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Female hunting participation in Europe and North America

Bjarni Serup

Handledare: Thomas Heberlein & Göran Ericsson **20 Poäng, D-nivå**

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SLU
901 83 Umeå, Sweden

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Swedish University of Agricultural Sciences
SE-901 83 Umeå, Sweden

Abstract

In the face of hunter declines one source of recruitment is females, who are greatly underrepresented in hunter populations. This study uses data from 13 European countries, 50 U.S. states and 6 Canadian provinces/territories to examine the relationship of aggregate level variables on female participation. Wyoming had the highest percentage of female hunters with 22 percent, and Italy the lowest with 0.9 percent. The average percent female hunters was 12 % across 68 locations. The best model explaining the amount of female hunters in a country/state, was the combined effect of percent male hunters and area (country size). This highlights both cultural and opportunity factors for female participation in hunting. Further, my analysis showed differences among Europe and North America when it came to income and level of education. European countries with higher per capita income and higher level of education had a larger proportion of female hunters. In North America, low income states with low educational level had the highest percentage of female hunters.

Introduction

Hunters and hunting, are and have been, the centre of attention for many social scientists, who has been searching for explanations for hunting participation, recruitment, retention, desertion (Peterle 1977, Adams and Steen 1997, DiCamillo and Schaefer 2000, Enck et al. 2000, Stedman and Heberlein 2001), and studying the impacts and effect on nature and society that hunting has (Holsman 2000, Organ et al. 2000, Peterson 2004).

North America is experiencing a decline in the number of hunters (Brown et al. 2000, Enck et al. 2000, Schultz et al. 2003), the trend differs from state to state, but the overall picture shows that the proportion of hunters in the population is getting smaller. Women's hunting participation was on the rise 10 years ago, and to some degree, compensated for the decrease in male hunters (Responsive management 1995). But women are still a minority among hunters (U.S. Fish And Wildlife Service 2001b) and data from NSGA (2007) indicate a 0.8 % drop in female participation in hunting with firearms, but a 5.8 % increase in bow hunting from 2000-2005.

Current hunter numbers are still fairly high, compared to historical data (U.S. Fish & Wildlife Service 2001a), but given that 80% of today's hunters had their first hunting experience before the age of 15, (U.S. Fish & Wildlife Service 2001a) and the recruitment of the younger age groups is diminishing, the decline could get more dramatic in the future. Changing demographics indicate further problems (Responsive Management 1995, Brown et al. 2000), as an increasing part of the population can be defined as urban, the population is aging and urban sprawl increases (U.S. Census 2000, Floyd and Lee, 2002). These are all factors which are negatively associated with hunting participation (Brown et al. 2000, Schulz et al. 2003).

Obtaining precise data on the number of hunters in Europe and a possible decrease or increase in these numbers, has proven difficult. Pinet (1995) found an overall decrease in the number of hunters in Europe - comparing his data with data from FACE (2005) shows that the decline continued. The latest demographic data from Western Europe mirrors North America (Eurostat 2005), which supports the data on a decline in hunter numbers. Data on female hunters are even harder to come by, popular literature from Denmark and a

statement from the Swedish Hunting organisation indicates that female hunter numbers are increasing (Hansen 2001b, Swedish Hunting Association 2007).

A declining hunter population could have serious implications for several reasons. Hunting and wildlife management are closely linked (Muth and Jamison 2000, Zinn 2003). Consequently, management agencies in North America strongly depend on funds generated from license sales and from firearm taxes (Decker et al. 2001, Floyd and Lee 2002, Mehmood et al. 2003). This money supports wildlife -and game management, as well as general nature management and conservation programs (Enck et al. 2000, Adams et al. 2004 and Loveridge et al. 2006). In 1998, Canadian hunting licenses and fees generated 70 million dollars, an amount that contributed to more than 80% of wildlife agencies' budget throughout Canada (Mauser 2004).

Not only wildlife agencies and conservation programs benefit from hunters - hunting is big business. In 2001 in the US, 14.6 million hunters spent 20.6 billion dollars on hunting, including licenses, tax, transportation and equipment (U.S. Fish & Wildlife Service 2001a). In Europe the amount spent by hunters adds up to around 10 billion Euros annually and the 7 million European hunters support between 100.000 – 120.000 jobs (Pinet 1995, Lecocq 2004). In Canada hunters spend 1.2 billion Canadian dollars on hunting trips and another 1.5 billion on wildlife related activities outside of the hunting season (Mauser 2004). The expenditures by hunters often benefit local economies by putting much needed cash into rural communities (Pinet 1995, Mauser 2004).

Most studies on hunting participation have been done on the individual level, using survey data. The results point toward several factors including demography, socioeconomy, culture, personal reasons and opportunity (Wright et al. 2001, Schulz et al. 2003). The general picture that emerges of a hunter is a white male (Floyd and Lee 2002) with a father who hunted. He most likely began hunting before the age of 20 and has ties to the rural community (Decker et al. 2001, Stedman and Heberlein 2001, Responsive management 2003).

In 2002, Heberlein et al. used aggregate data to search for macro explanations for hunting participation. They found culture and opportunity variables to be the best predictors of

hunter numbers overall across states and countries. But what about female hunters? Do they fit these results when analyzed as a group of their own? Why do some countries have more female hunters than others? If indeed female hunting participation is increasing, women will have an important influence on future hunter numbers. Data from U.S. Census Bureau (2001) and FACE (2005) shows that the proportion of female hunters varies between 1-20% in the states and countries of Europe and North America, with North America having the largest fraction of female hunters. Individual survey data suggest that female hunters follow the same patterns as male hunters with ties to a rural community (Adams and Steen 1997). However, Stedman and Heberlein (2001), found that female hunting participation is almost exclusively determined by the presence of a male family member who hunts. Women diverge in at least two other ways from male hunters. They are often recruited later in life than male hunters (Adams and Steen 1997) and female participation in hunting does not seem to be negatively correlated with higher educational level (Duda 2001).

From Heberlein et al. 2002 and from my literature review above, I derived three main hypotheses I address in this paper - the Opportunity hypothesis, the Cultural hypothesis and the Personal resource hypothesis, to examine women's hunting participation on a macro level.

Cultural hypothesis

Hunting is a social activity which is deeply rooted in rural communities and is an important part of rural life. The culture that surrounds hunting is not limited to the actual hunters but also includes non-hunters, thereby providing a solid foundation for hunting and hunter recruitment (Responsive Management 1995, Harder et al. 2005, Heberlein and Ericsson 2005, Milbourne 2003). Growing up in an rural environment is strongly associated with hunting participation and Heberlein et al. (2002) found percent rural population to be the strongest predictor of hunting participation in their study. I expect percent rural population to have an effect on female hunters as well, so I predict to find more female hunters in countries with a higher proportion of rural population. Furthermore percent rural population is inversely correlated with percent urban population and urban population is negatively associated with hunting participation (Brown et al. 2000).

Percent male hunters acts as another variable relating to culture. Hunting initiation is a process of influence from -and interaction with, other hunters. In the particular case of female hunters, socialization seems even more important than for male hunters. Husbands and fathers has proven to be a necessity in female hunting initiation (Adams and Steen 1997 and Jackson et al. as cited in Adams and Steen 1997, Stedman and Heberlein 2001). I predict that countries with a high proportion of male hunters will have more female hunters.

Opportunity hypothesis

Available habitat is a necessary condition to sustain hunting. Most game species are associated with forest and/or farmland, so I have used percent forest cover and percent farmland as measures of hunting opportunity. The population density of a country or state will also affect hunting opportunity. Densely populated areas have less available habitat and are therefore likely to have little hunting opportunity. In addition, high population density is positively correlated with urbanization which has a negative influence on hunter numbers. On the other hand, large areas should provide more hunting through more available habitat, so I have also included population density (people/km^2) and area (size of a country/state in km^2) as opportunity variables. Although rural population act as a variable in the cultural hypothesis, it should be mentioned in this section as well. Growing up in a rural area increases the chance of having access to hunting and therefore rural population can act as a variable when testing the opportunity hypothesis.

I predict the proportion of female hunters to be negatively correlated with high population density. I further predict that area, farmland, rural population and forest cover will be positively correlated with female hunter numbers.

Personal resource hypothesis

The influence of income and education on hunting participation differs between studies and among countries. Results from the 1996 survey on the importance of nature to Canadians (DuWors et al. 1999), showed that Canadian hunters had an income above average. The survey results regarding education showed that hunters were divided in two major groups when it came to education; some secondary or high school education (37.6%) and post secondary certificate or diploma (32%). Mitchell (2001) on the other hand, found that

people in Western Canada with a high school degree or less, are 1.5 times more likely to hunt than people with some college education.

Hunting participation among the U.S. citizens is levelling off with education after high school (Duda 2001). However, women with a college education are just as likely to hunt as those who have other levels of education (Duda 2001). In the US, income is positively correlated with hunting participation up to an income around $50.000 (Duda 2001). The only data I found from Europe is Danish, which shows that Danish hunters have an above average income (Hansen 2001).

The education variable is, proportion of the female population with a Master degree or higher. It is difficult to forecast the influence of income and education. If indeed education is positively correlated with female hunting participation, I expect income to be positively correlated as well because education and income are associated. This should mean that countries/states with a higher percent women with a college/university education, should have a higher proportion of female hunters. Rural population however is often associated with lower income, so if female hunters are correlated to percent rural population, education and rural population could outweigh each other. Thus, income can fall out either way.

I added percent women in population, to investigate any possible relationship between the percentage of women in the population and number of female hunters. Further, age is known to be negatively correlated to hunting participation (Responsive Management 1995, Mitchell 2001), so I added the variable, percent population >65 years, to find if it holds true for female hunters and on a larger scale. I expect countries with a high percentage of people 65 years and older, to have fewer female hunters.

To test my prediction(s) I performed a study similar to Heberlein et al. (2002) looking for macro explanations in female hunting participation. I used data from 50 US states, 6 Canadian provinces and 13 European countries. Overall, I predict that opportunity, culture and personal resources influence the number of female hunters. My dependent variable was proportion of female hunters. The predictor variables were chosen with respect to previous

studies reviewed above on recruitment and their possible explanatory power of hunting participation.

Materials and Methods

My data set consists of 15 variables: Number and percentage of hunters, number and percentage of female hunters, number and percentage of male hunters, population size, population density (people/km²), Area (km²), farmland (%), woodland (%), Per capita income (US$), Rural population (%), Urban population (%), Educational level for women (proportion of women in the population with a master degree or higher), population size, percentage of the population 65 years and older and women in the population (%). Urban population in the U.S. is defined as an area consisting of a large central place and adjacent densely settled census blocks that together have a population of at least 2500 (Urban cluster) or 50.000 (urbanized area). The urban definition for Europe varies for every country, depending on political history, administrative areas, number of inhabitants, labour force involved in agriculture or other (UN 2003). Rural population is calculated as 100% - percent urban population.

I used the regional definition of forestland and farmland, and compared them without any standardization. Measurement of educational level is not standardized among the 3 regions; I have chosen the best corresponding measures of education. In the U.S. it is master degree or higher, in Europe it is Isced97 levels 5a and 6 and in Canada it is a university degree, certificate or diploma. Heberlein et al. (2002) did not include educational level as a variable, but the information from my literature review indicates that educational level could separate female hunters from male hunters.

Per capita income is specified in US$. Canadian and European numbers are transformed to US$ by multiplying with the exchange rate from the same year as the data. Currency values were found at United Nations (UN 2007). The main part of the U.S. hunter data comes from the U.S. Fish and wildlife Service's National Survey of Fishing, Hunting and Wildlife-Associated Recreation 2001 (U.S. Fish and Wildlife Service 2001). The report has insufficient female hunter data from 24 states because of small sample size, it does have numbers for male hunters, so to get an estimate for those states I calculated, percent female

hunters, by (100% - percent male hunters = percent female hunters). The report also lacked data for Massachusetts and Connecticut, so I used numbers from the 1996 report.

Independent variable data comes from U.S. census Bureau (U.S. Census Bureau 1999, 2000, 2001) and United States Department of Agriculture (USDA 2002a, 2002b). Federation of associations for hunting and conservation of the EU (FACE 2005) provided most of the European data on hunters, but data from Norway, Italy, Germany, Sweden and Switzerland comes directly from national hunting organizations. Independent variables data were obtained from Eurostat (2006), The Worldbank (2006), Food and Agriculture Organization of the United Nations (FAO 2000), United Nations (UN 2000, 2003) and the International Monetary Fund (IMF 2005). Hunter data from the Canadian provinces comes from email correspondence with local DNR/FWS offices. Independent variable data from Canada was found on Statistics Canada (Statcan 1996a, 1996b, 2006) and Canadian Forest Service (CFS 2006).

I have a complete data set on total hunter numbers and female hunter numbers for all states in the US. It was only possible to find information on female hunters from 13 European countries (Austria, Belgium, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Netherlands, Norway, Switzerland and Sweden) and from 6 Canadian provinces (Alberta, British Columbia, Ontario, Quebec, Saskatchewan and Yukon). States and provinces will be referred to as countries throughout my paper. I gathered independent data from the same year as the hunter data, when not possible, I chose data as close to the relevant year as possible. Because of the time span (2000-2005) in the dependent variable between regions, data on independent variables comes from more sources than would have been necessary, had the hunter data been from the same year.

I log transformed the following variables for normality: Population density, area, per capita income and number of female hunters. I excluded the variable percent women in population due to its low variance (48-52%). Urban population (%) is the opposite of rural population (%) so I only included the rural expression in the analysis.

Initially I wanted to include young hunters as a dependent variable in the analysis. Because of poor data quality on young hunters I was forced to abandon this idea. Fifty seven

countries (out of 92 investigated) had data on young hunters, but a comparison was impossible because of differences in defining a young hunter among the countries. Sorting the data resulted in 8 different categories of young hunters with an age span ranging from 8-34 years. Removing the oldest age class 25-34 years results in a sample size of 31 – still with a high variation in the age groups. Collection of data on young hunters is not only a problem of a common definition, but also relates to hunting rules. There is more than 10 years difference in minimum age of hunting, between the lowest and highest countries in my sample.

Results

The raw data indicated a difference in hunter numbers among the regions, with Canada and the U.S. having a higher proportion of female hunters than Europe. To examine if this was true I used linear regression to test if region affects the number of hunters. Because of the small sample size (5 countries) from Canada I joined the Canadian and the U.S. data under North America.

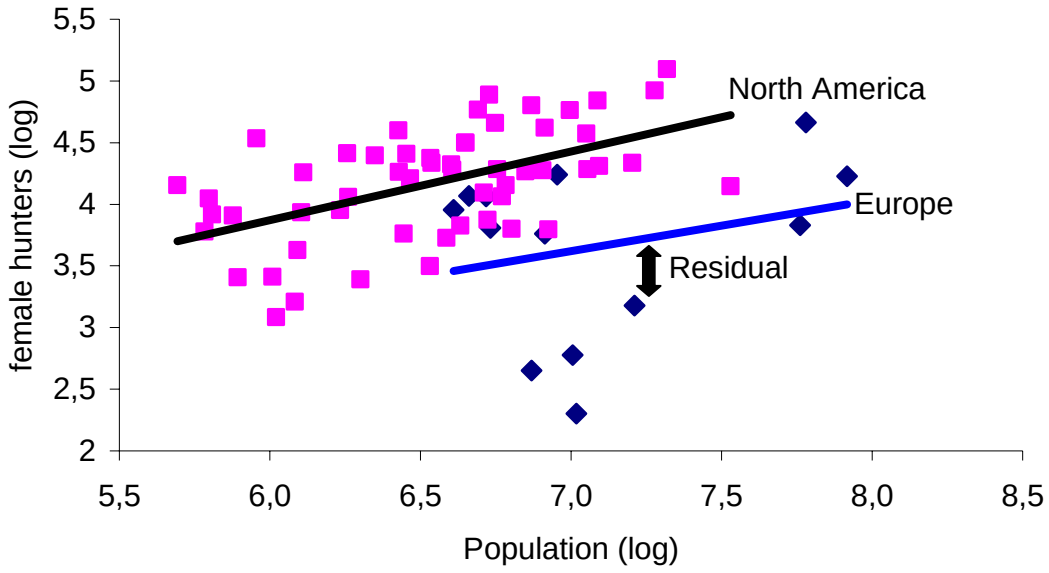

Figure 1. Europe (♦) and the North America (■). Number of female hunters (log) in each country plotted against population size (log). The figure highlights two things; One) the more people, the more female hunters a country will have. Two) it shows that there are differences in the number of female hunters when comparing regions. Notice that all the European countries are situated below the trend lines for Canada and the U.S.

Figure 1. shows that there are indeed regional differences in the data. Both population size and region affects the number of female hunters in a country. In order to handle the effect

of population size and region I needed a standardized variable when comparing countries. From the fitted regression (Fig.1) I obtained the residual for each country. The country residual was then divided by the population size (log) of the country. So the dependent variable is the standardized residual of female hunters predicted from population size (log). A negative value means that the country has fewer female hunters than expected based on its population size and a positive value means that is has more female hunters than expected.

In the 68 countries, the proportion of male hunters had the single most important influence on the dependent variable – a greater proportion of male hunters in a country produce higher positive value of the standardized independent variable (Table 1). High population density had a negative effect on the proportion of female hunters in a country. Country size (area) and high percentages of rural population were positively correlated with female hunter numbers. Women's educational level, woodland and income level did not have a significant effect on the number of female hunters across the 68 countries.

Table 1. Pairwise correlations between country independent variables and standardized residual of female hunter numbers. N (All regions) = 68, N (Europe) = 13 and N (North America) = 55.

Independent variables	All regions	North America (b)	Europe
Area (log)	.48**	.44**	.68**
Density (log)	-.39**	-.38**	-.68**
Farmland (%) (a)	.17	.29*	-.26
Woodland (%)	.05	-.05	.38
Male hunters (%)	.63**	.74**	.70**
Rural pop. (%)	.44**	.52**	.28
Income (log)	-.05	-.42**	.39
Women with master or higher (%)	.20	-.38**	.45
Pop. >65 (%)	-.11	-.08	-.28

Footnotes: a) Excl. Kentucky b) Incl. 5 Canadian provinces: Quebec, Ontario, Alberta, British Columbia and Saskatchewan. Correlation values with * are significant at ($p<.05$) and ** at ($p<.01$).

The difference among the regions is noticeable when looking at Table 1. Income and education really separated the regions, both were negatively correlated with female hunting participation in North America and positively correlated in Europe (all though not significant in Europe). The effect of these two variables disappeared when looking at all 68 countries, they were probably outweighing each other. The small sample size (13) probably explains why only three variables were significant in the European data (table1).

Several of the independent variables were correlated, making it difficult to determine which of them that were actually the most important. An example is the relationship between population density and area, where one variable (area) act as part of the other (population density). I used pairwise correlation as a first step in order to disentangle possible effects of the independent variables on each other (Table 2).

Table 2. Pairwise correlations for independent and dependent variables for Europe (upper right) and North America (lower left). N (Europe) = 13 and N (North America) = 55.

	Male hunters (%)	Density (log)	Area (log)	Farm-Land %	Wood-Land %	Income (log)	Rural pop. (%)	women edu. (%)	Pop. >65 (%)	Europe Std. Res.
% male hunters		-.75**	.26	.26	.20	.40	.52	.49	-.64*	.70**
Density (log)	-.58**		-.53	-.53*	-.61*	-.25	-.45	-.61*	.33	-.68**
Area (log)	.24*	-.72**		-.18	.58*	-.04	.21	.37	.32	.68**
Farmland (%)	.34**	-.11	.08		-.53	-.60*	-.18	-.06	.22	-.26
Woodland (%)	-.12	.30*	-.25	-.78**		.03	.27	.53	.32	.38
Income (log)	-.40**	.18	-.21	-.10	-.21		-.16	-.24	-.24	.39
Rural pop. (%)	.78**	-.37**	.03	.21	.21	-.53**		.38	-.20	.28
Women edu (%)	-.46**	.02	.12	-.51**	.39**	.08	-.33*		-.22	.45
Pop.>65 (%)	.03	.23	-.28*	.15	.08	-.43**	.16	.10		-.28
North America Std. res.	.74**	-.38**	.44**	.29*	-.05	-.42**	.52**	-.38**	-.08	

Footnotes: a) Excl. Kentucky. Correlation values with * are significant at ($p<.05$) and ** at ($p<.01$).

Several of the independent variables were correlated (Table 2). Two of the opportunity variables, Farmland and woodland, were negatively correlated to each other in both regions. Area and density were also highly correlated in both Europe and North America, showing a negative relationship.

I used multiple linear regression to isolate the single effect of each of the correlated variables, on the independent variable (Table 2 and Table 3). In order to find possible differences among the two regions I analyzed Europe and North America separately, the results are presented in Table 3. Density, area and percent male hunters seemed equally important in both Europe and North America. When put together in the same model density lost effect on the independent variable in both regions. Percent rural population, percent farmland and income all lost effect when combined with area and percent male hunters. Thus the best model to describe which countries have more female hunters than expected is the joint effect of percent male hunters and area (Table 3). This means that large countries with a high proportion of male hunters are likely to have a higher percentage of female

hunters. The model is the same for both regions, but male hunters have a stronger effect in the North American data.

Table 3. Selected models from the multiple regression, divided into Europe and North America. The table consists of four models for each region, highlighting the best model describing female hunting participation and the models focusing on the difference among North America and Europe.

North America	Std. β	p	SE	Europe	Std. β	p	SE
Male hunters (%)	.672	.000	.001	Male hunters (%)	.562	.006	.007
Area (log)	.278	.003	.010	Area (log)	.537	.008	.035
R2 = .60***				R2 = .71***			
Women edu. (%)	-.350	.004	.006	Women edu. (%)	.573	.038	.036
Income (log)	-.388	.002	.083	Income (log)	.522	.054	.128
R2 = .29***				R2 = .35*			
Women edu. (%)	-.070	.506	.006	Women edu. (%)	.303	.346	.046
Income (log)	-.150	.146	.073	Income (log)	.283	.356	.155
Male hunters (%)	.645	.000	.002	Male hunters (%)	.436	.211	.014
R2 = .55***				R2 = .40**			
Women edu. (%)	-.157	.121	.005	Women edu. (%)	.128	.574	.033
Income (log)	-.120	.204	.067	Income (log)	.288	.191	.108
Male hunters (%)	.544	.000	.002	Male hunters (%)	.380	.130	.010
Area (log)	.303	.002	.010	Area (log)	.548	.011	.036
R2 = .62***				R2 = .71**			

Std. β is a measure of the relative influence of the variable on the independent variable, p is the significance value of the Std. Beta and R2 (adj.) is a measure of the explanatory power of the model. * significant at 0.05, ** significant at 0.01 and *** at 0.001.

Next, I analyzed the influence of income and education because of the different way the variables were associated with female hunters in the two regions. The two variables were included in 3 different models (Table 3). Put together in a model both income and education had significant effect in the two regions, with an R^2 of .29 in North America and .35 in Europe. They had a negative effect in North America and a positive effect in Europe. When analyzed together with area and percent male hunters they lost their significant effect. They were, however, still negatively (North America) and positively (Europe) correlated to the independent variable, indicating a difference among the regions.

Discussion

This study aimed at finding explanations of women's participation in hunting on a macro level and gather information on women's hunting participation. My results support some of the earlier work done on women's hunting participation on the individual level, as well general studies on hunters. (Adams and Steen 1997, Brown et al. 2000, Enck et al. 2000). At the same time this study also produces new knowledge on female hunting participation.

When analyzing all countries together I found support for both the cultural and the opportunity hypothesis, with the cultural hypothesis getting the strongest support from the data. In Europe and North America – female hunter numbers seem to be largely determined by the amount of male hunters. This means, that the percentage of male hunters in a country is the best predictor of female hunter numbers when looking above the level of individual motivations or barriers.

Heberlein et al. (2002) also found support of the cultural hypothesis. Their measure however, was percent rural population in a state/country, which was not significantly associated with female participation in my analysis. Stedman and Heberlein (1996) found no difference in female hunting participation between women growing up in urban areas and women growing in rural areas, which corresponds with my results. It looks as if primary family socialization is the key determinant (Stedman and Heberlein 1996) in female hunting participation more than broad cultural influence. Females seem to be dependent on having a male hunter within their closest family. This can maybe be ascribed to the fact that hunting is not a normal form of recreation for women. If indeed female hunter numbers are rising it will likely increase the chances of women recruiting women. I do see signs of this in the forming of female hunting groups such as "Women Hunters" (USA), "WILDA" (Sweden) and "Team Toes" (Denmark), groups like these might alter the recruitment pattern; more participants should result in an expanded network and should therefore reach more potential female hunters.

The analysis revealed regional differences in the data, separating the regions actually reveals some support of the personal resource hypothesis. In North America, income level is negatively associated with female hunters, as is level of education among women. Europe

is showing an opposite trend with both education and income positively correlated with number of female hunters (all though not significant, Table 1). Percent rural population is also a much stronger predictor of female hunter numbers in North America than in Europe. Percent farmland is negatively associated with female hunting participation in Europe and density has a much greater negative impact on female hunter numbers than in North America.

It looks like the difference is a issue of social class. Analyzing my results, it seems that European countries with high per capita income and well educated women, has a higher proportion of female hunters, while the opposite is the case in North America. I believe that the differences can be partly explained in the way hunting is structured in the two regions. In North America the state offers hunting on public land (Adams et al. 2004), the cost connected to this service is relatively low and not affected by open market economy. The North American system stands in contrast to the overall pattern of hunting in Western Europe, where hunting takes place on private land or on leased public land (Oldfield et al. 2003, Schwartz et al. 2003). Very few places are hunting habitat offered as a service with the only cost being management fees (Myrberget 1990). The effect of the European system could lead to limited access and/or increased costs (Pinet 1995, Hansen 2001). Limited access, privatization and an open market, will most likely increase hunting costs (United States Department of Agriculture 1988, Henderson and Moore 2006). It could be an effect of this system that emerges in the European data, with countries that have high per capita income and high level of education, also have a bigger proportion of female hunters.

If that is the case it might reveal the future development of hunting in some states in the U.S. In a report from Responsive Management (2003) limited access due to privatization of the land, is mentioned as an important barrier to hunting participation in the U.S. Duda et al. (1995) reported that limited access and too few hunting grounds, were the top two dissatisfactions among active hunters in the U.S. Adams et al. (2000, 2004) have shown similar trends arising in Texas. Increase in the cost of hunting is likely to result in dissertation (Adams et al. 1989, Walsh et al. 1992).

Like Heberlein et al. (2002) my results also show support of the opportunity hypothesis, although measured on expressed in a different way. My variable was area and Heberlein et

al. used log forest. The effect of area is apparently a general issue when it comes to hunting and is not confined to gender. Other studies have shown the effect of habitat availability, or lack off, on hunting participation (responsive Management 1995, Miller and Vaske 2003) and my results concur with previous knowledge.

Conclusion

Pinet (1995) calls for better knowledge on hunters and their motivations. Such knowledge is accessible in North America but practically nonexistent in Europe. Address questions regarding female hunters and the information becomes even scarcer. I believe that this study is a step in the right direction. Albeit the precision of the data could better, the method proves to be an “easy” way of gaining knowledge on female hunting participation in Europe and North America. Furthermore it produces results that allows for comparison between the regions and revealing trends under different hunting regimes, something that can prove to be important in the future of retention and recruitment studies.

So are women the group that will make hunter numbers rise? Based on my results I will say no. Of course they increase the amount of available recruits, but overall I found support for the same hypothesis as Heberlein et al. (2002) implying that female hunters are subject to the same of barriers as male hunters (culture, opportunity and age) when it comes to hunting participation.

Like Pinet did 12 years ago, I will call for more knowledge, starting with gathering standardized data hunters, especially for Europe and most of all, on female and young hunters. Only having 13 European countries and 5 Canadian included in the study is not satisfying, but it is a start.

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