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Outdoor activity involvement and postsecondary status among rural adolescents:

Results from a longitudinal analysis

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**Abstract**

Outdoor recreation and leisure are being promoted in some rural communities as an economic revitalization strategy and an arena for youth development. This research brief reports on a study analyzing a five-wave longitudinal dataset that examined the influence of outdoor activity involvement on postsecondary educational status in a sample of emerging adults from a large, rural county in the northeastern U.S. ( $N=114$ ). Differences in educational predictors were found between individuals participating in different outdoor activity types and at different levels throughout adolescence. Multinomial regression found the degree of outdoor activity involvement and parental education levels to predict postsecondary enrollment status two years after high school. Additionally, postsecondary enrollment was associated with living outside the area after high school. Results illustrate the importance of considering the relationship between leisure activities, education, and residential decision making when conducting research on youth and community development in rural areas.

Outdoor activity involvement and postsecondary status among rural adolescents:

Results from a longitudinal analysis

Many rural communities in the United States face the dual challenges of developing new economic engines to offset declines in traditional sectors and stemming the flow of youth outmigration resulting from the corresponding loss of educational and job opportunities (Akin, Shaw, & Spartz, 2015; Carsey Institute, 2007). Youth growing up in this environment often must decide to “stay and work in whatever industry or business is locally available, or leave to pursue higher education or other types of work” (Biddle & Hall, 2017, p. 1). Outdoor recreation is being recognized in some mountainous and forested rural regions as a strategy for economic revitalization and an arena for positive youth development that enhances individual potential, strengthens community affiliation, and shapes future residential decision making (Janzer, 2017; Mainella, Agate, & Clark, 2011; McKalip, 2012; McLaughlin, Schoff, & Demi, 2014; Stracuzzi, 2009). Creating opportunities for rural adolescents to engage in outdoor activities may therefore be a promising way to retain them as future residents. Research on the role of leisure in youths’ future aspirations and planning, however, must also recognize post-secondary education as a determining factor in the trajectories they actually pursue as emerging adults, as it introduces a “mobility imperative” (Farrugia, 2016) that indelibly shapes later residential choices (Beal & Crockett, 2010; Byun, Irvin, & Meece, 2012; see e.g., Marcus & Krupnick, 2018).

Given recent interest in leisure research with social import as a main criterion (Glover, 2015), the relationship between different leisure patterns, educational attainment, and indicators of residential selection as adolescents progress into emerging adulthood is important to understand when examining how leisure activities are “developmental” in rural contexts (see

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Edwards & Matarrita-Cascante, 2011; McLaughlin et al., 2014; Schafft, 2016). The study reported in this research brief examined the extent to which organized and unstructured outdoor activity involvement during adolescence predicted postsecondary educational and residential status among emerging adults from a rural, northern New England county. Informed by a developmental-contextual perspective (Seaman, Sharp & Coppens, 2017) we examined the following questions: (1) What different patterns of outdoor activity involvement exist among adolescents growing up in a rural, northeastern county? (2) How do youth presenting distinctive patterns of involvement differ socially and demographically? (3) Which activity profiles predicted the educational and residential statuses of youth as they transitioned to emerging adulthood?

Leisure activities provide a unique developmental context shown to connect adolescents to peer and adult supports, introduce new skills, enable a sense of agency, contribute to personal exploration, and promote higher levels of educational attainment (e.g., Caldwell & Witt, 2011; Eccles, Barber, Stone, & Hunt, 2003). Despite the well-known benefits of positive leisure activities to youths' future outcomes, longitudinal research examining particular patterns of leisure involvement relative to developmental outcomes in rural environments is limited (Davison et al., 2012; Sharp, Tucker, Baril, Van Gundy, & Rebellon, 2015). Studies analyzing specific activity types germane to rapidly evolving rural settings are even more scarce. We focused on outdoor activities in this research for two main reasons: (1) Outdoor activities were the most highly ranked out-of-school activity for area youth, who also show participation rates at 20% above the national average (Seaman, Sharp, McLaughlin, Tucker, VanGundy & Rebellon, 2014). (2) State and local leaders are actively working to expand the area's reputation as a destination for outdoor recreation and tourism. This priority enjoys widespread popular support

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among adults in the area, according to a 2017 study where 81% of respondents rated tourism and recreation as “very important” to the region’s economic future, surpassing the former mainstays of light manufacturing (71%), forest-based industries, (67%), and biomass production (41%) (Hamilton, Fogg, & Grimm, 2017). Existing research therefore indicates that outdoor activities are a common pastime for area youth, promote community attachment, and are viewed as part of the region’s economic future, suggesting a potential leverage point for communities seeking to link youths’ future planning with regional development efforts (Cox, Tucker, Sharp, Van Gundy, & Rebellon, 2014; Seaman et al., 2014).

### **Methods**

The present study used five waves of data collected as part of a longitudinal study of rural youth development which surveyed the entire age cohort of public school students progressing from 7<sup>th</sup> grade ( $N=316$ ; 2008) to two years post-high school ( $N=137$ ; 2015), living in a geographically large, rural county in the northeastern United States. The county, which is rich in natural amenities, is undergoing a shift from resource extraction and manufacturing to an outdoor recreation and tourism-based economy following the closure of several pulp and paper plants and a corresponding population reduction since the 1990s. It is already known for outdoor pursuits including tourism, skiing, fishing, and hunting, and a variety of motorized and non-motorized activities, in addition to a history of agriculture and resource extraction as sources of livelihood. Its demographic and economic features are comparable to other rural, forested communities undergoing similar changes (Hamilton, Hamilton, Duncan, & Colocousis, 2008). The Institutional Review Board at the University of New Hampshire and local K-12 administrators approved this study.

Respondents who completed the survey in either/both of 7th or 8th grade (waves 1 & 2),

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10th grade (wave 3), 12th grade (wave 4) and two years post-graduation (wave 5) were included in the final sample ( $N=114$ ; Mean age at wave 5 = 20.35; 60% female, 40% male; 96% white).

To capture outdoor activity involvement throughout adolescence, outdoor-focused items were selected from a 17-item checklist of activities collected at waves 1-4, in which respondents indicated involvement over the previous 12 months. Person-centered analysis (Magnusson, 2003) was used to create profile groups based on responses to involvement in organized (e.g., 4-H, Scouts) and unstructured (e.g., snowmobiling, hiking) outdoor activity involvement across middle and high school.

Emerging adulthood outcomes of postsecondary educational status, community affiliation and perspectives toward nature, and residential status were measured 2 years post-high school. Postsecondary education status was computed using enrollment status in 2015-16 (two years post-high school) and anticipated enrollment in 2016-17, as reported in the wave 5 survey. To measure community affiliation and perspectives toward nature as a related but potentially independent dimension of it (see Brehm, 2007; Fabiansson, 2006), two variables were created using the following items from the *Community and Environment in Rural Areas* (CERA) inventory (Hamilton et al., 2008): “*I feel like I am part of my community,*” “*I am proud to present my community to people,*” and “*I care about my community,*” and “*This community has so much to offer in terms of outdoor activities, you could never get bored*” and “*I love the natural beauty of my community.*” Residential status in emerging adulthood was measured by asking wave 5 respondents to report where they currently live the majority of the time. Wave 5 respondents also rated whether educational and job opportunities in the focal area, along with “fun things to do” and “natural beauty,” were getting worse, staying the same, or better (scale: 1-3).

## Results<sup>1</sup>

Two-step cluster analysis, calculated in SPSS, using longitudinal data on involvement in outdoor activities across middle and high school produced three distinct profiles of outdoor activity involvement: Those with little or no involvement in any outdoor activity throughout adolescence (Group 1,  $N=31$ ), high involvement in unstructured activities only (Group 2,  $N=57$ ), and high involvement in both unstructured and organized activities (Group 3,  $N=26$ ). Group composition, postsecondary educational and residential statuses, and ANOVA results comparing years of involvement are shown in Table 1. Chi square analyses revealed no significant group differences by gender ( $\chi^2 = 1.28, p = .527$ ), however groups differed significantly in postsecondary status, with a greater proportion of low-involved youth continuously unenrolled in postsecondary education (47% vs. 22% and 19%;  $\chi^2 = 10.025, p = .04$ ). Being enrolled full time after high school was significantly associated with living outside the area ( $\chi^2 = 15.905, p = .000$ ). Groups did not differ in their assessments of occupational ( $M=1.6 - 1.7; p=.674$ ) or educational opportunities at wave 5 ( $M=2.0 - 2.1; p=.782$ ), or on perceptions regarding “fun things to do” ( $M=1.7 - 1.9; p=.264$ ) and “natural beauty” ( $M=2.1 - 2.2 p=.863$ )

[Insert table 1 about here]

### Factors predicting educational attainment

Drawing from the literature concerning social capital, activity involvement, and postsecondary status in rural populations, values representing predictive factors were created by averaging responses across 10<sup>th</sup> and 12<sup>th</sup> grade survey waves on variables known to predict postsecondary status. These included: parents' education level, level of family educational

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<sup>1</sup> Partial results were previously presented at the Symposium on Experiential Education Research, November 9, 2017, Montreal, QC.



guidance, high school grades, school belonging, youths' aspirations for attending college, youths' expectations for actually finishing college, parental expectations, and community affiliation (see Byun, Meece, et al., 2012; Eccles & Davis-Keane, 2005; Irvin, Meece, Byun, Farmer, & Hutchins, 2011). Table 2 reports correlations among these factors, along with youths' community affiliation and perspectives toward nature.

[Insert table 2 about here]

As shown in Table 2, items typically predictive of college attendance were highly correlated with one another and with items indicating community affiliation, which in turn was positively correlated with perspectives toward nature and not with a desire to leave the area. The relationship between unstructured outdoor activity involvement and all dimensions of community affiliation was particularly robust. Table 3 shows results from an ANOVA used to examine group differences on these main factors. Groups differed significantly on the importance they placed on leaving the area, expectations they would actually finish college, and perception of the importance parents placed on attending college. Groups also differed in responses to the questions about community affiliation and perspectives toward nature, with the least involved students scoring significantly lower than the other groups in both areas.

[insert table 3 about here]

Predictors of postsecondary status were evaluated using multinomial logistic regression (variables violating assumptions of multicollinearity were omitted; see Table 2) with outdoor activity profile group entered as a categorical factor and parents' educational level, school belonging in high school, and importance of leaving the area entered as covariates (see Seaman et al., 2014; Byun, Meece, Irvin & Hutchins, 2012; Eccles & Davis-Keane, 2005). The fit of the

final model was statistically significant ( $\chi^2 = 28.435, p = .002$ ) and accurately estimated 65.1% of overall cases.

[Insert table 4 about here]

As shown in Table 4, results indicate that the odds of being continuously enrolled in postsecondary education decreases by 89%  $[(0.11-1)*100]$  between Group 3 (high involvement in organized and unstructured activities) to Group 1 (low involvement). For every one-unit increase in parents' educational level, the odds of being continually enrolled in school full-time increases by a factor of 2.9 (290%) versus being continuously unenrolled. Findings therefore suggest that levels of parent education and outdoor activity throughout adolescence each influenced youths' postsecondary trajectories, particularly for highly involved youth.

### **Discussion**

In their review of the literature on leisure in rural communities, Edwards and Matarrita-Cascante (2011) wrote: "Future research should endeavor to provide a better understanding of the role of leisure and recreation for positive development of rural youth" (p. 462). They also argued that researchers should seek to understand how leisure activities function in specific communities, rather than assuming uniform conditions, goals, or experiences across rural settings. The present study investigated longitudinal patterns of outdoor activity involvement among adolescents growing up in a natural amenity-rich region of the northeastern US, which is actively attempting to transition into an outdoor recreation economy, and whether this involvement predicted postsecondary status – an important marker of positive development. The study also analyzed residential status and perceptions of key community features at emerging adulthood, which are critical issues for determining later residential selection and form an important part of community revitalization (McLaughlin et al., 2014).

Results presented here underscore the importance of understanding the complex relationship of specific leisure activities to outcomes of interest in different ecological niches. Not only did well-known antecedent factors, such as parents' educational level and degree of youth activity involvement, emerge as predictors of postsecondary outcomes, findings also indicate challenges that might be unique to rural environments. For instance, the most highly involved youth reported the most favorable perspectives toward nature in high school yet were also the most likely to pursue full-time postsecondary education and thus relocate away from their communities. Conversely, the least involved youth placed greatest importance on leaving and scored lowest on variables indicating community affiliation in high school – including their perspectives toward nature as a dimension of their community – but were least likely to be enrolled full-time after high school and thus were the most likely to remain in the area. Such findings point to a double-bind for youth and communities alike; certain outdoor activity patterns might foster community affiliation, but also reinforce a favorable orientation toward higher education, which typically entails relocating especially when local avenues are limited. Meanwhile, disengaged youth (who also tended to possess fewer familial resources) developed neither community affiliation through the outdoors nor aspirations for college, yet were most likely to remain in the area. This suggests “rural brain drain” (Petrin, Schafft, & Meece, 2014) remains a persistent phenomenon in which leisure pursuits may also play a part. More optimistically, findings suggest that *unstructured* outdoor activities might create bonds with the natural environment and the local community while also orienting youth to postsecondary options that allow them to remain in the area. These connections, and the profiles of youth who learn to “make do” (Nelson & Smith, 1999) by taking advantage of them, should be examined more carefully in future research, especially as communities seek to capitalize on certain kinds of

leisure provision over others.

The challenge of balancing local community needs with individual aspirations should not be underestimated. Notably, the most highly involved youth did not have the most highly educated parents, but rated higher parental expectations for attending college. This finding suggests a possible relationship between parents' values and the use of leisure activities as a kind of "resource compensation" (Morris, 2015) that buttresses familial goals for postsecondary attainment. The specific ways leisure activities are exploited in the service of establishing young people's postsecondary goals deserve greater attention in future research, particularly given rising awareness of an "engagement gap" (Snellman, Silva, Frederick & Putnam, 2015) that contributes to social and economic inequity.

Finally, as emerging adults, members of different outdoor activity profile groups equally perceived educational, occupational, and leisure opportunities to be the same or worse in their communities of origin, which will likely influence decisions to return. Therefore, a need exists to examine in greater detail how perceptions of such conditions are formed through leisure activities, how these perceptions influence educational planning, and how, as rural youth transition to adulthood, key conditions are evaluated. As Corbett (2014) observes, this effort will require abandoning longstanding "tropes" that shape etic perspectives on rural living, such as Romantic constructions of community, nature, and leisure that do not match how they function together in reality for rural residents.

### **Conclusion**

Although the present study was limited in several respects, including attrition in the final wave of data collection and a lack of detail regarding specific outdoor pursuits, motivations for participation, and depth of involvement, it did illustrate some of the complexities involved in

using leisure to promote youth and community development in rural contexts. Coupled with familial resources, leisure activities appear to be linked with future educational and residential planning (McLaughlin et al., 2014); as such, they could be a promising leverage point for communities trying to retain young adults. Further research could fruitfully examine how institutional efforts to intervene in future planning might coordinate most beneficially with regional economic revitalization programs that create the conditions in which later decisions are made.

Amidst losses in recreational infrastructure that often accompanies economic decline due to changes in industry (Oncescu, 2015), some communities are thinking inventively about using available resources such as natural amenities as draws for tourists as well as assets for enhancing young people's outlook toward themselves and their communities. Developing future aspirations is double-edged, however, as it often entails moving away to pursue opportunities elsewhere, then deciding whether to return, which poses a risk to communities. The availability of natural amenities for leisure purposes may influence later residential selection, but not in isolation from other developmental-contextual processes that shape educational planning and assessments of economic opportunity (McLaughlin et al., 2014). Existing research, including the brief analysis presented here, indicates the importance of placing the relationship between leisure activities, education, and residential selection centrally in future studies of rural community and youth development.

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Table 1: Profile Group Composition, Postsecondary Educational and Residential Status

Group	Gender		Years involved		Continuously not enrolled	Intermittent or part-time enrollment	Continuously enrolled full-time
	F	M	Org.	Unst.			
1) Low involvement (N=31)	21	10	.10	1.52	14 (47%)	7 (23%)	9 (30%)
2) High in unstruct. (N=57)	33	24	0	3	12 (22%)	11 (20%)	32 (58%)
3) High in both (N=26)	14	12	1.81	3.15	5 (19%)	9 (37%)	12 (46%)
Respondents living in area at Wave 5					19 (63%)	14 (54%)	11 (22%)
Respondents living outside of area at Wave 5					11 (37%)	12 (46%)	40 (78%)

ANOVA results:  $F(2, 111) = 154.49, p = .000$ . Years of involvement in organized activities: *Group 3 > Group 2, 1* ( $p = .000$ ); Years in unstructured outdoor activities: *Group 1 < Group 2, 3* ( $p = .000$ )

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Table 2: Correlations Among Included Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Organized outdoor activity involvement	-											
2. Unstructured outdoor activity involvement	.25**	-										
3. Parents' education level	-.14	.03										
4. Parental educational guidance	.02	.06	.31**	-								
5. Grades in HS	-.02	.02	.36***	.31**	-							
6. Important to leave area after HS	.01	-.23*	.08	-.05	.00	-						
7. School belonging	.07	.09	.20	.45***	.40***	-.20*	-					
8. Aspirations to attend college	.04	.11	.26*	.15	.46***	.10	.43***	-				
9. Expectations for finishing college - self	.20*	.23*	.31**	.27**	.50***	.03	.45***	.79***	-			
10. Expectations to attend college - parents	.10	.31**	.33**	.33**	.27**	.05	.36***	.49***	.56***	-		
11. Perspectives toward nature	.27**	.37**	.19	.15	.15	-.31**	.29**	.09	.22*	.07	-	
12. Community affiliation	.18	.26**	.19	.34***	.37**	-.37***	.64***	.29**	.42**	.31***	.56***	-

\* $p < .05$ .; \*\* $p < .01$ .; \*\*\* $p < .00$ .

Table 3: M (and SD) of Included Variables by Profile Group, with Group Differences

Variable	Group 1: Low involvement (N=31)	Group 2: High in unstructured only (N=57)	Group 3: High involvement in both (N=26)
1. Parents' education level	3.00 (.93)	3.47 (1.13)	3.02 (1.07)
2. Parental educational guidance	2.26 (.96)	2.57 (.90)	2.50 (.69)
3. Grades in HS	6.89 (1.63)	7.23 (1.33)	7.15 (2.00)
4. Important to leave area after HS	4.26 (1.86) <sup>i</sup>	3.18 (1.83)	3.81 (1.79)
5. School belonging	3.70 (1.21)	3.95 (1.22)	3.90 (.99)
6. Importance of college	5.59 (.70)	5.72 (.67)	5.85 (.57)
7. Expect to go to college - self	5.35 (.80)	5.68 (.61)	5.87 (.34) <sup>ii</sup>
8. Expect to attend college - parents	5.52 (.77)	5.80 (.46)	5.87 (.34) <sup>iii</sup>
9. Perspectives toward nature	1.14 (.57) <sup>iv</sup>	1.86 (.63)	1.93 (.79)
10. Community affiliation	1.44 (.78) <sup>v</sup>	1.86 (.61)	1.92 (.70)

Item scales are as follows: Parents' education level: 1=Less than HS, 6=Graduate or professional degree; Parental guidance: 0=Strongly disagree, 4= Strongly agree; Grades: 1=mostly F's, 9=Mostly A's; School belonging: 0=Strongly disagree, 6= Strongly agree; Importance of leaving the area & college items (6-10): 0=Not at all important, 6=Very important; Community affiliation items (11, 12): 0=Strongly disagree, 3= Strongly agree. i-Group 1 > Group 2 ( $p=.025$ ); ii- Group 3 < Group 1 ( $p=.007$ ); iii - Group 3 < Group 1 ( $p=.045$ ); iv - Group 1 < Group 2, 3 ( $p=.000$ ); v - Group 1 < Group 2, 3 ( $p=.013$ )

Table 4: Variables affecting odds of continuous postsecondary school enrollment

Variable	B	Odds ratio (95% Confidence interval)	Standard error
School belonging in HS	.207	1.229 (.720 – 2.099)	.273
Importance of leaving area after HS	.040	1.040 (.723 – 1.498)	.186
Parents' education level	1.070	2.915 (1.492 – 5.693)**	.342
Outdoor activity profile group			
Group 1: Low involvement	-2.204	.110 (.018 - .659)*	.912

Reference category: Continuously unenrolled. \* $p=.016$ ; \*\* $p=.002$ .