LOCAL COMMUNITIES AND PROTECTED AREAS: SOCIAL DIMENSIONS OF PRO-ENVIRONMENTAL ENGAGEMENT IN RETEZAT NATIONAL PARK, ROMANIA

By

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To my parents

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A lack of community interest and participation in biodiversity conservation has been discussed as a major constraint for natural resources management in Romania and other areas of the world. Given weak understandings of Romanian rural residents' relationships with neighboring environments, this study examined various social dimensions of community and their potential to facilitate or hinder local pro-environmental behaviors.

Three research questions were addressed in this study. First, how levels and types of community attachments, conservation attitudes, connections to nature and perceived collective environmental responsibility facilitate or hinder attitudes towards pro-environmental civic engagement and pro-environmental civic behavioral intentions. Secondly, whether different facets of community attachment are distinctively predicted by length of residence, social interaction, and socio-demographic characteristics. Lastly, differences in affective and attitudinal environmental responses were assessed among young adults, middle age adults, and older adults residing in rural Romania.

Quantitative and qualitative data were collected in nine rural communities in Romania, communities neighboring Retezat National Park (RNP). Cross-sectional data was collected from 260 residents during June – October 2009 using face to face interviews and mail surveys. Also,

in depth-interviews were conducted with 24 community members representing the nine communities selected for study. Structural Equation Model (SEM) was used to assess the hypothesized relationships between constructs. Multivariate analysis of variance (MANOVA) was employed to assess differences in affective and attitudinal environmental responses among age groups. The qualitative data was analyzed using a grounded theory approach to inquiry focusing on an in depth theoretical conceptualization of the community attachment construct.

The results revealed the hierarchical structure of the relationships between social and park attachments, connections to nature and conservation attitudes and local environmental identity accounting for the relationships between these constructs. Local environmental identity and perceived collective environmental responsibility were found to have a significant direct impact on attitudes towards pro-environmental civic engagement, which ultimately were found to influence pro-environmental civic behavioral intentions. Furthermore, social interaction was found to have a stronger effect on park attachment, while length of residence had a stronger association with attachment to the social environment. Four distinct dimensions of attachment emerged from the textual analysis: attachments to the natural, social, institutional and cultural environments. In addition, younger residents (<31) were found to have weaker affective bonds with nature and the national park neighboring their communities.

This research extends current theoretical understandings of social predictors and inter-relationships between attachments, connections to nature, conservation attitudes, and perceived environmental responsibilities in areas rich in natural resources and their attitudinal and behavioral implications. Furthermore, this study complements contemporary understandings of the community attachment construct and affective and attitudinal environmental responses in rural contexts. Practical implications are discussed.

CHAPTER 1
INTRODUCTION

Background

Romania is situated in the southeastern part of Central Europe, sharing borders with the Republic of Moldova, Ukraine, Hungary, Serbia, and Bulgaria. The population of Romania is approximately 21.5 million people (2006 estimate), of which approximately 44.8% live in rural areas (Romanian National Institute of Statistics, 2007). In size, Romania is slightly larger than the US state of Oregon.

In terms of physical features, with 91,700 square miles (237,500 sq km), the Romanian landscape includes a variety of geographical areas. Approximately 31% of Romanian territory is covered by mountains (the Carpathians), 36% by hills and orchards, and 33% by plains and meadows (Romanian National Institute of Statistics, 2007). The three main tourist attractions in Romania are the Danube River, the Black Sea, and the Carpathian Mountains. Romania, due to legislative measures during the communist era (when the majority of land was owned by the state) and the communist installed presidents' passion for hunting, still has a high level of biodiversity and natural ecosystems (Ioras, 2003). The conservation focus in terms of natural resources management is indicated by the presence of a large variety of forest fauna species, including 60% of all European brown bears and 40% of the European wolves. After 1989, when major changes in land ownership started to be implemented, the threats to biodiversity sharply increased. The first nature reserves were established in Romania in the 1930's. In 2006, approximately 6.6% of the country's land mass had protected status, including three biosphere reserves, thirteen national parks and seven natural parks (Kuijs & Bergh, 2006).

The first national park in Romania was established in 1935 in the Retezat Mountains. In 1979, Retezat National Park (RNP) was declared an International Biosphere Reserve under the

UNESCO Man and Biosphere program (Ioras, 2003). The Romanian Government has established protected areas over the years, but they persistently lacked management guidelines and enforcement for resource protection (Cutumisu, 2003). In 1999, the first national project for establishing a national system of protected areas was initiated, with a focus on incorporating biodiversity concerns into the planning and management of Romanian protected areas. Retezat National Park was the first park in Romania with a management system in place (van Hal, 2006). Retezat National Park received its PAN (Protected Area Network) Certification in 2004. The PAN Parks mission is to establish a network of effectively managed and independently verified protected areas in Europe, that successfully integrate nature conservation and tourism objectives (PAN Parks, 2009).

Retezat National Park is located in the southwestern Carpathians, Hunedoara County, and the total surface of the park is 38,138 ha (RNP Management Plan, 2008). Within the park, there are more than twenty mountain peaks of 2,000 meters or higher (the highest peak is Peleaga at 2,509 meters, ~8,232 ft.), in addition to eighty lakes of glacial origin. There are more than 1,100 species of plants, over 50 species of mammals including roe deer, chamois, lynx, bear, and otter and 168 recorded bird species including the golden eagle. Due to changes in elevation, there a variety of forest types, but the predominant ones are the beech forest located between 800 and 1200 m, mixed forest between 1200 and 1400 m, and the spruce fir forest between 1400 and 1800 m (RNP, 2008). Two major hydrological basins bisect the park's landscape, Mures and Jiul de Vest.

In terms of management, Retezat National Park encompasses three different areas with different policies and regulations assigned (RNP Management Plan, 2008). The Gemenele Scientific Reserve (1,600 ha; 4%) represents the central zone or the scientific zone, an area

managed by the Romanian Academy where only scientific research activities are allowed. The Integral Protection Zone (18,000 ha; 47%) is the second largest area in the park and the major activities allowed in this area are passive recreation related, as well as some other activities such as traditional grazing (occurring under the establishing regulations of the park, as stated in the park management strategy). The remaining park area (49%) is represented by a buffer zone where sustainable forest harvesting and tourism development are permitted. Operationally, the park administration is responsible for overseeing a series of hiking trails, designated camping sites, and two-visitor information centers. A total area of 6.5 ha (<1%) of the park has tourist infrastructure. The park area is primarily wilderness, visitors driving to the fringe of the park and hiking to the major attractions in the park. There are no paved roads within the park. Figure 1-1 depicts a map of the park and its current touristic infrastructure.

The park's co-management framework includes, in addition to the park full time managers, a Scientific Council and a Consultative Council. The Scientific Council consists of scientists that represent the Romanian Academy, while the Consultative Council is represented by key stakeholders of the Retezat National Park area (local communities, tourism operators, local businesses, etc.) The Consultative Council provides recommendations regarding park management activities but does not have decision-making authority (van Hal, 2006). The management framework initiated by Retezat National Park is perceived as being a model for other protected areas in Romania.

A large portion of the park area (17,564 ha, 46%) is owned by the state and is administered by the National Forestry Administration, through its local ROMSILVA agency (Hunedoara Forest Directorate). Local associations own the reminder of the land (20,574 ha). Rural communities adjacent to Retezat National Park belong to five communes encompassing 43

villages with a total population estimated at 14,009 adult residents. A commune is an administrative division in Romania encompassing one or more villages that share similar economic, socio-cultural, geographic and demographic conditions. Table 1-1 depicts the villages adjacent to RNP and the communes they belong to. Twenty-six villages have grazing rights to alpine meadows, and their rights are administered through the local councils of the five communes to which the villages belong or by local associations (Kuijs & Bergh, 2006). Of these, three communes are primarily important from a management perspective, due to their close proximity to the park and their land ownership and use of resources in the park (use of buffer zone resources): Rau de Mori, Salasu de Sus, and Campu lui Neag (van Hal, 2006). Similarly, the influence of the park on these villages is not negligible; the park policies and regulations have a major impact on the livelihoods of the people living in these communities. The daily livelihoods within these communities are sustained through agricultural practices, with only a quarter of the population being involved in industrial fields (Cutumisu, 2003).

Communities rely on park resources primarily for grazing and the use of other natural resources such as wood, forest fruits, mushrooms, and medicinal plants. The major management concerns, as it relates to conservation, are related to overgrazing of the pasture areas and illegal wood harvesting (RNP Management Plan, 2008). Tourism impacts are also viewed as a threat to the conservation goals of the park, as over the last ten years, an increase in the number of tourists' accommodations in the area has been reported (van Hal, 2006).

Previous research conducted in the area discussed a variety of challenges for park management and surrounding communities. van Hal (2006) emphasized the growing concerns of local people due to the increased restrictions imposed on grazing by the park administration for conservation purposes. These restrictions were strongly viewed as having great impact on the

landowners control over their private lands. van Hal (2006), based on an investigation conducted to better understand co-management in the area, observed a lack of a common interest in conservation in the area. The author described this situation as being directly linked to a lack of effective cooperation and management. Similarly, Kuijs & Bergh (2006) emphasized the lack of a conservation attitude in the communities surrounding Retezat National Part and a lack of care for the environment. These two studies used a qualitative approach in understanding park management efforts, depicting primarily the voices of the park administrative staff and park stakeholders (e.g. lodge owners, travel operators, mayors of local communities) but not directly the views of local residents.

The Retezat National Park employed a co-management framework for the management and planning of the park's natural resources. The effectiveness of the management practice is still questioned, as the local communities' interest and participation in conservation is perceived as being limited. Consequently, it is essential to better understand the major factors that shape community residents' conservation attitudes and behaviors, and what community residents' see as their role in protecting the natural resources of the area.

Problem Statement

The literature on parks and protected areas management underscores that successful management endeavors and sustainability depend on the cooperation and support of local communities (Augustyn, 1998; Brandon & Wells, 1992; Cottrell & Cutumisu, 2006; de Beer & Marais, 2005; Hall, 2004; Ioras, 2003). Historically, parks and protected areas have been viewed as islands of biodiversity conservation with little or no networks or connections to the human dimensions (Cutumisu, 2003). Currently, local communities adjacent to national parks and protected areas are perceived as having a major role in achieving conservation and sustainability ideals, due to their strong connections to the surrounding environments and resources. Manfredo

et al. (2004) emphasized that people living in such communities make use of, develop meanings and attachments to, and are affected by the conditions of neighboring natural environments. Furthermore, Agrawal (2001) underscored that giving consideration to the social and economic environment in the management process is essential to assuring equity as well as effective management.

Actively involving local communities in the management of protected areas has been associated with an increased awareness in terms of the benefits of biodiversity conservation, a more responsible use of resources, and ultimately enhanced livelihoods and welfare of local people (Ioras, 2003; Pagdee et al., 2006). Heltberg (2001) argued that formal and informal community based resource management institutions play a positive role in reducing resource use and dependence. However, efforts to involve local communities are often challenged either by the urgency of implementing biodiversity conservation projects or the lack of community motivation to be involved or even the lack of knowledge on how and to what extent to involve local people.

Often in the literature, local communities adjacent to parks and protected areas are perceived as being passive, lacking initiative and care for the environment, and having expectations for established authorities to take the active role in terms of resource management (de Beer & Marais, 2005). This assertion has been constantly made as it regards local communities adjacent to national parks and protected area in Romania, but little is empirically known about the Romanian context, and especially about the institutional and social factors that shape the local communities attitudes and behaviors towards protected areas.

The institutional capacity for conservation and protected area management in Romania is still at a nascent stage, although efforts are being directed towards defining the country's nature

conservation agenda. In 1999, the first models for protected area management were established in Romania, models primarily framed using a participatory paradigm, based on stakeholders' representation in the management process. Stanciu (2002) underscored that the legal framework for protected area management in Romania encourages the development of co-management systems that sustain conservation objectives and bring benefits to the park stakeholders.

Co-management and participatory decision-making initiatives have been encouraged over the years but modest success has been achieved in terms of management effectiveness. Excessive exploitation of natural resources is still a real threat to biodiversity conservation in Romania. The lack of community interest and participation in biodiversity conservation has been discussed as being a major constraint for natural resources management in Romania. This situation has been primarily attributed to a low sense of community and collective responsibility that characterizes Romanian rural communities (PJB Associates, 2006) and also to the legacy of the communist system, primarily based on a centralized political structure, which lasted until 1989 (Oostenbrink & Kosterink, 2005). However, there is scarce empirical evidence that supports these assertions.

Based on a study conducted in the Retezat National Park (the first park in Romania with a co-management system in place) to better understand the co-management framework employed by the park, van Hal (2006) emphasized a lack of common interest in conservation in the area. The author described this situation as being directly linked to a lack of effective cooperation and management. Similarly, Kuijs & Bergh (2006) emphasized a lack of conservation attitude in communities surrounding Retezat National Part as well as a lack of care for the environment. These two studies used a qualitative approach in understanding the park administrative efforts, depicting primarily the voices of those directly involved in management and to a lesser extent the views of citizens from local communities.

Taking into consideration that Romania is still at an incipient stage in the process of shaping its nature conservation approach, there is an emerging need to better understand the major factors that shape community conservation attitudes and behaviors. Thus, in view of the increasingly recognized importance of local engagement in protected area management and the realities of the Romanian context, this study examined the extent to which community social dimensions could explain conservation attitudes and pro-environmental civic attitudes and behavioral intentions. Taking into account that the linkage between the institutional and social dimensions of community in Romania is still viewed as fairly weak (Cottrell & Cutumisu, 2006), this study primarily focuses on the social dimensions of pro-environmental engagement.

As previously emphasized, in the Romanian context, assertions have been made that the lack of environmental engagement is a consequence of a low sense of community and collective environmental responsibility. Community attachment has been previously identified in the literature as a predictor of environmental engagement (Brehm, Eisenhauer, & Krannich, 2004) and environmental responsibility has been linked to pro-environmental engagement (Garling et al., 2003). Furthermore, concerns have been raised over the attitudes people residing adjacent to Retezat National Park have towards conservation and their care for the environment. Therefore, this study examined these constructs, focusing on investigating the major determinants of community attachment and the nature of the relationship between community attachment, conservation attitudes, connections to nature, perceived environmental responsibility, attitudes towards pro-environmental civic engagement and pro-environmental civic behavioral intentions.

Purpose of the Study

The purpose of this study is to examine the social dimensions of community and their potential to facilitate or hinder local engagement in pro-environmental behaviors. Three research questions were addressed in this study. First, how levels and types of community attachment,

connections to nature, conservation attitudes, and perceived collective environmental responsibility facilitate or hinder attitudes towards pro-environmental civic engagement and pro-environmental civic behavioral intentions. Secondly, this study questioned if different facets of community attachment are distinctively predicted by length of residence, social interaction, and socio-demographic characteristics. Lastly, differences in affective and attitudinal environmental responses were assessed among young adults, middle age adults, and older adults residing in rural Romania.

The study questions were examined in the context of nine rural communities adjacent to Retezat National Park, Romania. Retezat National Park was the first area designated (1935) as a national park in Romania and also the first park in Romania with a co-management system in place. This national park is viewed as being a management model for other parks and protected areas in Romania (van Hal, 2006). The rural communities adjacent to Retezat National Park were well suited for this study because they are representative of other rural communities in Romania that are making use of and are affected by the conditions of the neighboring protected areas. The research findings have implications and relevance for other protected areas in the country, as well as abroad.

This study seeks to improve our understanding of community social dimensions that facilitate or inhibit pro-environmental behavioral intentions. By increasing our understanding of the theoretical bases for public engagement and our ability to account for them, greater knowledge to assist community program development emerges. To accomplish the study purpose, qualitative and quantitative data collection techniques were employed. Data were collected through in-depth interviews and surveys with community members.

Dissertation Format

This dissertation is presented in six chapters. Following the introduction and a more detailed description of the study methods, are chapters devoted to answering the three major research questions of the study. A discussion of the content contained within each chapter follows.

Chapter two depicts the methods employed in this study. The data collection and analysis process are described in greater detail. Descriptive statistics for all the constructs included in the study are provided. Furthermore, the results of the measurement model for constructs included in the study are reported.

Chapter three examines the structural relationships between community attachment, connections to nature, conservation attitudes, perceived collective environmental responsibility, attitudes towards pro-environmental civic engagement and pro-environmental civic behavioral intentions. A structural equation model was proposed and the hypothesized relationships were tested using MPLUS version 5.21.

Chapter four explores the intricacies of community attachment using a multidimensional conceptualization of the construct, attachment to the social and natural environment. This chapter focuses on assessing if different facets of community attachment are distinctively predicted by length of residence, social interaction, and socio-demographic characteristics. Furthermore, it elaborates on current understanding of community attachment by qualitatively exploring the extent to which we could speak of other facets of the community attachment construct.

Chapter five investigates whether affective and attitudinal environmental related constructs differ among young adults, middle age adults, and older adults residing in rural Romania. Citizens of differing ages were raised under different political and park status stages in Romania. Affective response captured connections with nature and attachments to the park, while

attitudinal response included measures of attitudes towards conservation and attitudes towards pro-environmental civic engagement behaviors.

Chapter six conceptually identifies further research streams based on the study findings and discussions. In particular, the importance of testing the proposed structural relationships under different contexts is emphasized as well as practical applications.

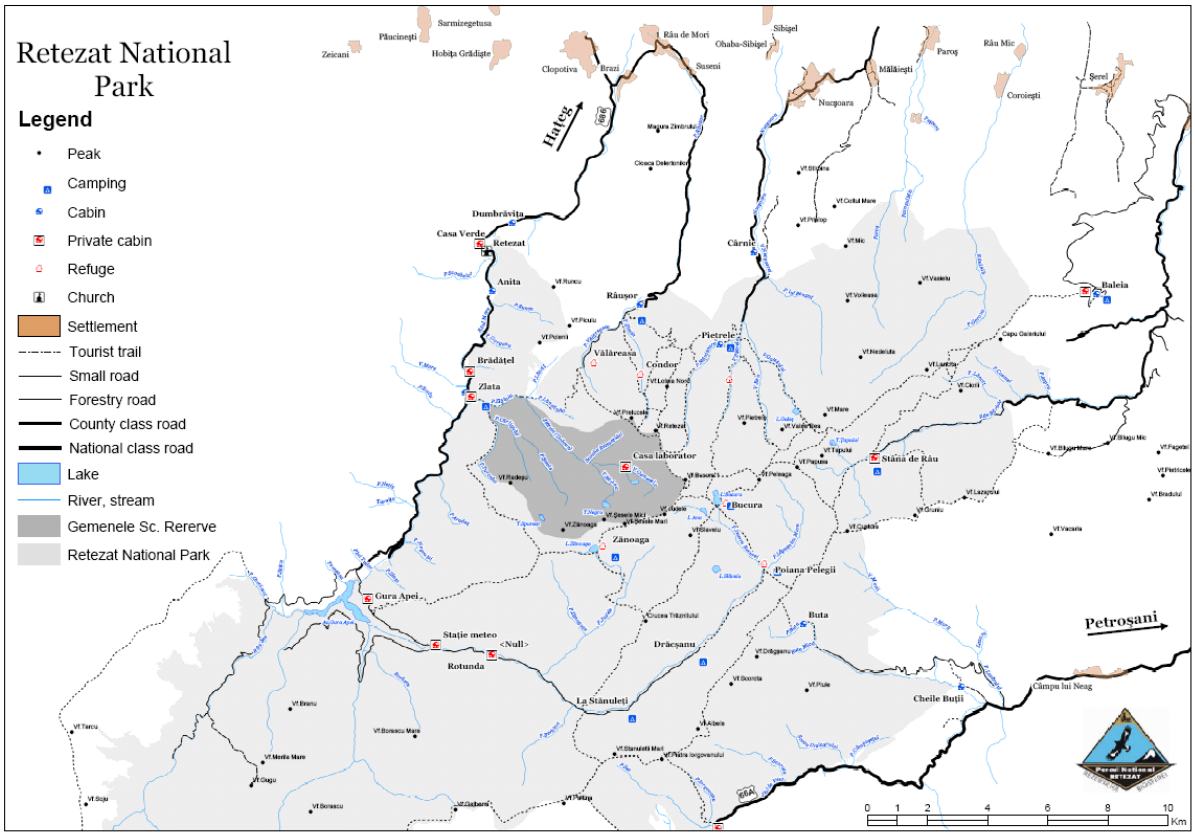

Figure 1-1. Map of Retezat National Park, Romania

Table 1-1. Communes and villages adjacent to Retezat National Park

Commune	Villages	Adult Population
1. Salasu de Sus	Salasu de Sus*	2,490
	Coroiesti	
	Malaiesti	
	Nucsoara	
	Ohaba de sub Piatra	
	Paros - Pestera	
	Rau Mic	
	Rau Alb	
	Salasu de Jos	
	Zavoi	
2. Rau de Mori	Rau de Mori*	3,314
	Brazi	
	Clopotiva	
	Ohaba-Sibistel	
	Ostrov	
	Ostrovel	
	Ostrovu Mic	
	Sibistel	
	Suseni	
	Unciuc	
	Valea Biljii	
3. Santamaria-Orlea	Santamaria-Orlea*	3,198
	Balomir	
	Barastii Hategului	
	Bucium Orlea	
	Ciopeia	
	Sacel - Sanpetru	
	Subcetate - Vadu	
4. Pui	Pui*	4,527
	Baiesti	
	Federi	
	Galati	
	Hobita	
	Ohaba Ponor	
	Rau Barbat	
	Rusor	
	Serel - Fizesti	
	Uric - Ponor	
5. Uricani Town	Campu lui Neag	480
TOTAL		14,009

CHAPTER 2
METHODS

Research Design

This study examined community social dimensions and their ability to facilitate or inhibit pro-environmental behavioral intentions. To accomplish the study goals, this research was conducted in nine communities adjacent to Retezat National Park, Romania using a mixed methods approach, quantitative and qualitative methods for data collection and data analysis being employed.

A series of steps were taken to gather information relevant to better understanding the social dimensions of pro-environmental engagement in Retezat National Park. Primarily, two major data collection phases were carried out simultaneously to answer the research questions of this study. A qualitative approach to data collection, entailing in-depth/ key informant interviews with community members was conducted. Concurrent to the in-depth/ key informant interviews, a household survey of a sample of local communities adjacent to Retezat National Park was conducted. In the following sections, the data collection and analysis procedures for these two phases are described in more detail.

Data Collection Procedures

Quantitative Data Collection

The theoretical population of this phase included all adults living in rural communities adjacent to protected areas in Romania. The accessible population for the study was adult community members of 43 rural communities adjacent to Retezat National Park, Romania, villages that belong to five communes. A commune is an administrative division in Romania encompassing one or more villages that share similar economic, socio-cultural, geographic and

demographic conditions. For administrative purposes, one village in each commune is designated as the major village, where all the local administrative authorities are located.

The total adult population in the villages adjacent to Retezat National Park was estimated at 14,009 adult residents. In order to more thoroughly examine the determinants of pro-environmental civic behavioral intentions in the communities neighboring Retezat National Park, and due to budget/ resource limitations, nine communities were selected using multistage sampling to be included in the final sampling frame. Considering that the rural communities adjacent to Retezat National Park belong to five communes, a decision was made to select two villages dissimilar in terms of size from each commune, to assure representation of each commune in the final sample. Furthermore, taking into account that each commune has a village designated as the major village (the largest village in the commune), where all the public offices are located, a decision was made to include these villages in the final sample frame (one commune had only one village). Thus, at first, the following five major villages were included in the sampling frame and excluded from further sampling: Salasu de Sus, Rau de Mori, Santamaria Orlea, Pui, and Campu lui Neag. Secondly, from four communes, one more village was randomly selected. Using a table listing all the villages adjacent to the park, each village was numbered and using a table of random numbers, a village was selected from each commune. Accordingly, the following four villages were selected to be included in the final sample: Nucsoara, Unciuc, Sacel-Sanpetru, Hobita.

The sampling frame included the total number of households in the nine communities adjacent to RNP, but the final unit of analysis was the individuals residing in the households. The nine villages selected have a population of 4,232 persons residing in 1,159 private households. A systematic sampling method with a random start was used to select participants for the face to

face interviews, the sampling interval being established based on the number of households in the sampling frame for each community divided by sample size needed in each community. The person in the household of age of 18 or older was asked to participate in the study, and the questions were asked directly to the respondents and recorded by the interviewer.

Bernard (2000) suggested that a sample size depends on several aspects as follows: the heterogeneity of the population from which the elements are chosen; how many population subgroups (independent variables) the researcher wants to deal with simultaneously in the analysis; the size of the phenomenon that the researcher is trying to detect and how precise you want your sample statistics (or parameter estimator) to be. In terms of the heterogeneity of the population from which the elements are chosen, a fairly heterogeneous sample was anticipated in terms of the variables of interest for the study, due to the sampling approach (systematic random sampling). De Vaus (2001) emphasized the need for sufficient variation in the sample on the key variables of the study. Considering that this study focuses on collecting data from different communities, with different population sizes, it was expected to have an acceptable level of variation in the sample.

Based on the accessible population size, estimated at approximately 14,009 adult residents, the minimum number of completed questionnaires needed was determined to be 576. The accuracy of sample statistics are expressed in terms of the level of confidence that the statistics fall within a specified interval from the parameter. This sample size was found to be sufficient to limit sampling error and be statistically representative of the population at a confidence level of .95 and confidence interval of 4, which means within plus or minus 4 percentage points of the population parameter.

Taking into account the possibility of a low response rate, in addition to the sample determined of 576, an approximately 50% sample was calculated to be included in the study (Steele et al., 2001). Thus, the total number of people that was planned to be asked to participate in the study was established at 850. The number of questionnaires to be conducted in each community was calculated based on the number of households in each community. The total number of households in the nine communities was estimated at 1,159. For example, given a population of 205 households in Pui, approximately 153 residents were attempted to be asked to participate in the study. Similarly, at a total of 100 households in a community (7% of the estimated total number of households in the nine villages), approximately 60 households were planned to be contacted to participate in the study. The sampling frame is depicted in Table 2-1.

Instrumentation

Participants in this study were asked to express their opinions on a series of questions about their community as well as Retezat National Park. The instrument consisted of fixed-choice, partially closed-ended and open-ended questions (Appendix A). The final questionnaire included four broad sections: opinions about the community and local life conditions; feelings about Retezat National Park and nature in general; engagement in environmental protection in Retezat National Park; and demographics. More specifically, the community and local life conditions section included six questions (e.g., social attachment scale, social interaction scale, quality of life perceptions, level of involvement in community affairs). The section capturing feelings about Retezat National Park and nature in general contained ten questions (e.g., connection to nature scale, park attachment scale, conservation attitudes, park visitation patterns). The section on engagement in environmental protection in Retezat National Park included four questions (e.g., attitudes towards pro-environmental civic engagement scale, pro-environmental civic behavioral intentions scale, perceived environmental responsibility items).

The demographics section consisted of ten questions measuring length of residence, household size, gender, age, family status, educational level, employment, and household income.

Community attachment was measured using a scale (multiple items); the same approach was used to measure conservation attitudes, connections to nature, attitudes towards pro-environmental civic engagement, perceived environmental responsibility and pro-environmental civic behavioral intentions. The instruments employed are described in greater detail in the subsequent chapters.

Reliability and validity

Predominantly scales were employed to measure the study constructs, in order to reduce random error. In cases were scales were used, reliability measures as well as confirmatory factor analyses were conducted to determine their accuracy.

To assess face and content validity, multiple strategies were followed. At first, three university professors reviewed the survey instrument and also provided feedback in terms of the extent the empirical measures adequately reflected the real meanings of the concepts under consideration. Secondly, the principal investigator (a native of Romania) translated the English language version of the questionnaire in Romanian. Thirdly, a Romanian student translated the Romanian language version of the questionnaire back to English, and after revisions were made, further verified the accuracy of the translation. Lastly, at the study site, park management staff was asked to complete the survey and comment on the questionnaire content, design, clarity, wording and format. Based on the feedback, minor adjustments were made to the questionnaire. Appendix B depicts the Romanian language version of the study questionnaire.

Qualitative Data Collection

In-depth interviews were conducted with community members in each of the nine communities selected for study. A grounded theory approach to inquiry was followed to allow

for an in depth theoretical conceptualization of the community attachment construct. Furthermore, an examination of the feelings, attitudes, and behaviors that people living adjacent to a national park have towards their communities and the protected area was undertaken. A non-probability sampling approach was employed, this phase of the study being focused on understanding the experiences of the respondents and not generalizing to the larger population. A referral sampling technique was employed to identify participants, with a focus on including individuals highly involved in their community and also individuals with low levels of local engagement. Park management employees and public officials were asked to provide names of community members from the nine selected communities that are interested and highly engaged in community affairs. Based on a first interview in each of the nine communities, the principal investigator asked the respondents to provide names of other community members that might participate in the study and have dissimilar levels of interest and engagement in their community.

Data was collected from 24 community members representing the nine communities adjacent to Retezat National Park. Creswell (2007) recommends that researchers interview 20 to 30 individuals when a grounded theory approach to qualitative inquiry is employed. Considering that this study involved multiple communities, approximately three interviews were conducted in each community.

A semi-structured interview with an interview guide was employed to organize the discussion. The discussion primarily evolved around four major questions, respondents being asked to: (1) describe their community to someone who has never been there; (2) describe what is the most important thing to them about their community; (3) describe their feelings and attitudes towards the park; and (4) describe the things they do or they are willing to do for their community and the park (Appendix C). The Romanian version of the interview guide is

presented in Appendix D. The interviews were conducted by the principal investigator in the native language and were tape-recorded, when permission to record the interview was obtained from the interviewee. All the interviews were translated (into English), transcribed and analyzed by the principal investigator.

Data Analysis

Quantitative Data Analysis

Data analyses were performed to address the three research questions of the study. The data for two of the research questions was analyzed using structural equation model (SEM) analysis, while for the third research question multivariate analysis of variance (MANOVA) was employed.

The structural equation model analysis encompassed several stages. First, descriptive statistics were computed for the variables used in the study using the Statistical Package for the Social Sciences (SPSS) version 18.0. Second, the data collected was screened and the critical assumptions underlying the statistical techniques employed by the study were assessed. Third, a two-step data analysis was employed to assess the hypothesized relationships among the research constructs (Anderson & Gerbing, 1988). As part of this process, individual items were examined using Confirmatory Factor Analysis (CFA) and the measurement model for constructs included in the study was estimated using MPLUS version 5.21 to determine how well the indicators captured their specific constructs and the ability of the respondents to differentiate between constructs (Hair et al., 2006). This was followed by an assessment of the Structural Equation Model (SEM) assessing the hypothesized relationships between constructs. SEM was assessed using MPLUS version 5.21 using the WLSMV (weighted least squares mean and variance adjusted) method of estimation, method recommended for categorical and ordinal data (Muthen et al., 1997).

The fit of the measurement model and the structural equation model were assessed using multiple criteria. The chi-square test of model fit divided by the degrees of freedom was used as a reference criteria (<3.0; Kline, 2005) supplemented by the Root Mean Square Error of Approximation (RMSEA), Weighted Root Mean Square Residual (WRMR), Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI). RMSEA values equal to or less than .06 is indicative of a good model fit, values between .08 and .10 indicate acceptable model fit, and values higher than .10 are considered to be indicative of poor fit (Browne & Cudeck, 1992; MacCallum, Browne, & Sugawara, 1996). CFI and TLI values equal to or greater than .95 also indicate good model fit (Hu & Bentler, 1999). The criterion for WRMR is a value less than 1.00 (Yu, 2002).

Cronbach's alpha coefficients (α) and composite reliability (CR) have been widely used to estimate the reliability of confirmatory factors. Evidence of internal consistency is provided by Cronbach's alphas above the recommended level of .70 (Nunnally & Bernstein, 1994). Fornell & Larker (1981) suggested that a composite reliability (CR) greater than .70 as adequate. For convergent validity, the average variance extracted (AVE) coefficient has been widely used. The AVE value that is greater than .50 is deemed acceptable (Bagozzi, 1994; Fornell & Larker, 1981). Another criterion for convergent validity is factor loadings. T-statistics for factor loadings (λ) greater than 1.96 at a significance level of $p < 0.05$ are regarded as significant. Hatcher (1994) indicated that attributes with factor loadings lower than .40 should be excluded from further analysis. Furthermore, Kline (2005) emphasized the importance of using good psychometric characteristics that will each also have relatively standardized factor loadings (i.e., > .60). Thus, in this study the criteria for factor loadings were set at .60. For obtaining discriminant validity, the correlations between variables should be less than .85 (Kline, 2005).

Marsh, Craven, & Debus (1991) underscored that when a model has been misspecified (poor model fit), the researcher has to respecify the model. One way to respecify the model is to delete indicators and the other option is to allow errors to correlate, and decisions should be supported by theory or rationale (Joreskog, 1993). Residuals and modification indices are two main sources to identify misfits in the model. Standardized residuals exceeding ± 2.58 are a considered to be a baseline for respecification. Another type of information relevant for respecification is values of modification indices for parameter estimates constrained to equal zero. Large modification indices (> 3.85) and statistically significant at the .05 level may often be associated with the largest expected change value (Saris, Satorra, & Sorbom, 1987). On the baseline of large residuals and large expected change values, the researcher can determine how the model can proceed to be respecified. The literature suggests that large modification indices should be considered for elimination, and if they are so critical that it is hard for them to be eliminated, the next largest modification index should be evaluated and considered for respecification (Saris, Satorra, & Sorbom, 1987).

To assess group differences in terms of affective and attitudinal environmental response, three multivariate analysis of variance (MANOVA) models were performed. Data analysis encompassed several stages. First, descriptive statistics were computed for the variables used in the study using the Statistical Package for the Social Sciences (SPSS) version 18.0. Second, the data collected was screened and the critical assumptions underlying the statistical techniques employed were assessed. Third, individual items were examined using Confirmatory Factor Analysis (CFA) and the measurement model for constructs included in the study was estimated using MPLUS version 5.21. Lastly, three multivariate analysis of variance (MANOVA) models

were assessed. The Wilk's Lambda statistics as well as the post-hoc tests with Tukey statistics were evaluated in this stage.

The following sections depict the descriptive statistics for the variables used in the study, followed by an assessment of the study measurements using Confirmatory Factor Analysis (CFA) with a focus on determining how well the indicators captured their specific constructs.

Descriptive statistics

Participants. Cross-sectional data was collected from 260 residents during June – October 2009 using face to face interviews (68% response rate) and mail survey (9% response rate). The average age was 45.0 years, with almost one quarter of the respondents (23.7%, *n* = 59) being between 18 and 30 years and slightly more than one third of the respondents (36.1%, *n* = 90) being between 31 and 50 years. Respondents who were above 51 years were the most represented group (40.2%, *n* = 100). Of the respondents, 54.2% (*n* = 135) were males and 46.8% (*n* = 114) were females. The average length of residency was 37.36 years (*SD* = 18.269), with 40.1% (*n* = 101) residing in their community between 20 to 40 years, 27.4% (*n* = 69) between 41 to 60 years and 20.6% (*n* = 52) between 1 to 20 years. The majority of the respondents (65.1%, *n* = 162) were married or partnered, 48.6% (*n* = 121) had one to five children under 18 years, and on average, the number of adults per household was three.

Almost one third of the respondents (31.6%, *n* = 79) indicated high school as the highest level of education attained, 14% (*n* = 35) of the respondents had some college or a college degree and 14 % (*n* = 35) had an elementary school education or less. About one third of respondents (33.8%, *n* = 82) reported a monthly household income between 1,000 and 2,000 RON (about US $330-$660) and 30.6% (*n* = 74) indicated a monthly household income of more than 2,000 RON (about US $661). When their current employment status was asked, slightly less than one third of

the respondents (29.5%, *n* = 74) reported they were retired, 10.8% (*n* = 27) were students, while a small percentage of the respondents identified themselves as being unemployed (2.4%, *n* = 6).

The majority of respondents (70.6%, *n* = 173) indicated that they do not have any property rights (ownership or land use rights) in Retezat National Park. Almost all respondents (96.0%, *n* = 241) reported they do not personally receive any income from the park or its visitors. Similarly, the majority of the respondents (97.2%, *n* = 244) reported their immediate family does not receive any income from the park and its visitors. The demographic characteristics are depicted in Table 2-2.

Local life. The majority of the respondents evaluated the quality of life in their community as average (70.5%, *n* = 182), with an overall mean (*M*) of 3.07 and standard deviation (*SD*) equal to .61, where 1 = Poor; 2 = Above poor; 3 = Average; 4 = Above average; 5 = Excellent. Almost half of the respondents (49.6%, *n* = 127) indicated they are somewhat active in community activities or events, while only 2.7% (*n* = 7) reported as being extremely active in community activities and events. The level of involvement in community activities and events had a mean of 2.77 and standard deviation of .92, where 1 = Not active at all; 2 = Not very active; 3 = Somewhat active; 4 = Very active; 5 = Extremely active.

Social attachment. The social dimension of community attachment was measured using 12 items on a five point Likert scale ranging from 1 to 5, where 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly agree. Of the 12 social attachment items, “the associations that I have with other people in this community mean a lot to me” (*M* = 4.52, *SD* = .76) was the most highly rated, followed closely by “I feel like I belong in this community” (*M* = 4.50, *SD* = .84). The lowest rated social attachment item was “I agree with most people in this

community about what is important in life" (*M* = 3.61, *SD* = 1.30). These results are presented in Table 2-3.

Social interaction. Social interaction was measured using the frequency of interaction with various types of people in the community. The following question was asked: "How often do you see or meet with at least one of the following types of people? Family, Close Friends, Acquaintances, Neighbors, etc." For each type, the respondents were given response options of: (1) never, (2) a few times a year, (3) once a month, (4) a few times a month, (5) once a week, (6) more than once a week, and (7) everyday. Of the 10 categories of groups provided, "neighbors" (*M* = 6.43, *SD* = 1.01) was the most highly rated, followed by "immediate family (parents, siblings)" (*M* = 5.55, *SD* = 1.85). The lowest rated group categories were "members of non-governmental organizations" (*M* = 1.47, *SD* = .76) and "Retezat National Park staff" (*M* = 2.71, *SD* = 1.82). Table 2-4 depicts the results for the social interaction items.

Connection to nature. Connections to nature were measured using 18 items on a five point Likert scale ranging from 1 to 5, where 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly agree. The items captured five dimensions of connection to nature: admiration (3 items), spirituality (3 items), identity (4 items), sorrow (2 items), restoration (3 items), and fear (3 items). Of the 18 items, "when surrounded by nature, I feel at peace" (*M* = 4.91, *SD* = .33) was the most highly rated, followed by "I feel sorrow because we're destroying too much nature" (*M* = 4.75, *SD* = .76). The lowest rated item was "a lot of nature just scares me" (*M* = 1.60, *SD* = 1.18), followed by "I have too much fear of nature to hike in remote natural areas" (*M* = 2.10, *SD* = 1.51). These results are presented in Table 2-5.

Park visitation. The majority of the respondents (91.5%, *n* = 227) reported they have been at least once inside Retezat National Park. Slightly more than half of the respondents (51.5%, *n* =

123) mentioned they have been inside the park a few times during the past 12 months. Nearly third of the respondents (29.3%, *n* = 70) did not visit the park during the past 12 months. When asked was the major purpose for visiting the park, the respondents mentioned hiking (79.5%, *n* = 190), camping (32.6%, *n* = 78) or collecting non-timber forest products (30.5%, *n* = 73) as the major purpose for their visit. Table 2-6 depicts in more detail the major reasons for visiting the park. When asked to identify for what reasons the park is important to them, the respondents mentioned "a great place to visit with family and friends" (87.0%, *n* = 215), "scenery, its unique landscapes, plants, and animals" (85.8%, *n* = 212), "outdoor recreation (hiking, climbing, etc.)" (84.2%, *n* = 208), "benefits it brings to our community" (48.5%, *n* = 120), "use of natural resources (timber, mushrooms, medicinal plants, fishing, etc.)" (42.5%, *n* = 105) and "livestock grazing" (34.8%, *n* = 86).

Park attachment. The respondents' attachment to Retezat National Park was measured using nine items on a five point Likert scale ranging from 1 to 5, where 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly agree. The items included captured two dimensions of park attachment, identity (5 items) and dependence (4 items). Of the nine items, "Retezat National Park means a lot to me" (*M* = 4.54, *SD* = .78) and "I enjoy living near Retezat National Park" (*M* = 4.54, *SD* = .75) were the most highly rated, followed by "Retezat National Park is very important to me" (*M* = 4.33, *SD* = .91). The lowest rated item was "I get many personal benefits out of living near Retezat National Park" (*M* = 3.72, *SD* = 1.28), followed by "I identify strongly with the Retezat National Park" (*M* = 3.78, *SD* = 1.18). These results are presented in Table 2-7.

Conservation attitudes. The respondents' attitudes towards conservation were measured based on their reactions to 25 items on a five point Likert scale ranging from 1 to 5, where 1 =

Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly agree. These items captured four dimensions of conservation attitudes: conservation awareness (6 items), conservation benefits (7 items), land use perspectives (7 items), and management considerations (5 items). Of the 25 items, "it is important to have the Retezat National Park for the survival of various plants and animal species" (*M* = 4.91, *SD* = .42) was the most highly rated, followed closely by "it is necessary to set aside some land for the protection of plants and animals" (*M* = 4.89, *SD* = .38). The lowest rated item was "Retezat National Park is a waste of land" (*M* = 1.36, *SD* = .96), followed by "people who own land/ have property rights in the park should be allowed to use resources as they wish" (*M* = 1.92, *SD* = 1.33). Table 2-8 depicts these results.

When asked who should establish the rules and regulations for land management in Retezat National Park, the respondents' mentioned Retezat National Park Administration (89.6%, *n* = 215), local councils (56.3%, *n* = 135), and landowners (40.0%, *n* = 96). Only seven respondents (2.9%) mentioned there is no need to establish strict regulations for administering the land within the park.

Attitudes towards pro-environmental civic engagement. Attitudes towards pro-environmental civic engagements were measured using nine items on a five point Likert scale ranging from 1 to 5, where 1 = Not at all effective; 2 = Never effective; 3 = Sometimes effective; 4 = Often effective; 5 = Always effective. Of the nine items, "learning about the environment" (*M* = 4.59, *SD* = 71) was the most highly rated, followed by "investing time to learn about the park and environmental protection" (*M* = 4.36, *SD* = .87) and "participating in educational programs about the environment" (*M* = 4.36, *SD* = .89). The lowest rated item was "participating in a workshop on how to reduce my dependence on park resources" (*M* = 3.87, *SD* = 1.15). Overall, the respondents' reported "bringing tourists to the park" (*M* = 4.41, *SD* = .89) and

“voting for public officials that show interest in environmental issues” (M = 4.21, SD = 1.09) as being often effective in protecting the environment in Retezat National Park. Table 2-9 depicts these results.

Pro-environmental civic behavioral intentions. Pro-environmental civic behavioral intentions were measured using eight items on a five point Likert scale ranging from 1 to 5, where 1 = Very unlikely; 2 = Somewhat unlikely; 3 = Neither likely nor unlikely; 4 = Somewhat likely; 5 = Very likely. Of the nine items, “attend a public presentation about Retezat National Park” (*M* = 4.02, *SD* = 1.11) was the most highly rated, followed by “give my input into park management decisions” (*M* = 3.94, *SD* = 1.16). The lowest rated item was “participate in a workshop on how to reduce my dependence on park resources” (*M* = 3.23, *SD* = 1.39). These results are presented in Table 2-10.

Perceived environmental responsibility. Perceived environmental responsibility was measured using four items on a five point Likert scale ranging from 1 to 5, where 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly agree. The items captured personal environmental responsibility, collective environmental responsibility, and governmental environmental responsibility. Of the four items, “authorities, together with the citizens, are responsible for protecting the environment in Retezat National Park” (*M* = 4.67, *SD* = .81) was the most highly rated. The lowest rated item was “authorities, rather than the citizens, are responsible for protecting the environment in Retezat National Park” (*M* = 4.30, *SD* = 1.07). Table 2-11 depicts these results.

Confirmatory factor analysis

A first order confirmatory factor analysis (CFA) of each construct measured in the study was used to assess the reliability and validity of the constructs and which variables should be included in the models based on good fits. Thus, the CFA of the following constructs was

assessed: community attachment, social interaction, connection to nature, conservation attitudes, attitudes towards pro-environmental civic engagement, and pro-environmental civic behavioral intentions.

Confirmatory factor analysis (CFA) of community attachment. Community attachment was conceptualized as encompassing attachment to the social environment (social attachment) as well as the natural environment (attachment to the park). In this study, the social dimension of community attachment was measured using a multiple item scale including 12 items. The attachment to the natural environment (the park in this study), was measured using a multi-item scale encompassing two distinct dimensions of attachment, identity (5 items) and dependence (4 items). For the purposes of this study first and foremost one measurement model with three factors was tested using confirmatory factor analysis.

The multifaceted three-factor model (social attachment, park identity, park dependence) assumed that the underlying factors of community attachment are three distinct but related factors, which are cause of their observed measures. Two items which were negative items were reserve coded before running the confirmatory factor analysis. The results of the CFA with three factors and 21 items revealed poor fit, the chi-square or χ^2/df ratio (3.68: $\chi^2 = 198.57$, df = 54, $p < .001$) was higher than the suggested criteria (i.e., <3.0; Kline 2005). CFI (.94), RMSEA (.102) and WRMR (1.162) yielded a poor model fit, with the exception of TLI (.97) which suggested an adequate fit. An investigation of the factor loadings revealed that factor loading for one item ("there are many things I would like to change about this community") was statistically insignificant and four items ("if the people in this community were planning something, I'd think of it as something WE were doing rather than THEY were doing", "if I needed advice about something, I could go to someone in this community", "there are things going on in this

community that I am not proud of", "I feel no commitment to Retezat National Park") had factor loadings lower than .60. Thus, a decision was made to eliminate these five items from further analysis due to their low factor loadings. Two more items ("overall, I am very attached to this community", "I agree with most people in this community about what is important in life") were eliminated from further analysis based on an investigation of the modification indices that showed the model could be improved if we allow these items to correlate to other two items very similar in working. One item ("I wouldn't substitute other places for living near Retezat National Park") was eliminated because it was found as a weak measure of the park dependence factor, due to high correlation with the other two factors in the model.

Furthermore, the correlation between park identity and park dependence (r = .90) was higher than the recommended criteria of .85 (Kline, 2005), suggesting a weaker differentiation of these constructs by this population. Consequently, scale items were collapsed and one measure of park attachment was retained including seven items. The CFA model with six items measuring social attachment and seven items measuring park attachment, revealed good model fit, the χ-square/ df ratio (2.87: χ^2 = 77.402, df = 27, p < .001) was lower than the suggested criteria (i.e., <3.0; Kline 2005). CFI (.98), TLI (.99), RMSEA (.085) and WRMR (.842) yielded a good model fit and all the item (indicator)-loadings were significant (p < .001) and ranged from .65 to .95 that provides strong evidence of convergent validity. In terms of discriminant validity, the correlation between social attachment and park attachment was lower than .85, being equal to .56. The fit indices for the community attachment measurement model with three factors are depicted in Table 2-12. The item (indicator)-loadings, reliability coefficients (Cronbach alphas), composite reliability coefficients (CR), and convergent validity results (AVE) were above the recommended criteria and are portrayed in Table 2-13.

Confirmatory factor analysis (CFA) of social interaction. Social interaction was measured using 10 items encompassing three underlying factors: interaction with strong ties (3 items), interaction with weak ties (3 items), and interaction with authorities (4 items). The initial CFA model revealed a good model fit the χ-square/ df ratio (2.16: $\chi^2 = 47.604$, df = 22, $p < .001$) was lower than the suggested criteria (i.e., <3.0; Kline 2005). CFI (.96), TLI (.96), RMSEA (.068) and WRMR (.680) yielded a good model fit. However, the factor loadings for two items ("neighbors", "community groups (e.g. church)") were low (<.60) and the reliability coefficient for the interaction with strong ties factor was lower than the recommended criteria (.70), Cronbach alpha being equal to .58. Consequently, the two items and the factor capturing interaction with strong ties were eliminated from further analysis. After eliminating these items, the RMSEA was high (.102). Thus, based on an evaluation of the modification indices a new model was proposed for social interaction encompassing interaction with friends (2 items), interaction with public officials (1 item), and park interactions (3 items). In this model the factor loading for the one item capturing interaction with public officials was set at 1.00. The results of this model depicted one item ("members of non-governmental organizations") with a low factor loading and thus considered for elimination.

The fit indices for the social interaction measurement model with three factors (a total of 5 items) revealed good fit. The χ-square/ df ratio (1.96: $\chi^2 = 5.890$, df = 3, $p > .05$) was lower than the suggested criteria (i.e., <3.0; Kline 2005). CFI (.99), TLI (.99), RMSEA (.062) and WRMR (.242) yielded a good model fit. These results are depicted in table 2-12. In terms of discriminant validity, the correlations between interactions with friends and interactions with the park was .40, interactions with friends and interactions with public officials was .43, interactions with the park and interactions with public officials was .52, all being lower than .85. The item (indicator)-

loadings, reliability coefficients (Cronbach alphas), composite reliability coefficients (CR), and convergent validity results (AVE) were above the recommended criteria and are portrayed in Table 2-14.

Confirmatory factor analysis (CFA) of connection to nature. The initial CFA model of connections to nature included 18 items encompassing five factors: admiration (3 items), spirituality (3 items), identity (4 items), sorrow (2 items), restoration (3 items), and fear (3 items). The multifaceted six-factor model assumed that the underlying factors of nature connection are six distinct but related factors, which are cause of their observed measures. The results of the initial CFA model revealed adequate model fit, the χ-square/ df ratio (2.69: χ^2 = 96.73, df = 36, $p < .001$) was lower than the suggested criteria (i.e., <3.0; Kline 2005). CFI (.98), TLI (.98), RMSEA (.083) and WRMR (.883) yielded a good model fit. However, the reliability coefficients for three factors: admiration, awe (α = .60), sorrow (.α = .42), and fear (α = .67) were low. When analyzing the factor loadings, one item ("a lot of nature just scares me") measuring nature fear had a low factor loading. After eliminating this item the reliability for the items left measuring nature fear was low (α = .69). Thus, the three factors (awe, sorrow, and fear) were eliminated from further analysis.

The results of the new model with three factors (identity, spirituality, and restoration) revealed a high RMSEA (.111). An investigation of the modification indices showed that one item ("nature provides me with a spiritual connection") was a weak measure of the spirituality dimension, the results showing the model could be improved if this item would be allowed to load on the identity and restoration dimensions. Thus, this item was eliminated from further analysis. Furthermore, inter-factor correlations were high, the correlation between nature restoration and nature identity (.87), and between nature restoration and nature spirituality (.93)

were above the suggested criteria of .85 (Kline, 2005) and suggesting inability of the sample to differentiate between factors. Therefore, scale items were collapsed and tested as a one-dimensional measure of connection to nature. After collapsing the items, RMSEA (.122) showed poor model fit. Further investigation of the modification indices showed two items that strongly correlated with other items due to very similar wording, thus items "feeling part of nature is a spiritual experience" and "my love for nature is a big influence in my life" were eliminated from further analysis. The fit indices for the connection to nature measurement model with one factor revealed acceptable model fit, the χ-square/ df ratio (3.01: $\chi^2 = 30.094$, df = 10, $p < .001$) being close to the suggested criteria (i.e., <3.0; Kline 2005). CFI (.99), TLI (.99), RMSEA (.091) and WRMR (.600) yielded an acceptable model fit. These results are depicted in table 2-12. The item (indicator)-loadings, reliability coefficients (Cronbach alphas), composite reliability coefficients (CR), and convergent validity results (AVE) were above the recommended criteria and are portrayed in Table 2-15.

Confirmatory factor analysis (CFA) of conservation attitudes. For the present study one a priori, four factor model was proposed as a measure of conservation attitudes. The multifaceted four-factor model assumed that the underlying factors of conservation attitudes are four distinct but related factors: conservation awareness (6 items), benefits (7 items), land use perspectives (7 items) and management considerations (5 items), which are cause of their observed measures. The initial CFA model with four factors encompassing a total of 25 items, had a poor model fit the χ-square/ df ratio (4.22: $\chi^2 = 257.385$, df = 61, $p < .001$) being higher than the suggested criteria (i.e., <3.0; Kline 2005). CFI (.79), TLI (.90), RMSEA (.115) and WRMR (1.355) yielded a poor model fit. An investigation of the factor loadings revealed four items ("if overgrazing continues in the park, all the animals will soon disappear", "the benefits

from the park usually outweigh negative consequences", "it is good if some land within the park is allocated to local people", "Retezat National Park is for visitors, those who enjoy hiking and wildlife viewing") with low factors loadings that were dropped. Furthermore, four more items ("Retezat National Park is a waste of land", "personally, I support the rules and regulations established by the park administration", "the quality of the air is higher because of living near the Retezat National Park area", "the park resources help local waters stay pure for our community") were considered for elimination based on modification indices that showed these items being a weak measure of their constructs, the results showing that the model could be improvement if we allow these items to load on multiple latent factors. Furthermore, the land perspective factor was eliminated from further analysis due to its weak association with the other factors. The land use perspectives factor did not load on the higher order model capturing conservation attitudes and was eliminated from further analysis.

The fit indices for the conservation attitudes measurement model with three factors revealed good model fit, the χ-square/ df ratio (2.23: $\chi^2 = 60.155$, df = 27, $p < .001$) being lower than the suggested criteria (i.e., <3.0; Kline 2005). CFI (.96), TLI (.98), RMSEA (.071) and WRMR (.780) yielded a good model fit. These results are depicted in table 2-12. In terms of discriminant validity, the correlations between conservation awareness and conservation management was .63, conservation awareness and conservation benefits was .52, conservation benefits and conservation management was .58, all being lower than .85. The item (indicator)-loadings, reliability coefficients (Cronbach alphas), composite reliability coefficients (CR), and convergent validity results (AVE) were above the recommended criteria and are portrayed in Table 2-16.

Confirmatory factor analysis (CFA) of attitudes towards pro-environmental civic engagement. For the present study one a priori model was proposed as a measure of attitudes towards pro-environmental civic engagements. A one factor model was proposed that assumed that the underlying attributes (12 items) of attitudes toward pro-environmental civic engagement load on one factor. The initial CFA model with 12 items, had a poor model fit the χ-square/ df ratio (6.87: $\chi^2 = 171.714$, df = 25, $p < .001$) being higher than the suggested criteria (i.e., <3.0; Kline 2005). CFI (.91), TLI (.97), RMSEA (.196) and WRMR (1.219) yielded a poor model fit. Three items ("reducing use of park resources", "bringing tourists to the park", and "voting for public officials that show interest in environmental issues") were eliminated from further analysis due to low factor loadings. Furthermore, four items ("attending public presentations about the Retezat National Park", "learning about the environment", "participating in educational programs about the environment", "participation in a local organization that is involved in park protection") were strongly associated with other four items and the modification indices revealed that the model could be improved if we allow the errors of these items to correlate. Considering the items were very similar in working, a decision was made to eliminate four of the items from further analysis.

The fit indices for the attitudes towards pro-environmental civic engagement measurement model with one factor (5 items) revealed good model fit, the χ-square/ df ratio (1.42: $\chi^2 = 7.105$, df = 5, $p > .001$) being lower than the suggested criteria (i.e., <3.0; Kline 2005). CFI (.997), TLI (.998), RMSEA (.042) and WRMR (.289) yielded a good model fit. These results are depicted in table 2-12. The item (indicator)-loadings, reliability coefficients (Cronbach alphas), composite reliability coefficients (CR), and convergent validity results (AVE) were above the recommended criteria and are portrayed in Table 2-17.

Confirmatory factor analysis (CFA) of pro-environmental civic behavioral intentions. A one factor model was proposed that assumed that the underlying attributes of pro-environmental civic behavioral intentions load on one factor (8 items). The initial CFA model with eight items, had a poor model fit the χ-square/ df ratio (10.99: $\chi^2 = 131.931$, df = 12, $p < .001$) being higher than the suggested criteria (i.e., <3.0; Kline 2005). CFI (.93), TLI (.97), RMSEA (.203) and WRMR (1.224) yielded a poor model fit. Based on an investigation of the modification indices three items were found to be strongly associated with other items that were similar in wording. Thus, the three items ("participate in a public meeting related to Retezat National Park", "be actively involved in an organization that supports park management efforts", and "express my concerns about park management to elected officials") were eliminated from further analysis.

The fit indices for the pro-environmental civic behavioral intentions measurement model with one factor (5 items) revealed good model fit, the χ-square/ df ratio (1.21: $\chi^2 = 6.045$, df = 5, $p > .05$) being lower than the suggested criteria (i.e., <3.0; Kline 2005). CFI (.999), TLI (.999), RMSEA (.029) and WRMR (.279) yielded a good model fit. These results are depicted in table 2-12. The item (indicator)-loadings, reliability coefficients (Cronbach alphas), composite reliability coefficients (CR), and convergent validity results (AVE) were above the recommended criteria and are portrayed in Table 2-18.

Qualitative Data Analysis

In-depth with 24 community members representing the nine communities adjacent to Retezat National Park were conducted. Interviews were analyzed using a grounded theory approach (Strauss & Corbin, 1990, 1998) allowing for unique theoretical categories to emerge from the data. A series of steps specific to grounded theory research were followed in analyzing the data collected through the in-depth interviews. At first, the principal investigator highlighted

significant statements, sentences as well as quotes, depicted from the respondent narratives. This stage was be followed by a clustering of meanings, the major themes in the narratives being identified in this stage. The principal investigator coded the data for its major categories of information. This stage was followed by a process of linking categories across subjects and cases, focusing on a deeper understanding of the interrelationships between categories and the context or setting that influences the revealed experiences. The final findings provide a theoretical conceptualization of the community attachment construct and depict how is to live as part of these communities, the shared feelings, attitudes, and behaviors people have towards their community and the neighboring protected area.

Table 2-1. Sampling frame for local community residents based on households

Communities	Households (N)	Sampling Frame	Asked to Participate in the Study (On site/Mail)	Completed Surveys (On site/ Mail)
Santamaria Orlea	162	119	105 (40/65)	36 (32/4)
Sacel-Sanpetru	196	128	87 (53/34)	23 (20/3)
Rau de Mori	101	77	75 (75/0)	61 (61/0)
Unciuc	55	43	30 (30/0)	25 (25/0)
Salasu de Sus	150	111	54 (54/0)	33 (33/0)
Nucsoara	70	51	32 (32/0)	28 (28/0)
Pui	205	153	134 (26/108)	28 (15/13)
Hobita	50	34	20 (20/0)	14 (14/0)
Campu lui Neag	170	128	43 (20/23)	12 (11/1)
Total:	1159	844	580 (350/230)	260 (239/21)

Table 2-2. Demographic characteristics of the respondents

	Frequency	Percent (%)
Age		
18 to 30 years	59	23.7
31 to 50 years	90	36.1
51 and above	100	40.2
Total	249	100.0
Mean (SD)	45.02	16.405
Gender		
Male	135	54.2
Female	114	45.8
Total	249	100.0
Length of residence		
1 to 20 years	52	20.6
21 to 40 years	101	40.1
41 to 60 years	69	27.4
61 to 80 years	28	11.1
Over 80 years	2	0.8
Total	252	100.0
Mean (SD)	37.36	18.267
Family Status		
Single	64	25.7
Married/ Partnered	162	65.1
Divorced/ Separated	9	3.6
Widowed	14	5.6
Total	249	100.0
Household		
Adults		
1	18	7.2
2	67	26.9
3	56	22.5
4	58	23.3
5	33	13.3
6	15	6.0
7	1	0.4
8	1	0.4
Total	249	100.0
Mean (SD)	3.30	1.395

Table 2-2. Continued

	Frequency	Percent (%)
Minors (Under 18 years old)		
0	128	51.4
1	61	24.5
2	52	20.9
3	6	2.4
4	1	0.4
5	1	0.4
Total	249	100.0
Mean (SD)	.77	.933
Education		
None	2	0.8
Primary school (1-4)	6	2.4
Elementary school (5-8)	27	10.8
Professional/ vocational school	37	14.8
Some high school (9-10)	14	5.6
High school graduate (9-12)	79	31.6
Post high school	34	13.6
Some college	7	2.8
College degree	28	11.2
Advanced degree	16	6.4
Total	250	100.0
Household Income		
Almost no income	15	6.2
Less than 250 RON	10	4.1
Between 250 and 499 RON	14	5.8
Between 500 and 999 RON	47	19.4
Between 1000 and 1499 RON	48	19.8
Between 1500 and 2000 RON	34	14.0
More than 2000 RON	74	30.6
Total	242	100.0
Employment		
Retired	74	29.5
Not working outside of home	15	6.0
Unemployed	6	2.4
Student	27	10.8
Working in agriculture/ owning farming land	13	5.2
Working in industry	35	13.9
Working in commerce, tourism, and other services	7	2.8
Technician, supervisor	27	10.8
Personnel with higher qualifications	21	8.4
Business owner, entrepreneur	8	3.2
Other (please specify)	18	7.2
Total	251	100.0

Table 2-2. Continued

	Frequency	Percent (%)
Property Ownership/Rights in RNP		
No	173	70.6
Yes	72	29.4
Total	245	100.0
Personal Income from RNP		
No	241	96.0
Yes	10	4.0
Total	251	100.0
Immediate Family Income from RNP		
No	244	97.2
Yes	7	2.8
Total	251	100.0

Table 2-3. Descriptive statistics social attachment

Social attachment	Percent*					Mean	SD
	1 %	2 %	3 %	4 %	5 %		
Overall, I am very attached to this community	0.8	3.5	8.6	25.8	61.3	4.43	.851
I feel like I belong in this community	0.8	3.5	7.5	21.7	66.5	4.50	.842
The associations that I have with other people in this community mean a lot to me	0.4	2.0	8.2	24.2	65.2	4.52	.762
If the people in this community were planning something, I'd think of it as something WE were doing rather than THEY were doing	0.8	6.4	14.3	30.7	47.8	4.18	.958
If I needed advice about something, I could go to someone in this community	5.9	5.9	8.2	27.1	52.9	4.15	1.166
I agree with most people in this community about what is important in life	8.8	14.0	16.0	29.6	31.6	3.61	1.298
Given the opportunity, I would move out of this community	56.0	8.1	10.9	11.7	13.3	2.18	1.520
I feel loyal to the people in this community	3.1	2.8	18.9	24.0	51.2	4.17	1.034
There are things going on in this community that I am not proud of	6.5	9.0	12.1	30.2	42.2	3.92	1.222
I plan to remain a resident of this community for a number of years	2.4	5.1	8.6	16.5	67.5	4.42	1.004
There are many things I would like to change about this community	1.6	5.5	5.9	29.9	57.1	4.35	.933
I like to think of myself as similar to the people who live in this community	6.3	10.7	9.1	27.3	46.6	3.97	1.249

*Note: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.

Table 2-4. Descriptive statistics social interaction

Social interaction	Percent*							Mean	SD
	1 %	2 %	3 %	4 %	5 %	6 %	7 %		
Immediate family (parents, siblings)	1.2	11.3	5.7	9.7	8.1	13.4	50.6	5.55	1.847
Extended family (cousins, uncles)	3.2	26.6	8.9	16.9	18.1	20.2	6.0	4.05	1.728
Acquaintances	0.4	12.6	5.7	21.9	20.2	20.6	18.6	4.85	1.606
Close friends	1.2	6.5	3.6	16.5	17.7	21.4	33.1	5.40	1.573
Neighbors	0.4	0.0	2.5	3.7	6.2	21.0	66.3	6.43	1.007
Community groups (e.g. church)	6.1	12.2	13.0	15.4	33.7	14.2	5.3	4.22	1.584
Public officials	6.5	33.5	17.7	11.7	13.3	7.7	9.7	3.54	1.790
Retezat National Park Staff	29.0	35.5	7.7	9.3	6.9	5.2	6.5	2.71	1.821
Tourists	16.1	38.3	8.9	15.3	8.1	4.8	8.5	3.09	1.816
Members of non-governmental organizations	64.3	28.9	3.4	2.6	0.9	0.0	0.0	1.47	.758
Others	26.3	15.8	21.1	10.5	10.5	0.0	15.8	3.26	2.104

*Note: 1 = never, 2 = a few times a year, 3 = once a month, 4 = a few times a month, 5 = once a week, 6 = more than once a week, and 7 = everyday.

Table 2-5. Descriptive statistics connection to nature

Connection to nature	Percent*					Mean	SD
	1 %	2 %	3 %	4 %	5 %		
Admiration							
I have seen things in nature that were so amazing; they just filled me with wonder	0.8	0.4	2.9	22.9	73.1	4.67	.634
The power of nature is just incredible	1.6	0.8	4.9	16.5	76.1	4.65	.759
The magnitude of nature is impressive	0.4	1.7	2.5	15.8	79.6	4.73	.633
Spirituality							
Nature provides me with a spiritual connection	3.3	2.9	9.9	25.9	58.0	4.33	.994
My feelings for nature have influenced my spiritual beliefs	5.4	4.1	12.9	28.2	49.4	4.12	1.125
Feeling part of nature is a spiritual experience	4.2	2.9	11.3	23.9	57.6	4.28	1.055
Identity							
My love for nature is a big influence in my life	2.0	2.4	6.9	26.5	62.0	4.44	.883
I am connected to nature much like I'm connected to my family	2.9	3.7	7.0	23.8	62.7	4.40	.974
Nature is a huge part of who I am	2.1	4.1	6.6	26.7	60.5	4.40	.932
I often feel a sense of oneness with the natural world around me	2.9	5.4	9.1	26.0	56.6	4.28	1.028
Sorrow							
I feel sorrow because we're destroying too much nature	2.5	1.2	1.2	9.0	86.1	4.75	.764
Seeing how much nature is being destroyed affects me emotionally	2.1	1.7	5.0	17.0	74.3	4.60	.832
Restoration							
When surrounded by nature, I feel at peace	0.0	0.0	1.2	6.5	92.2	4.91	.327
Listening to the wind go through the trees calms my mind	4.6	2.5	8.7	21.6	62.7	4.35	1.051
When I'm alone in a natural area, I have this feeling of complete calm	2.1	1.7	5.4	24.8	66.1	4.51	.841
Fear							
A lot of nature just scares me	75.6	6.6	4.5	8.7	4.5	1.60	1.184
Remote natural areas make me nervous	43.1	6.7	10.0	20.1	20.1	2.67	1.643
I have too much fear of nature to hike in remote natural areas	58.3	12.0	4.1	13.2	12.4	2.10	1.506

*Note: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.

Table 2-6. Major purpose for visiting the park

	Frequency	Percent
Collecting wild resources	73	30.5
Hiking	190	79.5
Camping	78	32.6
Work	36	15.1
I never go there	6	2.5
Other	33	13.8

Table 2-7. Descriptive statistics park attachment

Park attachment	Percent*					Mean	SD
	1 %	2 %	3 %	4 %	5 %		
Identity							
Retezat National Park means a lot to me	0.8	1.2	9.7	19.8	68.4	4.54	.784
I feel no commitment to Retezat National Park*	49.6	14.3	9.8	13.1	13.1	2.26	1.497
I am very attached to Retezat National Park	2.0	4.5	15.9	28.6	49.0	4.18	.992
Retezat National Park is very important to me	2.0	2.0	11.8	29.0	55.1	4.33	.910
I identify strongly with the Retezat National Park	6.6	6.6	23.5	29.2	34.2	3.78	1.178
Dependence							
I get many personal benefits out of living near Retezat National Park	8.9	9.3	17.5	28.9	35.4	3.72	1.280
I wouldn't substitute other places for living near Retezat National Park	3.7	5.3	11.5	19.3	60.2	4.27	1.093
I enjoy living near Retezat National Park	1.2	0.4	7.0	25.5	65.8	4.54	.750
I get lots of satisfaction out of living near Retezat National Park	3.3	2.4	15.5	31.8	46.9	4.17	.996

*Note: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.

Table 2-8. Descriptive statistics conservation attitudes

Conservation attitudes	Percent*					Mean	SD
	1 %	2 %	3 %	4 %	5 %		
Awareness							
It is important to have the Retezat National Park for the survival of various plants and animal species	0.4	0.4	0.8	4.5	93.9	4.91	.415
It is necessary to set aside some land for the protection of plants and animals	0.0	0.4	1.2	7.0	91.4	4.89	.381
Retezat National Park is our country's pride	0.0	0.8	0.8	8.6	89.8	4.87	.481
Retezat National Park being protected is important for the benefit of our future generations	0.4	0.0	0.4	10.8	88.3	4.87	.418
The illegal cutting of trees in the park should be strictly regulated	2.1	2.1	3.7	8.7	83.5	4.69	.813
If overgrazing continues in the park, all the animals will soon disappear	11.6	9.4	13.7	26.6	38.6	3.71	1.367
Land use perspectives							
What people and their livestock need is more important than protecting wild animals and plants	37.6	8.7	28.5	16.1	9.1	2.50	1.370
It is good if some land within the park is allocated to local people	20.6	10.5	14.3	26.1	28.6	3.32	1.497
Retezat National Park is a waste of land	84.5	5.4	3.3	2.9	3.8	1.36	.964
People who own land/ have property rights in the park should be allowed to use resources as they wish	58.1	17.4	8.9	6.4	9.3	1.92	1.328
Retezat National Park is for visitors, those who enjoy hiking and wildlife viewing	1.7	2.5	5.4	14.6	75.8	4.60	.837
The economic stability of communities is more important than protecting park resources	36.9	14.5	20.3	14.5	13.7	2.54	1.452

Table 2-8. Continued

Conservation attitudes	Percent*					Mean	SD
	1 %	2 %	3 %	4 %	5 %		
Management							
Retezat National Park is managed successfully for the benefit of future generations	4.3	6.8	10.2	26.4	52.3	4.16	1.123
Personally, I support the rules and regulations established by the park administration	2.6	3.4	6.8	17.9	69.4	4.48	.949
Retezat National Park is managed successfully for a wide range of uses and values, not just tourism	7.4	5.2	16.1	26.5	44.8	3.96	1.220
Retezat National Park management does a good job at protecting the natural resources in the park	3.4	6.0	10.3	28.8	51.5	4.19	1.066
The citizens from the communities around the park have enough say in how the park is managed	14.7	16.5	24.2	27.3	17.3	3.16	1.304
Benefits							
The benefits from the park usually outweigh negative consequences	6.1	5.7	21.8	32.3	34.1	3.83	1.145
My community benefits from being near the Retezat National Park	8.4	4.6	13.0	31.8	42.3	3.95	1.222
Having the Retezat National Park near my home benefits me and my family	7.6	2.9	13.4	37.4	38.7	3.97	1.151
My community is a more beautiful place to live because we are living near Retezat National Park	1.3	0.9	8.1	28.6	61.1	4.47	.787
The quality of the air is higher because of living near the Retezat National Park area	0.4	0.4	1.7	16.7	80.8	4.77	.536
The park resources help local waters stay pure for our community	2.9	2.5	7.5	22.5	64.6	4.43	.948
The tourists who come to the area are useful to we who live in adjacent communities	5.8	11.2	17.0	27.0	39.0	3.82	1.227
Retezat National Park Administration							

*Note: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.

Table 2-9. Descriptive statistics attitudes towards pro-environmental civic engagement

Attitudes pro-environmental civic engagement	Percent*					Mean	SD
	1 %	2 %	3 %	4 %	5 %		
Attending public presentations about the Retezat National Park	2.5	1.2	24.0	29.8	42.6	4.09	.967
Participating in public meetings related to Retezat National Park	2.1	4.1	23.2	32.8	37.8	4.00	.983
Participating in a community project addressing environmental concerns in the area	0.8	1.7	15.4	32.9	49.2	4.28	.844
Learning about the environment	0.4	1.3	6.7	22.5	69.2	4.59	.709
Investing time to learn about the park and environmental protection	0.8	3.3	11.6	27.8	56.4	4.36	.874
Participating in educational programs about the environment	1.3	3.3	10.4	28.3	56.7	4.36	.890
Participating in a workshop on how to reduce my dependence on park resources	4.2	9.3	19.5	28.8	38.1	3.87	1.149
Participation in a local organization that is involved in park protection	2.5	4.6	17.1	27.1	48.8	4.15	1.024
Investing personal time to get involved with the park	2.5	5.8	24.8	30.2	36.8	3.93	1.034
Reducing use of park resources	6.4	6.8	17.9	26.1	42.7	3.92	1.207
Bringing tourists to the park	1.3	2.5	12.6	21.8	61.9	4.41	.893
Voting for public officials that show interest in environmental issues	3.3	5.8	12.9	22.1	55.8	4.21	1.087

*Note: 1 = Not at all effective, 2 = Never effective, 3 = Sometimes effective, 4 = Often effective, 5 = Always effective.

Table 2-10. Descriptive statistics pro-environmental civic behavioral intentions

Behavioral intentions	Percent*					Mean	SD
	1 %	2 %	3 %	4 %	5 %		
Participate in a public meeting related to Retezat National Park	7.4	7.4	10.7	39.1	35.4	3.88	1.189
Attend a public presentation about Retezat National Park	5.8	5.3	9.9	39.5	39.5	4.02	1.110
Participate in a community project addressing environmental concerns	6.6	6.6	16.9	30.6	39.3	3.89	1.190
Invest time to learn more about the park and environmental protection	7.0	9.1	12.8	33.1	38.0	3.86	1.221
Give my input into park management decisions	5.0	9.6	11.7	33.9	39.7	3.94	1.163
Be actively involved in an organization that supports park management efforts	9.9	12.4	17.8	31.8	28.1	3.56	1.288
Participate in a workshop on how to reduce my dependence on park resources	17.0	14.5	18.3	28.6	21.6	3.23	1.389
Express my concerns about park management to elected officials	9.2	4.2	14.2	36.3	36.3	3.86	1.218
Visit the park at least twice	5.8	4.1	9.5	24.9	55.6	4.20	1.142
Visit the park at least six times	26.7	8.5	11.9	18.6	34.3	3.25	1.630

*Note: 1 = Very unlikely, 2 = Somewhat unlikely, 3 = Neither likely nor unlikely, 4 = Somewhat likely, 5 = Very likely.

Table 2-11. Descriptive statistics perceived environmental responsibility

Environmental responsibility	Percent*					Mean	SD
	1 %	2 %	3 %	4 %	5 %		
Personally, I have no responsibility for protecting the environment in Retezat National Park	37.3	18.4	11.0	8.1	25.0	2.65	1.627
Every citizen in my community must take responsibility for protecting the environment in Retezat National Park	3.0	1.3	6.4	19.9	69.5	4.52	.901
Authorities, rather than the citizens, are responsible for protecting the environment in Retezat National Park	3.4	7.1	5.0	24.8	59.7	4.30	1.072
Authorities, together with the citizens, are responsible for protecting the environment in Retezat National Park	2.1	2.1	2.5	13.0	80.3	4.67	.807

*Note: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree.

Table 2-12. Goodness of fit indices for each construct

CFA models	χ^2/df	RMSEA	WRMR	CFI	TLI
Community attachment					
Original	198.57/54	0.102	1.162	0.944	0.972
Respecified	77.40/27	0.085	0.842	0.988	0.992
Social interaction					
Original	47.604/22	0.068	0.680	0.962	0.962
Respecified	5.890/3	0.062	0.244	0.994	0.987
Connection to nature					
Original	96.73/36	0.083	0.883	0.983	0.988
Respecified	30.09/10	0.091	0.600	0.991	0.994
Conservation attitudes					
Original	257.39/61	0.115	1.355	0.786	0.902
Respecified	60.16/27	0.071	0.780	0.964	0.982
Attitudes towards pro- environmental engagement					
Original	171.71/25	0.156	1.219	0.911	0.965
Respecified	7.105/5	0.042	0.289	0.997	0.998
Pro-environmental behavioral intentions					
Original	131.93/12	0.203	1.224	0.933	0.966
Respecified	6.045/5	0.029	0.279	0.999	0.999

Note. χ^2 = chi square test statistic; *df* = degree of freedom; RMSEA = root-mean square-error of approximation; WRMR = weighted mean score residual; CFI = comparative fit index; TLI = Tucker-Lewis Index.

Table 2-13. Reliability and validity of the community attachment CFA model

Factors and items	Mean	SD	λ	α	CR	AVE
Social attachment				.773	.876	.544
I feel like I belong in this community	4.50	.842	.74*			
The associations that I have with other people in this community mean a lot to me	4.52	.762	.68*			
Given the opportunity, I would move out of this community	3.82	1.520	.67*			
I feel loyal to the people in this community	4.17	1.034	.78*			
I plan to remain a resident of this community for a number of years	4.42	1.004	.87*			
I like to think of myself as similar to the people who live in this community	3.97	1.249	.66*			
Park attachment				.903	.949	.729
Retezat National Park means a lot to me	4.54	.784	.91*			
I am very attached to Retezat National Park	4.18	.992	.93*			
Retezat National Park is very important to me	4.33	.910	.95*			
I identify strongly with the Retezat National Park	3.78	1.178	.84*			
I get many personal benefits out of living near Retezat National Park	3.72	1.280	.65*			
I enjoy living near Retezat National Park	4.54	.750	.88*			
I get lots of satisfaction out of living near Retezat National Park	4.17	.996	.80*			

Note. * = t-statistic (> 1.96) at a significance level of $p<0.05$; λ = factor loadings; α = Cronbach's alpha coefficients; CR = composite reliability; AVE = average variance extracted.

Table 2-14. Reliability and validity of the social interaction CFA model

Factors and items	Mean	SD	λ	α	CR	AVE
Interactions with friends				.750	.786	0.647
Acquaintances	4.85	1.606	0.772*			
Close Friends	5.40	1.573	0.836*			
Interactions with public officials	3.54	1.790	set@1.00	N/A	N/A	N/A
Interactions with park				.682	.773	.602
Retezat National Park Staff	2.71	1.821	0.806*			
Tourists	3.09	1.816	0.745*			

Note. * = t-statistic (> 1.96) at a significance level of $p<0.05$; λ = factor loadings; α = Cronbach's alpha coefficients; CR = composite reliability; AVE = average variance extracted.

Table 2-15. Reliability and validity of the connection to nature CFA model

Factors and items	Mean	SD	λ	α	CR	AVE
Connection to nature				.871	.932	.665
I am connected to nature much like I'm connected to my family	4.40	.974	.88*			
Nature is a huge part of who I am.	4.40	.932	.90*			
I often feel a sense of oneness with the natural world around me.	4.28	1.028	.93*			
My feelings for nature have influenced my spiritual beliefs	4.12	1.125	.90*			
When surrounded by nature, I feel at peace	4.91	.327	.68*			
Listening to the wind go through the trees calms my mind	4.35	1.051	.74*			
When I'm alone in a natural area, I have this feeling of complete calm	4.51	.841	.64*			

Note. * = t-statistic (> 1.96) at a significance level of $p<0.05$; λ = factor loadings; α = Cronbach's alpha coefficients; CR = composite reliability; AVE = average variance extracted.

Table 2-16. Reliability and validity of the conservation attitudes CFA model

Factors and items	Mean	SD	λ	α	CR	AVE
Conservation awareness				.741	0.921	0.704
It is important to have the Retezat National Park for the survival of various plants and animal species	4.91	.415	0.87*			
It is necessary to set aside some land for the protection of plants and animals	4.89	.381	0.89*			
Retezat National Park is our country's pride	4.87	.481	0.84*			
Retezat National Park being protected is important for the benefit of our future generations	4.87	.418	0.93*			
The illegal cutting of trees in the park should be discouraged/ strictly regulated	4.69	.813	0.63*			
Conservation management				.834	0.881	0.651
Retezat National Park is managed successfully for the benefit/enjoyment of future generations	4.16	1.123	0.84*			
Retezat National Park is managed successfully for a wide range of uses and values, not just tourism	3.96	1.220	0.79*			
Retezat National Park management does a good job at protecting the natural resources in the park	4.19	1.066	0.90*			
The citizens from the communities around the park have enough say in how the park is managed	3.16	1.304	0.68*			
Conservation benefits				.767	0.859	0.606
My community benefits from being near the Retezat National Park	3.95	1.222	0.85*			
Having the Retezat National Park near my home benefits me and my family	3.97	1.151	0.84*			
My community is a more beautiful place to live because we are living near Retezat National Park	4.47	.787	0.76*			
The tourists who come to the area are useful to we who live in adjacent communities	3.82	1.227	0.66*			

Note. * = t-statistic (> 1.96) at a significance level of $p<0.05$; λ = factor loadings; α = Cronbach's alpha coefficients; CR = composite reliability; AVE = average variance extracted.

Table 2-17. Reliability and validity of the attitudes towards pro-environmental civic engagement CFA model

Factors and items	Mean	SD	λ	α	CR	AVE
Attitudes pro-environmental civic engagement				.823	0.880	0.596
Participating in public meetings related to Retezat National Park	4.00	.983	0.82*			
Participating in a community project addressing environmental concerns in the area	4.28	.844	0.73*			
Investing time to learn about the park and environmental protection	4.36	.874	0.81*			
Participating in a workshop on how to reduce my dependence on park resources	3.87	1.149	0.71*			
Investing personal time to get involved with the park	3.93	1.034	0.78*			

Note. * = t-statistic (> 1.96) at a significance level of $p<0.05$; λ = factor loadings; α = Cronbach's alpha coefficients; CR = composite reliability; AVE = average variance extracted.

Table 2-18. Reliability and validity of the pro-environmental civic behavioral intentions CFA model

Factors and items	Mean	SD	λ	α	CR	AVE
Pro-environmental behavioral intentions				.844	0.893	0.626
Attend a public presentation about Retezat National Park	4.02	1.110	0.85*			
Participate in a community project addressing environmental concerns	3.89	1.190	0.84*			
Invest time to learn more about the park and environmental protection	3.86	1.221	0.86*			
Give my input into park management decisions	3.94	1.163	0.71*			
Participate in a workshop on how to reduce my dependence on park resources	3.23	1.389	0.68*			

Note. * = t-statistic (> 1.96) at a significance level of $p<0.05$; λ = factor loadings; α = Cronbach's alpha coefficients; CR = composite reliability; AVE = average variance extracted.

CHAPTER 3
PRO-ENVIRONMENTAL CIVIC ENGAGEMENT IN RETEZAT NATIONAL PARK, ROMANIA

Introduction

A synthesis of the wider literature on parks and protected areas management reveals a persistent argument that successful management endeavors and sustainability depend on the cooperation and support of local communities (Augustyn, 1998; Brandon & Wells, 1992; de Beer & Marais, 2005; Hall, 2004). Historically, parks and protected areas have been viewed as islands of biodiversity conservation with little or no connections to the human dimensions (Cutumisu, 2003). Currently, local communities adjacent to national parks and protected areas are perceived as having a major role in achieving conservation and sustainability ideals, due to their permanent interactions and attachments to surrounding environments (Manfredo et al., 2004).

The community development literature further underscores the intertwined relationship between community well-being and ecological well-being (Wilkinson, 1991). Linkages between the two dimensions have been hypothesized focusing on explaining ways in which natural resource conditions may contribute or detract from individual and collective well-being (Manfredo et al., 2004) or how community development reduces the probability of occurrence of actions that degrade ecological well-being (Wilkinson, 1991). On a similar note, Agrawal (2001) emphasized the importance of giving consideration to social and economic environments in the management process, to assure equity, as well as effective management. Actively involving local communities in the management of protected areas has been repeatedly associated with increased awareness in terms of the benefits of biodiversity conservation, a more responsible use of resources, and ultimately enhanced livelihoods and welfare of local peoples (Pagdee et al., 2006). However, efforts to involve local communities are often challenged either by the urgency

of implementing biodiversity conservation projects or the lack of community motivation to be involved or even a lack of knowledge on how and to what extent to involve local people. Often communities adjacent to protected areas are perceived as being passive, lacking initiative and environmental sensitivity, and have beliefs that established authorities will take responsibility for resource management (de Beer & Marais, 2005). This assertion is regularly made for local communities adjacent to Romanian protected areas (Kuijs & Bergh, 2006; van Hal, 2006), but little is empirically known about the Romanian context, and especially about the institutional and socio-environmental factors that shape local communities' attitudes and behaviors towards protected areas.

Co-management of protected areas and participatory decision-making initiatives has been encouraged over the years in Romania but only modest success has been achieved in terms of management effectiveness. Excessive exploitation of natural resources is still a real threat to biodiversity conservation in Romania. The lack of community interest and participation in biodiversity conservation has been discussed as being a major constraint for natural resources management in Romania. This situation has been primarily attributed to a low sense of community and collective responsibility that characterize Romanian rural communities (PJB Associates, 2006) and also to the legacy of the communist system, primarily based on a centralized political structure, which lasted until 1989 (Oostenbrink & Kosterink, 2005). However, there is only scarce empirical evidence, much of it anecdotal that supports these assertions.

Taking into consideration that Romania is still at an incipient stage in the process of shaping its nature conservation approaches, there is an emerging need to better understand the major factors that shape community conservation attitudes and pro-environmental civic

engagements. Thus, in view of the increasingly recognized importance of local engagement in protected area management and the realities of the Romanian context, this study examined the extent to which community social dimensions could explain attitudes towards pro-environmental civic engagement and pro-environmental civic behavioral intentions. Taking into account that the linkage between the instructional and social dimensions of community in Romania is still viewed as fairly weak (Cottrell & Cutumisu, 2006), this study primarily focuses on the social dimensions of pro-environmental civic engagement. The study addressed the following question: How levels and types of community attachment, conservation attitudes, connections to nature and perceived collective environmental responsibility facilitate or hinder attitudes towards pro-environmental civic engagement and pro-environmental civic behavioral intentions?

Conceptual Framework

Different theoretical socio-psychological models were proposed to account for relevant behavioral patterns. Among others, the theory of reasoned action (TRA), the theory of planned behavior (TPB) and the theory of interpersonal behavior (TIB) are all well-established social psychological theories belonging to the school of cognition (Barr & Gilg, 2007). Many similarities exist between these models, the main differences pertaining to the predictors used in explaining social behaviors.

Fishbein and Ajzen in the 1970's proposed the TRA and postulated that behavior is a direct result of intention to engage in a specific behavior. Additionally, they argued that behavioral intentions are a result of the attitude a person has towards the behavior (behavior belief), perceived social pressure to engage in a particular behavior (normative belief) and strength of the desire to comply with the norm. The TPB adds one more variable to the model, perceived behavioral control (a person's belief that he or she has the ability and resources necessary to perform the behavior) (Ajzen, 1991).

The TIB, model proposed by Triandis in the 1980's, includes a series of behavioral determinants similar to those found in the TPB. Gagnon et al. (2003) emphasized the broader purpose of TIB as compared to TPB by considering that this model includes determinants that are not accounted for in the other behavior models. The factors that are unique to TIB are role beliefs, habit and affect (Bamberg & Schmidt, 2002). Based on the TIB model, behavior is determined by three dimensions: intention, facilitating conditions and habit. In TIB, intention is determined by five constructs: affect, perceived consequences, perceived social norms, perceived normative belief and self-identity. These concepts have been defined by Triandis (1980) and used in conducting research (Gagnon et al., 2003; Zhang, Inbakaran, & Jackson, 2006) as follows: affect was described as an emotional factor associated with the behavior; perceived consequences refer to the evaluation of the possible consequences of the behavior. The perceived social norms were defined as normative and role beliefs. Normative beliefs include the opinions of people or groups' about the realization of the behavior, opinions acknowledged by the individual. Role beliefs reflect the extent to which an individual thinks someone of a similar social position should or should not behave. The other normative component of the TIB is the personal normative belief that represents the feeling of personal responsibility regarding the performance or not of a given behavior. Finally, self identity refers to the degree of congruence between the individual's perception of himself or herself and the characteristics he or she associates with the realization of the behavior.

Comparative studies between the three socio-psychological models showed that the TIB had increased predictive powers, and ultimately explained more intentional variance due to the unique elements included in the model, habit, affect and role beliefs (Bamberg & Schmidt, 2002). In the case of this study, the actual behavior was not measured, the focus being on

assessing various factors and their influence on behavioral intentions. Thus, measures of habit as well as facilitating conditions were not included. As previously mentioned, the TIB also includes an emotional component of attitude that influences behavioral intentions, a component that has been less studied in the context of environmental behaviors.

Based on the tenets of the theory of interpersonal behavior and sociological and ecological literature, a research model examining determinants of attitudes towards pro-environmental civic engagement and pro-environmental civic behavioral intentions was proposed and tested (Figure 3-1). The factors included in the model were chosen based on the literature as well as their relevance for the study site. This study hypothesized based on theory that at different levels of attitude (behavior belief), affect, and role beliefs, dissimilar levels of behavior intentions will be observed. Thus, the constructs explored were attitudes towards behavior and its predicting factors, conservation attitudes, role beliefs, affect and ultimately their relationships with behavioral intentions. Consequently, research hypotheses were developed as follows:

- H1: Attitudes towards pro-environmental civic engagement positively impacts pro-environmental civic behavioral intentions.
- H2: Perceived collective environmental responsibility positively impacts pro-environmental civic behavioral intentions.
- H3: Community attachment positively impacts pro-environmental civic behavioral intentions.
- H4: Community attachment positively impacts conservation attitudes.
- H5: Conservation attitudes positively impacts attitudes towards pro-environmental civic engagement.
- H6: Connection to nature positively impacts conservation attitudes.

Methodology

Description of the Study Area

Retezat National Park (RNP) was designated in 1935, being the first national park established in Romania. In 1979, RNP was declared an International Biosphere Reserve under the UNESCO Man and Biosphere program and in 2004 RNP received its Protected Area Network (PAN) Certification. Retezat National Park is located in the southwestern Carpathians, Hunedoara County, and the total surface of the park is 38,138 ha (RNP Management Plan, 2008). Within the park, there are more than twenty mountain peaks 2,000 meters or higher, in addition to eighty lakes of glacial origin. There are more than 1,100 species of plants, over 50 species of mammals including roe deer, chamois, lynx, bear, and otter and 168 recorded bird species including the golden eagle.

In 1999, the first models for protected area management were established in Romania, models primarily framed using a participatory paradigm, based on stakeholders' representation in the management process (Stanciu, 2002). RNP was the first park in Romania with a management system in place (van Hal, 2006) and the management framework initiated by RNP is perceived as being a model for other protected areas in Romania. The RNP co-management framework includes, in addition to the park administration, a Scientific Council and a Consultative Council. The Scientific Council consists of scientists that represent the Romanian Academy, while the Consultative Council is represented by key stakeholders of the RNP area (local communities, tourism operators, local businesses, etc.) The Consultative Council provides recommendations regarding park management activities but does not have decision-making ability (van Hal, 2006).

A large portion of the park area (17,564 ha, 46%) is owned by the state, while local associations own the remainder of the land (20,574 ha). Twenty-six villages have grazing rights to alpine meadows, and their rights are administered either through community based

associations or the local councils of the five communes to which the villages belong (Kuijs & Bergh, 2006). A commune is an administrative division in Romania encompassing one or more villages that share similar economic, socio-cultural, geographic and demographic conditions. Of the five, three communes are primarily important from a management perspective, due to their close proximity to the park and their land ownership and use of resources in the park (use of buffer zone resources): Rau de Mori, Salasu de Sus, and Campu lui Neag (van Hal, 2006). The total population of these three communes was estimated at 6,837 inhabitants (Kuijs & Bergh, 2006).

Communities rely on park resources primarily for grazing and the use of other natural resources such as wood, non-timber forest products, mushrooms, and medicinal plants. The major management concerns, as it relates to conservation, are related to overgrazing of the pasture areas and illegal wood harvesting (RNP Management Plan, 2008). Previous research conducted in the area discussed a variety of challenges for park management and surrounding communities. van Hal (2006) emphasized the growing concerns of local people due to the increased restrictions imposed on grazing by the park administration for conservation purposes. These restrictions were strongly viewed as having great impact on the landowners control over their private lands. van Hal (2006) observed a lack of a common interest in conservation in the area, as a result of rudimentary local cooperation in management. Furthermore, Kuijs & Bergh (2006) using a qualitative approach in understanding the park management efforts, emphasized the lack of a conservation attitude in the communities surrounding Retezat National Part and a lack of care for the environment. These two studies depicted primarily the voices of the park administrative staff and park stakeholders (e.g. lodge owners, travel operators, mayors of local communities) but not directly the views of local residents.

The Retezat National Park employs a co-management framework for the management and planning of the park's natural resources. The effectiveness of the management practice is still questioned, as the local communities' interest and participation in conservation is perceived as being limited. Therefore, it is essential to better understand the major factors that shape community residents' conservation attitudes and behavior intentions. Thus, this study examined the attitudes that people living adjacent to Retezat National Park have towards conservation, and how these attitudes are affected by community attachment and nature connections and further shape attitudes towards pro-environmental civic engagement and pro-environmental civic behavioral intentions.

Measures of Model Components

Pro-environmental civic behavioral intentions

Environmental behavior has been studied by social scientists from different disciplines, including psychology, education, communication, and environmental studies. Kollmuss & Agyeman (2002) defined pro-environmental behavior as behavior deliberately aimed at minimizing one’s negative impact on the natural and built environment.

Gagnon et al. (2003) described behavioral intention as the individual’s motivation regarding the performance of a given behavior. The theoretical socio-psychological models that come to account for behavior, postulate that our behaviors and intentions to behave in a certain way are strongly correlated. Furthermore, attitudes towards the behavior are perceived to have a strong influence on behavioral intentions. Attitudes were primarily defined as an overall positive or negative evaluation of performing the behavior (Fielding et al., 2008). In this study, the actual performance of the behavior was not measured, the focus was on understanding the predictors of behavioral intentions.

Pro-environmental behaviors can take different forms, and accordingly, different factors can differently shape or influence each specific type of behavior. The literature makes a distinction between political behaviors, as compared with behaviors that relate with consumption (e.g. energy saving, green consumer behavior) (Aoyagi-Usui, Vinken, & Kuribayashi, 2003). Stern (2000) provides a more detailed classification of pro-environmental behaviors, identifying several different types of pro-environmental behaviors such as: environmental activism, environmental citizenship behavior (active involvement in environmental issues, public participation that with an influence on policy making, decision making) and private sphere environmentalism (e.g. consumer behavior, automobile, energy use, green consumerism etc.).

Based on Stern's (2000) classification of environmental behaviors, the environmental behaviors of interest in this study, relate to what the author describes as environmental citizenship behaviors. Primarily, the focus is on behaviors that relates to public participation and active involvement in local environmental concerns. Chavis & Wandersman (1990) argued that three important components influence an individual's civic participation, specifically, their perception of the environment, one's social relations, and one's perceived control and empowerment within the community. The author viewed sense of place as a factor that mobilizes these factors.

According to the social participation literature, the most important factors that shape involvement have been social ties and networks (Granoveter, 1973; Luloff, 1990), and social interaction with community members (Luloff & Swanson, 1995; Wilkinson, 1991), which were found to ultimately define community attachment (Kasarda & Janowitz, 1974). In the context of this study, two variables were tested for their direct influence on pro-environmental civic behavioral intentions: community attachment, as an emotional investment in place and its people,

and perceived collective environmental responsibility. Furthermore, a measure of attitudes towards pro-environmental civic engagement was suggested to mediate the relationship between conservation attitudes and pro-environmental civic behavioral intentions.

Attitudes towards pro-environmental civic engagements were measured using twelve items adapted from previous work done by Halpenny (2006) and Garling et al. (2003). The items were measured on a five point Likert scale ranging from 1 to 5, where 1 = Not at all effective; 3 = Sometimes effective; 5 = Always effective. Pro-environmental behavioral civic intentions were measured using eight items adapted from previous studies conducted by Garling et al. (2003); Theodori & Luloff (2002); and Halpenny (2006). The items were measured on a five point Likert scale ranging from 1 to 5, where 1 = Very unlikely; 3 = Neither likely nor unlikely; 5 = Very likely.

Community attachment

Community attachment has been examined in a variety of disciplines, primarily focusing on understanding the major determinants of community attachment as well as the implications of community attachment to social and ecological well-being. Hummon (1990) defined community attachment as an emotional connection to a place that emerges in the context of residence and belonging. Some of the major determinants of community attachment discussed in the literature are length of residence, participation in community activities and groups, and local ties and networks (Beggs, Hurlbert, & Haines, 1996; Brehm, 2007; Brehm, Eisenhauer, & Krannich, 2004; Kasarda & Janowitz, 1974; Theodori & Luloff, 2002).

The collective action and engagement literature views attachment to a community as an important predictor of action and engagement that ultimately translates into well-being at the individual and community levels (Brennan, 2007; Theodori, 2000; Wilkinson, 1991). The relationship between community attachment and pro-environmental civic behavior has received

reduced empirical testing. Theodori & Luloff (2002) emphasized that the focus of earlier studies was primarily on understanding behavior as a consequence of differences in socio-demographic characteristics and attitudes, less being known in terms of the sentimental and emotional attachments (based on social ties, as well as ties to the natural environment).

Community attachment has been commonly attributed to social relations and their contribution to the emotional bond people have with their communities. Thus, it has been primarily operationalized as a unidimensional construct, capturing emotional responses concerning the social environment (Gursoy & Rutherford, 2004). Hummon (1990) argued that community attachment appears to be most strongly rooted in involvement in local social relations, but he also acknowledged that the built and natural environment might also contribute to such emotional ties if perceived in favorable terms. Cross (2003) also emphasized the need to operationalize community attachment as a multidimensional construct, the unidimentionality approach limiting the depth of information captured and our ability to distinguish how different dimensions of attachment might shape community behavior and action differently.

Academic investigation has been conducted looking at the relationship between social attachment and attachment to the natural environment and collective action, open communication, attitudes toward relevant environmental concerns and local conflicts over land use management (Brehm, Eisenhauer, & Krannich, 2006; Brehm, Eisenhauer, & Krannich 2004). Social attachment was found to have different implications on the independent variables as compared with the natural environmental attachment, providing evidence of the relevance of understanding community attachment as a reflection of attachment to the social and natural environment. Brehm's (2007) argued that in communities where natural amenities are abundant, they can play an important role in the development of a person’s sentimental and emotional

attachments to their community, regardless of length of residence. This assertion was supported by a study conducted by McCool & Martin (1994). Thus, a need for studies focused on better understanding specific place attributes (natural environment versus social) to which people are attached and the mechanisms through which such attachments are formed emerged.

Extensive literature exists that focuses on place based attachments, sense of place and place attachment (Altman & Low, 1992; Kyle et al., 2004; Williams et al., 1992; Williams & Vaske, 2003), concepts that can be directly linked to the idea of attachment to the natural environment in the context of community attachment. Not surprisingly, Mesch & Manor (1998) views place attachment as a subjective evaluation of the features of the physical, as well as the social environment that has behavioral implications. Positive relationships have been found between place attachment and specific environmental behaviors (Bott, Cantrill, & Myers, 2003; Vaske & Kobrin, 2001). These studies highlight the importance of better understanding the relationships that exist between place based attachments and community attachment and ultimately their role in shaping attitudes and behavioral intentions. Thus, this study employed an assessment of community attachment based on attachment to the social environment and attachment to the natural environment (the protected area neighboring the local communities participating in the study). The social dimension was measured using ten items on a five point Likert scale ranging from 1 to 5, where 1 = Strongly disagree; 3 = Neutral; 5 = Strongly agree. The items were adapted from Theodori & Mayfield (2008). Attachment to the park was assessed using the conceptualization employed in the place attachment literature, more specifically the two dimensions of attachment: place dependence and place identity (Kyle et al., 2004; Williams & Roggenbuck, 1989; Williams et al., 1992). The respondents' attachment to Retezat National Park was measured using nine items on a five point Likert scale ranging from 1 to 5, where 1 =

Strongly disagree; 3 = Neutral; 5 = Strongly agree. Consequently, it is expected that community attachment has a hierarchical structure, encompassing attachment to the social environment and attachment to the park.

Connection to nature

Connection to nature is often portrayed as a sense of oneness with nature. The connection people have with nature has been discussed in the literature as an important factor in explaining environmentally responsible behavior (Schultz et al., 2004). The feelings people have for nature shape personal identity, values and attitudes, and ultimately influence behavior (Driver & Ajzen, 1996; Mannell, 1996; Roggenbuck & Driver, 2000).

Connection to Nature (CTN) primarily encompasses biospheric values, which have been found as building a strong foundation for developing value-based concerns and increased motivation for environmentally responsible behavior (Schultz et al., 2004). The main assumption made in regard to peoples' connection to nature and behaviors, underscores that when people are connected to nature, they intrinsically care for it and act to protect and preserve it (Pennisi, 2007).

The complexity of human connection to nature derives from its multiple underpinnings, which relate to self-concept and identity, as well as cognitive, affective and behavioral components. Pennisi (2007) depicted values and identity as the two core aspects of connection to nature. The interconnectivity between personal identity, values, attitudes, and ultimately behaviors has been previously accounted for in the literature (Clayton, 2003; Clayton & Opotow, 2003; Hitlin, 2003; Vaske & Donnelly, 1999). Connection to nature was found as a strong predictor or attitudes, which ultimately shape behaviors. Therefore, connection to nature as a reflection of personal identity and values represents an important dimension for explaining pro-environmental attitudes and behaviors. To better understand the relationships people living

adjacent to protected areas in Romania have with nature in general, the residents' connection to nature was assessed in this study. Furthermore, the impact of connection to nature on conservation attitudes was examined.

Several scales measuring connection to nature have been developed. These scales include the Connectedness to Nature Scale (CNS) (Mayer & Frantz, 2004), single-item Venn diagram measure of Inclusiveness of Self (Schultz, 2002), a measure of environmental identity (Clayton, 2003), and a computer dependent Implicit Association test (Schultz et al., 2004). The first three measures assume the construct is unidimensional, a belief that has been contradicted by recent work done by Pennisi (2007). Thus, the scale developed by Pennisi (2007) was employed. The items included captured five dimensions of connection to nature: admiration (3 items), spirituality (3 items), identity (4 items), sorrow (2 items), restoration (3 items), and fear (3 items). The eighteen items were measured on a five point Likert scale ranging from 1 to 5, where 1 = Strongly disagree; 3 = Neutral; 5 = Strongly agree. Therefore, it is expected that connection to nature has a hierarchical structure capturing the five dimensions of connection to nature previously proposed in the literature.

Conservation attitudes

Jennings & Nickerson (2006) defined attitudes as an enduring predisposition toward particular aspects of one's environment. This predisposition is translated in the way people think, feel, and behave. The importance of understanding attitudes evolves from the relationship between attitudes and behavioral intentions (Ajzen, 1991). Researchers frequently examined the attitudes towards conservation of the residents' living adjacent to protected areas. The body of literature on attitudes towards conservation, and protected areas, is fairly notable. The focus of inquiry was primarily on understanding the main predictors that shape attitudes and to a lesser

extent investigations were conducted on the consequences of having positive or negative attitudes towards either the protected area, or conservation.

The perceived benefits achieved from conservation are often acknowledged as strong predictors of residents' attitudes towards protected areas (Gadd, 2005). However, study findings not always found the relationship between benefits and support for conservation noteworthy, other factors being suggested as having higher predictive power in terms of conservation attitudes (Walpole & Goodwin, 2001). It has been suggested that the type of residents' interactions with the authorities of a protected area could play an important role in shaping conservation attitudes (Kappelle, 2001; Robertson & Lawes, 2005).

As previously mentioned, the focus of inquiry on residents' attitudes seems to be predominantly directed towards understanding antecedents of conservation attitudes rather than the consequences of having positive or negative attitudes. Dolisca et al., (2009) found forest conservation behaviors to be directly influenced by conservation attitudes. However, Infield & Namara (2001) conducted an assessment of a community conservation program in Uganda, in an effort to evaluate the impacts of the program on community attitudes and observed an effect of the program on conservation attitudes but behaviors were not greatly changed based on program participation. In the case of this study, attitudes seemed to be vulnerable to poor behaviors on the part of the park staff and law enforcement actions. Thus, the relationship between conservation attitudes and pro-environmental behaviors requires further investigation considering that positive conservation attitudes might not always lead to anticipated behaviors. To better account for changes in pro-environmental civic behavioral intentions, this study employed a measure of conservation attitudes, but also a measure of attitudes towards pro-environmental civic

engagements. Those attitudes that strictly relate to the expected behavior, as suggested by theory, have a higher predictive power in terms of behavioral intentions.

Different measures have been employed in the literature to assess community attitudes towards conservation, primarily multidimensional scales being used. Based on previous studies, respondents' attitudes towards conservation were measured on the bases of their reactions to 25 items, capturing four dimensions of conservation attitudes: conservation awareness (6 items), conservation benefits (7 items), land use perspectives (7 items), and management considerations (5 items) (Infield & Namara, 2001; McFarlane & Boxall, 2003; Nguyen, 2007). These items were measured on a five point Likert scale ranging from 1 to 5, where 1 = Strongly disagree; 3 = Neutral; 5 = Strongly agree. Therefore, it is hypothesized that conservation attitudes have a hierarchical structure capturing conservation awareness, conservation benefits, land use perspectives and conservation management.

Perceived collective environmental responsibility

Perceived environmental responsibility has been identified in several behavioral models as a significant determinant of behavioral intentions (Ajzen, 1991; Hines et al., 1987; Stern & Oskamp, 1987; Triandis, 1980). Fransson & Garling (1999) defined environmental responsibility as individuals' sense of obligation or duty to take actions against environmental deterioration in general, or specific environmental concerns.

A strong relationship has constantly been found between environmental responsibility and behaviors that have implications for the well-being of the environment (Garling et al., 2003; Hines et al., 1987; Van Liere & Dunlap, 1978; Vining & Ebreo, 1992). The social context has been viewed as shaping ascribed collective responsibility for pro-environmental engagement. Garling et al. (2003) identified pro-environmental behavioral intentions as being a reflection of personal norms, ascribed responsibility, and awareness of consequences for oneself, others, and

for the biosphere. Therefore, perceived environmental responsibility has been primarily suggested as being a strong predictor for behaviors that have collective implications (e.g. participation in public meetings), as compared to behaviors that relate to self-interest (e.g. reducing water use). Furthermore, Barr & Gilg (2007) found the social context and alternative perceptions of trust and responsibilities within localities as having a mediating role in shaping public understandings of sustainability and environmental issues. In this study, perceived environmental responsibility is viewed as an important predictor of pro-environmental behavioral intentions, considering the Romanian social context that has been shaped by historical events that primarily emphasized public/governmental responsibility as compared to collective responsibility.

In this study, perceived collective environmental responsibility was examined on the basis of the respondents' reaction to two statements that pertain to collective environmental responsibility. The questions were previously employed by Garling et al. (2003) and were assessed using a five point Likert scale ranging from 1 to 5, where 1 = Totally disagree; 3 = Neither agree nor disagree; 5 = Totally agree.

Data Collection

Rural communities adjacent to Retezat National Park belong to five communes encompassing 43 villages with a total population estimated at 14,009 adult residents. Two villages dissimilar in size from each commune, to assure representation of each commune in the final sample were selected. Nine communities (one commune had only one village) were selected for this study using multistage random sampling. The sampling frame included the total number of households in the nine communities adjacent to RNP, but the final unit of analysis was the individuals residing in the households. The nine villages selected have a population of

4,232 persons residing in 1,159 private households. A sampling frame based on households as opposed to individuals was found to be more suitable due to the complexity of the survey.

To assess face and content validity, multiple strategies were followed. At first, three university professors reviewed the survey instrument and also provided feedback in terms of the extent the empirical measures adequately reflect the real meanings of the concepts under consideration. Secondly, a Romanian student translated the Romanian language version of the questionnaire back to English, and after revisions were made, further verified the accuracy of the translation. Lastly, at the study site, park management staff was asked to complete the survey and comment on the questionnaire content, design, clarity, wording and format. Based on the feedback, adjustments were made to the questionnaire.

Cross-sectional data was collected from 260 residents during June 2009 – October 2009 using face to face interviews (68% response rate) and mail survey (9% response rate). A systematic sampling method with a random start was used to select participants for the face to face interviews, the sampling interval being established based on the number of households in the sampling frame for each community divided by sample size needed in each community. Considering the small size of these communities and the challenge of finding people at home, in general every other household was selected. The person in the household age 18 or older was asked to participate in the study, and the questions were asked directly to the respondents and recorded by the interviewer. In addition, a mail survey was sent to households where the residents were not at home, even after multiple visits at different times during the day. A total of 230 surveys were sent by mail to the population of four communities using home address information from the phone book. The low response to the mail method revealed the lack of feasibility of this method for the residents living in these communities.

Participants in this study were asked to express their opinions on a series of questions about their community as well as Retezat National Park. The questionnaire measured the following constructs: community attachment, connection to nature, conservation attitudes, perceived collective environmental responsibility, attitudes towards pro-environmental civic engagement, and pro-environmental civic behavioral intentions. In addition to these constructs, several socio-demographic characteristic variables (age, gender, education, occupation, residency, length or residency, income) were included.

Data Analysis

Data analyses were performed following three stages. First, descriptive statistics were computed for the variables used in the study using the Statistical Package for the Social Sciences (SPSS) version 18.0. Second, the data collected was screened and the critical assumptions underlying the statistical techniques employed by the study were assessed. Third, a two-step data analysis was employed to assess the hypothesized relationships among the research constructs (Anderson & Gerbing, 1988). As part of this process, individual items were examined using Confirmatory Factor Analysis (CFA) and the measurement model for constructs included in the study was estimated using MPLUS version 5.21 to determine how well the indicators captured their specific constructs and the ability of the respondents to differentiate between constructs (Hair et al., 2006). This was followed by an assessment of the Structural Equation Model (SEM) assessing the hypothesized relationships between constructs. SEM was assessed using MPLUS version 5.21 using the WLSMV (weighted least squares mean and variance adjusted) method of estimation, method recommended for categorical ordinal data (Muthen et al., 1997). Finally, the direct and indirect effects, as well as the moderator effects between constructs were assessed.

The fit of the measurement model and the structural equation model were assessed using multiple criteria. The chi-square test of model fit divided by the degrees of freedom was used as

a reference criteria supplemented by the Root Mean Square Error of Approximation (RMSEA), Weighted Root Mean Square Residual (WRMR), Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI). RMSEA values equal to or less than .06 is indicative of a good model fit, values between 0.08 and 0.10 indicate acceptable model fit, and values higher than 0.10 are considered to be indicative of poor fit (Browne & Cudeck, 1992; MacCallum, Browne, & Sugawara, 1996). CFI and TLI values equal to or greater than 0.95 also indicate good model fit (Hu & Bentler, 1999). The criterion for WRMR is a value less than 1.00 (Yu, 2002). After adjustments (specified below), the models utilized in reporting the findings met the minimum standards listed here.

Results

The residents sampled resided in nine communities adjacent to Retezat National Park. The average age was 45.0 years, with almost one quarter of the respondents (23.7%) being between 18 and 30 years and slightly more than one third of the respondents (36.1%) being between 31 and 50 years. Respondents who were above 51 years were the most represented group (40.2%). Fifty four percent were males and 46% percent were females. The average length of residency was 37 years. The majority of the respondents (65.1%) were married or partnered, and on average, the number of adults per household was three. Almost one third of the respondents (31.6%) indicated high school as the highest level of education attained, 14% of the respondents had some college or a college degree and 14% had an elementary school education or less. About one third of respondents (33.8%) reported a monthly household income between 1,000 and 1,999 RON (about US $330-$660) and 30.6% indicated a monthly household income of more than 2,000 RON (about US $661). The majority of respondents (70.6%) indicated that they do not have any property rights (ownership or land use rights) in Retezat National Park.

Individual constructs and their measurements were examined using confirmatory factor analysis (CFA). Marsh, Craven, & Debus (1991) underscored that when a model has been misspecified (poor model fit), the researcher has to respecify the model. One way to respecify the model is to delete indicators and the other option is to allow errors to correlate, and decisions should be supported by theory or rationale (Joreskog, 1993). In this study, the measurement model for each construct was examined and modifications were made based on residuals assessment and modification indices. As a result of initial CFA tests, several items in various factors were dropped due to their low factor loadings. Ultimately, for each construct, those items where retained that were substantive in size and had significant factor loadings. In this stage, the proposition that connection to nature has a hierarchical structure capturing five dimensions was not supported, inter-factor correlations being high and suggesting inability of the sample to differentiate between factors. Therefore, scale items were collapsed and ultimately seven items were retained as a one-dimensional measure of connection to nature. This finding questions the multidimensionality of the connection to nature construct. Similarly, the correlation between park identity and park dependence was high suggesting a weaker differentiation of these constructs by this population. Consequently, scale items were collapsed and one measure of park attachment was retained including seven items. Furthermore, for the conservation attitude scale, one of the four factors (land use perspectives) did not load on the higher order model and was eliminated from further analysis.

After assessing the measurement model for each construct and a good fit to the data was observed, the fit indices for the total measurement model were examined. The measurement model including nine factors (social attachment, park attachment, connection to nature, conservation awareness, conservation benefits, conservation management, attitudes pro-

environmental civic engagement, pro-environmental civic behavioral intentions, and perceived collective environmental responsibility) was tested. The fit indices for a total measurement model with nine factors revealed good fit (Table 3-1). The χ-square/ df ratio (1.82: $\chi^2 = 167.159$, df = 92, $p < .001$) was lower than the suggested criteria (i.e., <3.0; Kline 2005). CFI (.97), TLI (.98), RMSEA (.056) and WRMR (.898) yielded a good model fit and all the item (indicator)-loadings were significant ($p < .001$) and ranged from .61 to .94 that provides strong evidence of convergent validity (Table 3-2).

Evidence of internal consistency is provided by Cronbach's alphas above the recommended level of .70 (Nunnally & Bernstein, 1994), ranging from .71 (perceived collective environmental responsibility) to .90 (park attachment) and composite reliability (CR) above the recommended level of .70 (Fornell & Larker, 1981), ranging from .84 (perceived collective environmental responsibility) to .95 (park attachment). Also included in Table 3-2 are the average variance extracted (AVE) estimates with recommended levels of .50 or higher indicating convergent validity for a construct's measure (Bagozzi, 1994; Fornell & Larker, 1981). All values exceeded the recommended level ranging from .54 (social attachment) to .73 (park attachment). All the inter-correlations among latent factors were less than the suggested threshold of .85 (Kline, 2005), ranging from .24 to .71 and being a strong evidence of discriminant validity (Table 3-3). These findings reveal that the proposed measurement model satisfied all the psychometric requirements, thus the measures were adequate for further analysis.

A hierarchical model was tested with social attachment and park attachment set to load on a second-order factor, community attachment, and conservation awareness, conservation benefits and conservation management were also set to load on a conservation attitudes factor. A specification problem was encountered and the results revealed high inter-correlations between

the latent constructs, conservation attitudes and community attachment (.91). Also each second-order factor had high correlations with some of the first-order factors that did not define the second-order factor. In fact, community attachment was more highly correlated with nature connection (.82), conservation awareness (.79), and conservation benefits (.73) than with social attachment (.65). Also conservation attitudes were more highly correlated with park attachment (.78) than with conservation management attitudes (.63). This situation indicated that these factors collectively were a measure of a latent factor, which based on the literature most likely implies a measure of local environmental identity. Environmental identity has been discussed as reflecting a sense of connection to the social and natural environment, based on history and emotional attachment that ultimately affects the ways in which we perceive and act toward the world (Clayton & Opotow, 2003). Thus, six factors were set to load collectively on a second order factor measuring local environmental identity.

The confirmatory factor analysis revealed the hierarchical structure of the independent variables, a single factor local environmental identity explaining the relationships between the first order factors. Results for the measurement model with local environmental identity as a second-order factor revealed good fits. The χ-square/ df ratio (2.18: $\chi^2 = 189.316$, df = 87, $p < .001$) was lower than the suggested criteria (i.e., <3.0; Kline, 2005). CFI (.96), TLI (.98), RMSEA (.067) and WRMR (1.054) yielded a good model fit and all factor loadings were significant and substantial in size. The factor loadings on local environmental identity ranged from .58 (conservation management) to .86 (park attachment). The results of final CFA tests yield that all item (indicator)-loadings for each factor were significant ($p < .001$) and ranged from .61 to .94, providing strong evidence of convergent validity.

Based on tenets of the theory of interpersonal behavior that incorporates self-identity as a predictor of attitudes, four hypotheses were reformulated (H3; H4; H5; H6) and a structural equation model was tested with local environmental identity influencing attitudes towards pro-environmental civic engagement, and pro-environmental civic behavioral intentions being influenced by perceived collective environmental responsibility and attitudes towards pro-environmental civic engagement. SEM analysis was performed to examine the overall model as well as individual tests of the hypothesized relationships among the latent constructs. The hypothesized model to the data resulted in adequate fit with χ-square/ df ratio (2.24: χ^2 = 194.749, df = 87, $p < .001$) being lower than the suggested criteria (i.e., <3.0; Kline, 2005). The goodness-of-fit indices CFI (.96), TLI (0.98), RMSEA (.069) and WRMR (1.075) revealed acceptable fits. All factor loadings were significant and substantial in size.

Support for the hypotheses was examined via the significance of the individual path coefficients (Figure 3-2). Significant path coefficients were found between local environmental identity and attitudes towards pro-environmental civic engagement (standardized coefficient of .657; $p < 0.001$), and between attitudes towards pro-environmental civic engagement and pro-environmental civic behavioral intentions (standardized coefficient of .645; $p < 0.001$). Perceived collective environmental responsibility did not have a significant impact on pro-environmental civic behavioral intentions (standardized coefficient of .112, $p > 0.05$). A decision was made to respecify the model and include a path from perceived collective environmental responsibility to attitudes towards pro-environmental civic engagement. The results showed a reasonable improvement in the model with χ-square/ df ratio (2.16: χ^2 = 187.532, df = 87, p < .001) lower than the suggested criteria. CFI (.96), TLI (.98), RMSEA (.067) and WRMR (1.055) revealed good model fits. Significant path coefficients were found between local environmental identity

and attitudes pro-environmental civic engagement (standardized coefficient of .450; $p < 0.001$); between perceived collective environmental responsibility and attitudes pro-environmental civic engagement (standardized coefficient of .349; $p < 0.001$); and between attitudes towards pro-environmental civic engagement and pro-environmental behavioral intentions (standardized coefficient of .722; $p < 0.001$).

Furthermore, local environmental identity was found to indirectly influence pro-environmental civic behavioral intentions through attitudes towards pro-environmental civic engagement (standardized coefficient of 0.325; $p < 0.001$). The significant indirect effect suggests that attitudes towards pro-environmental civic engagement mediate the relationship between local environmental identity and pro-environmental civic behavioral intentions. When pro-environmental civic engagement and local environmental identity were set to impact on pro-environmental civic behavioral intentions, the path coefficient from engagement to behavioral intentions was significant (standardized coefficient of .660; $p < 0.001$), while the path coefficient from local environmental identity to behavioral intentions was insignificant (standardized coefficient of .061; $p > 0.05$).

Discussion

The primary findings of this study are twofold. First, the results underscored the hierarchical structure of the relationship between social and park attachments, connection to nature and conservation attitudes. Local environmental identity was found to account for the relationship between these constructs. Consequently, four hypotheses were reformulated (H3; H4; H5; H6) and a direct impact of local environmental identity on attitudes towards pro-environmental civic engagement was proposed. Second, this study highlights the interplay of variables that affect pro-environmental civic behavioral intentions. Local environmental identity and perceived collective environmental responsibility were found to have a significant direct

impact on attitudes towards pro-environmental civic engagement that ultimately shape pro-environmental civic behavioral intentions.

Clayton & Opotow (2003) argued that strong attachments and connections with nature can contribute to the formation of identities in environmental contexts. This sentiment supports the paradigm that environmental identities emerge from interactions with the natural world and from socially constructed understandings of oneself and others (Chawla, 1999). Identity is a notion directly linked to self-concept and involves beliefs about who we are and the way we organize information about ourselves. It has been emphasized that we do have multiple ways of organizing information about ourselves, resulting in multiple identities that ultimately vary in their salience and importance according to the immediate context and expected behaviors (Clayton & Opotow, 2003). Consequently, Kihlstrom et al. (1988) talked about natural environments and environmental issues and how they directly tie to our core identity due to their relevance to our sense of self, emotional arousal, and their connections to other aspects of life that have personal significance. This does not mean a negation of the social aspects of identity, identity emerging in a social context and taking into account social interdependence and cultural aspects (Snyder & Canto, 1998).

It has been emphasized that for many people, their identity lies in the natural and the social world they are part of; that is, in the relationships they have to the natural and social world. In this study, it was found that attachment to the social environment and the park, connection to nature and attitudes towards conservation are strongly embedded and they define a local environmental identity. This identification of the local population with the surrounding environment might be due to the enduring interaction of the local people with the environment, their way of life being strongly dependent on the natural and social environment. In addition, the

park adjacent to these communities has a long history of conservation and protection and its magnificence and relevance for the community seems to be embedded in the cognitive representation of self. The park could be viewed as a local stimuli in the definition of the self in this context. Identity is viewed more salient when individuals of groups undergo geographical, social, and psychological shifts. In the case of this study, the local population is very stable, generation after generation living in these communities and thus an argument can be made that the local environmental identity is vivid.

This study underscores the importance of attachment and nature connections and conservation attitudes in shaping local environmental identities, and the need to sustain such connections through social interactions as well as interaction with natural environments. Social interactions play an important role in defining attachment and thus any initiatives that bring people together in order to act together, can greatly contribute to local environmental identity. A weaker contribution to this latent construct, local environmental identity seems to be made by social attachments and attitudes people have about the conservation management approach in the area. From a social perspective, it could be argued that given the changing social environment in Romania characterized by socio-economic instabilities, local social identity in these communities has been weakened over time. Furthermore, conservation management attitudes do not strongly define identity. This might suggest a weaker association with the management and a development of identity on the grounds of nature connections, park attachment and conservation attitudes which might not necessarily be in agreement with the current management philosophy. The notion of “other” has been discussed in relation to environmental identity, the argument being that identity can elicit strong connections that can take an intensified meaning and create a situation where group divisions based on definitions of “us” (community members) and “them”

(park administration) possibly emerge (Clayton & Opotow, 2003). Thus, the weak identification of the local population with the management approach could be an indication that local institutions responsible for conservation management do not truly represent what the locals believe and their connections and understanding of the environment.

The wider literature on environmental identity underscores that this construct should be understood as a product as well as a force, being a representation of beliefs about self in an environmental context and a behavior motivator. The interconnectivity between personal identity, values, attitudes, and ultimately behaviors has been previously accounted for in the literature (Clayton, 2003; Clayton & Opotow, 2003; Hitlin, 2003; Vaske & Donnelly, 1999). The argument being that local environmental identity provides people with a sense of connection and a sense of being part of a larger whole, and the extent to which we see ourselves as part of the group, ultimately influences our intentions to act. The theory of interpersonal behavior incorporates self-identity, the individual's perception of himself or herself, as one of the major predictors of behavioral intentions (Gagnon et al., 2003; Zhang, Inbakaran, & Jackson, 2006). This relationship is based on the argument that our definition of ourselves ultimately defines our actions.

This study found a direct impact of local environmental identity (as a reflection of attachment, connection to nature, and conservation attitudes) on attitudes towards pro-environmental civic engagement. Furthermore, the relationship between environmental identity and pro-environmental behavioral civic intentions was found to be mediated by attitudes towards civic engagement. It is not surprising that the more residents' identify with the social and natural environment, the more positive attitudes they have towards engagement that ultimately shapes behavioral intentions. For the most part, residents were born and raised in their respective

communities and from a socio-psychological perspective, the local environment is an integral part of their identity that ultimately structures their attitudes towards pro-environmental civic engagement. This finding substantiates current understanding of what has been previously described as community identity and its implications for environmental values and attitudes (Pol, 2002; Van Vugt, 2001).

Perceived collective responsible behaviors to guard natural resources were also found to have a direct impact on attitudes towards pro-environmental civic engagement. This finding is consistent with past research and theory that suggest residents' sense of involvement is higher when people feel a strong collective responsibility for the well-being of the environment and have cooperative relationships with one another (Dolisca et al., 2009; Kaplan, 2000; White & Runge, 1994). A direct relationship between collective responsibility and behavioral intentions was not supported in this study. Attitudes towards pro-environmental civic engagement were found to mediate the relationship between local environmental identity, perceived collective environmental responsibility and pro-environmental civic behavioral intentions. This underscores the importance of attitudes in the context of pro-environmental civic engagement, identity and perceived responsibility influencing attitudes but not behavioral intentions directly. Similarly, Dolisca et al. (2009) found conservation behavior to be directly influenced by residents' attitudes in the context of forest conservation initiatives in Haiti.

Previous studies emphasized community residents' lack of faith in their ability to get involved (Lepp, 2006). This study did not test such a concept, but the strength of environmental identity seems to negate feelings of lack of ability or knowledge to engage. The strength of local environmental identity facilitates positive attitudes towards civic engagement and ultimately willingness to get involved in local pro-environmental initiatives. This further indicates the need

to provide opportunities for engagement and constantly foster residents' capacity to be agents of change in their communities and the environments they are attached and connected to. The Retezat National Park administration should take into account the strong connection people in these communities have to their environment and create opportunities for them to express their opinions for sustainable management of the protected area. As emphasized previously, identity can be powerful in shaping notions of "us" and "them" and when such strong distinctions appear, the ability to reach effective communication and collaborations weakens. The residents of these communities developed strong attachments and meanings to the surrounding environment and their existence is embedded in a permanent interaction with their environment, and should not be overlooked by management.

The conceptualization of local environmental identity could be argued might be a characteristic of the population in this study and the local environment which is rich in natural resources amenities. Thus, this study should be repeated under different conditions, culturally, socially and environmentally to test the environmental identity conceptualization. This study provides evidence that with stronger local environmental identity and collective environmental responsibility, the residents' attitudes towards pro-environmental engagement will likely increase, ultimately shaping behavioral intentions. Furthermore, this study substantiates the knowledge on rural communities and their interactions with neighboring natural environments, highlighting the major predictors of pro-environmental civic engagement intentions.

Conclusions

Findings from this study show residents' attitudes shaped behaviors in ways consistent with the theory of interpersonal behavior. The model supported the hypothesis that a more positive attitude toward the environment increases the probability of civic engagement. Factors such as local environmental identity, attitudes, and collective environmental responsibility play a

determining role in resident's behavioral intentions. This study found that attitudes play a mediator role in stimulating behavioral intentions. This study contradicts beliefs that people living adjacent to protected areas do not care about the environment and do not have an interest in having or bringing their contribution to protecting the neighboring environment. Such communities strongly identify with their environment and develop meanings, attitudes and attachments that are hard to disentangle and ultimately even harder to change.

Results show that pro-environmental civic behavioral intentions can be improved by providing villagers information about the importance of civic engagement, and also by strengthening local environmental identities which could be done by encouraging social interaction as well as interaction with the environment (the park, in this case). Furthermore, providing increasing understanding of the benefits of the park, the benefits of conservation, and higher management transparency and cooperation can ultimately generate greater identification of the local population with the local environment. Thus, this study emphasizes the need to create opportunities for local people to utilize and benefit from the park so that ultimately they become an integrated part of the management and conservation stewards.

Projects that require involvement, interaction, and sharing of knowledge and information (about benefits and management approach) should be supported and constantly encouraged and implemented throughout the area. Furthermore, collective responsibility was found to impact on attitudes towards pro-environmental civic engagement. Pretty & Smith (2004) suggest that trust and connectedness in community are necessary for determining individual actions to achieve engagement and ultimately positive biodiversity outcomes. Recommendations include using meetings and informative messages to strengthen intentions for local engagement and increase knowledge and awareness of conservation benefits as well the responsibilities derived from

living adjacent to the park. Efforts to better inform local residents how current park rules and management strategies sustain the natural environment to better achieve the environmental goals that the residents expressed, and how they can be involved in making specific decisions facilitating those should further enhance synergistic partnerships.

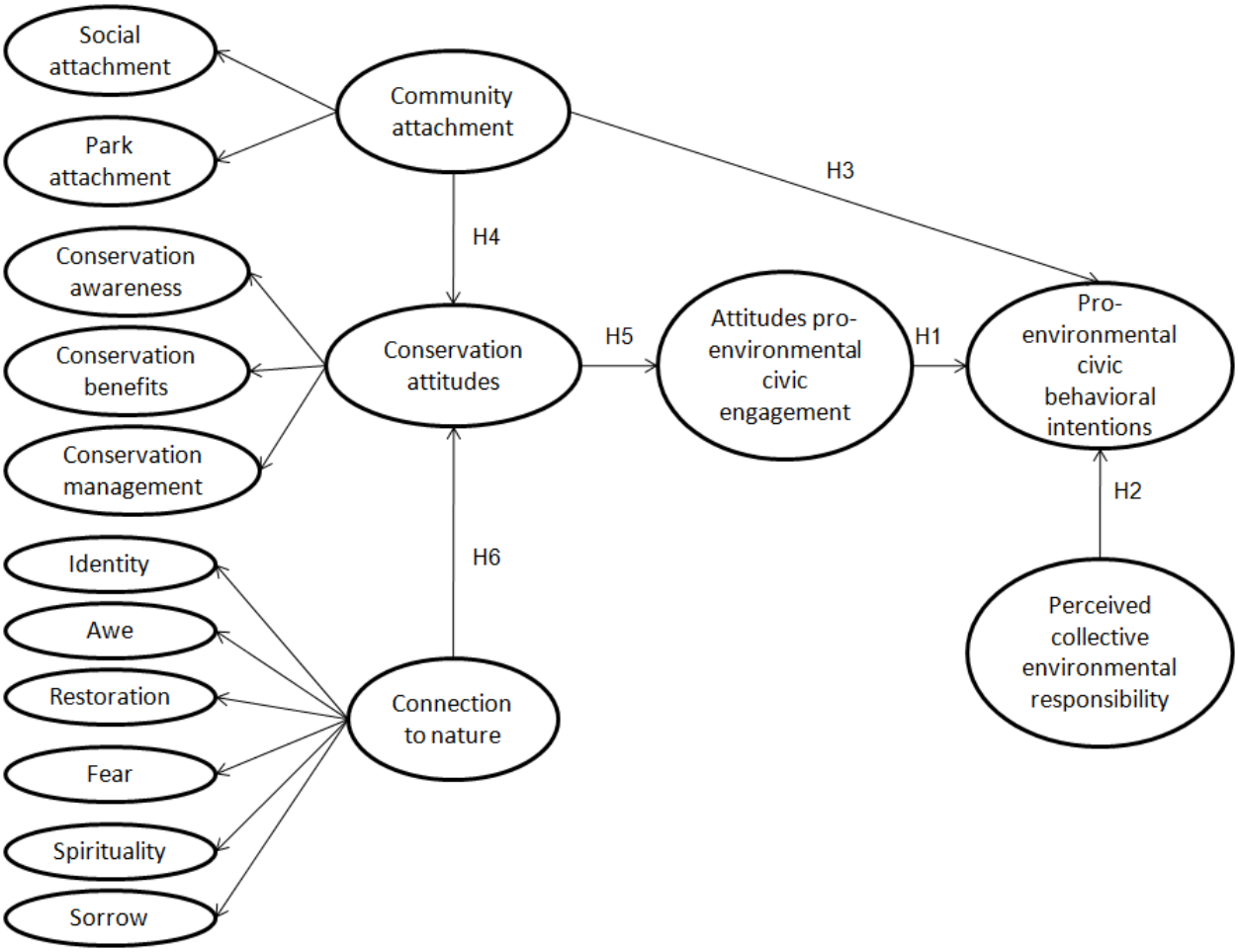

Figure 3-1. Proposed research model

Table 3-1. Fit indices for measurement model and SEM model

Construct	χ^2	df	χ^2 / df	RMSEA	CFI
Measurement model	167.16	92	1.817	0.056	0.970
Measurement Model with Second Order Factor	189.32	87	2.177	0.067	0.959
SEM A	194.75	87	2.239	0.069	0.957
SEM B	187.53	87	2.156	0.067	0.960

Table 3-2. Summary results for measurement model

Factors and items	Mean	SD	λ	α	CR	AVE
Social attachment[1]				.773	.872	.537
I feel like I belong in this community	4.50	.842	.72*			
The associations that I have with other people in this community mean a lot to me	4.52	.762	.63*			
Given the opportunity, I would move out of this community[a]	3.82	1.520	.61*			
I feel loyal to the people in this community	4.17	1.034	.84*			
I plan to remain a resident of this community for a number of years	4.42	1.004	.88*			
I like to think of myself as similar to the people who live in this community	3.97	1.249	.68*			
Park attachment[1]				.903	.950	.733
Retezat National Park means a lot to me	4.54	.784	.90*			
I am very attached to Retezat National Park	4.18	.992	.92*			
Retezat National Park is very important to me	4.33	.910	.94*			
I identify strongly with the Retezat National Park	3.78	1.178	.87*			
I get many personal benefits out of living near Retezat National Park	3.72	1.280	.65*			
I enjoy living near Retezat National Park	4.54	.750	.88*			
I get lots of satisfaction out of living near Retezat National Park	4.17	.996	.80*			

Table 3-2. Continued

Factors and items	Mean	SD	λ	α	CR	AVE
Connection to nature[1]				.871	.930	.661
I am connected to nature much like I'm connected to my family	4.40	.974	.90*			
Nature is a huge part of who I am	4.40	.932	.89*			
I often feel a sense of oneness with the natural world around me	4.28	1.028	.93*			
My feelings for nature have influenced my spiritual beliefs	4.12	1.125	.90*			
When surrounded by nature, I feel at peace	4.91	.327	.67*			
Listening to the wind go through the trees calms my mind	4.35	1.051	.70*			
When I'm alone in a natural area, I have this feeling of complete calm	4.51	.841	.65*			
Conservation awareness[1]				.727	0.896	0.687
It is important to have the Retezat National Park for the survival of various plants and animal species	4.91	.415	0.86*			
It is necessary to set aside some land for the protection of plants and animals	4.89	.381	0.87*			
Retezat National Park is our country's pride	4.87	.481	0.94*			
The illegal cutting of trees in the park should be strictly regulated	4.69	.813	0.62*			
Conservation management[1]				.834	0.877	0.645
Retezat National Park is managed successfully for the benefit/enjoyment of future generations	4.16	1.123	0.91*			
Retezat National Park is managed successfully for a wide range of uses and values, not just tourism	3.96	1.220	0.74*			
Retezat National Park management does a good job at protecting the natural resources in the park	4.19	1.066	0.90*			
The citizens from the communities around the park have enough say in how the park is managed	3.16	1.304	0.63*			

Table 3-2. Continued

Factors and items	Mean	SD	λ	α	CR	AVE
Conservation benefits[1]				.767	0.862	0.613
My community benefits from being near the Retezat National Park	3.95	1.222	0.82*			
Having the Retezat National Park near my home benefits me and my family	3.97	1.151	0.83*			
My community is a more beautiful place to live because we are living near Retezat National Park	4.47	.787	0.84*			
The tourists who come to the area are useful to we who live in adjacent communities	3.82	1.227	0.62*			
Attitudes pro-environmental civic engagement[2]				.823	0.880	0.596
Participating in public meetings related to Retezat National Park	4.00	.983	0.81*			
Participating in a community project addressing environmental concerns in the area	4.28	.844	0.75*			
Investing time to learn about the park and environmental protection	4.36	.874	0.82*			
Participating in a workshop on how to reduce my dependence on park resources	3.87	1.149	0.68*			
Investing personal time to get involved with the park	3.93	1.034	0.79*			
Pro-environmental civic behavioral intentions[3]				.844	0.893	0.628
Attend a public presentation about Retezat National Park	4.02	1.110	0.89*			
Participate in a community project addressing environmental concerns	3.89	1.190	0.80*			
Invest time to learn more about the park and environmental protection	3.86	1.221	0.84*			
Give my input into park management decisions	3.94	1.163	0.75*			
Participate in a workshop on how to reduce my dependence on park resources	3.23	1.389	0.67*			

Table 3-2. Continued

Factors and items	Mean	SD	λ	α	CR	AVE
Perceived collective environmental responsibility[4]				.707	0.843	0.729
Every citizen in my community must take responsibility for protecting the environment in Retezat National Park	4.52	.901	.90*			
Authorities, together with the citizens, are responsible for protecting the environment in Retezat National Park	4.67	.807	.80*			

Note. * = t-statistic (> 1.96) at a significance level of $p<0.05$; λ = factor loadings; α = Cronbach's alpha coefficients; CR = composite reliability; AVE = average variance extracted; [a]Variable reverse coded for consistency directionality of items; [1]Measured on a 5-point scale where 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly agree; [2]Measured on a 5-point scale where 1 = Not at all effective; 2 = Never effective; 3 = Sometimes effective; 4 = Often effective; 5 = Always effective; [3]Measured on a 5-point scale where 1 = Very unlikely; 2 = Somewhat unlikely; 3 = Neither likely nor unlikely; 4 = Somewhat likely; 5 = Very likely. [4]Measured on a 5-point scale where 1 = Totally disagree; 2 = Somewhat disagree; 3 = Neither agree not disagree; 4 = Somewhat agree; 5 = Totally agree.

Table 3-3. Correlations among factors (based on the measurement model)

	1	2	3	4	5	6	7	8	9
1. Social attachment	1.00								
2. Park attachment	0.559*	1.00							
3. Connection to nature	0.605*	0.676*	1.00						
4. Conservation awareness	0.491*	0.713*	0.524*	1.00					
5. Conservation management	0.380*	0.420*	0.434*	0.626*	1.00				
6. Conservation benefits	0.409*	0.672*	0.388*	0.486*	0.583*	1.00			
7. Attitudes pro-environmental civic engagement	0.341*	0.510*	0.563*	0.492*	0.357*	0.555*	1.00		
8. Pro-environmental civic behavioral intentions	0.242*	0.460*	0.407*	0.358*	0.154**	0.382*	0.704*	1.00	
9. Perceived collective environmental responsibility	0.281**	0.433*	0.468*	0.672*	0.398*	0.482*	0.632*	0.413*	1.00

*Correlation significant $p < .001$; **Correlation significant $p < .05$.

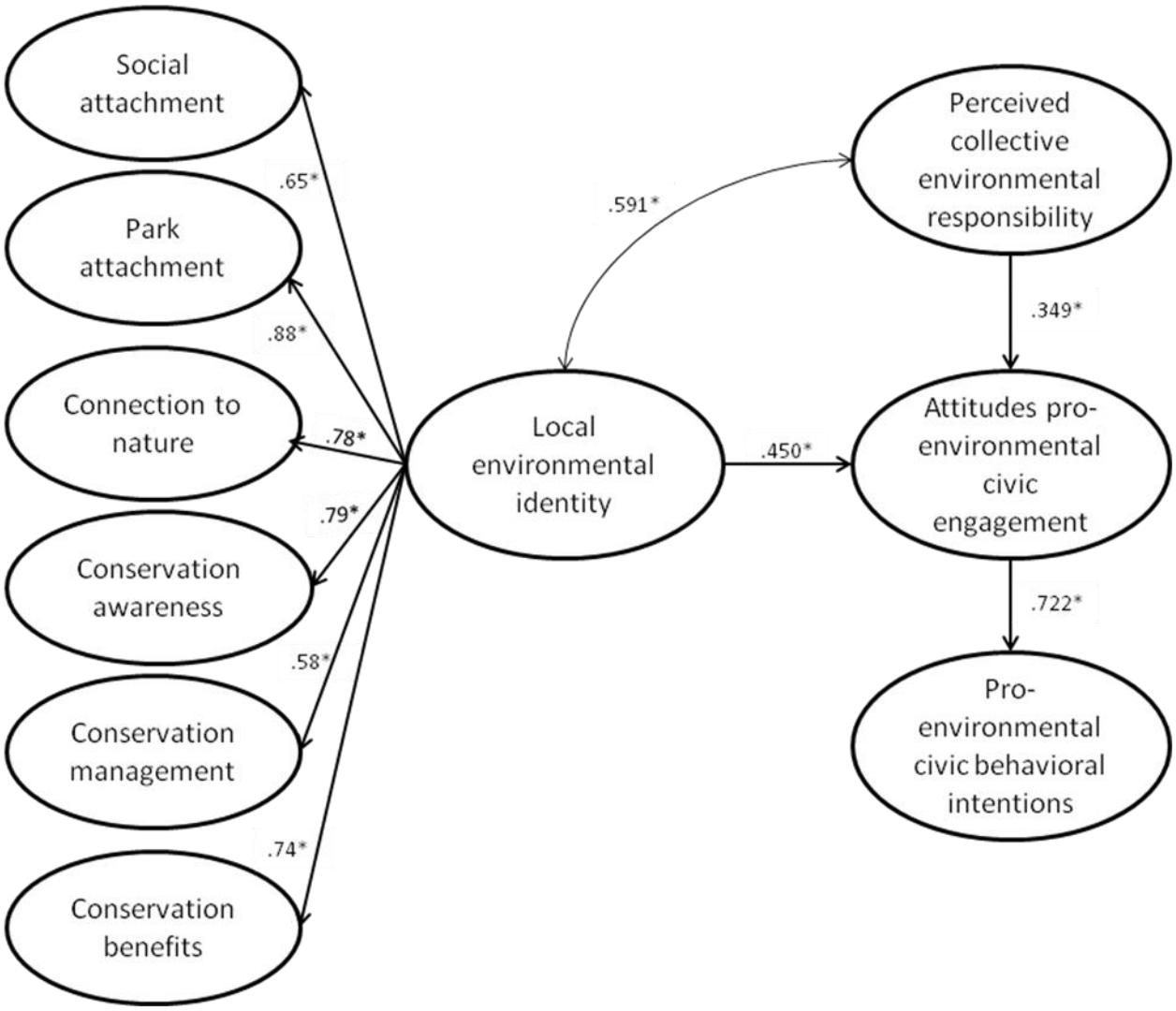

Figure 3-2. A structural equation model test

CHAPTER 4
A MIXED METHOD INVESTIGATION OF COMMUNITY ATTACHMENT

Introduction

Rural communities constantly gathered academic attention due to their continuous exposure to external pressures determining local economic and social instabilities. Flora and Flora (1990) emphasized that in order to achieve sustainability in such communities it is imperative to build the social structure, maintain the population base and engage residents for community action. Community attachment is one of the key concepts discussed as being at the roots of community action that ultimately fosters community development (Wilkinson, 1986). Consequently, community attachment has been examined in a variety of disciplines, focusing on operationalizing the construct, understanding its major determinants as well as implications for community well-being.

Hummon (1990) defines community attachment as an emotional connection to a place that emerges in the context of residence and belonging. Predominantly, the community attachment literature views the social relations within a community at the foundation of the emotional bond people have with their communities. Consequently, community attachment was operationalized as a unidimensional construct, general measures of feeling at home in the community, knowing what's going on in the community and feelings about moving away (sorry or happy) being widely used (Gursoy & Rutherford, 2004).

Over the years, one more dimension has been acknowledged to frame the community attachment concept, attachment to the natural environment. Cross (2001), Stedman (2002, 2003), Beckley (2003), and Brehm (2007) emphasized in their work the importance of the natural environment in shaping community attachment. Hummon (1990) argued that community attachment is most strongly rooted in involvement in local social relations, but he also

acknowledged that the built and natural environment might also contribute to such emotional ties. Furthermore, Cross (2003) underscored that a unidimensional approach to community attachment limits the depth of information captured and our ability to distinguish how different dimensions of attachment might shape community behavior and action differently.

The multidimensionality of the construct has been scarcely assessed, only a few studies proposing measures of attachment to the social and natural environment and further investigating their predictors. Generally, the major determinants of community attachment discussed in the literature are length of residence, participation in community activities and groups, local ties and networks, and various socio-demographic characteristics, such as age, family status, income, education (Beggs, Hurlbert & Haines, 1996; Brehm, Eisenhauer, & Krannich, 2004; Brehm, 2007; Kasarda & Janowitz, 1974; Theodori & Luloff, 2002;).

The influence of length of residence on community attachment has been primarily attributed to social interaction and social integration components that define residency, but this relationship was not always found to be significant. McCool & Martin (1994) identified that newcomers were more highly attached to their community than long-term residents. An argument was made that this situation might be indicative of a tendency for newcomers to be attached to biophysical or landscape features of place, as opposed to social networks and local relationships. Consequently, it can be argued that attachment to the natural environment can be equally strong in forming an emotional investment in community.

Brehm et al. (2006) examined the relationship between length of residence and attachment to the social and natural environment. The study findings indicate that the strength of social attachments to the community were significantly different between residents who had lived in the area more than ten years and those who had not. In contrast, there was not a significant

difference between newcomers' and long-term residents' strengths of attachment to their community's natural environment. Such findings are indicative and supportive of prior prepositions underscoring the importance of assessing the multiple facets of community attachment and their predictors.

In terms of socio-demographic characteristics and their impact on community attachment, Kasarda & Janowitz (1974) viewed the individuals' stage in the life cycle, as reflected by age, family status, and number of children, indicative of emotional investment in community. Others emphasized the importance of education and income in explaining attachment (Brehm et al., 2006; Gursoy & Rutherford, 2004). To date, the strength of such relationships is still not very clear and little is known how different socio-demographic characteristics relate to attachment to the social and natural environment.

Based on a qualitative study, Brehm's (2007) speaks to the complexity of developing a discrete separation of the natural environment dimension from the social dimension, yet clearly demonstrates that the natural environment does play an important role in the overall formation of community attachment. The author argues that in communities where natural amenities are abundant and often on a grand scale, they can play an important role in the development of a person's sentimental and emotional attachment to their community, regardless of length of residence. Brehm (2007) advocates for studies focused on better understanding specific place attributes (natural environment versus social) to which people are attached and the mechanisms through which such attachments are formed.

To date, various research studies discussed the complexity of the community attachment concept and the contribution of the social and natural environment in shaping emotional connections to community. It is relevant to notice the majority of these studies were conducted in

North America, multiple assertions being proposed in terms of community attachment and its dimensions but only a few being actually empirically tested under different conditions and settings. In the mist of irresolute findings and emerging need to empirically test the community attachment dimensionality under different conditions and settings, this study examined the social and natural dimensions of community attachment in the context of nine rural communities in Romania, communities adjacent to a national park. Two distinct facets of community attachment were assessed in order to examine if they are distinctively predicted by length of residence, social interaction and socio-demographic characteristics. Furthermore, this study qualitatively explored the extent to which we could speak of other dimensions of community attachment in these communities, questioning the existence of various pillars that support the emotional bond people have with their place of residence.

Conceptual Framework

Community attachment is a complex and integrating sociological construct that depicts the emotional connections among people and their communities. Feelings of belonging and identity with a place of residence are viewed as the core elements that permeate personal emotional responses. Community attachment is perceived as providing social and psychological attachment for residents that ultimately encourage their participation in community-based activities (Brennan, 2007; Theodori, 2000). Consequently, the collective action and engagement literature constantly identified attachment to a community as an important predictor of action and active participation that ultimately translates into well-being at the individual and community levels (Wilkinson, 1991).

The sociological literature on community attachment primarily views social relations within a community at the foundation of the emotional bond people have with their communities. The importance of interpersonal connections (strong ties to friends and kin), involvement in

formal community organizations, and affective and emotional feelings towards the local community has been constantly emphasized as pillars of community attachment (Beggs, Hurlbert, & Haines, 1996; Kasarda & Janowitz, 1974; Luloff and Swanson, 1995;). However, more recently other ways of defining the attachment construct have been proposed. Cross (2001), Stedman (2002, 2003), Beckley (2003), and Brehm (2007) emphasized in their work the importance of the natural environment in shaping community attachment. Such assertions are grounded in studies that examined attachment in terms of affinity to a physical place rather than the web of interpersonal relationships rooted in a community (Stokols & Shumaker, 1981; Williams et al., 1992). Extensive literature exists that focuses on place based attachments, sense of place and place attachment (Altman & Low, 1992; Kyle et al., 2004; Williams et al., 1992; Williams & Vaske, 2003). Place attachment has also been discussed as being a subjective evaluation not only of the physical features of ones environment, but also tangentially integrating a personal assessment of the social environment (Mesch & Manor, 1998). Consequently, it could be argued that community attachment integrates an emotional response to the natural environment and should be viewed as a variation of sense of place and place attachment, constructs primarily rooted in the connections people have with some physical locations in the natural world.

The previous remarks come to highlight the importance of better understanding the interplay between place-based attachments and community attachment, and the overall role played by the natural environment in the overall assessment of the community attachment. The sociological analyses have been deficient at capturing the influence of the natural environment on community attachment, even though it did constantly highlight the interlinked relationship between community and ecological well-being and the ability of the natural environment to

support social integration (Wilkinson, 1991). Brehm (2007) argued for a dual appraisal of community attachment, attachment to the social and natural environment and in the same time questioned the extent to which the specific natural attributes people are attached to can be distinguished from the social environment. To date, studies did show that separating these two dimensions is feasible and suitable as they seem to have distinct predictors and attitudinal behavioral implications.

Kasarda & Janowitz (1974) were among the first sociologists to explore the major factors that contribute to community attachment. The authors attributed community attachment primarily to the prevalence of a complex system of ties and networks within community that supports social interaction. Large area and density was associated with limited social interaction and decreased community participation and attachment. Luloff & Swanson (1995) and Beggs, Hurlbert, & Haines (1996) also speak of the importance of social interaction, interaction with friends, relatives and others in creating the emotional bond at the foundation of community attachment.

Furthermore, length of residence in a community was persistently viewed as a benchmark of community attachment (Beggs, Hurlbert, & Haines, 1996; Goudy, 1990; Payne & Schaumleffel; 2008; Theodori, 2004). The influence of length of residence on community attachment has primarily been attributed to social interaction and social integration components that define residency. However, the correlation between length of residence and attachment, while statistically significant, was not always found to be strong. McCool & Martin (1994) identified that newcomers were more highly attached to their community than long-term residents. Such findings are indicative that one can decide to live in a community and become

attached to it rapidly, thus questioning assertions that local ties and networks, and social relations in general are the primary stimuli of community attachment.

The community attachment literature also highlights various socio-demographic characteristics relevant for understanding emotional investment in community. Kasarda & Janowitz (1974) discussed the importance of achieved social position (income and education) and stage in the life cycle (age, family status and number of children) in explaining community attachment. Previous studies assessed the role of achieved social position in shaping community attachment (Brehm et al., 2006; Gursoy & Rutherford, 2004; Goudy, 1990; Kasarda & Janowitz, 1974; Stinner et al., 1990). Beggs, Hurlbert, & Haines (1996) found that persons with higher levels of education had weaker local ties than persons with lower levels of education do and income had a negative effect on local sentiments. Furthermore, Goudy (1990) emphasized that age plays a role in affecting local bonds and sentiments but usually of less importance than length of residence. The inability of age measures to capture parenting and marital status was highlighted by Beggs, Hurlbert, & Haines (1996) and further argued for including measures of family status when assessing attachment. While socio-demographic measures and their role in shaping community attachment have been previously studied, findings have not always been conclusive.

To date, several studies employed a multidimensional assessment of community attachment and tested how core predictors of attachment correlate with distinct dimensions of community attachment. Using a quantitative assessment, Brehm et al. (2004) found social attachment and attachment to the natural environment as two distinct dimensions of the broader concept of community attachment. The results showed religious affiliation, length of residence and social involvement strongly associated with social attachment, while not significantly

associated with levels of attachment to the natural environment. Furthermore, a significant connection between collective action, perceptions of open communication and social attachment was found. However, the relationship between natural environment attachment and collective action and open communication was not significant. Brehm et al. (2006) identified household income as a better predictor of attachment to the natural environment, an argument being made that those who have money tend to have more interest in natural amenities. In addition, Brehm et al. (2006) and Cross (2003) identified sentimental and emotional attachments to local communities, based on social ties as well as ties to the physical environment as having a direct influence on levels of environmental concern and local conflicts over land use management.

The ability to differentiate between the two dimensions of community attachment was questioned by Brehm (2007) in a study using a mixed method approach. While the quantitative analyses presented a more discrete picture of social and natural environment dimensions, the qualitative results of the analyses revealed attachment to the natural environment as a distinct dimension of community attachment, as well as a facet of community attachment that is more embedded in the social dimension of attachment. The ability of the natural environment to support certain life styles and social connections was underscored when trying to explain the embedded nature of the social and natural dimensions. In addition, it is questionable to what extent attachment to the natural environment could be a direct consequence of a social instability within the community. Thus, Brehm (2007) emphasized the need to further investigate the complex dimensionality of the community attachment concept using multiple methods.

Current understandings of the community attachment dimensionality demonstrate the need for further research in various community contexts to clarify the role of the social and natural environment in the assessment of community attachment. Understanding the underpinnings of

various dimensions of attachment could further provide deeper knowledge of the mechanisms through which different facets of community attachment contribute to the formation of social groups and ultimately influence community action. Based on current theoretical conceptualization of community attachment, this study assessed the structural relationships between social attachment and natural attachment (the national park neighboring the local communities participating in the study) and social interaction, length of residence and socio-demographic characteristics (age, family status, number of children under 18 years, education, and income). The factors included in the model were chosen based on the literature as well as their relevance for the study site. Consequently, following findings from previous studies research hypotheses were developed as follows:

- H1: Social interaction positively impacts attachment to the social and natural environment.
- H2: Length of residence positively impacts attachment to the social and natural environment.
- H3: Age positively impacts attachment to the social and natural environment.
- H4: Family status positively impacts attachment to the social and natural environment.
- H5: Number of children under 18 years old negatively impacts attachment to the social and natural environment.
- H6: Education negatively impacts attachment to the social and natural environment.
- H7: Income negatively impacts attachment to the social and natural environment.

Brehm et al. (2006) underscored that community attachment might have other facets not examined, such as cultural traditions and beliefs, economic linkages and activities, and political engagement. Thus, a qualitative approach was employed to further assess the dimensionality of the community attachment construct.

Methodology

Study Area

Retezat National Park (RNP) was designated in 1935, being the first national park established in Romania. In 1979, RNP was declared an International Biosphere Reserve under the UNESCO Man and Biosphere program and in 2004 RNP received its Protected Area Network (PAN) Certification. Retezat National Park is located in the southwestern Carpathians, Hunedoara County, and the total surface of the park is 38,138 ha (RNP Management Plan, 2008). Within the park, there are more than twenty mountain peaks of 2,000 meters or higher, in addition to eighty lakes of glacial origin. There are more than 1,100 species of plants, over 50 species of mammals including roe deer, chamois, lynx, bear, and otter and 168 recorded bird species including the golden eagle.

A large portion of the park area (17,564 ha, 46%) is owned by the state, while local associations own the reminder of the land (20,574 ha). Of the 43 villages adjacent to Retezat National Park, 26 villages have grazing rights to alpine meadows, and their rights are administered either through community based associations or the local councils of the five communes to which the villages belong (Kuijs & Bergh, 2006). The total population of these five communes was estimated at 14,006 inhabitants. Communities rely on park resources primarily for grazing and the use of other natural resources such as wood, non-timber forest products, mushrooms, and medicinal plants. Due to reduced level of interest and engagement in community affairs, a low sense of community and collective responsibility has been constantly emphasized as characterizing Romanian rural communities (Oostenbrink & Kosterink, 2005; PJB Associates, 2006). However, there is scarce empirical evidence that supports these assertions and little is known about the determinants and level of attachment in these rural communities in Romania. Therefore, this study will investigate the major determinants of

community attachment and the multidimensionality of this construct in the context of nine rural communities adjacent to Retezat National Park, using both a quantitative and qualitative approach.

Survey Data Collection and Analysis

Rural communities adjacent to Retezat National Park belong to five communes encompassing 43 villages with a total population estimated at 14,009 adult residents. Two villages dissimilar in size from each commune, to assure representation of each commune in the final sample were selected. Nine communities (one commune had only one village) were selected for this study using a multistage random sampling. The sampling frame included the total number of households in the nine communities adjacent to RNP, but the final unit of analysis was the individuals residing in the households. The nine villages selected have a population of 4,232 persons residing in 1,159 private households.

Cross-sectional data was collected from 260 residents during June – October 2009 using face to face interviews (68% response rate) and mail survey (9% response rate). A systematic sampling method with a random start was used to select participants for the face to face interviews, the sampling interval being established based on the number of households in the sampling frame for each community divided by sample size needed in each community. Considering the small size of these communities and the challenge of finding people at home, in general every other household was selected. The person in the household of age of 18 or older was asked to participate in the study, and the questions were asked directly to the respondents and recorded by the interviewer. In addition, a mail survey was sent to those households where the residents were not found at home, even after multiple visits at different times during the day. A total of 230 surveys were sent by mail to the population of four communities using home

address information from the phone book. The low response (n = 21) to the mail method revealed the lack of feasibility of this method for the residents living in these communities.

Participants in this study were asked to express their opinions on a series of questions about their attachment to the community, social interaction, length of residence and several socio-demographic characteristics. This study employed an assessment of community attachment based on attachment to the social environment and attachment to the natural environment. The social dimension was measured using ten items on a five point Likert scale ranging from 1 to 5, where 1 = Strongly disagree; 3 = Neutral; 5 = Strongly agree. The items were adapted from Theodori & Mayfield (2008). Cross (2003) emphasized that attachment to the natural environment can also be viewed as an attachment to the bioregion and its attributes, the park in the case of this study. Attachment to the park was assessed using the conceptualization employed in the place attachment literature, more specifically the two dimensions of attachment: place dependence and place identity (Kyle et al., 2004; Williams & Roggenbuck, 1989; Williams et al., 1992). Place dependence centers on a functional attachment to place, while place identity reflects an emotional attachment and it relates to the symbolic meaning of the place. The respondents' attachment to Retezat National Park was measured using nine items on a five point Likert scale ranging from 1 to 5, where 1 = Strongly disagree; 3 = Neutral; 5 = Strongly agree.

Social interaction was measured using the frequency of interaction with various types of people in the community. The following question was asked: "How often do you see or meet with at least one of the following types of people? Family, Close Friends, Acquaintances, Neighbors, etc." For each type, the respondents were given response options of: (1) never, (2) a few times a year, (3) once a month, (4) a few times a month, (5) once a week, (6) more than once a week, and (7) everyday. The respondents were asked to report for how long they have lived in

their community. Five categories of length of residence were created (1=One to 20 years; 2=21 to 40 years; 3=41 to 60 years; 4=61 to 80 years; 5=Over 80 years). Individual level socio-demographics included age (1=18 to 30 years; 2=31 to 50 years; 3=51 years and above), family status (1=Single; 2=Partnered); number of children under 18 years (frequency from 1 to 5 children), educational attainment (1=Elementary school or less; 2=High school graduate; 3=Post high school education), and monthly household income (1=Almost no income to 7=More than 2,000 RON; ~US $661).

Data analyses were performed following three stages. First, descriptive statistics were computed for the variables used in the study using the Statistical Package for the Social Sciences (SPSS) version 18.0. Second, the data collected was screened and the critical assumptions underlying the statistical techniques employed by the study were assessed. Third, a two-step data analysis was employed to assess the hypothesized relationships among the research constructs (Anderson & Gerbing, 1988). As part of this process, individual items were examined using Confirmatory Factor Analysis (CFA) and the measurement model for constructs included in the study was estimated using MPLUS version 5.21 to determine how well the indicators captured their specific constructs and the ability of the respondents to differentiate between constructs (Hair et al., 2006). This was followed by an assessment of the Structural Equation Model (SEM) assessing the hypothesized relationships between constructs. SEM was assessed using MPLUS version 5.21 using the WLSMV (weighted least squares mean and variance adjusted) method of estimation, method recommended for categorical ordinal data (Muthen et al., 1997). After adjustments (specified in the results section), the models utilized in reporting the findings exceeded minimum standards of acceptability for model fits.

Qualitative Data Collection and Analysis

In-depth interviews were conducted with community members in each of the nine communities selected for study. A grounded theory approach to inquiry was followed to allow for an in depth theoretical conceptualization of the community attachment construct. A referral sampling technique was employed to identify participants, with a focus on including individuals highly involved in their community and also individuals with low levels of local engagement. Park management employees and public officials were asked to provide names of community members from the nine selected communities that are interested and highly engaged in community affairs. Based on a first interview in each of the nine communities, the principal investigator asked the respondents to provide names of other community members that might participate in the study and have dissimilar levels of interest and engagement in their community.

Data was collected from 24 community members representing the nine communities adjacent to Retezat National Park. Creswell (2007) recommends that researchers interview 20 to 30 individuals when a grounded theory approach to qualitative inquiry is employed. A semi-structured interview with an interview guide was employed to organize the discussion. Following Brehm (2007) approach to investigate the multiple facets of community attachment, the discussion begun with a very general discussion of their community. The respondents were asked to describe their community to someone who has never been there, followed by a question that asked them to more specifically talk about things they are attached to or care about the most in their community.

The interviews were conducted by the principal investigator in the native language and were tape-recorded, with the exception of one interview where the respondent declined permission to record the interview. All the interviews were transcribed and analyzed by the principal investigator. Interviews were analyzed using a grounded theory approach (Strauss &

Corbin, 1990, 1998) allowing for unique theoretical categories to emerge from the data. A series of steps specific to grounded theory research were followed in analyzing the data collected through the in-depth interviews. At first, the principal investigator coded the data for its major categories of information. This stage was followed by a process of linking categories, focusing on a deeper understanding of the interrelationships between categories.

Survey Data Results

The residents sampled resided in nine communities adjacent to Retezat National Park. The average age was 45.0 years, with almost one quarter of the respondents (23.7%) being between 18 and 30 years and slightly more than one third of the respondents (36.1%) being between 31 and 50 years. Respondents who were above 51 years were the most represented group (40.2%). Fifty four percent were males and 46% percent were females. The average length of residency was 37 years. The majority of the respondents (65.1%) were married or partnered, 48.6 percent had one to five children less than 18 years old, and on average, the number of adults per household was three. Almost one third of the respondents (31.6%) indicated high school as the highest level of education attained, 14% of the respondents had some college or a college degree and 14% had an elementary school education or less. About one third of respondents (33.8%) reported a monthly household income between 1,000 and 1,999 RON (about US $330-$660) and 30.6% indicated a monthly household income of more than 2,000 RON (about US $661). The majority of respondents (70.6%) indicated that they do not have any property rights (ownership or land use rights) in Retezat National Park.

Individual constructs and their measurements were examined using confirmatory factor analysis (CFA). As a result of initial CFA tests, several items in various factors were dropped due to their low factor loadings. Ultimately, for each construct, those items where retained that were substantive in size and had significant loadings on the factor. In this stage, the correlation

between park identity and park dependence was found to be high suggesting a weaker differentiation of these constructs by this population. Consequently, scale items were collapsed and one measure of park attachment was retained including seven items. Furthermore, due to a high correlation between age and length of residence and multicollinearity concerns, age as an observed variable was eliminated from further analysis (H_3 was not assessed). Education and income were also found to be highly correlated, thus education was assessed as a predictor of attachment to the social environment, while income was examined as a predictor of attachment to the natural environment.

After assessing the measurement model for each construct and a good fit to the data was observed, the fit indices for the total measurement model were examined. The measurement model including five latent factors (social attachment, park attachment, interaction with friends, interactions with public officials and park interactions) and five observed variables (length of residence, family status, number of children under 18 years, level of education, and income) was tested. The fit indices for a total measurement model with five latent factors revealed good fit (Table 4-1). The χ-square/ df ratio (2.08: $\chi^2 = 133.12$, df = 64, $p < .001$) was lower than the suggested criteria (i.e., <3.0; Kline, 2005). CFI (.98), TLI (.98), RMSEA (.064) and WRMR (.764) yielded a good model fit and all the item (indicator)-loadings were significant ($p < .001$) and ranged from .67 to .95, providing strong evidence of convergent validity (Table 4-2).

Evidence of internal consistency is provided by Cronbach's alphas above the recommended level of .70 (Nunnally & Bernstein, 1994), ranging from .68 (interaction with park) to .90 (park attachment) and composite reliability (CR) above the recommended level of .70 (Fornell & Larker, 1981), ranging from .79 (interactions with friends) to .96 (park attachment). Also included in Table 4-2 are the average variance extracted (AVE) estimates with

recommended levels of .50 or higher indicating convergent validity for a construct's measure (Bagozzi, 1994; Fornell & Larker, 1981). All values exceeded the recommended level ranging from .55 (social attachment) to .73 (park attachment). All the inter-correlations among latent factors were less than the suggested threshold of .85 (Kline, 2005), ranging from -.23 to .57 and being a strong evidence of discriminant validity (Table 4-3). These findings reveal that the proposed measurement model satisfied all the psychometric requirements, thus the measures were adequate for further analysis.

A hierarchical model was tested with interaction with friends, public officials and park set to load on a second-order factor, social interaction. The fit indices for the model revealed good fit, social interaction being founds to have a hierarchical structure and this model was used for further analysis. The χ-square/ df ratio (2.09: $\chi^2 = 139.99$, df = 67, $p < .001$) was lower than the suggested criteria (i.e., <3.0; Kline, 2005). CFI (.98), TLI (.98), RMSEA (.065) and WRMR (.826) yielded a good model fit and all the item (indicator)-loadings were significant ($p < .001$), the factor loadings for the second order model ranging from .67 (interactions with park) to .80 (interactions with public officials).

SEM analysis was performed to examine the overall model as well as individual tests of the hypothesized relationships among the latent constructs. The hypothesized model to the data resulted in adequate fit with χ-square/ df ratio (2.05: $\chi^2 = 139.09$, df = 68, $p < .001$) being lower than the suggested criteria (i.e., <3.0; Kline, 2005). The goodness-of-fit indices CFI (.98), TLI (0.98), RMSEA (.063) and WRMR (.827) revealed acceptable fit. All factor loadings were significant and substantial in size.

Support for the hypotheses was examined via the significance of the individual path coefficients (Figure 4-1). Statistically significant path coefficients were found between: social

interaction and attachment to the social environment (standardized coefficient of .402; $p < 0.001$) and attachment to the park (standardized coefficient of .482; $p < 0.001$) (H1 supported); length of residence and attachment to the social environment (standardized coefficient of .318; $p < 0.001$) and attachment to the park (standardized coefficient of .195; $p < 0.05$) (H2 supported). Family status did not have a statistically significant impact on attachment to the social environment (standardized coefficient of .131; $p > 0.05$) and attachment to the park (standardized coefficient of .110; $p > 0.05$) (H4 not supported). A significant negative path coefficient was found between the number of children under 18 and attachment to the social environment (standardized coefficient of -.154; $p < 0.05$), while this variable did not have a statistically significant impact on attachment to the park (standardized coefficient of .098; $p > 0.05$) (H5 partially supported). Furthermore, a significant negative path coefficient was found between level of education and attachment to the social environment (standardized coefficient of -0.224; $p < 0.05$) (H6 partially supported), and between income and attachment to the park (standardized coefficient of -.283; $p < 0.001$) (H7 partially supported). The model explained 38% of the variance in attachment to the social environment, and 37% of attachment to the park.

Qualitative Data Results

The respondents' narratives evoked the multidimensionality of the community attachment construct, several facets of attachment emerging from the textual data. These themes were found to best represent the meanings and communalities of the shared narratives. Four thematic categories emerged from the narratives that depict distinct facets of community attachment and in the same time speak to the complexity of the construct. For a better depiction of the thematic categories, direct quotes from the respondents' narratives are provided. All the names associated with the quotes are fictive.

Attachment to the social environment. One theme that emerged from the respondents' narratives captured the social environment within the community as a discrete dimension of attachment. Respondents mentioned the importance of the social connections within the community in shaping feelings of emotional attachment. The narratives underscored that strength of the community as well as personal attachment to the community emerges from the care and respect community members have for each other.

> … What makes me attached? I'm attached to the people and how they are, meaning there is this connection between people based on respect, of love in the end, because if you don't have respect you don't love either… it's a well-behaved community, without conflicts… not only here, in general I noticed that people here, even though others say that people from the mountain areas are uncultivated, and I don't know what else they say… yes, they haven't always had electricity, they haven't always had television either, but they have always had their work, they had to work to survive and in exchange they had that kindness because ones without the others, they had to help each other, you know, and… this is what I'm attached to… even now people greet each other. (Ioan)

Respondents through their work responsibilities show their care and attachment to fellow community members. Feelings of attachment to the social environment translate to behavior directed at protecting the social structure of the community.

> I care about the people, their well-being, because of this we even allow them to pick up non-timber forest products and use them… mushrooms, we didn't, we did not follow a campaign against them… because they are poor families, without any income and because of this we did not force them, a proof is that we don't even have penalties, fines, given to the local population, we are in an open partnership with them, we helped them with timber for house consumption, and with this we answer to their requests. (Ioana)

The respondents' attachment is embedded in different dimensions of community, and the following quote further reveals that certain dimensions of attachment might have higher personal relevance than other. Furthermore, attachment and care for one aspect of the community determines positive connections and relevance for other dimensions of community that strongly relate to the social life.

> … first and foremost I care about the citizens, because I work with them, of course I also care very much about the cultural and historical values we have in the commune, because thanks Goodness we have them… (Horea)

Attachment to the social environment also relates to the family background, respondents attaching strong meaning to the place due to genealogical roots in the area. Notions such as "place of birth", "this being a home" were strongly emphasized in the narratives.

> I have strong roots in the area, being a local, my whole family is from the area, thus, of course I like this area, I like it, it's my home, it's my place, I have here all the properties I inherited from my parents, grandparents, and so forth… yes. (Florenta)

> I have lots of relatives here, my grandparents where from here, my parents, my grandparents, both from my mothers and fathers side, my parents also… so I have relatives in this village. (Adrian)

Attachment to the natural environment. The natural environment emerged as a distinct dimension of attachment, the respondents talked about the natural environment in very distinct terms. It's worth emphasizing that attachment to the natural environment goes beyond the park and its beauty, the whole local landscape contributing to the connections people have to their natural environment. Respondents noted how the natural environment supports their livelihood and the livelihood of others in the community. The relationships developed between the residents and nature seems to emerge from the ability of the natural environment to provide opportunities for relaxation and self-actualization.

> … for me going for a walk in the area, not necessarily in Retezat, I can go up here on the hill, Magura Zambrului, as we call it, it's a relaxation and, it totally changes me… so, I love this area very much… (Alexandru)

Respondents reflected on different aspects of the natural environment that permeates their emotional investment in the community. The respondents' indicated as being attached to different features in the natural environment, including the Retezat National Park adjacent to

their community. The natural beauty of the park was emphasized by the respondents in their narratives.

> The church and the Colt Fortress, and of course, Retezat National Park, because it's something that cannot be described in words, so if you go there it cannot be described in words, there are glacier lakes, it's a dream like… my understanding is that there are insects, birds, that cannot be found anywhere else and there is forest totally not touched by humans, there are glacier lakes… and I like it very much, there is vegetation and there is so much silence and if you go there you recharge your batteries like nowhere else, like nowhere else… (Miruna)

> Of course, Retezat National Park, yes, so Retezat and consequently the National Park… because I said before I grew up here as a child, I grew up here in the mountains, in the National Park… (George)

The respondents in their description of the natural environment constantly depicted the importance of nature through their life and primarily how much it meant for their childhood. Furthermore, the ability of nature to provide and support their existence was also highlighted, being viewed at the foundation of the community well-being. The area and the location of the community provided opportunities for constant interaction with the natural environment, being an object of appreciation derived from constant activities strongly connected with the natural environment.

> I love the nature I spent my childhood with and being with the cattle while grazing since I was 8, 9 years old, our parents sent us with the cattle on the hill… and we have beautiful hills here, near the village, the pasture is near the village, the plains are close to the village, we were going there to help our parents with the land, on the hills we spent most of the time with the cattle, that was when all of us were going, almost all of us… together… the nature, the forest, the water bodies, the wildlife in the forest, from school since I was a kid I loved these things which I still admire, and it happened for me, I was lucky to be close to them quite often… (Verde)

Remarks capturing attachment to the natural environment depicted the personal significance of the current place of residence as a place of birth. Experiences accumulated over the years in the context of residence and interaction with the natural environment encroach feelings of attachment and care.

> I care about it as a place of my origin (a birthplace) and because of its beauty, being adjacent to Retezat, being adjacent to some very beautiful water bodies (rivers), Streiu, Rau Mare… what can I say, as any birthplace to which you have been attached ones, it attracts you as it attracted me when I came back here after my retirement and I started to build a house, but being adjacent to Retezat, not with the park, not only with the park, with Retezat in his whole integrity is… it's for a passion and a great enjoyment considering that is neglected by some authorities… It's just the passion and love for the area and for this land, for my birthplace (my place of origin) that brought me here, I still live some disappointments from this point of view… (Veronica)

Furthermore, respondents talked about their affinity for the land and continuous investment in continuing activities that support their livelihood. Primarily, they emphasized the importance they attach to their property, the land and the agricultural practices they engage in. In addition, taking care of the livestock has been and continues to be an essential aspect of the local life. Much of the emotional connections with the land seem to emerge more from an identity dimension, and less a dependence response, an aspect reflected by comments that underscore personal efforts to cultivate the land and taking care of the livestock even though these activities are not always efficient or beneficial.

> … the livestock, I have a retirement fund, I have a good retirement fund after 40 years of work at Paroseni thermal power station and still I love to work, having livestock… having livestock and gathering the hay that's what I like… (Minodora)

> … Lots of money from our big salary, small how it is, we are using in agriculture and we end up making nothing out of it, yes… just because we care and we want the land to be taken care of, yes… (Alun)

> It has been transmitted from generation to generation this love for taking care of the animals and even now there is this preoccupation in our community… (Ion)

Attachment to the institutional environment. The institutional environment was depicted as playing a role in shaping attachment to the community. Respondents emphasized their care and concern for the local institutions, such as school, church, clinic, any the business environment that provides opportunities for jobs. The importance of the local church was emphasized in the narratives, as an institutional place that brings people together, people being

emotionally involved with the church, volunteering for it and putting their efforts to be a better place for the community to meet.

> … the church, I'm telling you… I sing in the church, I'm a church singer; my dad use to sing as well, this is what I am attached to because during the religious service nobody lies… (Mihai)

> … I have been involved with the church to make it beautiful and nice-looking; we have done some renovations at school and the local cultural center, working on this with the city hall, it looks good now, now it's the infrastructure that upsets us the most, we wish they could pave the roads… (Paula)

Furthermore, institutional attachment evolves from personal occupation. Respondents mentioning the school and the local clinic, as well as the business environment as having special meaning for them and the benefits if brings to the well being of the community.

> … working in education I have always been interested in school, I have always wanted the school to be better than anything else… I have always wanted the school to be better than at my house, unfortunately I could not accomplish everything I wanted and now some of the things I wanted were accomplished… so, the school, and other local institutions… the church, yes. (Bogdan)

> I care about everything; I care about everything that moves around here starting from the smallest thing, from a small bar, a job for somebody, to some of the most important local institutions, of course, because I'm a school servant I'm interested primarily in school, church, local council, the city hall, local forest center, all of them affect us in one way or another and motivate us to have an attitude or another… (Florenta)

The respondents emphasized the importance of the institutional environment in bringing people together. Aspects of community (e.g. elements of infrastructure) that gather common interest were emphasized.

> … There are still a few who care about the good things, people who are still working in the natural areas, for example foresters, hunters, they still care about the good and beautiful things… things of common interest which each of us use, fixing the road, water, the pasture, and everything we use in common, because this was… it was keeping us together, willingly or unwillingly … these things, things we share in common … (Verde)

Attachment to the cultural environment. The cultural environment within the community was depicted as contributing to the emotional connections with the place. An emphasis was attributed to the local traditions and customs that historically defined and strengthened the social environment. The local residents do identify themselves through their past and history, and value its contribution to the local identity and see the importance of keeping them vivid and transmitting them from generation to generation.

> I think is important to protect/ guard our archaic way of life, our old, our old traditions which are very beautiful and I care a lot about them, these old undertakings I think it will be a shame to be lost because they are not that valuable financially, they do not bring money and it takes a lot of time, and people are more oriented towards money making activities, to be honest, even me… I used to have animals, I was taking care of them, no, it's not worth it… I don't know what the future will look like for these activities but I hope they won't vanish… but with grazing it's almost over, because is not worth it… (Eugen)

> …and I love the folklore, the beautiful songs, as we have our Romanian "doina" who is considered to be the strongest (the most vivid) expression of the Romanian spirit, and it is… the patriotic songs, I love history a lot, I like it very much considering that we are in a place with a lot of history, here in our garden we have the ruins of a Romanian aristocrat, we found coins, we found objects who are currently at the museum in Deva, from the museum they came to us, you can see these ones here, these are fossils of dinosaurs … it was me who took care of this as well, because while I was with the animals in the mountains I found these fossils and because I loved these kind of things I took them… I loved these kinds of things, and I still admire and love them, I end up remaining the custodian of the area… (Verde)

Attachment to the cultural environment has the ability to determine personal interest in engaging in activities that will ultimately protect the local traditions and further instill community pride.

> We try to maintain our traditions, folklore, or to bring them back into actuality, because there was a period of a few years now when these activities have been totally ignored, not taken care of, this is what I care about, to put into value everything that is beautiful in our commune. (Horea)

Interlinked nature of the community attachment dimensions. It could be noticed from the respondents narratives that the dimensionality of the community attachment construct

captures in addition to distinct dimensions, the interplay of the different facets of attachment. This suggests that such dimensions are distinct but in the same time they do share common connotations, links and interrelationships existing between the different facets of the construct. The natural and social dimensions are strongly linked, primarily considering the importance of the natural resources for sustaining livelihoods.

> The people are very good, people with fear of God, hard-working people, assiduous, they like to take care of the livestock, they care about the forest, because this was there occupation here, the parents raised us this way and they grew up like this as well, in the future we want to protect as much as we can, to protect the nature the most because it gives us everything. (Stefan)

The area in its entity encompasses not only the natural environment, but also the social structure which is an integral part of the environmental elements that sustain the welfare of these communities. Much of the attachment evolves from love for nature and love of the socio-cultural life, elements rooted in years of persistence in the area that give distinctiveness and enforce connections to the community in its entity.

> Primarily, the beauty of the area keeps me here… there are people from the mountain areas, and as you could see it's very dispersed, spread, who persisted here even though… how should I say it… under the communist times the village was totally destroyed. (Stefan)

> For a short period of time, 20 years, I have been gone from the area in a different place… I came back because I couldn't make it (could not resist there), I was attached to the land so to speak, to the area, of what the whole mountain represents and everything else… (Alexandru)

The multiple facets of community attachment even if distinct they do come together and define an overall personal attachment to the community. The respondents narratives emphasize that community attachment is embedded in the multiple dimensions of community that ultimately create the emotional bond at the foundation of attachment. Distinct objects of attachment ultimately permeate the residents' sentimental and emotional response to the community, even if sometimes such objects are not easily distinguished.

> I don't know if at this point I could, I don't know what to say, but I believe I could not live anywhere else… to be honest, I am attached. (Mihnea)

Supported by the previous remarks, it can be argued that the community attachment construct has a hierarchical structure, different environmental dimensions being at the foundation of defining emotional investment in the community.

Discussion and Conclusions

The multidimensionality of the community attachment construct was assessed in this study. More specifically, the focus was on identifying if different facets of community attachment (attachment to the social and natural environment) are distinctively predicted by length of residence, social interaction, and socio-demographic characteristics. This analysis was complemented by a qualitative exploration of the community attachment construct to investigate the extent to which we could speak of other dimensions of community attachment.

The quantitative results indicate that attachment to the social and natural environment are distinctively predicted by variables commonly associated with community attachment. Social interaction was found to have a stronger effect on park attachment, while length of residence had a stronger association with attachment to the social environment. The reduce effect of length of residence on park attachment further supports previous assertions that one can decide to live in a community and rapidly become attached to the natural environment (McCool & Martin, 1994; Brehm et al., 2006). Furthermore, the stronger association of social interaction with park attachment could be the result of social groups and shared experiences that relate to the park and the natural environment in general. The park surrounding these rural communities and the natural resources in general has strong implications for the residents due to their relevance for their livelihoods. Activities, such as agriculture, livestock raising, and even hiking have the ability to bring people together and interact on topics of common interest. This assertion emerged for the

qualitative analysis, the respondents' narratives constantly depicting the natural environment as an integral part of their existence.

Family status was not found to have a significant effect on attachment to the social environment and park attachment. This finding suggests that being in a relationship does not make any difference for the attachment people held toward their social and natural environment. Ultimately, other factors having greater ability in predicting personal feelings of attachment and belonging. In addition, a significant negative effect was found between the number of children under 18 years in the household and the strength of attachment to the social environment. Drawing on the social network literature and community interaction, which suggest that stronger ties (family ties) have weaker influence on community attachment (Beggs, Hurlbert, & Haines, 1996), it could be argued that larger families with children will tend to devote more of their time to their family and have weaker level of interaction in the community. Previous literature underscored that the stronger the family ties are the weaker the level of interaction in the community is and thus ultimately a reduced level of attachment to the community (Brennan, 2006; Bridger & Alter, 2008; Summers, 1986; Wilkinson, 1991). The number of children in the household was found not to have an effect on attachment to the park, further reinforcing that attachment to community lay in the multiple facets of the community and various personal conditions distinctly facilitating the development of attachment to different dimensions of the community.

Education and income, as a reflection of social position in the community were two other measures assessed in this study. Education was found to have a significant negative effect on attachment to the social environment, while income had a significant negative influence on attachment to the park. Previous literature underscored that local concentration of network ties

should be higher among persons of lower social position (e.g., persons with lower level of education and income) (Beggs, Hurlbert, & Haines, 1996; Campbell et al., 1986; Goudy 1990). Thus, the implication of education and income on attachment has consistent effects, education being inversely related to attachment to the social environment and income having a negative influence on attachment to the park. Beggs, Hurlbert, & Haines (1996) found income as having a negative net effect on local sentiments, suggesting that individuals with higher incomes might hold higher expectations for their community and its leaders, and therefore, they may tend to be more critical of the community than less affluent persons. In the case of this study, income was found to significantly affect park attachment. Ultimately, the results suggest that social position does play a role in shaping attachment to the social and natural environments, with education having greater impact on social attachment and income influencing park attachment.

The results of the quantitative part of the study revealed the distinct nature of the two dimensions of community attachment, different predictors being more powerful than others in predicting attachment to the social and natural environment. Consequently, the importance of incorporating measures of attachment to the natural environment in the broader assessment of community attachment is emphasized. In various contexts and settings, the natural environment might be a stronger dimension of attachment having the ability to generate powerful emotional responses. Simply acknowledging that the natural dimension does exist and as is most often embedded in the social environment, as suggested by Brehm (2007) is not sufficient, there is much more information that can be captured by integrating assessments of various dimension of community attachment. This study reveals that park attachment, as a reflection of attachment to the natural environment, is strongly correlated with attachment to the social environment emphasizing its role in tangentially supporting the social dynamics that are at the foundation of

the community. The correlation between the two dimensions further supported the shared meanings that the two dimensions capture, finding strongly supported by the qualitative part of the study.

The multidimensionality of the community attachment construct and the intertwined nature of the relationship between the emerging dimensions were underscored in the residents' narratives. Four distinct dimensions of attachment emerged from the textual analysis, attachment to the natural, social, institutional and cultural environment. While distinct, these dimensions of attachment do have an intertwined nature that makes them worthy of attention and further assessment. Brehm (2007) talked about the complexity of the construct, and primarily discussed two dimensions of attachment, the natural and social environment and the tangled relationship of the two dimensions. This study brings into attention two more dimensions of attachment, the institutional and cultural environment. Respondents emphasized their attachment to the social and natural environment, their connections being shaped by various experiences some that go back to their childhood when family tasks required greater interaction with the social and the natural environment. Various activities (e.g. agriculture, livestock) were depicting as being at the roots of attachment, their ability to bring people together and closer to the social and natural environment was emphasized. Furthermore, the respondents' narratives suggest that much of these activities have been lost over the years in these communities, thus a weakened interaction being the current reality with direct implications for the strength of the connections with the social and natural environment. Thus, such interactions should be encouraged in the future, primarily for children and their connection and interactions with the surrounding environment.

Attachment and care was also found to emerge from job responsibilities that are locally based, suggesting that people that have local responsibilities do develop strong connections to

the medium that relates to their job environment. Such feelings of attachment emerging from direct engagement in activities that relate to job responsibilities might ultimately have implication for empowerment, local engagement and intentions to act on local concerns. Thus, it is important to provide employment opportunities for residents' in contexts that directly relate to the community (e.g. local school, hospital, national park). Furthermore, the residents of the communities adjacent to the park have strong roots in the area, generation after generation living in the same community fact that shows their strong connection with the land and their commitment to the area.

On the basis of this study, a refinement of the community attachment measurement is needed that better captures the multidimensionality of the construct. This study emphasizes the importance of understanding how different dimensions of attachment are shaped and distinctively contribute to community attachment. The importance of depicting the connections people have to the multiple dimensions of their environment derives from current understanding that attachment is relevant for development, planning purposes, and conflict resolution. People are attached to various community attributes that they care about and ultimately want to protect. Thus, assessments focusing on understanding the multiple facets of community attachment can provide deeper understandings of community aspects and their contribution to local attachment. Informed programs could be developed aimed at strengthening various dimensions of the community that lack attachment and public care through the establishment of channels of interaction and communication. This further suggests a need to understand how various dimensions of community attachment are formed, how are they fluctuating and how separately predict various attitudinal and behavioral patterns.

Listening to the local residents and understanding their attachments within the community context so that informed decision could be made and in the long run avoid conflicts is paramount. Warren (1987) emphasized the importance of understanding the shared interests' in particular local geographical attributes, due to their implication for community togetherness that ultimately is a crucial element in the formation and continuation of community. Thus, considering the multiple facets of the community attachment construct is questionable how people become attached on dimension over the other in the context of the community, and what happens when people are not socially attached to their environment, what forms of attachment do they develop.

Community attachment is a construct constantly used in capturing people's sense of belonging and connection with the surrounding environment. Residence and rootedness were constantly viewed as key elements that define community attachment, and personal interest in the local. This study tested a series of variables in their ability to predict two distinct dimensions of community attachment, and the results showed that different personal and social characteristics have distinct influence on community attachment dimensions. Thus, much more information was captured in relation to community attachment. The correlation between the two dimensions (the natural and social environment) further supports the intertwined relationship between the two dimensions. This was supported by the qualitative analysis, which revealed four dimensions of attachment that share common meanings and interconnections. Based on these results, the importance of developing a measurement that focuses on the hierarchical nature of the construct is emphasized. The multiple dimensions of attachment building on each other to ultimately define an overall attachment to the community, with its foundations being rooted in multiple local aspects.

Table 4-1. Fit indices for measurement model and SEM model

Construct	χ^2	df	χ^2 / df	RMSEA	CFI
Measurement Model	133.12	64	2.08	0.064	0.976
Measurement Model with Second Order Factor	139.99	67	2.09	0.065	0.975
SEM	139.09	68	2.05	0.063	0.975

Table 4-2. Summary results for measurement model

Factors and items	Mean	SD	λ	α	CR	AVE
Social attachment				.773	.891	.546
I feel like I belong in this community	4.50	.842	.76*			
The associations that I have with other people in this community mean a lot to me	4.52	.762	.69*			
Given the opportunity, I would move out of this community	3.82	1.520	.67*			
I feel loyal to the people in this community	4.17	1.034	.77*			
I plan to remain a resident of this community for a number of years	4.42	1.004	.87*			
I like to think of myself as similar to the people who live in this community	3.97	1.249	.65*			
Park attachment				.903	.967	.808
Retezat National Park means a lot to me	4.54	.784	.95*			
I am very attached to Retezat National Park	4.18	.992	.94*			
Retezat National Park is very important to me	4.33	.910	.95*			
I identify strongly with the Retezat National Park	3.78	1.178	.66*			
I get many personal benefits out of living near Retezat National Park	3.72	1.280	.84*			
I enjoy living near Retezat National Park	4.54	.750	.87*			
I get lots of satisfaction out of living near Retezat National Park	4.17	.996	.80*			
Interactions with friends				.750	.786	.650
Acquaintances	4.85	1.606	.85*			
Close Friends	5.40	1.573	.76*			
Interactions with public officials	3.54	1.790	.83*	N/A	N/A	N/A
Interactions with park				.682	.779	.641
Retezat National Park Staff	2.71	1.821	.93*			
Tourists	3.09	1.816	.65*			

Note. * = t-statistic (> 1.96) at a significance level of $p<0.05$; λ = factor loadings; α = Cronbach's alpha coefficients; CR = composite reliability; AVE = average variance extracted.

Table 4-3. Correlations among factors (based on the measurement model)

	1	2	3	4	5	6	7	8	9	10	11
1. Social attachment	1.00										
2. Park attachment	.561*	1.00									
3. Length residence	.416*	.230*	1.00								
4. Family status	.186	.149	.247*	1.00							
5. Kids under 18	-.126**	.081	-.155*	-.104	1.00						
6. Level of education	-.198**	-.078	-.093	.020	-.143	1.00					
7. Income	-.054	-.233*	.007	.060	.130	.302*	1.00				
8. Friends interaction	.274*	.340*	.036	-.004	.056	.054	.042	1.00			
9. Public officials interaction	.311*	.387*	.041	-.004	.064	.062	.047	.565*	1.00		
10. Park interaction	.261*	.325*	.034	-.003	.054	.052	.040	.474*	.540*	1.00	
11. Social interaction	.388*	.483*	.051	-.005	.080	.077	.059	.705*	.802*	.673*	1.00

*Correlation significant $p < .001$; **Correlation significant $p < .05$.

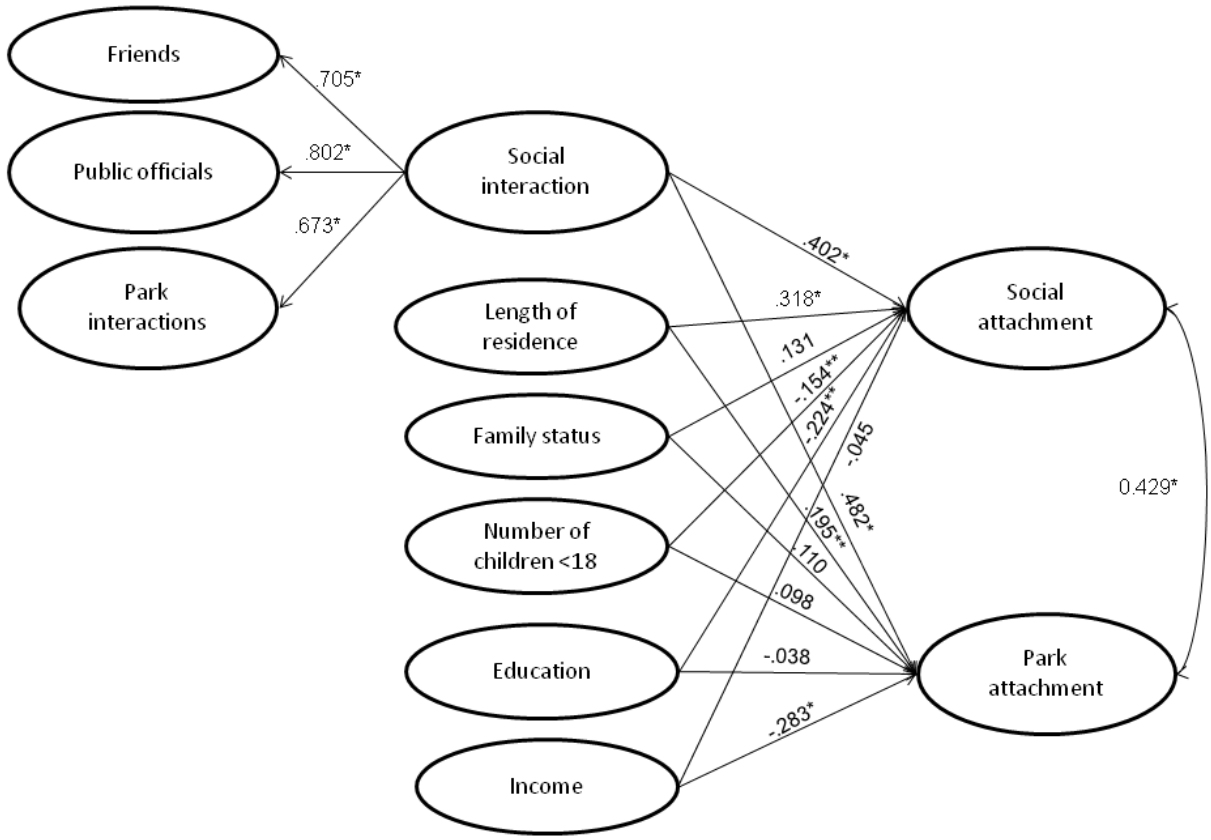

Figure 4-1. A structural equation model test

CHAPTER 5
THE IMPLICATIONS OF AGE ON AFFECTIVE AND ATTITUDINAL ENVIRONMENTAL RESPONSE

Introduction

Romania is an Eastern European country going through a transition from a communistic to a democratic society with a market-based economy. Institutional renewal, massive restructuring and privatization are characterizing this period. In this process, demographic and social-economic changes are taking place with direct impacts on citizens' attitudes and behaviors (Roman & Roman, 2003). Romania is a country rich in natural and cultural resources. Due to a historical focus on protecting natural habitats, Romania still has a large variety of forest fauna species, including 60% of all European brown bears and 40% of the European wolves (Ioras, 2003). After 1989, when major changes in land ownership started to be implemented, threats to biodiversity sharply increased. Excessive exploitation of natural resources became a real threat to biodiversity in Romania. Furthermore, Law 1 of 2000 and 247 of 2005 provided legal rights for use and administration of forests and alpine pastures by private owners and local associations. This situation generated increased concerns over habitat fragmentation and preservation, especially on forest lands because of land ownership changes (UNDP, 2001).

The literature on parks and protected areas management underscores that successful management endeavors and environmental sustainability depend on the cooperation and support of local communities (Brandon & Wells, 1992; de Beer & Marais, 2005; Hall, 2004). Actively involving local communities in the management of protected areas has been associated with an increased awareness in terms of the benefits of biodiversity conservation, a more responsible use of resources, and ultimately enhanced livelihoods and welfare of local people (Pagdee et al., 2006). The lack of community interest and participation in biodiversity conservation has been discussed as a major constraint for natural resources management in Romania. This situation has

been primarily attributed to a low sense of community and collective responsibility that characterizes Romanian rural communities (PJB Associates, 2006). Furthermore, researchers constantly attributed residents' apathy, lack of trust and non-participation in local decision-making in Romania to a history of top-down, centralized system political system (Oostenbrink & Kosterink, 2005; Popescu, 1993).

Based on a study conducted in Retezat National Park to better understand the co-management framework employed by the park, van Hal (2006) emphasized a lack of common interest in conservation in the area. Similarly, van den Kuijs & Bergh (2006) emphasized a lack of conservation attitude in communities surrounding Retezat National Park as well as a lack of care for the environment. These two studies used a qualitative approach in understanding the park administrative efforts, depicting primarily the voices of the park administrative staff and park stakeholders (e.g. lodge owners, travel operators, mayors of local communities) but not directly the views of citizens from local communities. To date, little is known about the relationships Romanian residents' have with their neighboring natural environments and how they might differ across age groups.

In the mist of weak understandings of Romanian rural residents' relationships with neighboring environments, this study seeks to explore the affective and attitudinal responses of people living adjacent to a national park towards their neighboring natural environments. Considering lack of care for the environment has been previously questioned, the connections people living adjacent to the park have with nature and their attachments to the park were assessed. Furthermore, a better understanding of attitudes towards conservation and pro-environmental civic engagement is warrant. Thus, measures of attitudes towards conservation,

pro-environmental civic engagement and perceived environmental responsibility were assessed to capture attitudinal response.

Roberts and Simpson (1993) viewed the communism period as having a strong influence on people's attitudes and relations with social and natural environments. Thus, to better depict the current situation, age group differences were assessed in terms of connection to nature, park attachment, conservation attitudes, and attitudes towards pro-environmental civic engagement and perceived environmental responsibility. This study questions the extent to which young adults (18 to 30 years) which have lived primarily in a post-communist period show different response patterns towards nature as compared with middle age adults (31 to 50 years) and older adults (51 to 80 years). Three multivariate analysis of variance (MANOVA) models were assessed. The first model captured an affective response to nature and the park, the second model assessed attitudes towards conservation, and the third model captured behavioral attitudes related to pro-environmental civic engagement and perceived environmental responsibility. No hypotheses are made regarding group differences due to the unique context of the study and lack of empirical precedents on which to base them. A qualitative exploration and introspection depicting the current situation as well as historical insights complement the quantitative findings.

Literature Review

Fishbein and Ajzen in the 1970's postulated that behavioral intentions are a result of the attitudes towards the behavior (behavior belief), perceived social pressure to engage in a particular behavior (normative belief) and strength of the desire to comply with the norm. Triandis in the 1980's emphasized the importance of affect in shaping behavioral intentions. The environmental behavior literature has employed several constructs to assess pro-environmental behavior intentions. Affective as well as attitudinal related constructs were employed. Connections to nature and place attachments have been constantly linked to pro-environmental

behaviors, due to an affective component stimulating motivation and commitment for engagement. To better account for changes in pro-environmental behavioral intentions, general measures of attitudes have been employed, as well as measures of attitudes towards specific behaviors. Those attitudes that strictly relate to the expected behavior have been found as having a higher predictive power in terms of behavioral intentions. Consequently, this study assessed residents' affective response towards nature and a park, attitudes towards conservation, a more general attitudinal measure, and attitudes strictly related to the expected behavior (pro-environmental civic engagement). The following paragraphs discuss the five constructs employed in this study.

Connection to Nature

Connection to nature is often portrayed as a sense of oneness with nature. The connection people have with nature has been discussed as being an important factor in explaining environmentally responsible behavior (Schultz et al., 2004). The feelings people have for nature shape personal identity, values and attitudes, and ultimately influence behavior (Driver & Ajzen, 1996; Mannell, 1996; Roggenbuck & Driver, 2000). The main assumption made in regard to peoples' connection to nature and behaviors, underscores that when people are connected to nature, they intrinsically care for it and act to protect and preserve it (Pennisi, 2007).

Pennisi (2007) depicted values and identity as the two core aspects of connection to nature. The interconnectivity between personal identity, values, attitudes, and ultimately behaviors has been previously accounted for (Clayton, 2003; Clayton & Opotow, 2003; Hitlin, 2003; Vaske & Donnelly, 1999). In the values-attitudes hierarchy, values are considered to be more stable and they represent the core of someone's belief system (Stern & Dietz, 1994; Vaske & Donnelly, 1999). Therefore, connection to nature as a reflection of personal identity and values represents an important dimension for explaining pro-environmental behavior.

Several scales measuring connection to nature have been developed. These scales include the Connectedness to Nature Scale (CNS) (Mayer & Frantz, 2004), single-item Venn diagram measure of Inclusiveness of Self (Schultz, 2002), and a measure of environmental identity (Clayton, 2003). These measures capture the construct as unidimensional, fact that has been contradicted by recent work done by Pennisi (2007). Furthermore, Perrin & Benassi (2009) argued that CNS is a measure of people's beliefs about their connection to nature, and less a measure of emotional connection. Thus, the scale developed by Pennisi (2007) was employed.

Louv (2006) underscored a weakened connection of the younger generation with the natural environment, due to technological advances as well as lack of interactions with nature. Furthermore, several authors argued that, as societies developed, humans got more distant, both psychologically and physically, from the natural world (Sheldrake, 1999; Vining, 2003).

Attachment to the Park

Extensive literature exists that focuses on place based attachments, sense of place and place attachment (Altman & Low, 1992; Kyle et al., 2004; Williams et al., 1992; Williams & Vaske, 2003). Place attachment is defined as an emotional bond between people and places (Altman & Low, 1992). The personal bond between people and settings has constantly gathered academic attention due to the meanings, values, beliefs, and symbols that people associate with places and their relevance for identity and other personal benefits (Brown & Perkins, 1992; Stedman, 2003; Tuan, 1974).

The relationship between people and places has been discussed as relying on subjective evaluations of social features (Woldoff, 2002), physical features (Stokols & Shumaker, 1981), or both (Brown & Perkins, 1992; Mesch & Manor, 1998; Riger & Lavrakas, 1981). Lawton (1990) emphasized that highly attached residents are often older and have stronger relations and interactions with community members. Brown & Perkins (1992) viewed place attachments as

being nourished by interactions with the social and natural environment. Rollero & De Piccoli (2010) underscored the role of age for place attachment, but at the same time, argued that such relationships might be mediated by length of residence. However, other studies show that feelings of attachment to place can develop for physical spaces with which individuals have had recent contact (Bonaiuto et al., 1999; Harris, Brown, & Werner, 1996: Mesch & Manor, 1998).

Positive relationships have been found between place attachment and attitudes toward relevant environmental concerns or local conflicts over land use management (Cross, 2003; Vorkinn & Riese, 2001; Williams et al., 1992; Brehm et al., 2006) and specific environmental behaviors (Bott, Cantrill, & Myers, 2003; Vaske and Kobrin, 2001). The social action literature provides consistent evidence that strong attachment correlates to increased motivation for action, local participation and civic behaviors with direct implications for the well-being of the social and natural environment (Lewicka, 2005; Van Vugt, 2001).

Place attachment has been assessed at different levels of scale. Vorkinn & Riese (2001) measured place attachment as a general measure of attachment to municipality, as well as a measure of attachment to five areas neighboring these local municipalities. Cross (2003) talked about attachment to the bioregion and its attributes, for example a local park. Manzo (2005) argued that the types of places individuals find important represent a broad range from physical settings, to built environments such as houses, streets, certain buildings, and non-residential indoor settings, to natural environments such as lakes, parks, trails, forests, and mountains. Considering that fewer studies have been conducting looking at the attachment people have towards a park neighboring their communities, this study employed a measure of attachment to a park and not an overall attachment to a place of residence.

Notions of dependence and identity have been associated with attachment to a place. Thus, resource based sociologists primarily employed a measure of place attachment that captured two dimensions of attachment: place dependence and place identity (Kyle et al. 2004; Williams et al., 1992). Place dependence has been discussed as centering on a functional attachment to place, while place identity reflecting an emotional attachment that relates to the symbolic meaning of the place.

Conservation Attitudes

Jennings & Nickerson (2006) defined attitudes as an enduring predisposition toward particular aspects of one's environment. This predisposition is translated in the way people think, feel, and behave. The importance of understanding attitudes evolves from the relationship between attitudes and behavior (Ajzen, 1991).

Researchers have frequently examined attitudes towards conservation of residents' living adjacent to protected areas. The perceived benefits achieved from conservation are often acknowledged as strong predictors of the residents' attitudes towards protected areas. Gadd (2005) confirmed that perceived benefits from conservation determined strong positive attitudes. However, Walpole & Goodwin (2001) identified that even though some of the respondents were highly benefiting from conservation through tourism, a positive relationship between the attained benefits from tourism and support for conservation was not observed as expected. Thus, the literature on people-park relationships suggests the importance of giving consideration to the type of experiences residents have with the park and its authorities.

It has been suggested that the type of residents' interactions with the authorities of a protected area could play an important role in shaping conservation attitudes (Kappelle, 2001; Robertson & Lawes, 2005). Ormsby & Kaplin (2005) identified interaction and benefits as two factors influencing residents' perceptions of the park. Attitudes towards protected areas and

conservation in general have been viewed as being quite heterogeneous in nature; being representative of group affiliation, as well as socio-demographic characteristics (Infield & Namara, 2001; Weladji, Moe, & Vedeld, 2003).

Different measures have been employed in the literature to assess community attitudes towards conservation. Multidimensional scales have primarily been used, incorporating conservation awareness dimensions, perceptions on conservation benefits, and management considerations (Infield & Namara, 2001; McFarlane & Boxall, 2003; Nguyen, 2007).

Attitudes towards Pro-environmental Civic Engagement

Kollmuss & Agyeman (2002) defined pro-environmental behavior as behavior consciously aimed at minimizing one's negative impact on natural and built environments. Pro-environmental behaviors can take different forms, and accordingly, different factors can differently shape or influence each specific type of behavior. The literature makes a distinction between political behaviors, as compared with behaviors that relate with consumption (e.g. energy saving, green consumer behaviors) (Aoyagi-Usui, Vinken, & Kuribayashi, 2003). Stern (2000) provides a more detailed classification of pro-environmental behaviors, identifying several different types of pro-environmental behaviors such as: environmental activism, environmental citizenship behavior (active involvement in environmental issues, public participation that with an influence on policy making, decision making) and private sphere environmentalism (e.g. consumer behavior, automobile, energy use, green consumerism etc.).

Stern (2000) underscored that environmental citizenship behavior is primarily influenced by general environmental attitudes, beliefs, and perceptions of costs and benefits. Socio-demographic characteristics were generally found to have a weak direct influence on behavior, but the literature shows that personal characteristics do have a significant influence on values and attitudes (McFarlane & Boxall, 2003). Theodori & Luloff (2002) found that highly educated,

young, with higher income respondents, and those with liberal political ideologies, were more likely to have proactive positions on environmental issues. Furthermore, those with proactive positions on environmental issues were reported as being more pro-environmentally engaged.

Based on Stern's (2000) classification of environmental behaviors, the environmental behaviors of interest in this study, relates to what the author describes as environmental citizenship behaviors. Primarily, the focus is on behaviors that relates to public participation and active involvement in local environmental concerns.

Perceived Environmental Responsibility

The literature suggests that people with a greater sense of personal responsibility are more likely to engage in environmentally responsible behaviors (Kollmuss & Agyeman, 2002). Fransson & Garling (1999) defined environmental responsibility as individuals' sense of obligation or duty to take actions against environmental deterioration in general, or specific environmental concerns. Perceived environmental responsibility has been identified in several behavioral models as a significant determinant of behavioral intentions (Ajzen, 1991; Hines et al., 1987; Triandis, 1980).

A strong relationship has constantly been found between environmental responsibility and behaviors that have implications for the well-being of the environment (Garling et al., 2003; Van Liere & Dunlap, 1978; Vining & Ebreo, 1992). Garling et al. (2003) emphasized that in order for a behavior to be performed, awareness of responsibility to perform the behavior stimulates a moral obligation to engage in performing the behavior.

The social context has been viewed as shaping ascribed responsibility for pro-environmental engagement. Garling et al. (2003) identified pro-environmental behavioral intentions as being a reflection of personal norms, ascribed responsibility, and awareness of consequences for oneself, others, and for the biosphere. Therefore, perceived personal

responsibility has been primarily suggested as being a strong predictor for behaviors that have collective implications (e.g. participation in public meetings), as compared to behaviors that relate to self-interest (e.g. reducing water use).

Barr & Gilg (2007) found the social context and alternative perceptions of trust and responsibilities within localities as having a mediating role in shaping public understandings of sustainability and environmental issues. In this study, perceived environmental responsibility is primarily relevant, considering the Romanian social context that has been shaped by historical events that primarily emphasized public/governmental responsibility as compared to collective or personal responsibility.

Methods

Study Area

Retezat National Park (RNP) was designated in 1935, being the first national park established in Romania. In 1979, RNP was declared an International Biosphere Reserve under the UNESCO Man and Biosphere program and in 2004 RNP received its Protected Area Network (PAN) Certification. Retezat National Park is located in the southwestern Carpathians, and the total surface of the park is 38,138 ha (RNP Management Plan, 2008). Within the park, there are more than twenty mountain peaks 2,000 meters or higher, in addition to eighty lakes of glacial origin. There are more than 1,100 species of plants, over 50 species of mammals including roe deer, chamois, lynx, bear, and otter and 168 recorded bird species including the golden eagle.

RNP was the first park in Romania with a management system in place (van Hal, 2006). The co-management framework initiated by RNP is perceived as being a model for other protected areas in Romania. A large portion of the park area (17,564 ha, 46%) is owned by the state, while local associations own the remainder of the land (20,574 ha). Of the 43 villages

adjacent to the park, 26 villages have grazing rights to alpine meadows, with their rights administered either through community based associations or local councils of the five communes to which the villages belong (Kuijs & Bergh, 2006). A commune is an administrative division in Romania encompassing one or more villages that share similar economic, socio-cultural, geographic and demographic conditions. The total population of these five communes was estimated at 14,006 inhabitants.

Communities rely on park resources primarily for grazing and the use of other natural resources such as wood, non-timber forest products, mushrooms, and medicinal plants. The major management concerns, as it relates to conservation, are related to overgrazing of the pasture areas and illegal wood harvesting (RNP Management Plan, 2008).

Measurements

Participants in this study were asked to express opinions on a series of questions about nature and Retezat National Park. The constructs used for this study included: connection to nature, attachment to the park, conservation attitudes, attitudes towards pro-environmental civic engagement, and perceived environmental responsibility. In addition to these constructs, several socio-demographic characteristic variables (age, gender, education, family status, length or residency, income) were included.

A general measure of connection to nature was measured using 18 items previously tested by Pennisi (2007). The items included captured five dimensions of connection to nature: admiration (3 items), spirituality (3 items), identity (4 items), sorrow (2 items), restoration (3 items), and fear (3 items). The eighteen items were measured on a five point Likert scale ranging from 1 to 5, where 1 = Strongly disagree; 3 = Neutral; 5 = Strongly agree. The respondents' attachment to Retezat National Park was measured using nine items on a five point Likert scale ranging from 1 to 5, where 1 = Strongly disagree; 3 = Neutral; 5 = Strongly agree. The items

captured two dimensions of attachment: place dependence and place identity (Kyle et al., 2004; Williams et al. 1992; Williams & Roggenbuck, 1989)

The respondents' attitudes towards conservation were measured based on their reactions to 18 items that were adopted from previous studies conducted by Infield & Namara (2001), Nguyen (2007) and McFarlane & Boxall (2003). These items capture three dimensions of conservation attitudes: conservation awareness (6 items), conservation benefits (7 items), and management considerations (5 items). The items were measured on a five point Likert scale ranging from 1 to 5, where 1 = Strongly disagree; 3 = Neutral; 5 = Strongly agree.

Attitudes towards pro-environmental civic engagements were measured using 12 items adapted from previous work done by Garling et al. (2003) and Halpenny (2006). The items were measured on a five point Likert scale ranging from 1 to 5, where 1 = Not at all effective; 3 = Sometimes effective; 5 = Always effective. Perceived environmental responsibility was examined on the basis of the respondents' reaction to one statement that pertains to personal environmental responsibility (Garling et al., 2003). The question was assessed using a five point Likert scale ranging from 1 to 5, where 1 = Totally disagree; 3 = Neither agree nor disagree; 5 = Totally agree. Individual level socio-demographics included age (1=18 to 30 years; 2=31 to 50 years; 3=51 to 80 years), gender (1=Male; 2=Female); number of children under 18 years (frequency from 1 to 5 children), educational attainment (1=Elementary school or less; 2=High school graduate; 3=Post high school education), length of residence (open ended) and monthly household income (1=Almost no income to 7=More than 2,000 RON; ~US $661).

Data Collection

Rural communities adjacent to Retezat National Park belong to five communes encompassing 43 villages with a total population estimated at 14,009 adult residents. Two villages dissimilar in size from each commune were selected, to assure representation of each

commune in the final sample. Nine communities (one commune had only one village) were selected for this study using multistage random sampling. The nine villages selected have a population of 4,232 persons residing in 1,159 private households. Multiple strategies to assure face and content validity were utilized including a review by a panel of 3 survey experts, translation and retranslation by two Romanian natives and a review of the survey by park staff.

Cross-sectional data was collected from 260 residents during June – October 2009 using face to face interviews (68% response rate) and mail survey (9% response rate). Systematic sampling with a random start was used to select participants for face to face interviews. Due to small community sizes and the challenge of finding people at home, generally, every other household was selected. Adults 18 or older were asked to participate, and questions were asked and responses recorded by an interviewer. In addition, 230 mail surveys were sent to four communities where residents were not at home or interviewer safety was an issue.

Data Analysis

Data analyses were performed following four stages. First, descriptive statistics were computed for the variables used in the study using the Statistical Package for the Social Sciences (SPSS) version 18.0. Second, the data collected was screened and the critical assumptions underlying the statistical techniques employed were assessed. Third, individual items were examined using Confirmatory Factor Analysis (CFA) and the measurement model for constructs included in the study was estimated using MPLUS version 5.21 to determine how well the indicators captured their specific constructs and the ability of the respondents to differentiate between constructs (Hair et al., 2006). CFA was assessed using the WLSMV (weighted least squares mean and variance adjusted) method of estimation, method recommended for categorical ordinal data (Muthen et al., 1997). Forth, three multivariate analysis of variance (MANOVA) models were assessed.

The fit of the measurement models were assessed using multiple criteria. The chi-square test of model fit divided by the degrees of freedom was used as a reference criteria supplemented by the Root Mean Square Error of Approximation (RMSEA), Weighted Root Mean Square Residual (WRMR), Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI). RMSEA values equal to or less than .06 is indicative of a good model fit, values between .08 and .10 indicate acceptable model fit, and values higher than .10 are considered to be indicative of poor fit (Browne & Cudeck, 1992; MacCallum, Browne & Sugawara, 1996). CFI and TLI values equal to or greater than 0.95 also indicate good model fit (Hu & Bentler, 1999). The criterion for WRMR is a value less than 1.00 (Yu, 2002).

After each factor was confirmed by meeting the minimum standards listed above, a score for each factor was calculated using the average of the attributes loaded on the factor. Three multivariate analysis of variance (MANOVA) models were performed to test for any significant age group differences in the underlying dimensions. In the MANOVA procedure, the dependent variables for the first model capturing an affective response to nature and the park were two factors: connection to nature and attachment to the park. The dependent variables for the second model assessing general conservation attitudes were three factors: conservation awareness, conservation benefits and conservation management. The third model included two dependent variables capturing attitudinal response towards pro-environmental civic behavior: attitudes towards pro-environmental civic engagement and perceived environmental responsibility. Age was the independent variable. Taking into consideration that length of residence and education has been previously linked with environmental response the two variables were included as covariates to control for their effects.

Results

The average age was 45 years, with one quarter (23.9%) being between 18 and 30 years and about one third (36.0%) being between 31 and 50 years. Respondents who were between 51 and 80 years were most represented (40.1%). Fifty four percent were males. The average residency length was 37 years. The majority (65.1%) were married or partnered, and on average, the number of adults per household was three. Almost one third (31.6%) indicated high school as the highest level of education attained, 14% had some college or a college degree and 14% had an elementary school education or less. About one third (33.8%) reported monthly household income between 1,000 and 1,999 RON (about US $330-$660) and 30.6% indicated a monthly household income of more than 2,000 RON (about US $661). The majority of respondents (70.6%) indicated that they did not have any ownership or land use rights in Retezat National Park.

To determine convergent validity, individual constructs and their measurements were examined using confirmatory factor analysis (CFA). Marsh, Craven, & Debus (1991) underscored that when a model has been misspecified (poor model fit), the researcher has to respecify the model. One way to respecify the model is to delete indicators and the other option is to allow errors to correlate, and decisions should be supported by theory or rationale (Joreskog, 1993). Thus, attributes with factor loadings lower than .40 were excluded from further analysis (Hatcher, 1994). Attributes correlating with more than one dimension were also excluded from further analysis. Evidence of internal consistency was assessed using Cronbach's alphas above the recommended level of .70 (Nunnally & Bernstein, 1994).

As a result of initial CFA tests, several items in various factors were dropped due to low factor loadings. Ultimately, for each construct, the items retained were substantive in size and had significant factor loadings. Connection to nature was not found to have a hierarchical

structure. Three factors were eliminated due to low factor loadings and low reliability coefficients. The reliability coefficients for the three factors were below the recommended level of .70 ((Nunnally & Bernstein, 1994), ranging from .42 (nature sorrow) to .67 (nature fear). Furthermore, inter-factor correlations between nature restoration and nature identity (.87), and between nature restoration and nature spirituality (.93) were above the suggested criteria of .85 (Kline, 2005) and suggesting inability of the sample to differentiate between factors. Therefore, scale items were collapsed and ultimately seven items were retained as a one-dimensional measure of connection to nature. Similarly, the correlation between park identity and park dependence was high (.89) suggesting weak differentiation. Consequently, scale items were collapsed and one measure of park attachment retained including seven items.

The fit indices for the measurement model for each construct are provided in Table 5-1. All item (indicator)-loadings as well as descriptive statistics are presented in Table 5-2. Evidence of internal consistency is provided by Cronbach's alphas above the recommended level of .70 (Nunnally & Bernstein, 1994), ranging from .73 (conservation awareness) to .90 (park attachment) and composite reliability (CR) above the recommended level of .70 (Fornell & Larker, 1981), ranging from .86 (conservation benefits) to .94 (park attachment). Also included in Table 5-2 is the average variance extracted (AVE) estimate with recommended levels of .50 or higher indicating convergent validity for a construct's measure (Bagozzi, 1994; Fornell & Larker, 1981). All values exceeded the recommended level ranging from .60 (attitudes pro-environmental civic engagement) to .71 (park attachment). These findings reveal that the proposed measurement model satisfied all the psychometric requirements, thus the measures were adequate for further analysis.

A composite score for each construct was calculated based on the measurement results. Descriptive statistics for all variables for the three age groups of interest in this study are presented in Table 5-3. Three MANOVA models were assessed in order to capture age differences in terms of affective response to nature and the park, attitudinal response towards conservation, and a civic behavior attitudinal response (Table 5-3). The assumptions of the MANOVA procedures were assessed and the data was evaluated as being suitable for analysis.

The descriptive statistics showed respondents had more neutral responses in terms of their perception of environmental responsibility (M = 3.39; SD = 1.602) and attitudes towards conservation management (M = 3.86; SD = .992), while more positive responses were observed for conservation awareness (M = 4.83; SD = .396) and connections with nature (M = 4.44; SD = .691). The results of the MANOVA procedure finds that residents in different age groups had statistically significant differences in their affective response towards nature and the park (Model 1: $p < .05$) and attitudes towards pro-environmental civic behavior (Model 3: $p < .05$). No statistically significant group differences were observed as it relates to general attitudes towards conservation (Model 2: $p > .05$). Furthermore, an assessment of the group differences for each individual construct revealed significant group differences in terms of connections to nature ($p < .05$), park attachment ($p < .05$), conservation awareness ($p < .05$), conservation management ($p < .05$), attitudes towards pro-environmental civic engagement ($p < .05$), and perceived environmental responsibility ($p < .05$). The last four constructs were very close to the limit of statistical significant difference (.05).

The post-hoc tests with Tukey statistics revealed that respondents between 18 to 30 years differed significantly in their connections to nature and attachments to the park from those 31 to 50 years ($p < .05$) and 51 to 80 years ($p < .05$), the younger age group reporting lower levels of

connection to nature and park attachment. No significant differences in connections to nature and attachments to the park were observed between respondents' age 31 to 50 years and 51 to 70 years ($p > .05$). A significant negative difference between respondents' age 18 to 30 years and 51 and 80 years ($p < .05$) in terms of conservation awareness was also observed. No significant age group differences were observed in terms of conservation management. Respondents' between 18 to 30 years also differed significantly in their attitudes towards pro-environmental civic engagement ($p < .05$) as compared with older adults (age 51 to 80), lower levels of attitudes toward pro-environmental civic engagement being reported by the younger group. Furthermore, the young adults (age 18 to 30) differed significantly in their perceived personal environmental responsibility ($p < .05$) as compared with older adults (age 51 to 80), with the younger generation scoring higher on perceived personal environmental responsibility.

To better control for influences on the dependent variables, education and length of residence were included as covariates in the models. The group age differences on affective response to nature and the park remained statistically significant even after controlling for education and length of residence (Wilk's Lambda = .870; $F = 7.640$; $p < .05$). The age group differences in terms of connections to nature ($p < .05$) and park attachment ($p < .05$) were statistically significant. The age group differences in terms of conservation attitudes remained statistically insignificant when controlling for education and length of residence (Wilk's Lambda = .977; $F =. 785$; $p > .05$). Education was found to provide a better explanation for differences in attitudes towards conservation management ($p < .05$), and length of residence better capturing differences in terms of conservation benefits ($p < .05$). The age group differences on attitudes towards behavior became insignificant when controlling for level of education and length of residence (Wilk's Lambda = .969; $F = 1.671$; $p > .05$). Education was found to better explain the

differences in attitudes towards behavior (Wilk's Lamba = .955; $F = 4.991$; $p < .05$). More specifically, level of education providing a better explanation of differences in perceptions of environmental responsibility ($p = .002$). The correlation between age and level of education was significant and suggested young adults had higher levels of education($r = -.248$), while the correlation between age and length of residence was positive and significant ($r = .616$).

Discussion

This study investigated the implications of age for affective and attitudinal environmental response of adults residing in rural Romania. Age differences were assessed in terms of affective environmental response captured by connections with nature and attachments to the park. Attitudinal environmental response included measures of general attitudes towards conservation as well as attitudes towards pro-environmental civic engagement and perceived personal environmental responsibility. There age groups were defined: young adults (age 18 to 30), middle age adults (age 31 to 50), and older adults (age 51 to 80).

The findings of this study are threefold. Firstly, age of the residents was found to be an important factor in explaining the amount of affect residents' held towards nature and the park, even after controlling for length of residence and level of education. Young adults reported lower connections to nature and attachments to the park as compared with their older counterparts. The affective environmental response did not differ among middle age adults and older adults. Secondly, level of education was found to better explain attitudinal response towards pro-environmental behavior. More specifically, differences in attitudes towards conservation management were found to be better explained by level of education. Furthermore, level of education was found to play a significant role in explaining differences in perceived environmental responsibility, respondent's with higher levels of education reporting higher

levels of personal environmental responsibility. Thirdly, length of residence better captured differences in terms of conservation benefits.

Older residents were found to have stronger bonds with nature as well as with the park neighboring their communities. This finding is partially supported by previous studies which underscored that residents highly attached to their place of residence tend to be older (Lawton, 1990; Pretty et al., 2003; Rollero & De Piccoli, 2010), but little is known how connections to nature relate to age. Concerns over lack of connections with nature of the younger generation have been raised (Louv, 2006), but less is known about the Romanian context and what factors determined such developments. Assertions that length of residence might have a greater predictive power for attachments were not supported in this study where a measure of attachment to the park was employed. This supports prepositions implying that feelings of attachment to place can develop for physical spaces with which individuals have had a recent contact (Bonaiuto et al., 1999; Harris, Brown, & Werner, 1996; McCool & Martin, 1994).

Furthermore, the age of the residents was not identified as an important factor in explaining the attitudinal environmental responses of the residents after controlling for education and length of residence. McFarlane & Boxall (2003) emphasized that socio-demographic characteristics while lacking ability to directly predict behavior, do relate stronger with values and attitudes. In this study, age was primarily found to provide a better explanation for differences in affective response, connections to nature and park attachments, concepts that have been constantly discussed as shaping personal values and identity (Brown & Perkins, 1992; Roggenbuck & Driver, 2000). While age was not found as a strong factor in explaining differences in attitudes towards conservation and pro-environmental civic behaviors, education had better ability to capture differences in attitudes. Thus, attitudinal environmental responses

towards pro-environmental civic behaviors were found to be better explained by an achieved social status, level of education. More specifically, the more highly educated tended to be more critical towards current management approaches towards conservation, but at the same time reported higher levels of perceived personal environmental responsibility. Beggs, Hurlbert, & Haines (1996) concluded that individuals with higher levels of achieved social status (higher levels of education and income) tended to have higher expectations for their community and its leaders, and therefore, they may tend to be more critical in their assessment of the community environment. This study supports such assertions, education being found to better explain differences in attitudes towards conservation management. The results also showed that length of residence better explains differences in conservation benefits, those that lived in the community for a shorter period of time reporting fewer benefits from conservation.

The findings of this study were also interpreted in light of comments made by participants in the in-depth interviews conducted with 24 community members representing the nine communities adjacent to Retezat National Park. The qualitative analysis revealed a series of themes that depicted major dynamics that relate to the social and natural environment in the community. The narratives captured a constant emphasis on the amount on changes that occurred over the years, primarily social changes that ultimately shaped environmental connections. The respondents emphasized that during communism, there was more unity and care in the community and also more care for the environment. The respondents emphasized the stronger connection and care for the environment of previous generations, and concerns were raised over the environmental consciousness of the younger generation.

> … maybe there was regulation, but it seems people used to have this consciousness to protect the forests, I don't know, to protect nature in general, they used to have it and I saw this at my grandpa… my grandpa used to say to me, you should never go in a forest and look to cut the most beautiful tree, you should cut the one that is the

> one that doesn't look that good, the one that is bended, faulty, the one that is dry a little bit, so they had this cult… this cult of protecting nature, and which now that we entered this century of high pace, the young generation seems to lack respect for nature, the respect for nature that is used to be is not there anymore, I think. (Miruna)

Furthermore, social dynamics are perceived as currently threatening the young generation and their interest in the locale. Concerns were raised over their stability and lack of perspectives in the community.

> This is what worries me very much, this instability and job insecurity and when you see the young generation worried, when you see them disoriented, you ask yourself, who should we depend on, because you have to depend on them, no? (Ioan)

The area currently lacks the economic activities that used to nourish the connections between people and nature. Agriculture and livestock represented, for a quite long period of time, the main sources of income in these areas. Older generations had more interactions with the park through different activities, including agriculture, livestock, and properties that were close to the park, to get to them they had to cross the park. Respondents emphasized that since childhood they were exposed to such activities and they got to know every trail in the park. Currently, agriculture and livestock raising is done sporadically and only for family benefit, not necessarily as a source of income. The orientation of the younger generation for more beneficial activities was underscored, agriculture and livestock not being very promising.

> … now we don't even go up in the mountains, because we don't have with what, we have no more sheep, cows are just a few…… and because we are not doing this anymore, people became disinterested, if they take the mountain, let them take it, because anyway is not ours, or because anyway we are not going there anymore. (Verde)

Residents' mentioned their prediction that much of what used to be agricultural traditions will soon be lost.

> … the traditions that used to be when we were kids are slowly vanishing, when our dad took us up in the mountains to take care of the sheep and help… they don't

> have this preoccupation anymore, but anyway there is this saying… are you going and sit there with the sheep ?!… (Stefan)

The quantitative analysis revealed more homogeneous attitudes towards conservation and the respondents tended to be more neutral in their assessment of conservation benefits and conservation management, with level of education capturing differences in attitudes towards conservation management and length of residence differences in perceptions of conservation benefits. The narratives constantly argued the importance of benefiting from the park, and the contribution that the park could have for the well-being of the community. Disappointment has been expressed by the respondents due to lack of benefits, from lack of employment opportunities for the local residents to the weak benefits from tourism. The narratives depicted a current lack of services for visitors, the tourism infrastructure being rudimentary while prior to 1990, it used to be much more welcoming.

> Before the revolution, I feel that there was more care for Retezat, because there were some services, to welcome visitors, for camping, accommodations, in Gentiana on the Pietrele Valley, yes….one at Lake Pietrele for tents… now is not there anymore, there are not, the population has no more animals, reason for which there are no more sheepfolds, sheepfolds are in my opinion very interesting and quite pleasant for the eye of the tourist. (Veronica)

There seems to be an increased awareness of the importance of the park and middleaged and older residents seem to value the fact that the park is protected and taken care of. The quantitative analysis depicted a high level of conservation awareness in the area. Much of the awareness comes from the admiration and pride of living adjacent to the park, feelings of happiness to see tourists coming and visiting the park and their communities being expressed. However, less and less tourists are coming due to a lack of infrastructure. Thus, the respondents underscored the need to make the park efficient and relevant for neighboring communities. An overwhelming concern was expressed over the lack of benefits from the park, that ultimately cultivated feelings of disconnect between the population and the park. The respondents strongly

challenged the social role of the park and accentuated desires for stronger connections and benefits for local communities. Some concerns are generated by the restrictions imposed by the park, which seems to lack support from local residents. Much of the current hope for the future rests in the young generation' and the promise of tourism. The respondents raised great concerns over the younger generation's interest in staying in the community, but at the same time, they emphasized that if economic opportunities start to increase (including tourism), there will be much more interest in reconnecting with the locale.

The social transition currently occurring in these communities is not unique. The literature on rural communities constantly depicted societal changes associated with a transition period from an agricultural society to a modern society. Pretty (2002) emphasized the weakened links between people and nature due to modern agriculture and industrialization, which has separated people from nature. In the industrial age, communities have been found to experience disconnect from nature and much of the stories, memories and language about land and nature are missing (Pretty, 2002). Furthermore, rapid modernization in both developing and industrialized countries has been associated with weaker sentiments of ownership, an inclination to care, and a desire to take action for the collective good. Kellert (2005) underscored that modern societies are characterized by lack of quality and quantity of human interaction with the natural environment. Biodiversity conservation has been found to also play a role in reducing the amount of interaction with the natural environment. Barrow & Fabricius (2002) discussed the social costs of biodiversity conservation, arguing that people surrounding conservation areas become increasingly alienated from nature and the benefits received from conservation do not always outweigh the costs.

Conclusions

This study finds affective response to nature and the park to be indicative of age differences that relate to environmental access changes in the community. The amount of interaction, as well as benefit from natural resources impacted feelings people hold for their natural environments. From a practical perspective, this study underscores the need to reconnect the younger generation with the natural environment by providing opportunities for interaction as well as showing them perceived benefits from conservation. The affective connections with nature and the park of the young adults residing in communities neighboring a national park in Romania are weak as compared with their older counterparts. Core values that are intrinsic to feelings of connection and attachment to neighboring environments seem to be have been impacted by local social and environmental dynamics and changes. Primarily lack of interaction with the natural environment seems to have generated weaker relationships with nature and the park. Agriculture and livestock have for a long period of time sustained the connection between the residents and the natural environment. The major threat that such developments impose relates to loss of the population base, a fact that was constantly mentioned by the residents as a threat to the well-being of the community. Disappointment with the current management and lack of benefits has been expressed, with those with higher levels of education being more critical towards the current situation but at the same time reporting higher levels of personal environmental responsibility. Thus, from a management perspective, highly educated individuals, who also tend to be younger, represent a group with potential for involvement in park management and community development efforts.

Connections and attachments to neighboring environments have been viewed as a reservoir for motivation and commitment to places (Lewicka, 2005). Furthermore, local participation and civic behaviors have often been connected to an affective link with the environment. Thus, much

of the current lack of local participation might be explained by weak affective connections with the neighboring environment of a generation that lacked the interactions with the natural environment their counterparts did. Place attachments were found to be nourished by daily interactions with the environment, natural and social environment (neighbors, neighboring parks and other physical areas) (Mesch & Manor, 1998; Sampson, 1989; Werner et al., 1993). Thus, there is an emerging need to create programs for young adults that provide opportunities for interaction with neighboring environments and ultimately allow residents to know and truly value the community they are part of. Projects targeted at reconnecting the younger generation with the locale could relate to agriculture and traditional activities as well as tourism.

Increased importance has to be given to the local communities. The natural environment, including the park, could ultimately play an increased role in maintaining the social infrastructure in the area. Currently the residents see the park as a precious asset but unfortunately nobody gets to enjoy and truly appreciate it. The lack of benefits from the park was constantly emphasized by the respondents in their narratives. Restrictions imposed by the park are perceived as limiting the quality and quantity of human interaction with the neighboring natural environment as well as impacting current sentiments towards the park. The respondents tended to be critical in their assessment of the management approach as well as perceived benefits. A word constantly expressed by the respondents in their narratives was *restrictions*; the park has increased its area over the last couple of years, increases that has also resulted in increased restrictions and regulations of the use of resources in the park area and in the buffer zone. Thus, there seems to exist an emphasis on increasing benefits and making the park relevant for the local communities. The park management should consider the neighboring communities

in their decisions, otherwise much of what currently represents communities and their culture and traditions of natural connections will be lost.

Table 5-1. Goodness of fit indices for each construct

CFA Model	χ^2/df	RMSEA	WRMR	CFI	TLI
Connection to nature					
Original	96.73/36	0.083	0.883	0.983	0.988
Respecified	30.09/10	0.091	0.600	0.991	0.994
Park attachment					
Original	51.479/17	0.091	0.646	0.986	0.994
Respecified	24.349/9	0.083	0.460	0.994	0.997
Conservation attitudes					
Original	257.39/61	0.115	1.355	0.786	0.902
Respecified	60.16/27	0.071	0.780	0.964	0.982
Attitudes pro- environmental civic engagement					
Original	171.71/25	0.156	1.219	0.911	0.965
Respecified	7.105/5	0.042	0.289	0.997	0.998

Table 5-2. Reliability and validity of the measurements (CFA models)

Factors and items	Mean	SD	λ	α	CR	AVE
Connection to nature[1]				.871	.932	.665
I am connected to nature much like I'm connected to my family	4.40	.974	.88*			
Nature is a huge part of who I am	4.40	.932	.80*			
I often feel a sense of oneness with the natural world around me	4.28	1.028	.93*			
My feelings for nature have influenced my spiritual beliefs	4.12	1.125	.90*			
When surrounded by nature, I feel at peace	4.91	.327	.68*			
Listening to the wind go through the trees calms my mind	4.35	1.051	.74*			
When I'm alone in a natural area, I have this feeling of complete calm	4.51	.841	.64*			
Park attachment[1]				.903	.944	.712
Retezat National Park means a lot to me	4.54	.784	.91*			
I am very attached to Retezat National Park	4.18	.992	.94*			
Retezat National Park is very important to me	4.33	.910	.95*			
I identify strongly with the Retezat National Park	3.78	1.178	.85*			
I get many personal benefits out of living near Retezat National Park	3.72	1.280	.62*			
I enjoy living near Retezat National Park	4.54	.750	.84*			
I get lots of satisfaction out of living near Retezat National Park	4.17	.996	.75*			
Conservation awareness[1]				.727	.880	.650
It is important to have the Retezat National Park for the survival of various plants and animal species	4.91	.415	0.87*			
It is necessary to set aside some land for the protection of plants and animals	4.89	.381	0.89*			
Retezat National Park is our country's pride	4.87	.481	0.84*			
The illegal cutting of trees in the park should be strictly regulated	4.69	.813	0.63*			

Table 5-2. Continued

Factors and items	Mean	SD	λ	α	CR	AVE
Conservation management[1]				.834	.881	.651
Retezat National Park is managed successfully for the benefit/enjoyment of future generations	4.16	1.123	0.84*			
Retezat National Park is managed successfully for a wide range of uses and values, not just tourism	3.96	1.220	0.79*			
Retezat National Park management does a good job at protecting the natural resources in the park	4.19	1.066	0.90*			
The citizens from the communities around the park have enough say in how the park is managed	3.16	1.304	0.68*			
Conservation benefits[1]				.767	.859	.606
My community benefits from being near the Retezat National Park	3.95	1.222	0.85*			
Having the Retezat National Park near my home benefits me and my family	3.97	1.151	0.84*			
My community is a more beautiful place to live because we are living near Retezat National Park	4.47	.787	0.76*			
The tourists who come to the area are useful to we who live in adjacent communities	3.82	1.227	0.66*			
Attitudes pro-environmental civic engagement[2]				.823	.880	.596
Participating in public meetings related to Retezat National Park	4.00	.983	0.82*			
Participating in a community project addressing environmental concerns in the area	4.28	.844	0.73*			
Investing time to learn about the park and environmental protection	4.36	.874	0.81*			
Participating in a workshop on how to reduce my dependence on park resources	3.87	1.149	0.71*			
Investing personal time to get involved with the park	3.93	1.034	0.78*			

Note. * = t-statistic (> 1.96) at a significance level of $p<0.05$; λ = factor loadings; α = Cronbach's alpha coefficients; CR = composite reliability; AVE = average variance extracted; [1]Measured on a 5-point scale where 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly agree; [2]Measured on a 5-point scale where 1 = Not at all effective; 2 = Never effective; 3 = Sometimes effective; 4 = Often effective; 5 = Always effective.

Table 5-3. MANOVA of age

Variable	Mean (SD)			Test of Between Subjects-Effects		
Age groups	18-30	31-50	51-80	*F* Value	*P* Value	Eta^2
Model 1 – Affective response	*N=52*	*N=82*	*N=86*			
Connection to nature	3.95 (.804)	4.51 (.593)	4.67 (.538)	22.549	< .001	.172
Park attachment	3.84 (.765)	4.33 (.694)	4.32 (.835)	8.037	< .001	.069
Model 2 – General attitudes	*N=51*	*N=76*	*N=84*			
Conservation awareness	4.72 (.400)	4.86 (.451)	4.88 (.319)	3.139	.045	.029
Conservation benefits	3.91 (.655)	4.11 (.880)	4.15 (.855)	1.400	.249	.013
Conservation management	3.67 (.830)	3.76 (1.053)	4.07 (.966)	3.289	.039	.031
Model 3 – Attitudes towards behavior	*N=57*	*N=79*	*N=84*			
Attitudes pro-environmental civic engagement	3.93 (.660)	4.10 (.785)	4.25 (.767)	3.141	.045	.028
Perceived environmental responsibility	3.86 (1.231)	3.35 (1.664)	3.11 (1.708)	3.875	.022	.034

For MANOVA Model 1, Wilk's Lambda = .820, *F* Value = 11.233, $p < .001$, Eta^2=.094
For MANOVA Model 2, Wilk's Lambda = .947, *F* Value = 1.910, $p = .078$, Eta^2=.027
For MANOVA Model 3, Wilk's Lambda = .937, *F* Value = 3.572, $p = .007$, Eta^2=.032

CHAPTER 6
CONCLUSIONS

Findings

The results of this study illustrate the dynamics of the social dimensions of community and their ability to facilitate or hinder pro-environmental engagements. First and foremost, this study found the attachments people hold for the social environment and the park, their connections to nature and attitudes towards conservation as being strongly embedded and define a local environmental identity. Thus, this study underscores the importance of attachments, nature connections and conservation attitudes in shaping local environmental identities, and the need to sustain such connections through social interactions as well as interaction with natural environments.

Furthermore, local environmental identity (as a reflection of attachment, connection to nature, and conservation attitudes) was found to have a significant direct impact on attitudes towards pro-environmental civic engagement, which ultimately were found to influence pro-environmental civic behavioral intentions. This suggests the more residents' identify with the social and natural environments, the more positive attitudes they have towards engagement that ultimately shapes behavioral intentions. This finding substantiates current understanding of what has been previously described as community identity and its implications for environmental values and attitudes (Pol, 2002; Van Vugt, 2001).

Perceived collective responsible behaviors to guard natural resources were also found to have a direct impact on attitudes towards pro-environmental civic engagement. Furthermore, this study demonstrates the importance of attitudes in the context of pro-environmental civic engagement, identity and perceived responsibility influencing attitudes but not behavioral intentions directly. This study provides evidence that with stronger local environmental identity

and collective environmental responsibility, residents' attitudes towards pro-environmental engagement will likely increase, ultimately shaping behavioral intentions.

In addition, attachments to the social and natural environment were found to be distinctively predicted by variables commonly associated with community attachment. Social interaction was found to have a stronger effect on park attachment, while length of residence had a stronger association with attachment to the social environment. Family status was not found to have a significant effect on attachment to the social environment and park attachment. This finding suggests that family status does not impact the amount of feelings and affinity people held for the social and natural environment defining the place. A significant negative effect was found between the number of children under 18 years in the household and the strength of attachment to the social environment. The number of children in the household was found not to have an effect on attachment to the park, further reinforcing that attachment to community lay in the multiple facets of the community and various personal conditions distinctly facilitating the development of attachment to different dimensions of the community.

Education and income, as a reflection of social position in the community, were two other measures assessed as predictors of social and park attachment. Education was found to have a significant negative effect on attachment to the social environment, while income had a significant influence on attachment to the park. Ultimately, the results suggest that social position does play a role in shaping attachment to the social and natural environment.

Furthermore, this study reveals that park attachment, as a reflection of attachment to the natural environment, is strongly correlated with attachment to the social environment emphasizing its role in tangentially supporting the social dynamics that are at the foundation of

the community. The correlation between the two dimensions further supported the shared meanings that the two dimensions capture, a finding strongly supported by the qualitative results.

The multidimensionality of the community attachment construct and the intertwined nature of the relationship between the emerging dimensions were underscored in the residents' narratives. Four distinct dimensions of attachment emerged from the textual analysis, attachment to the natural, social, institutional and cultural environment. While distinct, these dimensions of attachment do have an intertwined nature that makes them worthy of attention and further assessment.

This study also investigated the implications of age for affective and attitudinal environmental response of adults residing in rural Romania. Age of the residents was found to be an important factor in explaining the amount of affect residents' held towards nature and the park, even after controlling for length of residence and level of education. Young adults were found to have weaker affective bonds with nature and the park neighboring their communities as compared with their older counterparts. Level of education was found to better explain attitudinal response towards pro-environmental behavior. More specifically, differences in attitudes towards conservation management were found to be better explained by level of education, respondent's with higher levels of education assessing conservation management efforts lower. Furthermore, level of education was found to play a significant role in explaining differences in perceived environmental responsibility, respondent's with higher levels of education reporting higher levels of personal environmental responsibility. Lastly, length of residence better captured differences in terms of conservation benefits.

In conclusion, this study substantiates the knowledge on rural communities and their interactions with neighboring natural environments, highlighting the interplay of variables that

affect pro-environmental civic behavioral intentions. Attachments to the natural and social environment, connections to nature, conservation attitudes, and perceived environmental responsibilities emerging from social contexts were found to ultimately shape pro-environmental civic attitudes and behavioral intentions.

Implications and Future Research

This research extends current theoretical understandings of social predictors and inter-relationships between attachments, connections to nature, conservation attitudes, and perceived environmental responsibilities in areas rich in natural resources and their attitudinal and behavioral implications. Furthermore, this study complements contemporary understandings of the community attachment construct and affective and attitudinal environmental response in rural contexts.

Primarily, this study reveals the intertwined relationship between attachments to the social and natural environment, connections to nature, and conservation attitudes. Local environmental identity was proposed as accounting for the hierarchical structure of these constructs. The theory of interpersonal behavior incorporates self-identity, the individual's perception of himself or herself, as one of the major predictors of behavioral intentions (Gagnon et al., 2003; Zhang, Inbakaran, & Jackson, 2006). This relationship is based on the argument that our definition of ourselves ultimately defines our actions. This study found local environmental identity influencing attitudes towards the behavior but not behavioral intentions directly. Similarly, perceived collective environmental responsibility was found to impact attitudes but not behavior intentions directly. Attitudes towards the behavior were found to have greater predictive ability for behavioral intentions.

Further investigations are needed to better understand the environmental identity construct and the nature of the relationships between local environmental identity, perceived

environmental responsibility, and attitudes towards pro-environmental civic engagement and behavioral intentions in areas rich in natural resources. The conceptualization of local environmental identity could be argued might be a characteristic of the population in this study and the local environment which is rich in natural resources amenities. Thus, this study should be repeated under different conditions, culturally, socially and environmentally to test the environmental identity conceptualization and its implications for attitudes towards pro-environmental civic engagement and behavioral intentions.

Furthermore, this study underscores the importance of incorporating measures of attachment to the natural environment in the broader assessment of community attachment. In various contexts and settings, the natural environment might be a stronger dimension of attachment having the ability to generate powerful emotional responses. Simply acknowledging that the natural dimension exists and is most often embedded in the social environment, as suggested by Brehm (2007), is not sufficient. There is much more information that can be captured by integrating assessments of various dimension of community attachment.

This study brings to attention two more dimensions of attachment, the institutional and cultural environments. The importance of developing a measurement that focuses on the hierarchical nature of the construct is emphasized in this study. The multiple dimensions of attachment building on each other to ultimately define an overall attachment to the community, with its foundations being rooted in multiple local aspects. This further suggests a need to understand how various dimensions of community attachment are formed, how are they fluctuating and how they separately predict various attitudinal and behavioral patterns.

This study found affective environmental responses to nature and the park to be indicative of age differences that relate to social and environmental changes that occurred over the years in

the community. Thus, affective environmental responses were found to be more volatile in the face of social changes, as compared with attitudinal environmental response. Attitudinal responses were found to be better explained by an achieved social position (i.e., education) and length of residence in the community. An in-depth understanding of the affective environmental response of the younger generation living in rural communities is warranted, with a focus on capturing what nature means for the younger generation and what kind of experiences shape emotional response to the natural environment.

From a practical perspective, the results show that pro-environmental civic behavioral intentions can be improved by strengthening local environmental identities, which could be done by encouraging social interactions as well as interaction with the environment (the park, in this case). Furthermore, providing increasing understanding of the benefits of the park, the benefits of conservation, and higher management transparency and cooperation can ultimately generate greater identification of the local population with the local environment. Thus, the findings emphasize the need to create opportunities for local people to utilize and benefit from the park, so that ultimately they become an integrated part of the management and conservation stewards.

Recommendations include using meetings and informative messages to strengthen intentions for local engagement and increase knowledge and awareness of conservation benefits as well the responsibilities derived from living adjacent to the park. Efforts to better inform local residents how current park rules and management strategies sustain the natural environment to better achieve the environmental goals that the residents expressed, and how they can be involved in making specific decisions facilitating those, should enhance synergistic partnerships.

Projects that require involvement, interaction, and sharing of knowledge and information (about benefits and management approach) should be supported and constantly encouraged and

implemented throughout the area. This study indicates a need to provide opportunities for engagement and constantly fostering residents' capacities to be agents of change in their communities and the environments they are attached and connected to. The residents of these communities developed strong attachments and meanings to the surrounding environment and their existence is embedded in a permanent interaction with their environment, and should not be overlooked by management. Furthermore, informed programs could be developed aimed at strengthening various dimensions of the community that lack attachment and public care through the establishment of channels of interaction and communication.

Listening to the local residents and understanding their attachments within the community context so that informed decision could be made and in the long run avoid conflicts is paramount. Warren (1987) emphasized the importance of understanding the shared interests' in particular local geographical attributes, due to their implications for community togetherness that ultimately are crucial elements in the formation and continuation of community. Thus, considering the multiple facets of the community attachment construct is imperative to provide opportunities for community members to express their opinions and concerns about the things they care about and are attach to.

Furthermore, this study underscored the need to reconnect the younger generation with the natural environment by providing opportunities for interaction as well as showing them perceived benefits from conservation. The affective connections with nature and the park of the young adults residing in communities neighboring the national park in Romania are weak as compared with their older counterparts. Core values that are intrinsic to feelings of connection and attachment to neighboring environments seem to be have been impacted by local social and environmental dynamics and changes. Primarily, a lack of interaction with the natural

environment seems to have generated weaker relationships with nature and the park. Agriculture and livestock have for a long period of time sustained the connection between the residents and the natural environment. The major threat that weaker relationships with neighboring environments impose relates to loss of the population base, a fact that was constantly mentioned by the residents as a threat to the well-being of the community. Disappointment with the current management and lack of benefits has been expressed, with respondents with higher levels of education being more critical towards the current situation, but at the same time reporting higher levels of personal environmental responsibility. Thus, from a management perspective, highly educated individuals, who also tend to be younger, represent a group with potential for involvement in park management and community development efforts.

Thus, there is an emerging need to create programs for young adults that provide opportunities for interaction with neighboring environments and ultimately allow residents to know and truly value the community they are part of. Projects targeted at reconnecting the younger generation with the locale should relate to agriculture and traditional activities as well as tourism to facilitate heritage connections.

Limitations

Several measures were taken to reduce potential limitations that could have ultimately impacted the purity of the study. A major consideration was given to questionnaire development, its face and content validity procedures encompassed a detailed consideration of item wording, ordering effects, social desirability, translation and response biases. Measurements previously employed in the literature were used in this study and thus, overcoming possible validity limitations. Response rate was a major concern for this study, considering that people living in rural communities in Romania are not very used to being asked to participate in a research study. The response rate was not as high as desired but the major limitation was the result of not finding

people at home and not refusals to participate in the study. Face to face interviews were found to be much more effective than mail surveys sent to community members that could not be found at home even after multiple visits. The response rate was ultimately found to be appropriate for examining the study questions, including the structural equation model (Kline, 2005).

In the data analysis stage of the study, several items measuring different constructs employed in the study were found to be weak measures of the underlying constructs and thus, eliminated from further analysis. This situation was primarily attributed to the translation constraints, the meanings of certain items not being very well captured in the Romanian version of the questionnaire.

The results of this study are relevant and can be generalized primarily to communities surrounding protected areas in Romania and other regions transitioning from a dependent agricultural state to a less dependent agricultural state, yet, communities rich in natural resources. The residents' connections, attachments, as well attitudes towards the natural environment in these contexts are stimulated by continuous interactions with the natural environment. Thus, relationships between constructs might be a direct response of the local stimuli which incorporate the natural environment as a strong element characterizing the local life in such communities.

Conclusions

This research sought to provide insights into the social dimensions of pro-environmental civic engagement in the communities surrounding Retezat National Park in Romania. The importance of attachments to the social environment and the park, connections to nature, conservation attitudes, and perceived environmental responsibility in shaping local attitudes towards pro-environmental civic engagement and pro-environmental behavior intentions was assessed; and most were found to be important contributors. The study findings are relevant for

the development and planning of community based programs to support protected area management efforts. This research attempted to complement and advance current understandings of the human-park relationships and achieved this goal.

APPENDIX A
STUDY QUESTIONNAIRE

Your Community and Retezat National Park

Thank you for agreeing to complete this survey about your community and Retezat National Park. Please read each question carefully before responding. Answer to the best of your ability and save any additional comments for the end. Your answers will help to better understand your feelings, attitudes, and perceptions about your community and Retezat National Park.

This first section asks about your community and local life conditions.

1. People have different feelings about their community. Please indicate what your level of agreement is with the following statements <u>about your community?</u> Circle one number for each statement on the 5 point scale, where 1=strongly disagree and 5=strongly agree.

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Overall, I am very attached to this community	1	2	3	4	5
I feel like I belong in this community	1	2	3	4	5
The associations that I have with other people in this community mean a lot to me	1	2	3	4	5
If the people in this community were planning something, I'd think of it as something WE were doing rather than THEY were doing	1	2	3	4	5
If I needed advice about something, I could go to someone in this community	1	2	3	4	5
I agree with most people in this community about what is important in life	1	2	3	4	5
Given the opportunity, I would move out of this community	1	2	3	4	5
I feel loyal to the people in this community	1	2	3	4	5
There are things going on in this community that I am not proud of					
I plan to remain a resident of this community for a number of years	1	2	3	4	5
There are many things I would like to change about this community	1	2	3	4	5
I like to think of myself as similar to the people who live in this community	1	2	3	4	5

2. What are the three words that come to your mind when you think of <u>your community</u>?

A_____ B_____ C_____

3. Overall, how would you rate the quality of life in your community? Please ✓ one answer.

Poor	Above poor	Average	Above average	Excellent
❒	❒	❒	❒	❒

4. In general, how would you describe your level of involvement in community activities or events? Please ✓ one answer.

Not active at all	Not very active	Somewhat active	Very active	Extremely active
❒	❒	❒	❒	❒

5. Please name three things from your community that you care about the more, you feel most attached to?

A_____ B_____ C_____

6. How often do you get together or meet the following types of people? Please ✓ one answer per statement.

	Never	**A few times a year**	**Once a month**	**A few times a month**	**Once a week**	**More than once a week**	**Everyday**
Immediate family (parents, siblings)	❒	❒	❒	❒	❒	❒	❒
Extended family (cousins, uncles)	❒	❒	❒	❒	❒	❒	❒
Acquaintances	❒	❒	❒	❒	❒	❒	❒
Close friends	❒	❒	❒	❒	❒	❒	❒
Neighbors	❒	❒	❒	❒	❒	❒	❒
Community groups (e.g. church)	❒	❒	❒	❒	❒	❒	❒
Public officials	❒	❒	❒	❒	❒	❒	❒
Retezat National Park staff	❒	❒	❒	❒	❒	❒	❒
Tourists	❒	❒	❒	❒	❒	❒	❒
Members of non-governmental organizations	❒	❒	❒	❒	❒	❒	❒
Others (please specify _____ _____)	❒	❒	❒	❒	❒	❒	❒

This section asks for your feelings about Retezat National Park and nature in general.

7. People have different feelings about nature. Please indicate your level of agreement with the following statements in terms of *the way you generally feel about nature*. There are no right or wrong answers. Circle one number for each statement on the 5 point scale, where 1=strongly disagree and 5=strongly agree.

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
I have seen things in nature that were so amazing; they just filled me with wonder	1	2	3	4	5
When surrounded by nature, I feel at peace	1	2	3	4	5
A lot of nature just scares me	1	2	3	4	5
My love for nature is a big influence in my life	1	2	3	4	5
I feel sorrow because we're destroying too much nature	1	2	3	4	5
I am connected to nature much like I'm connected to my family	1	2	3	4	5

Seeing how much nature is being destroyed affects me emotionally	1	2	3	4	5
Remote natural areas make me nervous	1	2	3	4	5
Nature is a huge part of who I am	1	2	3	4	5
Nature provides me with a spiritual connection	1	2	3	4	5
I often feel a sense of oneness with the natural world around me	1	2	3	4	5
My feelings for nature have influenced my spiritual beliefs	1	2	3	4	5
The power of nature is just incredible	1	2	3	4	5
Listening to the wind go through the trees calms my mind	1	2	3	4	5
The magnitude of nature is impressive	1	2	3	4	5
Feeling part of nature is a spiritual experience	1	2	3	4	5
I have too much fear of nature to hike in remote natural areas	1	2	3	4	5
When I'm alone in a natural area, I have this feeling of complete calm	1	2	3	4	5

8. Have you ever been inside Retezat National Park?

❒ No ❒ Yes

9. What are the three words that come to your mind when you think of <u>Retezat National Park</u>?

A_____ B_____ C_____

10. During the last 12 months, how often did you go to Retezat National Park?

Never	A few times a year	Once a month	A few times a month	Once a week	More than once a week	Everyday
❒	❒	❒	❒	❒	❒	❒

11. If you do visit the Retezat National Park, what is the primary purpose of your visit? Please ✓ all that apply.

❒ Collecting wild resources (fire wood, mushrooms, medicinal plants, etc.)
❒ Hiking
❒ Camping
❒ Work
❒ Other (please specify_____)
❒ I never go there

12. People living near Retezat National Park have different feelings about the park. Please indicate your level of agreement with each of the following statements <u>about Retezat National Park and what it means to you as compared with other places?</u> Circle one number for each statement on the 5 point scale, where 1=strongly disagree and 5=strongly agree.

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Retezat National Park means a lot to me	1	2	3	4	5
I feel no commitment to Retezat National Park	1	2	3	4	5

I am very attached to Retezat National Park	1	2	3	4	5
Retezat National Park is very important to me	1	2	3	4	5
I get many personal benefits out of living near Retezat National Park	1	2	3	4	5
I identify strongly with the Retezat National Park	1	2	3	4	5
I wouldn't substitute other places for living near Retezat National Park	1	2	3	4	5
I enjoy living near Retezat National Park	1	2	3	4	5
I get lots of satisfaction out of living near Retezat National Park	1	2	3	4	5

13. Do you have any property rights (ownership or land use rights) in Retezat National Park?

❒ No ❒ Yes

14. Retezat National Park is important to people for different reasons. Please indicate for which of the following reasons is the park important to you? Please ✓ all that apply.

❒ Use of natural resources (fire wood, mushrooms, medicinal plants, fishing, etc.)
❒ Livestock grazing
❒ Outdoor recreation (hiking, camping, etc.)
❒ Scenery, its unique landscapes, plants, and animals
❒ A great place to visit with family and friends
❒ Benefits it brings to our community
❒ Other, please specify _____

15. Do you know of any group/forum/or committee that represents your community interests with the Retezat National Park administration?

❒ No
❒ Yes – If yes, please specify the name of the group/forum/ or committee_____

16. Below is a list of opinions about conservation in Retezat National Park. Please indicate what of your level of agreement is with each of the following statements. Circle one number for each statement on the 5 point scale, where 1=strongly disagree and 5=strongly agree.

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
It is important to have the Retezat National Park for the survival of various plants and animal species	1	2	3	4	5
It is necessary to set aside some land for the protection of plants and animals	1	2	3	4	5
Retezat National Park is our country's pride	1	2	3	4	5
Retezat National Park being protected is important for the benefit of our future generations	1	2	3	4	5
The illegal cutting of trees in the park should be strictly regulated	1	2	3	4	5

If overgrazing continues in the park, all the animals will soon disappear	1	2	3	4	5
What people and their livestock need is more important than protecting wild animals and plants	1	2	3	4	5
It is good if some land within the park is allocated to local people	1	2	3	4	5
Retezat National Park is a waste of land	1	2	3	4	5
People should who own/ have property rights in the park should be allowed to use park resources as they wish					
Retezat National Park is for outsiders, those who enjoy hiking and wildlife viewing	1	2	3	4	5
The economic stability of communities is more important than protecting park resources	1	2	3	4	5
Retezat National Park is managed successfully for the benefit/enjoyment of future generations	1	2	3	4	5
I support the rules and regulations established by the park administration	1	2	3	4	5
Retezat National Park is managed successfully for a wide range of uses and values, not just tourism	1	2	3	4	5
Retezat National Park management does a good job at protecting the natural resources in the park	1	2	3	4	5
The citizens from the communities around the park have enough say in how the park is managed	1	2	3	4	5
The benefits from the park usually outweigh negative consequences	1	2	3	4	5
My community benefits from being near the Retezat National Park	1	2	3	4	5
Having the Retezat National Park near my home benefits me and my family	1	2	3	4	5
My community is a more beautiful place to live because we are living near Retezat National Park	1	2	3	4	5
The quality of the air is higher because of living near the Retezat National Park area	1	2	3	4	5
The park resources help local waters stay pure for our community	1	2	3	4	5
The tourists who come to the area are useful to we who live in adjacent communities	1	2	3	4	5

This section asks about your engagement in environmental protection in Retezat National Park.

17. There are many ideas on how the park land should be managed. Please indicate who you think should establish the rules and regulations for land management in Retezat National Park? Please ✓ all that apply.

❒ Retezat National Park Administration
❒ Land owners
❒ Local councils
❒ Other, please specify_____
❒ I don't think there is a need to establish rules and regulations for land management in Retezat National Park

18. People take part in environmental protection in different ways. How effective do you think the following behaviors are in protecting the environment in Retezat National Park? Circle one number for each statement on the 5 point scale, where 1=not at all effective and 5=always effective.

	Not at all Effective	Never Effective	Sometimes Effective	Often Effective	Always Effective
Attending public presentations about the Retezat National Park	1	2	3	4	5
Participating in public meetings related to Retezat National Park	1	2	3	4	5
Participating in a community project addressing environmental concerns in the area	1	2	3	4	5
Learning about the environment	1	2	3	4	5
Investing time to learn about the park and environmental protection	1	2	3	4	5
Participating in educational programs about the environment	1	2	3	4	5
Participating in a workshop on how to reduce my dependence on park resources	1	2	3	4	5
Participation in a local organization that is involved in park protection	1	2	3	4	5
Investing personal time to get involved with the park	1	2	3	4	5
Reducing use of park resources	1	2	3	4	5
Bringing tourists to the park	1	2	3	4	5
Voting for public officials that show interest in environmental issues	1	2	3	4	5

19. In the next 12 months, if opportunities were provided, how likely would you be to perform the following behaviors? Circle one number for each statement on the 5 point scale, where 1=very unlikely and 5=very likely.

	Very Unlikely	Somewhat Unlikely	Neither Likely nor Unlikely	Somewhat Likely	Very Likely
Participate in a public meeting related to Retezat National Park	1	2	3	4	5
Attend a public presentation about Retezat National Park	1	2	3	4	5

Participate in a community project addressing environmental concerns	1	2	3	4	5
Invest time to learn more about the park and environmental protection	1	2	3	4	5
Give my input into park management decisions	1	2	3	4	5
Be actively involved in an organization that supports park management efforts	1	2	3	4	5
Participate in a workshop on how to reduce my dependence on park resources	1	2	3	4	5
Express my concerns about park management to elected officials	1	2	3	4	5
Visit the park at least twice	1	2	3	4	5
Visit the park at least six times	1	2	3	4	5

20. People have different perceptions in terms of who should be responsible for protecting Retezat National Park's environment. Please indicate what your level of agreement is with the following statements regarding responsibility for environmental protection in Retezat National Park. Circle one number for each statement on the 5 point scale, where 1=strongly disagree and 5=strongly agree.

	Totally Disagree	**Somewhat Disagree**	**Neither Agree nor Disagree**	**Somewhat Agree**	**Totally Agree**
Personally, I have no responsibility for protecting the environment in Retezat National Park	1	2	3	4	5
Every citizen in my community must take responsibility for protecting the environment in Retezat National Park	1	2	3	4	5
Authorities, rather than the citizens, are responsible for protecting the environment in Retezat National Park	1	2	3	4	5
Authorities, together with the citizens, are responsible for protecting the environment in Retezat National Park	1	2	3	4	5

This final section asks about your household and demographic information. This information will be kept confidential and used for statistical purposes only.

21. How long have you lived in this community?

Number of years_____

22. How many adults and children live in your household? (fill in a number)

Number of adults including yourself _____

Number of children (under 18) _____

23. What is your gender? ☐ Male ☐ Female

24. In what year were you born? _____

25. Are you? ☐ Single ☐ Married/partnered ☐ Divorced/separated ☐ Widowed

26. What is the highest level of education you have completed? Please ✓ one answer.

☐ None
☐ Primary school (1-4)
☐ Elementary school (5-8)
☐ Professional/ vocational school
☐ Some high school (9-10)
☐ High school graduate (9-12)
☐ Post high school
☐ Some college
☐ College degree
☐ Advanced degree

27. Which of the following best represents your current employment status? Please ✓ one answer.

☐ Retired
☐ Not working outside of home
☐ Unemployed
☐ Student
☐ Working in agriculture/ owning farming land
☐ Other (please specify) _____
☐ Working in industry
☐ Working in commerce, tourism, and other services
☐ Technician, supervisor
☐ Personnel with higher qualifications
☐ Business owner, entrepreneur

28. Do you in any way make money from the park or from visitors to the park?

☐ No ☐ Yes

29. Does anyone in your immediate family make money from the park or from visitors to the park?

☐ No ☐ Yes

30. What was your approximate household income last month?

☐ Almost no income
☐ Less than 250 RON
☐ Between 250 and 499 RON
☐ Between 500 and 999 RON
☐ Between 1000 and 1499 RON
☐ Between 1500 and 2000 RON
☐ More than 2000 RON

Thank you for completing this survey!

In the space provided below, please feel free to include any comments that you think might help us in better understanding your feelings, attitudes, and perceptions about your community and Retezat National Park.

APPENDIX B
STUDY QUESTIONNAIRE (IN ROMANIAN)

Comunitatea ta şi Parcul Naţional Retezat

Vă mulţumim că aţi acceptat să completaţi acest chestionar despre comunitatea dvs. şi Parcul Naţional Retezat. Vă rugam să citiţi cu atenţie fiecare întrebare înainte de a răspunde. Răspundeţi pe baza a ceea ce credeţi dvs. şi reţineţi orice fel de comentarii aveţi pentru sfârşitul chestionarului. Răspunsurile dvs. ne vor ajuta să înţelegem mai bine opiniile, atitudinile şi percepţiile dvs. faţa de comunitatea în care locuiţi şi faţă de Parcul Naţional Retezat.

Această secţiune include întrebări despre comunitatea dvs. şi condiţiile de viaţă locale.

1. Oamenii au diferite opinii/sentimente faţă de comunităţile lor. Vă rugăm să indicaţi în ce măsură sunteţi de acord cu următoarele afirmaţii despre comunitatea dvs. Pentru fiecare afirmaţie vă rugăm să încercuiţi un număr pe o scală de 5 puncte, unde 1=dezacord total şi 5=acord total.

	Dezacord total	**Oarecum dezacord**	**Neutru**	**Oarecum de acord**	**Acord total**
În general, sunt foarte ataşat/ă de această comunitate	1	2	3	4	5
Simt că aparţin acestei comunităţi	1	2	3	4	5
Legăturile pe care le am cu oamenii din această comunitate înseamnă mult pentru mine	1	2	3	4	5
Dacă oamenii din această comunitate ar organiza ceva, aş vedea asta ca ceva ce NOI facem mai curând decât ceva ce EI fac	1	2	3	4	5
Dacă aş avea nevoie de sfat, simt că aş putea să apelez la cineva în această comunitate	1	2	3	4	5
Am aceleaşi aspiraţii în viață ca majoritatea oamenilor din această comunitate	1	2	3	4	5
Dacă mi s-ar oferi oportunitatea, m-aş muta din această comunitate	1	2	3	4	5
Mă simt devotat oamenilor din această comunitate	1	2	3	4	5
În această comunitate se întâmplă lucruri de care nu sunt mândru					
Plănuiesc să rămân cetăţean al acestei comunităţi pentru încă mulţi ani	1	2	3	4	5
Sunt multe lucruri în această comunitate pe care aş vrea să le schimb	1	2	3	4	5
Mă consider ca fiind la fel ca şi ceilalţi oameni care locuiesc în această comunitate	1	2	3	4	5

2. Care sunt primele trei cuvinte care vă vin în minte când vă gândiţi la comunitatea dvs.?

A_____ B_____ C_____

3. În general, cum apreciaţi nivelul de trai din comunitatea dvs. ? Vă rugăm să bifaţi (✓) un răspuns.

Foarte prost	Prost	Mediu	Peste mediu	Excelent
❒	❒	❒	❒	❒

4. În general, cum aţi caracteriza nivelul dvs. de implicare în activităţi sau evenimente desfăşurate la nivelul comunităţii dvs.? Vă rugăm să bifaţi (✓) un răspuns.

Deloc activ	Nu foarte activ	Oarecum activ	Foarte activ	Extrem de activ
❒	❒	❒	❒	❒

5. Vă rugăm să enumeraţi trei lucruri din comunitatea dvs. la care tineţi foarte mult, de care vă simţiţi cel mai atașat.

A_____ B_____ C_____

6. Cât de des vă întâlniţi sau vă vedeţi cu următoarele categorii de oameni? Vă rugăm să bifaţi (✓) un răspuns pentru fiecare categorie.

	Niciodată	**De câteva ori pe an**	**O dată pe lună**	**De câteva ori pe lună**	**O dată pe săptămână**	**Mai mult de o dată pe săptămână**	**În fiecare zi**
Familia apropiată (părinţi, fraţi şi surori)	❒	❒	❒	❒	❒	❒	❒
Familia extinsă (verişori, unchi)	❒	❒	❒	❒	❒	❒	❒
Cunoştinţe	❒	❒	❒	❒	❒	❒	❒
Prieteni apropiaţi	❒	❒	❒	❒	❒	❒	❒
Vecini	❒	❒	❒	❒	❒	❒	❒
Grupuri în comunitate (spre exemplu, oameni la biserică)	❒	❒	❒	❒	❒	❒	❒
Autorităţi locale	❒	❒	❒	❒	❒	❒	❒
Angajaţi ai Parcului Naţional Retezat	❒	❒	❒	❒	❒	❒	❒
Turişti	❒	❒	❒	❒	❒	❒	❒
Membrii ai unor organizaţii non-guvernamentale	❒	❒	❒	❒	❒	❒	❒
Alţii (vă rugăm să detaliaţi _____ _____)	❒	❒	❒	❒	❒	❒	❒

Această secţiune include întrebări legate de opiniile/ sentimentele dvs. faţă de Parcul Naţional Retezat şi faţă de natură în general.

7. Oamenii au diferite sentimente faţă de natură. Vă rugăm să indicaţi în ce măsură sunteţi de acord cu următoarele afirmaţii despre ceea ce simţiţi în general faţă de natură. Nu există răspunsuri corecte sau incorecte. Pentru fiecare afirmaţie vă rugăm să încercuiţi un număr pe o scală de 5 puncte, unde 1=Dezacord total şi 5=Acord total.

	Dezacord total	Oarecum dezacord	Neutru	Oarecum de acord	Acord total
Am văzut lucruri în natură atât de extraordinare încât m-au copleşit cu uimire	1	2	3	4	5
Când sunt înconjurat de natură mă simt liniştit	1	2	3	4	5
Natura multă mă înfricoşează	1	2	3	4	5
Afecţiunea mea pentru natură are o mare influenţă în viaţa mea	1	2	3	4	5
Simt tristeţe văzând că distrugem natura în prea mare măsură	1	2	3	4	5
Sunt la fel de ataşat de natură precum sunt ataşat de familia mea	1	2	3	4	5
Mă afectează emotional să văd câtă natură este distrusă	1	2	3	4	5
Zonele naturale izolate/ nepopulate mă înfricoşează	1	2	3	4	5
Natura este o mare parte a ceea ce sunt	1	2	3	4	5
Natura îmi oferă o legătură spirituală	1	2	3	4	5
Simt des că sunt una cu natura din jurul meu	1	2	3	4	5
Sentimentele mele pentru natură influenţează opiniile mele spirituale	1	2	3	4	5
Puterea naturii este incredibilă	1	2	3	4	5
Mă linişteşte să ascult vântul bătând printre copaci	1	2	3	4	5
Imensitatea naturii este impresionantă	1	2	3	4	5
A te simţii parte a naturii este o experienţă spirituală	1	2	3	4	5
Mi-e mult prea frică de natură ca să pot să fac plimbări în zone naturale izolate/ nepopulate	1	2	3	4	5
Am un sentiment de calm total când sunt singur/ă în natură	1	2	3	4	5

8. Aţi fost vreodată în interiorul Parcului Naţional Retezat?

❒ Nu ❒ Da

9. Care sunt primele trei cuvinte care vă vin în minte când vă gândiţi la Parcul Naţional Retezat?

A_____ B_____ C_____

10. În ultimele 12 luni, cât de des aţi fost în Parcul Naţional Retezat?

Niciodată	De câteva ori pe an	O dată pe lună	De câteva ori pe lună	O dată pe săptămână	Mai mult de o dată pe săptămână	În fiecare zi
❒	❒	❒	❒	❒	❒	❒

11. De obicei, când mergeţi în Parcul Naţional Retezat, care este scopul principal al vizitei dvs.? Vă rugăm să bifaţi (✓) toate categoriile care sunt aplicabile în cazul dvs.

❒ Colectare/ culegere resurse naturale (lemne de foc, ciuperci, plante medicinale, etc.)
❒ Drumeţie
❒ Excursie cu cortul
❒ Munca în parc
❒ Altele (vă rugăm să detaliaţi_____)
❒ Nu merg niciodată acolo

12. Oamenii care locuiesc în apropierea Parcului Naţional Retezat au diferite opinii/ sentimente faţă de parc. Vă rugăm să indicaţi în ce măsură sunteţi de acord cu fiecare dintre următoarele afirmaţii despre Parcul Naţional Retezat şi ceea ce reprezintă el pentru dvs. în comparaţie cu alte locuri. Pentru fiecare afirmaţie vă rugăm să încercuiţi un număr pe o scală de 5 puncte, unde 1=dezacord total şi 5=acord total.

	Dezacord total	**Oarecum dezacord**	**Neutru**	**Oarecum de acord**	**Acord total**
Parcul Naţional Retezat înseamnă mult pentru mine	1	2	3	4	5
Nu simt nici un fel obligaţie faţă de Parcul Naţional Retezat	1	2	3	4	5
Sunt foarte ataşat de Parcul Naţional Retezat	1	2	3	4	5
Parcul Naţional Retezat este foarte important pentru mine	1	2	3	4	5
Personal beneficiez mult din faptul că locuiesc aproape de Parcul Naţional Retezat	1	2	3	4	5
Mă identific foarte mult cu Parcul Naţional Retezat	1	2	3	4	5
Nu îmi doresc să locuiesc în altă zonă decât în apropierea Parcului Naţional Retezat	1	2	3	4	5
Mă încântă că locuiesc aproape de Parcul Naţional Retezat	1	2	3	4	5
Primesc multă satisfacţie din faptul că locuiesc aproape de Parcul Naţional Retezat	1	2	3	4	5

13. Aveţi orice fel de drepturi (de proprietate şi/sau de folosinţă, paşunat) a resurselor din Parcul Naţional Retezat?

❒ Nu ❒ Da

14. Parcul Naţional Retezat este important pentru diferiţi oameni din diferite motive. Vă rugăm să indicaţi pentru care din următoarele motive Parcul Naţional Retezat este important pentru dvs. Vă rugăm să bifaţi (✓**)** toate categoriile care sunt aplicabile în cazul dvs.

❒ Folosirea resurselor din parc (lemn, ciuperci, plante medicinale, pescuit, etc.)
❒ Păşunat pentru animalele din gospodărie
❒ Petrecerea timpului liber (drumeţii, excursii cu cortul, etc.)
❒ Priveliştea parcului, cu peisajul, plantele şi animalele sale unice
❒ Este un loc extraordinar ce merită vizitat împreună cu familia şi prietenii
❒ Beneficiile pe care le aduce comunităţii noastre
❒ Altele, vă rugăm să detaliaţi _____

15. Cunoaşteţi vreun grup/ forum/ sau comitet care reprezintă interesele comunităţii dvs. în cadrul administraţiei Parcului Naţional Retezat?

❒ Nu
❒ Da – Dacă da, vă rugăm să specificaţi numele acelui group/ forum/ sau comitet

_____

16. Randurile de mai jos conţin o serie de opinii despre protejarea naturii în Parcul Naţional Retezat. Vă rugăm să indicaţi în ce măsură sunteţi de acord cu fiecare dintre aceste afirmaţii. Pentru fiecare afirmaţie vă rugăm să încercuiţi un număr care este cel mai aproape de părerea dvs., pe o scală de 5 puncte, unde 1=dezacord total şi 5=acord total.

	Dezacord total	**Oarecum dezacord**	**Neutru**	**Oarecum de acord**	**Acord total**
Este important să avem Parcul Naţional Retezat pentru supravieţuirea a diferite specii de plante şi animale	1	2	3	4	5
Este necesar a proteja diferite suprafeţe de teren pentru protecţia diferitelor plante şi animale	1	2	3	4	5
Parcul Naţional Retezat este mândria ţării noastre	1	2	3	4	5
Protejarea Parcului Naţional Retezat este importantă pentru beneficiul generaţiilor viitoare	1	2	3	4	5
Este necesar ca tăierea de copaci în parc să fie strict reglementată	1	2	3	4	5
Dacă supra paşunatul continuă în parc, toate animalele în curând vor dispărea	1	2	3	4	5
Sunt mai importante nevoile oamenilor şi a animalele lor domestice din gospodărie decât protejarea animalelor sălbatice şi a plantelor	1	2	3	4	5
Este bine că ceva teren din interiorul parcului este alocat oamenilor din zonă spre folosinţă	1	2	3	4	5
Parcul Naţional Retezat este o risipă de teren	1	2	3	4	5
Oamenii care au drepturi de proprietate/ folosinţă în parc ar trebui să fie lăsaţi să folosească resursele din parc cum doresc	1	2	3	4	5
Parcul Naţional Retezat este pentru vizitatori, cei cărora le plac drumeţiile şi admirarea animalelor sălbatice	1	2	3	4	5

Bunăstarea economică a comunităţilor este mai importantă decât protejarea resurselor parcului	1	2	3	4	5
Parcul Naţional Retezat este administrat cu succes pentru beneficiul generaţiilor viitoare	1	2	3	4	5
Personal, suport regulile şi dispoziţiile stabilite de către administraţia parcului	1	2	3	4	5
Parcul Naţional Retezat este administrat cu success pentru o varietate de nevoi de folosinţă şi valori, nu doar turism	1	2	3	4	5
Administraţia Parcului Naţional Retezat face o treabă bună în ceea ce priveşte protejarea resurselor naturale din parc	1	2	3	4	5
Cetăţenilor din comunităţile din jurul parcului le sunt ascultate părerile referitoare la administrarea parcului	1	2	3	4	5
Avantajele parcului în general depăşesc impactele negative	1	2	3	4	5
Comunitatea mea beneficiază din faptul că este aproape de Parcul Naţional Retezat	1	2	3	4	5
Având Parcul Naţional Retezat aproape de casa mea este de folos pentru mine şi familia mea	1	2	3	4	5
Comunitatea mea este un loc mai frumos de reşedinţă datorită faptului că locuim aproape de Parcul Naţional Retezat	1	2	3	4	5
Calitatea aerului este mai ridicată fiindcă locuim aproape de Parcul Naţional Retezat	1	2	3	4	5
Resursele parcului ajută ca apele din zonă să fie curate pentru comunităţile din jur	1	2	3	4	5
Turiştii care vin în zonă sunt de folos nouă, celor care locuim în comunităţile din jurul parcului	1	2	3	4	5

Această secţiune include întrebări despre implicarea dvs. în protecţia mediului în Parcul Naţional Retezat.

17. Oamenii au diferite păreri în legătură cu modul în care terenurile parcului ar trebui administrate. Vă rugăm să indicaţi cine credeţi dvs. că ar trebui să stabilească regulile şi dispoziţiile de administrate a terenurilor din cadrul Parcului Naţional Retezat? Vă rugăm să bifaţi (✓) toate categoriile care sunt aplicabile în cazul dvs.

❒ Administraţia Parcului Naţional Retezat ❒ Consiliile locale
❒ Proprietarii de terenuri ❒ Alţii, vă rugăm să detaliaţi_____
❒ Nu consider că e nevoie de stabilirea a unor reguli stricte de administrare a terenurilor din cadrul parcului

18. Oamenii se implică în diferite feluri în protejarea naturii. Cât de eficiente credeţi dvs. că sunt următoarele acţiuni/ comportamente pentru protejarea naturii în Parcul Naţional Retezat? Pentru fiecare afirmaţie vă rugăm să încercuiţi un număr pe o scală de 5 puncte, unde 1=total ineficient şi 5=întotdeauna eficient.

	Total ineficient	Ineficient	Câteodată eficient	Adesea eficient	Întotdeauna eficient
A lua parte/ a participa la prezentări publice despre Parcul Naţional Retezat	1	2	3	4	5
A participa la întâlniri publice legate de Parcul Naţional Retezat	1	2	3	4	5
A participa într-un proiect al comunităţii legat de probleme/griji de mediu în zonă	1	2	3	4	5
A învăţa despre mediul înconjurător	1	2	3	4	5
A investi timp pentru a învăţa despre parc şi protecţia mediului înconjurător	1	2	3	4	5
A participa în programe educative despre mediul înconjurător	1	2	3	4	5
A participa într-un curs despre reducerea dependenţei dvs. faţă de resursele din parc	1	2	3	4	5
A participa într-o organizaţie locală care este implicată în protecţia parcului	1	2	3	4	5
A investi din timpul tău personal pentru a deveni implicat în probleme legate de parc	1	2	3	4	5
A reduce utilizarea resurselor din parc	1	2	3	4	5
A aduce turişti în parc	1	2	3	4	5
A vota pentru autorităţile publice care se arată interesate de problemele de mediu locale	1	2	3	4	5

19. În următorele 12 luni, dacă ţi-ar fi oferită oportunitatea/ posibilitatea, cât de probabil ar fi ca tu să te implici în următoarele acţiuni/ comportamente? Încercuieşte un număr care este cel mai aproape de părerea ta pentru fiecare afirmaţie, pe o scală de 5 puncte, unde 1=foarte improbabil şi 5=foarte probabil.

	Foarte improbabil	Oarecum improbabil	Nici probabil, nici improbabil	Oarecum probabil	Foarte probabil
Să particip la întâlniri publice legate de Parcul Naţional Retezat	1	2	3	4	5
Să iau parte la o prezentare publică despre Parcul Naţional Retezat	1	2	3	4	5
Să particip într-un proiect al comunităţii legat de probleme de mediu	1	2	3	4	5
Să investesc timp să învăţ mai mult despre parc şi protecţia	1	2	3	4	5

mediului					
Să îmi exprim părerile în luarea deciziilor administrative ale parcului	1	2	3	4	5
Să fiu implicat activ într-o organizaţie care suportă eforturile administrării parcului	1	2	3	4	5
Să particip la un curs despre cum să reduc dependenţa mea faţă de resursele parcului	1	2	3	4	5
Să îmi exprim nemulţumirile mele legat de administrarea parcului la autorităţile publice	1	2	3	4	5
Să vizitez parcul de cel puţin două ori	1	2	3	4	5
Să vizitez parcul de cel puţin şase ori	1	2	3	4	5

20. Oamenii au diferite opinii în legătură cu cine ar trebui să îşi asume responsabilitatea pentru protejarea naturii. Vă rugăm să indicaţi în ce măsură sunteţi de acord cu următoarele afirmaţii în legătură cu asumarea responsabilităţii pentru protejarea naturii în Parcul Naţional Retezat. Pentru fiecare afirmaţie vă rugăm să încercuiţi un număr care este cel mai aproape de părerea dvs. pe o scale de 5 puncte, unde 1=dezacord total şi 5=acord total.

	Dezacord total	**Oarecum dezacord**	**Nici acord, nici dezacord**	**Oarecum de acord**	**Acord total**
Personal, nu am nici un fel de responsabilitate pentru protejarea naturii în Parcul Naţional Retezat	1	2	3	4	5
Fiecare cetăţean din comunitatea mea trebuie să îşi asume responsibilitatea/ este responsabil pentru protecţia naturii în Parcul Naţional Retezat	1	2	3	4	5
Autorităţile, mai degrabă decât cetăţenii, sunt responsabile pentru protejarea naturii în Parcul Naţional Retezat	1	2	3	4	5
Autorităţile, împreună cu cetăţenii, sunt responsabili pentru protejarea naturii în Parcul Naţional Retezat	1	2	3	4	5

Această secţiune finală include întrebări legate de gospodăria dvs. precum şi informaţii demografice. Aceste informaţii sunt confidenţiale şi vor fi folosite doar pentru analize statistice.

21. De cât timp locuiţi în această comunitate?

Număr de ani_____

22. Câţi adulţi şi câţi copii locuiesc în gospodăria dvs.? (Vă rugăm să scrieţi numărul de persoane)

Număr de adulţi, inclusiv dvs. _____

Număr de copii (sub 18) _____

23. Sunteţi? ☐ Bărbat ☐ Femeie

24. În ce an v-aţi nascut? 19_____

25. Sunteţi? ☐ Singur/ă ☐ Căsătorit/ă sau intr-o relatie ☐ Divorţat/ă sau despărţit/ă ☐ Văduv/ă

26. Care este ultima şcoală pe care aţi absolvit-o? Vă rugăm să bifaţi ✓ un răspuns.

☐ Fără şcoală
☐ Şcoală primară (1-4 clase)
☐ Gimnaziu (5-8 clase)
☐ Şcoală profesională/ ucenici sau complementar
☐ Treapta I de liceu (9-10 clase)
☐ Liceu (9-12 clase)
☐ Şcoală post-liceală sau tehnic de maiştri
☐ Universitar de scurtă durată/ colegiu
☐ Universitar de lungă durată
☐ Studii postuniversitare (ex: masterat, doctorat)

27. Care dintre următoarele categorii reprezintă cel mai bine situaţia dvs. actuală de angajare? Vă rugăm să bifaţi ✓ un răspuns.

☐ Pensionar
☐ Casnică
☐ Şomer, fără loc de muncă
☐ Student
☐ Agricultor cu gospodărie individuală
☐ Alta (vă rugăm să specificaţi) _____
☐ Muncitor
☐ Lucrător în comerţ/ turism sau alte servicii
☐ Technician, mainstru, funcţionar
☐ Personal cu studii superioare
☐ Patron, întreprinzător,liber profesionist

28. În prezent, dvs. personal obţineţi un venit de la parc sau de la vizitatorii parcului/ turişti?

☐ Nu ☐ Da

29. Dar cineva din gospodăria dvs.?

☐ Nu ☐ Da

30. În luna trecută ce venituri a obţinut cu aproximaţie familia dumneavoastră?

☐ Aproape nici un venit
☐ Sub 250 RON
☐ Între 250 şi 499 RON
☐ Între 500 şi 999 RON
☐ Între 1000 şi 1499 RON
☐ Între 1500 şi 2000 RON
☐ Peste 2000 RON

În spaţiul alocat mai jos, vă rugăm să adăugaţi orice fel de comentarii adiţionale care credeţi că ne-ar putea ajuta să întelegem mai bine sentimentele/opiniile, atitudinile, şi percepţiile dvs. faţă de comunitatea în care locuiţi şi faţă de Parcul Naţional Retezat. Vă mulţumim!

Vă mulţumim mult pentru completarea acestui chestionar!

APPENDIX C
SEMI-STRUCTURED INTERVIEW GUIDE

The purpose of this study is to explore the feelings, attitudes, and behaviors people have towards their communities and the neighboring natural areas. I would like to talk to you about your community and also Retezat National Park.

Questions:

1. First, please tell me a little bit about yourself – what is your occupation, what is the size and makeup of your family, how long have you lived in this community, and how much do you like it here?
2. Please tell me how would you describe your community to someone who has never been here?
3. Please describe some of the most important things to you about your community; things that you care about and are attached to the most.
    - Concerns regarding your community.
4. Please describe what you think about Retezat National Park as a protected area; your feelings as well as attitudes towards the park.
    - Concerns regarding the park.
5. Please describe some of the things you do or you are willing to do for your community and the park.

Is there anything that you would like to add? Do you have any questions or comments?

Thank you very much for you participation in this study.

APPENDIX D
SEMI-STRUCTURED INTERVIEW GUIDE (IN ROMANIAN)

Scopul acestui studiu este să exploreze opiniile, atitudinile, şi comportamentele pe care oamenii le au faţă de comunităţile în care locuiesc (comunităţile lor) şi ariile protejate învecinate. Aş vrea să vorbesc cu dvs. despre comunitatea în care locuiţi (comunitatea dvs.) şi despre Parcul Naţional Retezat.

Întrebări:

1. Pentru început, vă rog să îmi ziceţi câte ceva despre dvs. – care este ocupaţia dvs., care este mărimea şi compoziţia familiei dvs., de cât timp locuiţi în această comunitate, şi cât de mult vă place aici?
2. Vă rog să îmi spuneţi cum aţi descrie comunitatea dvs. la cineva care nu a fost niciodata aici?
3. Care consideraţi că sunt cele mai importante lucruri din comunitate pentru dvs., care sunt lucrurile de care vă pasă şi de care sunteţi ataşat cel mai mult, and why?
    - Griji legate de comunitate.
4. (Vă rog să îmi spuneţi) Ce credeţi dvs. despre Parcul Naţional Retezat ca şi arie protejata; sentimentele precum şi atitudinile dvs. faţă de parc.
    - Griji legate de parc.
5. Vă rog să descrieţi câteva din lucrurile pe care le faceţi sau sunteţi dispus să le faceţi pentru comunitatea dvs. şi pentru parc.

Aveţi orice alte comentarii, opinii, sugestii pe care aţi dori să le exprimaţi? Aveţi orice fel de întrebări sau comentarii?

Vă mulţumim foarte mult pentru participarea dvs. în acest studiu.

LIST OF REFERENCES

Agrawal, A. (2001). Common property institutions and sustainable governance of resources. *World Development, 29*(10), 1649-1672.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*, 179-211.

Altman, I., & Low, S. M. (Eds.). (1992). *Place attachment. Human behavior and environment.* New York, NY: Plenum Press.

Anderson, D., & Gerbing, D. (1988). Structural equation modeling in practice. A review and recommended two-step approach. *Psychological Bulletin, 103,* 411-423.

Aoyagi-Usui, M., Vinken, H., & Kuribayashi, A. (2003). Pro-environmental attitudes and behaviors: An international comparison. *Human Ecology Review, 10*(1), 23-31.

Augustyn, M. (1998). National strategies for rural tourism development and sustainability: The Polish experience. *Journal of Sustainable Tourism, 6*(3), 191-209.

Bagozzi, R. P. (1994). Structural equation models in marketing research: Basic principles. In R.P. Bagozzi (Ed.), *Principles of marketing research* (pp. 317–385). Oxford, UK: Blackwell.

Barr, A., & Gilg, A. W. (2007). A conceptual framework for understanding and analyzing attitudes towards environmental behaviour. *Geography Annals, 89B*(4), 361-379.

Barrow, E., & Fabricius, C. (2002). Do rural people really benefit from protected areas – rhetoric or reality? *Park, 12*(2), 67-79.

Bamberg, S., & Schmidt, P. (2002). Incentives, morality, or habit? Predicting students care use for university routes with the models of Ajzen, Schwartz, and Triandis. *Environment and Behavior, 35,* 264.

Beckley, T. M. (2003). The relative importance of sociocultural and ecological factors in attachment to place. In L. E. Kruger (Ed.), *Understanding community–forest relations.* Portland, OR: U.S. Department of Agriculture Forest Service, Pacific Northwest Research Station.

Beggs, J. J., Hurlbert, J. S., & Haines, V. A. (1996). Community attachment in a rural setting: A refinement and empirical test of the systemic model. *Rural Sociology, 61*(3), 407-236.

Bernard, R.H. (2000). *Social research methods.* Thousand Oaks, CA: Sage Publications.

Bonaiuto, M., Aiello, A., Perugini, M., Bonnes, M., & Ercolani, A. P. (1999). Multidimensional perception of residential environment quality and neighborhood attachment in the urban environment. *Journal of Environmental Psychology, 19,* 331–352.

Bott, S., Cantrill, J. G., & Myers, O. E. (2003). Place and the promise of conservation psychology. *Human Ecology Review, 10*(2), 100–112.

Brandon, K. E., & Wells, M. (1992). Planning for people and parks: Design dilemmas. *World Development, 20*(4), 557-570.

Brehm, J. M. (2007). Community attachment: The complexity and consequence of the natural environment facet. *Human Ecology, 35*, 477-488.

Brehm, J. M., Eisenhauer, B. W., & Krannich, R. S. (2006). Community attachments as predictors of local environmental concern. The case of multiple dimensions of attachment. *American Behavioral Scientist, 50*(2), 142-165.

Brehm, J. M., Eisenhauer, B. W., & Krannich, R. S. (2004). Community attachments as predictors of local environmental concern. The case for multiple dimensions of attachment. *67th Annual Meeting of the Rural Sociological Society*, Sacramento, CA. Retrieved from http://www.ruralsociology.org/annual-meeting/2004/Brehm,etal.pdf.

Brennan, M. A. (2007). Community development in the west of Ireland: Twenty years on in the Killala area. *Community Development Journal, 42*(3), 330-347.

Brennan, M. A. (2006). The development of community in the West of Ireland: A return to Killala twenty years on. *Community Development Journal, 42*(3), 330-347.

Bridger, J. C., & Alter, T. (2008). An interactional approach to place-based rural development. *Community Development, 39*(1), 99-111.

Brown, B. B., & Perkins, D. D. (1992). Disruptions in place attachment. In I. Altman & S. Low (Eds.), *Place attachment. Human behavior and environment.* (pp. 279–304). New York, NY: Plenum.

Browne, M. W., & Cudeck, R. (1992). Single sample cross-validation indices for covariance structures. *Multivariate Behavioral Research, 24*, 445-455.

Campbell, K. E., Marsden, P. V., & Hurlbert, J. S. (1986). Social resources and socioeconomic status. *Social Networks, 8*, 87-117.

Chawla, L. (1990). Ecstatic places. *Children's Environments Quarterly, 7*(4), 18-23.

Chavis, D. M., & Wandersman, A. (1990). Sense of community in the urban environment: A catalyst for participation and community development. *American Journal for Community Psychology, 18*(1), 55-81.

Clayton, S. (2003). Environmental identity: A conceptual and an operational definition. In S. Clayton & S. Opotow (Eds.), *Identity and the natural environment: The psychological significance of nature* (pp. 45-65). Cambridge, MA: MIT Press.

Clayton, S., & Opotow, S. (2003). Introduction: Identity and the natural environment. In S. Clayton & S. Opotow (Eds.), *Identity and the natural environment: The psychological significance of nature* (pp. 1-24). Cambridge, MA: MIT Press.

Cottrell, S. P., & Cutumisu, N. (2006). Sustainable tourism development strategy in WWF Pan Parks: Case of a Swedish and Romanian national park. *Scandinavian Journal of Hospitality and Tourism, 6*(2), 150-167.

Creswell, J. W. (2007). *Qualitative inquiry and research design. Choosing among five approaches* (2nd Ed.). Thousand Oaks, CA: Sage Publications, Inc.

Cross, J. E. (2003). Conceptualizing community attachment. *66th Annual Meeting of the Rural Sociological Society*, Montreal, Canada. Retrieved from http://www.ruralsociology.org/annual-meeting/2003/CrossJennifer.pdf.

Cross, J. E. (2001). *Protecting our place: Establishing and maintaining community attachments in the face of population growth and change.* Unpublished doctoral dissertation, University of California-Davis.

Cutumisu, N. (2003). *A synergy between nature conservation and development: A framework for analyzing the impact of the sustainable tourism strategy in Natura 2000 sites.* Unpublished technical report, PAN Parks.

de Beer, F., & Marais, M. (2005). Rural communities, the natural environment and development – some challenges, some successes. *Community Development Journal, 40*(1), 50-61.

de Vaus, S. (2001). *Research design in social research.* London, UK: Sage Publications.

Dolisca, F., McDaniel, J. M., Shannon, D. A., & Jolly, C. M. (2009). A multilevel analysis of the determinants of forest conservation behavior among farmers in Haiti. *Society and Natural Resources, 22*(5), 433-447.

Driver, B. L., & Ajzen, I. (1996). Research needed on hard-to-define nature-based human experiences. In B. L. Driver, D. Dustin, T. Baltic, G. Elsner & G. L. Peterson (Eds.), *Nature and the human spirit: Toward an expanded land management ethic*. State College, PA: Venture Publishing, Inc.

Fielding, K. S., Terry, D. J., Masser, B. M., & Hogg, M. A. (2008). Integrating social identity theory and the theory of planned behaviour to explain decisions to engage in sustainable agricultural practices. *British Journal of Social Psychology, 47*, 23-48.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Flora, C. B., & Flora, J. L. (1990). Developing entrepreneurial rural communities. *Sociological Practice, 8*, 197-207.

Fornell, C., & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*, 39-50.

Fransson, N., & Garling, T. (1999). Environmental concern: Conceptual definitions, measurement methods, and research findings. *Journal of Environmental Psychology, 19*, 369-382.

Gadd, M. E. (2005). Conservation outside of parks: Attitudes of local people in Laikipia, Kenya. *Environmental Conservation, 32*(1), 50-63.

Gagnon, M. P., Godin, G., Gagne, C., Fortin, J. P., Lamothe, L., Reinharz, D., & Cloutier, A. (2003). An adaptation of the theory of planned behavior to the study of telemedicine adoption by physicians. *International Journal of Medical Informatics, 71*, 103-115.

Garling, T., Fujii, S., Garling, A., & Jakobsson, C. (2003). Moderating effects of social value orientation on determinants of proenvironmental behavior intention. *Journal of Environmental Psychology, 23*, 1-9.

Goudy, W. J. (1990). Community attachment in a rural region. *Rural Sociology, 55*, 178–198.

Granovetter, M. (1973). The strength of weak ties. *American Journal of Sociology, 78*, 1360-1380.

Gursoy, D., & Rutherford, D. G. (2004). Host attitudes towards tourism: An improved structural model. *Annals of Tourism Research*, *31*(3), 495-516.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6th Ed.). Upper Saddle River, NJ: Person Education, Inc.

Hall, D. (2004). Rural tourism development in Southeastern Europe: Transition and the search for sustainability. *International Journal of Tourism Research, 6*, 165-176.

Halpenny, E. A. (2006). *Environmental behavior, place attachment, and park visitation: A case study of visitors to Point Pelee National Park.* Unpublished doctoral dissertation, University of Waterloo, Ontario, Canada.

Harris, P. B., Brown, B. B., & Werner, C. M. (1996). Privacy regulation and place attachment: Predicting attachments to a student family housing facility. *Journal of Environmental Psychology, 16*, 287–301.

Hatcher, L. (1994). *A step-by-step approach to using the SAS system for factor analysis and structural equation modeling*. Cary, NC: SAS.

Hitlin, S. (2003). Values as the core of personal identity: Drawing links between two theories of self. *Social Psychology Quarterly, 66*(2), 118-137.

Hines, J. M., Hungerford, H. R., & Tomera, A. N. (1987). Analysis and synthesis of research on responsible environmental behavior: A meta-analysis. *Journal of Environmental Education*, *18*, 1-18.

Heltberg, R. (2001). Determinants and impacts of local institutions for common resource management. *Environment and Development Economics, 6,* 183-208.

Hu, L., & Bentler, P. (1999). Fit indices in covariance structure modeling: Sensitivity under parameterized model misspecification. *Psychological Methods, 3,* 424–453.

Hummon, D. M. (1990). *Commonplaces: Community ideology and identity in American culture*. Albany, NY: State University of New York Press.

Ioras, F. (2003). Trends in Romanian biodiversity conservation policy. *Biodiversity and Conservation, 12*, 9-23.

Infield, M., & Namara, A. (2001). Community attitudes and behavior towards conservation: an assessment of a community conservation program around Lake Mburo National Park, Uganda. *Oryx, 35*(1), 48-60.

Jennings, G., & Nickerson, N. P. (2006). *Quality tourism experiences.* Burlington, MA: Elsevier Butterworth-Heinemann.

Joreskog, K. G. (1993). Testing structural equation models. In K.A. Bollen and J.S. Long (Eds.), *Testing structural equation models* (pp. 294-316). Newbury, CA: Sage.

Kasarda, J. D., and Janowitz, M. (1974). Community attachment in mass society. *American Sociological Review*, *39*, 328–339.

Kappelle, R. J. (2001). *Relationships between local people and protected natural areas: A case study of Arthur's Pass and the Waimakariri Basin, New Zealand*. Unpublished master's thesis, Lincoln University, Caterbury, New Zealand.

Kellert, S. R. (2005). *Building for life. Designing and understanding the human-nature connection.* Washington, DC: Island Press.

Kihlstrom, J. F., Cantor, N., Albright, J. S., Chew, B. R., Klein, S. B., & Neidenthal, P. M. (1988). Information processing and the study of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology*, (pp.145-180). San Diego, CA: Academic Press.

Kline, R. B. (2005). *Principles and practice of structural equation modeling*. New York, NY: Guilford.

Kollmuss, A., & Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research, 8*(3), 239-260.

Kuijs, J., & Bergh, J. van den. (2006). *Tourism and nature conservation in Retezat National Park: A case study of sustainable financing mechanisms and tourism potentials*. Unpublished master's thesis, University of Wageningen, Netherlands.

Kyle, G., Bricker, K., Graefe, A., & Wickham, T. (2004). An examination of recreationists' relationships with activities and settings. *Leisure Sciences, 26,* 123-142.

Lawton, M. P. (1990). Knowledge resources and gaps in housing the aged. In D. Tilson (Ed.), *Aging in place* (pp. 287–309). Glenview, IL: Scott, Foresman.

Lepp, A. (2006). Residents' attitudes towards tourism in Bigodi Village, Uganda. *Tourism Management, 28,* 876–885.

Lewicka, M. (2005). Ways to make people active: The role of place attachment, cultural capital, and neighborhood ties. *Journal of Environmental Psychology, 25,* 381–395.

Louv, R. (2006). *Last child in the woods. Saving our children from nature-deficit disorder.* Chapel Hill, NC: Algonquin Books of Chapel Hill.

Luloff, A. E. (1990). Community and social change: How do small communities act? In A. E. Luloff and L. E. Swanson (Eds.), *American Rural Communities* (pp. 214-227). Boulder, CO: Westview Press.

Luloff, A. E. & Swanson, L. E. (1995). Community agency and disaffection: Enhancing collective resources. In L. J. Beaulieu & D. Mulkey (Eds.), *Investing in people: The human capital needs of rural America* (pp. 351-372). Boulder, CO: Westview Press.

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1,* 130-149.

Mannell, R. C. (1996). Approaches in the social and behavioral sciences to the systematic study of hard-to-define human values and experiences. In B. L. Driver, D. Dustin, T. Baltic, G. Elsner & G. L. Peterson (Eds.), *Nature and the human spirit: Toward an expanded land management ethic* (pp. 405-416). State College, PA: Venture Publishing, Inc.

Manfredo, M. J., Vaske, J. J., Bruyere, B. L., Field, D. R., & Brown, P. J. (2004). *Society and natural resources: A summary of knowledge.* Jefferson, MO: Modern Litho.

Manzo, L. C. (2005). For better or worse: Exploring multiple dimensions of place meaning. *Journal of Environmental Psychology, 25*, 67–86.

Marsh, H.W., Craven, R. G., & Debus, R. (1991). Self-concepts of young children 5 to 8 years of age: Measurement and multidimensional structure. *Journal of Educational Psychology, 83*(3), 377-392.

Mayer, F. S., & Frantz, C. M. (2004). The connectedness to nature scale: A measure of individuals' feeling in community with nature. *Journal of Environmental Psychology, 24*(4), 503-515.

McCool, S. F., & Martin, S. R. (1994). Community attachment and attitudes toward tourism development. *Journal of Travel Research, 32,* 29-34.

McFarlane, B., & Boxall, P. C. (2003). The role of social psychological and social structural variables in environmental activism: An example of the forest sector. *Journal of Environmental Psychology*, *23*, 79-87.

Mesch, G. S., & Manor, O. (1998). Social ties, environmental perception, and local attachment. *Environment and Behavior*, *30*(4), 504-519.

Muthén, B., C du Toit, S. H., & Spisic, D. (1997). *Robust inference using weighted least squares and quadratic estimating equations in latent variable modeling with categorical and continuous outcomes.* Unpublished technical report.

Nguyen, T. N. (2007). *Role of social capital in natural resources conservation: A case study of Cat Tien National Park in Vietnam.* Unpublished doctoral dissertation, University of Florida.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill.

Oostenbrink, W., & Kosterink, P. (2005). *Public participation in sustainable regional development in EU-accession countries Bulgaria and Romania*. Retrieved from www.milieukontact.nl.

Ormsby, A., & Kaplin, B. A. (2005). A framework for understanding community resident perceptions of Masoala National Park, Madagascar. *Environmental Conservation*, *32*(2), 156-164.

Pagdee, A., Kim, Y. S., & Daugherty, P. J. (2006). What makes community forest management successful: A meta-study from community forests throughout the world. *Society and Natural Resources*, *19*, 33-52.

PAN Parks (2009). *Vision*. Retrieved from http://www.panparks.org/Introduction/Vision.

Payne, L. L., & Schaumleffel, N. A. (2008). Relationship between attitudes toward rural community parks and recreation and rural community satisfaction. *Journal of Park and Recreation Administration, 26*(3), 116-135.

Pennisi, L. (2007). *Connection to nature: Developing a measurement scale.* Unpublished doctoral dissertation, University of Florida.

Perrin, J. L., & Benassi, V. A. (2009). The connectedness to nature scale: A measure of emotional connection to nature? *Journal of Environmental Psychology, 29*, 434-440.

PJB Associates. (2006). *New perspectives for learning: Engaging people in active citizenship in Central and Eastern Europe*. Retrieved from http://www.pjb.co.uk/npl/bp64.htm.

Pol, E. (2002). The theoretical background of the city-identity-sustainability network. *Environment and Behavior, 34*, 8-25.

Popescu, C. (1993). Romanian industry in transition. *GeoJournal, 29*(1), 41–48.

Pretty, J. (2002). *Agri-culture. Reconnecting people, land, and nature*. Sterling, VA: Earthscan Publications Ltd.

Pretty, G., Chipuer, H., & Bramston, P. (2003). Sense of place amongst adolescents and adults in two rural Australian towns: The discriminating features of place attachment, sense of community and place dependence in relation to place identity. *Journal of Environmental Psychology, 23*, 273–287.

Pretty, J., & Smith, D. (2004). Social capital in biodiversity conservation and management. *Conservation Biology, 18*, 631–638.

Retezat National Park. (2008). *About the park.* Retrieved from http://retezat.ro/index.php/romana/despre-parc.html.

Retezat National Park.(2008). *Management plan.* Retrieved from http://retezat.ro/index.php/romana/proiect-life/119-plan-management-pnr-sit-natura2000.html.

Riger, S., & Lavrakas, P. J. (1981). Community ties: Patterns of attachment and social interaction in urban neighborhoods. *American Journal of Community Psychology, 9*, 55–66.

Roberts, L., & Simpson, F. (1999). Developing partnership approaches to tourism in Central and Eastern Europe. *UK Journal of Sustainable Tourism, 7*(3, 4), 35-47.

Robertson, J., & Lawes, M. J. (2005). User perceptions of conservation and participatory management of iGxalingenwa forest, South Africa. *Environmental Conservation, 32*(1), 64-75.

Roggenbuck, J., & Driver, B. L. (2000). Benefits of nonfacilitated uses of wilderness. *Wilderness Science in a Time of Change Conference*, Missoula, MT.

Rollero, C., & De Piccoli, N. (2010). Place attachment, identification and environment perception: An empirical study. *Journal of Environmental Psychology, 30*, 198-205.

Roman, M. M., & Roman, M. D. (2003). *Time use for leisure in Romania.* Retrieved from www.petra1.istat.it/timeuse/paper/paper55.ppt.

Romanian National Institute of Statistics. (2007). Statistical yearbook 2007. Retrieved from http://www.insse.ro/cms/rw/pages/index.en.do.

Sampson, R. J. (1989). Local friendship ties and community attachment in mass society: A multilevel systemic model. *American Sociological Review, 53*, 766–779.

Saris, W. E., Satorra, A., & Sörbom, D. (1987). The detection and correction of specification errors in structural equation models. In C. C. Clogg (Ed.), *Sociological methodology* (pp. 105-129). San Francisco: Jossey-Bass.

Schultz, P. W. (2002). Inclusion with nature: The psychology of human relationships. In P. Schmuck & P. W. Schultz (Eds.), *Psychology of sustainable development* (pp. 61-78). Norwell, MA: Kluwer Academic Publishers Group.

Schultz, P. W., Shriver, C., Tabanico, J. J., & Khazian, A. M. (2004). Implicit connections with nature. *Journal of Environmental Psychology, 24*(1), 31-42.

Sheldrake, R. (1999). *Dogs that know when their owners are coming home.* New York, NY: Crown.

Snyder, M., & Cantor, N. (1998). Understanding personality and social behavior: A functionalist strategy. In D.T. Gilbert, S. T. Fiske & G. Lindzey (Eds.), *The handbook of social psychology* (pp. 635-679). Boston, MA: McGraw-Hill.

Stanciu, E. (2002). Developing collaborative management in Retezat National Park, Romania. Retrieved from http://www.earthlore.ca/clients/WPC/English/grfx/sessions/PDFs/session_2/Stanciu.pdf.

Stedman, R. C. (2003). Is it really just a social construction? The contribution of the physical environment to sense of place. *Society and Natural Resources, 16*, 671–686.

Stedman, R. C. (2002). Towards a social psychology of place: Predicting behavior from place-based cognitions, attitude, and identity. *Environment and Behavior, 34*(5), 405–425.

Steele, J., Bourke, L., Luloff, A. E., Liao, P. S., Theodori, G. L., & Krannich, R. S. (2001). The drop-off/ pick-up method for household survey research. *Journal of the Community Development Society, 32*(2), 230-250.

Stern, P. C. (2000). Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues, 56*(3), 407-424.

Stern, P. C., & Dietz, T. (1994). The value basis of environmental concern. *Journal of Social Issues, 50*, 65-84.

Stern, P. C. & Oskamp, S. (1987). Managing scarce environmental resources. In D. Stokols & I. Altman (Eds.), *Handbook of environmental psychology*, Vol. 2, (pp 1043-1088). New York, NY: Wiley.

Stinner, W. F., Van Loon, M., Chung, S.-W., & Byun, Y. (1990). Community size, individual social position, and community attachment. *Rural Sociology, 55*(4), 494-521.

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Grounded theory procedures and techniques* (2nd ed.). Newbury Park, CA: Sage.

Strauss, A., & Corbin, J. (1990). *Basic of qualitative research: Grounded theory procedures and techniques.* Newbury Park, CA: Sage.

Stokols, D., & Shumaker, S. A. (1981). People in places: A transactional view of settings. In J. Harvey (Ed.), *Cognition, social behavior, and the environment* (pp. 441-488). Hillsdale, NJ: Erlbaum.

Summers, G. (1986). Rural community development. *Annual Review of Sociology, 12*, 237-371.

Theodori, G. L. (2004). Examining the association between length of residence and community attachment: A research note. *Southern Rural Sociology, 20*(1), 107-122.

Theodori, G. L. (2000) Levels of analysis and conceptual clarification in community attachment and satisfaction research: Connections to community development. *Journal of the Community Development Society, 31*(1), 35–58.

Theodori, G. L., & Luloff, A. E. (2002). Position on environmental issues and engagement in proenvironmental behaviors. *Society and Natural Resources, 15*, 471-482.

Theodori, G. L., & Mayfield, C. A. (2008). Attendance at religious meetings and community involvement. *Southern Rural Sociology, 28*(1), 266-276.

Triandis, H. C. (1980). Values, attitudes and interpersonal behaviour. In: M. M. Page (Ed.) *Nebraska symposium on motivation: Beliefs, attitudes and values* (pp. 195–259). Lincoln, NB: University of Nebraska Press.

Tuan, Y. (1974). *Topophilia: A study of environmental perception, attitudes, and values*. Englewood Cliffs, NJ: Prentice Hall.

United Nations Development Program. (2001). *The integration of biodiversity into National Environmental Assessment Procedures. National Case Studies. Romania.* Retrieved from http://www.unep.org/bpsp/EIA/Case%20Studies/Romania%20(EIA).pdf.

Van Hal, M. (2006). *Evaluation of co-management in national parks: The case of Retezat National Park, Romania.* Unpublished master's thesis, University of Wageningen, Netherlands.

Van Liere, K. D., & Dunlap, R. E. (1978). Moral norms and environmental behavior: An application of Schwartz's norm-activation model to yard burning. *Journal of Applied Social Psychology, 8,* 174-188.

Van Vugt, M. (2001). Community identification moderating the impact of financial incentives in a natural social dilemma: Water conservation. *Personality and Social Psychology Bulletin, 27,* 1440–1449.

Vaske, J. J., & Donnely, M. (1999). A value-attitude-behavior model predicting wildland preservation voting intentions. *Society and Natural Resources, 12,* 523-537.

Vaske, J. J., & Kobrin, K. C. (2001). Place attachment and environmentally responsible behavior. *Journal of Environmental Education, 32*(4), 16-21.

Vining, J. (2003). The connection to other animals and caring for nature. *Human Ecology Review, 10*(2), 87-99.

Vining, J., & Ebreo, A. (1992). Predicting recycling behavior from global and specific environmental attitudes and changes in recycling opportunities. *Journal of Applied Social Psychology, 22,* 1580-1607.

Vorkinn, M., & Riese, H. (2001). Environmental concern in a local context: The significance of place attachment. *Environment and Behavior, 33,* 249–263.

Walpole, M. J., & Goodwin, H. J. (2001). Local attitudes towards conservation and tourism around Komodo National Park, Indonesia. *Environmental Conservation, 28*(2), 160-166.

Warren, R. (1987). *The Community in America* (3rd ed.). Lanham, MD: University Press of America.

Weladji, R. B., Moe, S. R., & Vedeld, P. (2003). Stakeholder attitudes toward wildlife policy and the Benoue Wildlife Conservation Area, North Cameroon. *Environmental Conservation, 30*(4), 334-343.

Werner, C. W., Altman, I., Brown, B. B., & Ginat, J. (1993). Celebrations in personal

relationships: A transactional/dialectic perspective. In S. Duck (Ed.), *Social context and relationships: Understanding relationship processes series,* Vol. 3, (pp. 109–138). Newbury Park, CA: Sage.

White, A. T., & Runge, F. C. (1994). Common property and collective action: Lessons from cooperative watershed management in Haiti. *Economic Development and Cultural Change, 43,* 1-41.

Williams, D. R., Patterson, M. E., Roggenbuck, J. W., & Watson, A. E. (1992). Beyond the commodity metaphor. *Leisure Sciences, 14,* 29-46.

Williams, D. R., & Roggenbuck, J. W. (1989). Measuring place attachment: Some preliminary results. In L. H. McAvoy & D. Howard (Eds.), *Abstracts: 1989 Leisure Research Symposium* (p. 32). Arlington, VA: National Recreation and Park Association.

Williams, D. R., & Vaske, J. J. (2003). The measurement of place attachment: Validity and generalizability of a psychometric approach. *Forest Science, 49,* 830–840.

Wilkinson, K. P. (1986). In search of the community in the changing country-side. *Rural Sociology, 51,* 1-17.

Wilkinson, K. P. (1991). *The community in rural America.* Middleton, WI: Social Ecology Press.

Woldoff, R. A. (2002). The effects of local stressors on neighborhood attachment. *Social Forces, 81,* 87–116.

Yu, C. Y. (2002). *Evaluating cutoff criteria of model fit indices for latent variable models with binary and continuous outcomes.* Unpublished doctoral dissertation, University of California.

Zhang, J., Inbakaran, R. J., & Jackson, M. S. (2006). Understanding community attitudes towards tourism and host-guest interaction in the urban-rural border region. *Tourism Geographies, 8*(2), 182-204.

BIOGRAPHICAL SKETCH

Natalia Buta studied Marketing at University of Oradea, Romania. After graduation, she worked for two years as a human resources assistant for a company in Romania providing accounting services. Her passion for the outdoors and continues involvement in developing outdoor recreation programs for youth, provoked and inspired her to continue her studies. Consequently, in 2004 she joined the graduate program in Recreation and Parks Administration at Central Michigan University, where she received her Master of Arts in Recreation and Parks Administration. In 2006 she began her Ph.D. program at the University of Florida with a concentration in natural resources recreation.

Over the years, she has been involved in several research projects in cooperation with faculty. She worked on research projects that explored the role of the leisure experience in life satisfaction, impact of outdoor recreation participation on quality of life, as well as image formation process of natural landscapes in the context of outdoor recreation participation. Furthermore, she conducted research examining online representation of ecotourism operations, primarily focusing on socio-cultural, economic, educational, and environmental sustainability messages. Her accumulated research knowledge has formed the building blocks for designing her dissertation research, which is a strong representation of her research interest. She intends on continuing her work to better understand the role of outdoor recreation and natural and cultural resources in shaping community and ecological well-being.