Socialization and motivational pathways among different groups of non-traditional hunters in Alabama reveal unique recruitment and retention opportunities

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ABSTRACT

Participation in hunting has been declining and organizations have increased efforts to recruit non-traditional path hunters (NTPHs) such as adults who did not hunt as children, urban residents, and women. Anecdotal evidence suggests that NTPHs could be interested in hunting if recruiters emphasized certain aspects of the hunting experience such as connecting to nature or harvesting sustainable meat. To explore effects of non-traditional backgrounds on recruitment and retention, we measured the importance of socialization pathways, recruitment motives, and retention motives of a group of current hunters in Alabama Wildlife Management Areas (n = 700). A generalized ordinal logit regression model determined effects of different non-traditional backgrounds (e.g., non-hunting family, adult-onset hunters, urban resident, female, millennial) on recruitment and retention. We found that each non-traditional background has a unique influence on recruitment and retention, indicating a need for investigating specific NTPH backgrounds rather than a single homogenous NTPH group.

Introduction

Hunting participation in the United States has been declining since the 1980s (United States Fish & Wildlife Service, 2018). From 2011 to 2016, participation declined by 16% and hunting-related expenditures fell by 29% (United States Fish & Wildlife Service, 2018). These trends threaten the many economic and societal benefits that hunting provides. Hunting generates funding for state conservation agencies through license sales and corresponding matches through Pittman Robertson funds (Poudyal et al., 2008). Hunter activities support rural economies (Mozumder et al., 2007) and limit the negative impacts of deer herds (Stedman & Heberlein, 2001). Satisfied hunters increase public support for wildlife agencies and maintain a traditional culture in rural areas (Larson et al., 2014). For these reasons, the decline in hunting has sparked investment in recruitment, retention, and reactivation research (R3).

Traditionally, hunters are most often white males who are socialized into hunting by a family member at a young age (Bissell et al., 1998; Purdy et al., 1989; Responsive Management/National Shooting Sports Foundation, 2008). This traditional pathway of
hunter recruitment and retention had been successful in creating and maintaining avid hunters, but broad societal changes (e.g., urbanization, new competing leisure opportunities, demographic shifts) are decreasing its effectiveness (Larson et al., 2014; Mehmood et al., 2003). This once effective pathway is no longer maintaining a steady population of hunters (Ryan & Shaw, 2011).

Thus, there has been a movement in the hunting community to embrace new, emerging sub-populations of hunters from non-traditional pathways (Quartuch et al., 2017). This movement is motivated by anecdotal evidence and popular writings (Cerulli, 2012; McCaulou, 2012) showing that more people are entering the hunting population from historically under-represented groups. These under-represented groups include adults, women, those without family support, racial/ethnic minorities, and people from urban areas. For example, Cerulli’s (2012) book, *The Mindful Carnivore*, introduces the term “adult-onset hunter” to refer to individuals who started hunting as adults. The emergence of new groups such as adult-onset hunters could help slow the decline in hunting participation and maintain the economic and societal benefits of hunting. Furthermore, managers and researchers can support non-traditional hunter recruitment by determining what is motivating people from non-traditional backgrounds to start hunting, and then subsequently advertising this aspect of hunting or changing management objectives to increase the attractiveness of hunting to people from non-traditional backgrounds.

Motivational approaches help to explain why people engage in leisure behaviors. The experience of hunting provides a “bundle” of psychological outcomes desired by hunters (Driver & Knopf, 1976; Driver & Brown, 1975; Driver & Knopf, 1976; Manfredo et al., 1996), extending beyond the harvest of an animal (Hendee, 1974). Motivations of hunters can be categorized into three groups: achievement motives (concerned with personal accomplishments), affiliative motives (concerned with social relationships), and appreciative motives (concerned with nature; Purdy & Decker, 1986). Recent investigations of hunters’ motivations have shown that they include conservation (i.e., contributing to wildlife management) and civic-oriented motivations (i.e., to help reduce automobile accidents; Larson et al., 2014; Quartuch et al., 2017; Siemer et al., 2012). An individual’s motivation to hunt is what initiates and sustains interest in the activity (Decker et al., 1984; Purdy & Decker, 1986). Motivations are dynamic and a motivation that initiates interest may not be the same as one that sustains interest in hunting (Larson et al., 2013).

If non-traditional path hunters (NTPHs, such as adults who did not hunt as children, urban residents, and women) have different motivations to hunt than traditional hunters, R3 programs could adapt in response to these motivations to recruit and retain NTPHs more effectively. Anecdotal evidence suggests that NTPHs are more motivated to hunt to harvest food from a “natural” source (Cerulli, 2012; McCaulou, 2012), support wildlife conservation, or manage overabundant deer populations (Larson et al., 2014). However, there is limited empirical research examining NTPHs’ potentially unique motivations to hunt. In fact, Quartuch et al. (2017) measured the motivations and constraints of NTPHs in New York State, concluding that NTPH motivations and constraints may not differ substantially from those of traditional hunters.

Quartuch et al. (2017) acknowledged that it could be beneficial for future research to separate the NTPH population into specific subgroups (e.g., females, racial/ethnic minorities), as the motivations and constraints to hunting could differ among these specific NTPH groups. Our research adopts this approach. We wanted to know if specific non-
traditional backgrounds of NTPHs influence the importance of different socialization pathways into hunting, their motivations to start hunting (recruitment), or the motivations to continue hunting (retention).

**Methods**

**Study Population**

We employed a stratified random sampling method to select a sample of 3,000 hunters from a list of all Alabama Wildlife Management Area (WMA) hunting license holders (34,708 total) supplied by the Alabama Department of Conservation and Natural Resources (ADCNR). The ADCNR divided the list of WMA hunters into three age-based strata: residents 19–35 years old, 36–50 years old, and 51+ years old. A simple random sample \((n = 1,000)\) was selected from each of the three strata to comprise the total sample \((n = 3,000)\). We stratified by age cohort because cohort effects can be a strong driver of hunting and fishing participation (Chase, 2018).

**Survey Instrument and Implementation**

To determine the reasons individuals start hunting and continue hunting, we asked two questions. First, we asked, “How important were the following items for you first becoming a hunter?” Second, we asked, “Now that you are a hunter, how important are the following items for you continuing to be a hunter?” The first question measured impacts the had on an individual’s recruitment, whereas the second question measured their impact on retention. Seven items in the recruitment scale were related to the social pathways of recruitment (e.g., having a family member/relative who taught/mentored me), these items were based on previous recruitment literature (e.g., Larson et al., 2013; Ryan & Shaw, 2011). The remaining eight items were based on motivations research related to hunting (Manfredo et al., 1996; Quartuch et al., 2017). The retention scale measured these same eight motivational items and included two items relating to pathways into hunting (local and national hunting clubs). All of the items for recruitment and retention were measured on a 7-point scale ranging from 1 “not at all important” to 7 “very important” (Vaske, 2019).

The introduction and demographic portions of the questionnaire determined the non-traditional backgrounds of individuals. Individuals reported their sex, race/ethnicity, if other family members hunt, at what age they started hunting, and their current age. To include urban/suburban residents as a non-traditional background, we joined each respondent’s current address to Alabama population data (U.S. Census Bureau, 2012) and extracted the population density (ppl/km\(^2\)) at the census county subdivision level (CCDs).

We constructed the questionnaire following best practices for formatting, wording, and question order to eliminate responder bias (Vaske, 2019). The instrument consisted of 57 questions and, in addition to demographics, social context, and hunting motivations, it also measured hunter behaviors, setting preferences, and a multitude of concepts related to R3 and economic impact analysis.

We disseminated the questionnaire by mail following the Tailored Design Method (TDM), which utilizes sampling, contact, presentation, and multiple mailings designed to reduce measurement and nonresponse bias and increase response rates (Dillman et al.,
Utilizing a modified TDM, we made contact with recipients four times over a 10-week timeframe (April – June 2018) using an initial contact questionnaire packet, a reminder postcard, a second questionnaire packet, and a final e-mail with an online option. We selected a mail survey option because the mailing address was part of the license information, the length of the questionnaire, and wanting respondents to give more time and thought to their answers, thereby providing more accurate information than other methods (Vaske, 2019).

Data Analysis

First, we grouped traditional hunters versus NTPHs (any hunter from at least one of the five non-traditional backgrounds described below) to get a broader sense of differences in their socialization pathways (7 items), recruitment motives (8 items), retention motives (8 items), and retention pathways (2 items). We then compared the means between traditional hunters and NTPHs using t-tests for all 25 items, utilizing the Holm-Bonferroni adjustment to control the family-wise error rate. Second, we constructed generalized ordinal logistic regressions (olgmx package in R, Carroll, 2018; R Core Team, 2013) to predict non-traditional backgrounds related to socialization pathways, hunter recruitment, and hunter retention items. The generalized ordinal logistic regressions estimated items for either socialization pathways (7 items), recruitment motives (8 items), retention motives (8 items), or retention pathways (2 items) as the response variable and the five NPTH backgrounds as predictor variables, for a total of 25 regressions. The NTPH backgrounds included as independent variables in each model were: (a) growing up in a non-hunting family (vs. hunting family), (b) urban residence (population density greater than 200 ppl/km²) versus non-urban residence, (c) started hunting after the age of 18 (adult-onset hunter) versus started hunting during childhood, (d) being female versus male, and (e) belonging to the millennial age cohort (35 years or younger) versus being older. Individuals often come from multiple non-traditional backgrounds. For example, many hunters who grow up in a non-hunting household are also adult-onset hunters. A multivariate approach allowed us to control for effects of multiple non-traditional backgrounds simultaneously. Variance inflation factor (VIF) tests indicated that there was not significant collinearity among the predictor variables. We used a generalized ordinal logistic regression model because our data did not meet the proportional odds assumption required for standard ordinal logistic regression models (Williams, 2016).

Results

Of the 4,000 WMA hunters contacted, 966 responded, with 869 submitting the hard copy mail version and 97 using the online option. There were 205 non-deliverable (incorrect addresses) and 2,829 non-respondents. The response rate for each age cohort was different, including the nonresident group. We had response rates of 14% for ages 19–35, 30% for ages 36–51, and 35% for hunters over the age of 51. The final response rate for the entire sample was 26%. For this analysis, we excluded 205 nonresident hunters and 61 individuals who did not respond to the questions referring to recruitment and retention, leaving us with 700 respondents. Our sample was composed mostly of traditional hunters: male (97%), have family members who hunt (90%), started hunting before the age of 18 (92%), and rural
residents (81%), with an average age of 49 years old (SD = 12). NTPHs in our effective sample included hunters from non-hunting families (n = 71), adult-onset hunters (n = 57), females (n = 23), millenial hunters (n = 115), and urban hunters (n = 121).

The mean scores for the importance of socialization pathways for all NTPHs combined (Figure 1) revealed that NTPHs rated time spent outdoors in youth (M = 6.25) as the most important pathway. This was closely followed by having a family member (M = 5.60) and a neighbor or friend (M = 4.54) as a hunting teacher or mentor. Compared to these three pathways, the importance of scouts, summer camps, and local and national hunting or wildlife conservation groups was low. For traditional hunters, the three most important pathways were in the same order: time spent outdoors in youth (M = 6.65), family members (M = 6.32), and neighbors or friends (M = 4.71). Family members (t = 5.30; p < .01) and spending time outdoors (t = 4.65; p < .01), however, were significantly more important to traditional hunters than NTPHs, but neighbors and friends were of the same importance to both (t = 0.95; p = .341).

Investigating the recruitment and retention motivations of NTPHs revealed many different motivations to start and continue hunting (Figure 2). The most important recruitment and retention motives for NTPHs were the opportunity to be in nature (recruitment M = 6.48; retention M = 6.63), the relaxation and stress relief (recruitment M = 6.12; retention M = 6.53), and confidence in abilities outdoors (recruitment M = 5.92; retention M = 6.24). For traditional hunters, the three most important recruitment and retention motives were in the same order: the opportunity to be in nature (recruitment M = 6.54; retention M = 6.62), the relaxation and stress relief (recruitment M = 6.44; retention M = 6.58), and having confidence in outdoor abilities (recruitment M = 6.35; retention M = 6.39). Of these three motivations, the only differences between NTPHs and traditional hunters were during recruitment, where having confidence in outdoor abilities (t = 4.47, p < .01) and relaxation and stress relief (t = 3.32; p < .01) were significantly less important to NTPHs.

![Figure 1](image1.png)

**Figure 1.** Mean scores for importance of socialization pathways in traditional (n = 488) and NTPH hunters (n = 288 defined by one or more of the following attributes: non-hunting family, adult-onset, urban, female, or millenial) in 2018 survey of Alabama WMA hunters. Importance of socialization pathways measured on a 7-point scale ranging from 1 “not at all important” to 7 “very important.” We compared the means between traditional and NTPHs using t-tests, utilizing the Holm-Bonferroni adjustment to control the family-wise error rate. Statistically significant differences denoted by asterisk (*) at the end of horizontal bars (p < .05).
Results from our generalized ordinal logit models demonstrated that different subgroups of hunters with non-traditional backgrounds were significantly associated with different socialization pathways into hunting (Figure 3). The family member or relative pathway was more important to women than men, and less important to adult-onset hunters and
individuals from non-hunting families. We found that neighbors and friends as a socialization pathway was less important to individuals from non-hunting families than those from hunting families. Time spent outdoors during youth was a less important pathway for adult-onset hunters, individuals from non-hunting families, and women. Adult-onset hunters and millennials reported that groups such as the Scouts and 4-H club to be less important socialization pathways. Adult-onset hunters also reported summer camps, local hunting groups, and national hunting groups as less important socialization pathways into hunting.

We found that recruitment motives were significantly associated with different non-traditional backgrounds (Figure 4), especially for individuals from non-hunting families and adult-onset hunters. Individuals from non-hunting families reported family tradition, being a part of hunting culture, the desire to provide meat, and the desire to manage the herd as less important motivations to start hunting. Adult-onset hunters reported family tradition, confidence in outdoor abilities, having friends that hunt, and hunting culture as less important motivations to start hunting. We found that hunters living in urban areas rated the desire to provide meat as a less important motivation to start hunting. Both being a millennial and being a woman were not significantly associated with particular recruitment motives.

Like recruitment motives, results from our models investigating links between retention motives and non-traditional backgrounds also revealed some significant relationships (Figure 5). Family tradition was less important as a retention motive to adult-onset hunters and individuals from non-hunting families. Being a part of hunting culture was less important as a retention motive for adult-onset hunters. The desire to provide meat was more important to females and millennials as a retention motive, but less important to

Figure 4. Effects of non-traditional background on importance of recruitment motives in ordinal logistic regression model based on data from 2018 survey of Alabama WMA hunters (n = 700). Non-traditional backgrounds are non-hunting family (n = 71), adult-onset hunters (n = 57; started hunting after the age of 18), urban resident (n = 121; population density greater than 200 people/km2), female (n = 23), and millennial (n = 115; under the age of 35).
hunters living in urban areas. The desire to manage the wildlife herd was more important to millennials, but less important to hunters in urban areas. The opportunity to relax and relieve stress was less important as a retention motive for adult-onset hunters. The opportunity to be in nature was less important as a retention motive for adult-onset hunters, but more important for females.

**Discussion**

Although the traditional and NTPH hunters were similar in many ways, especially as hunting participation progresses, our findings demonstrated the importance of accounting for specific non-traditional backgrounds when trying to understand NTPH’s socialization pathways into hunting, recruitment motives, and retention motives. If managers recognize the distinct socialization pathways and motivations of different types of NTPHs (e.g., females, adult-onset hunters, those from non-hunting families), they may be better positioned to improve recruitment and continued participation in hunting.

Family provides a foundation for traditional hunting socialization, and individuals with family members who hunt are more likely to hunt at an earlier age and become more avid hunters (Decker et al., 1986; Purdy et al., 1989). Listening to hunting stories, eating game meat, and sharing responsibilities associated with hunting helps to socialize individuals from hunting households into hunting (Decker & Mattfeld, 1988). Yet, individuals raised in non-hunting families rarely experience these connections to hunting unless they can find close friends or mentors to substitute for family support (Decker et al., 2001; Enck et al., 2000; Purdy et al., 1985; Stedman & Heberlein, 2001). At first, this may not seem to be
supported by our findings as hunters from non-hunting families rated neighbors and friends as less important pathways into hunting than did hunters from hunting families, but neighbors and friends were relatively more important than family for individuals from non-hunting families compared to traditional hunters (Figure 3). Also of note, individuals from non-hunting families were less likely to start hunting to obtain meat or to manage the wildlife herd. Perhaps obtaining meat and managing the wildlife herd are motives typically inherited from family members, or perhaps this simply reflects a weaker overall motivation to hunt among NTPHs. Hunters from non-hunting families and those from hunting families have more similarities in their retention motives than they do in their recruitment motives, suggesting that the motivations of hunters from non-hunting families begin to align more with the motivations of traditional hunters as they become more established hunters.

In our study, we labeled individuals who started hunting after the age of 18 as adult-onset hunters. We found that adult-onset hunters reported many differences in the importance of socialization pathways compared to hunters who started hunting before the age of 18. Adult-onset hunters did, however, rate friends and neighbors of similar importance to hunters who started hunting before the age of 18, while rating family tradition as less important. Therefore, we might again assume, as we did with individuals from non-hunting families, that friends and neighbors are relatively more important to the socialization of adult-onset hunters than traditional hunters. It is not surprising that adult-onset hunters rated having friends who hunt and being a part of hunting culture, both related to social support, as less important because a lack of social support is most likely why they did not start hunting at a younger age (Decker et al., 1986). Adult-onset hunters did rate some recruitment motives similarly as traditional hunters, such as a desire to obtain meat, a desire to manage the wildlife herd, the opportunity for relaxation and stress relief, and the opportunity to be in nature. During retention, adult-onset hunters were still less motivated by family tradition and being a part of hunting culture, but having friends who also hunt was of similar importance to adult-onset hunters and traditional hunters. Thus, it seems that adult-onset hunters do not feel as though they belong to the tradition and culture of hunting, but the social aspect of hunting is still important (Byrne & Dunfee, 2018). It is important to note that although hunters from non-hunting families become more like traditional hunters during the retention phase, adult-onset hunters’ motivations did not converge.

The increasing number of adult women purchasing hunting licenses in recent years (Floyd & Lee, 2002; Heberlein et al., 2008) has made female hunting participation a critical topic in R3 research. Although female participation is increasing, this group remains a small portion of the overall hunting population (United States Fish & Wildlife Service, 2018). Differences between male and female hunters might originate from the different pathways that women take into hunting (Covelli, 2011), as they are less likely to participate in “masculine” hunting-related rituals (McCarty & Kelley, 1985; Stedman & Heberlein, 2001). Women’s pathways into hunting are context-dependent, but husbands are typically key mentors (Clarke et al., 2004; Heberlein et al., 2008; Heberlein & Thomson, 1996; McFarlane et al., 2003) and this was supported by our finding that family members were a more important pathway to hunting for women. Differences between males and females can also be driven by wildlife value orientations, with males having more utilitarian orientations and females holding more protectionist orientations (Zinn et al., 2002).
Previous research has shown that female hunters have different motivations for hunting than do males, rating motivations related to meat, nature, and family higher than others (Duda; Gigliotti & Metcalf, 2016; Metcalf et al., 2015). We found that separating recruitment and retention motivations could contribute to a more nuanced understanding of female hunting motivations. Females in our sample rated many recruitment motivations similarly to males, but rated retention motivations related to meat and nature as more important. This finding suggests that females become more motivated by meat and nature through the hunting experience. Overall, our limited results support Metcalf et al. (2015) in suggesting that messages portraying hunting as a natural activity, centered on family, with an opportunity to acquire high-quality food may help to recruit and retain more women in hunting.

The majority of Americans (about 80%) now live in cities and urban environments, whereas fewer than half of the total hunting population live in these areas (United States Fish & Wildlife Service, 2018). The increase in hunting constraints for urban residents (Miller & Hay, 1981; Poudyal et al., 2008), coupled with a transformation of cultural values (Heberlein & Ericsson, 2005; Karns et al., 2015; Stedman & Heberlein, 2001) and shifts in leisure settings (Kraus, 2008), are major factors contributing to the decline in hunter participation. Therefore, it is important to understand how hunters living in urban areas are socialized into hunting and what their recruitment and retention motivations are for hunting. We found that urban hunters rated finding meat as less important to recruitment and retention than did non-urban hunters. This seems to contradict research suggesting that framing hunting from a locavore perspective (i.e., only consuming food that is grown or produced in the local area) could minimize opposition to hunting, particularly in urban areas (Stedman et al., 2017). However, the locavore movement is a relatively recent phenomenon (e.g., Tidball et al., 2013), so finding lower meat-related motivations in an already established group of urban hunters may not contradict this recent movement. We also found that hunters living in urban areas placed slightly less importance on managing the herd as a retention motive. Hunters living in urban areas must travel outside of their residential area to hunt and thus are not controlling their own wildlife populations, so perhaps they feel disconnected from this motive.

More than half of the current hunters across the United States are 45 years of age or older (United States Fish & Wildlife Service, 2018) and many will soon age out of the hunting population. Therefore, the age composition of the hunter population is about to change considerably (Responsive Management, 2017). The baby boomer generation (born 1946–1964) is far more likely to hunt than younger generations, especially those born after 1980 (Winkler & Warnke, 2013). There is substantial research on the leisure preferences of the millennial generation (born 1981 to 1996) and Generation Z (born 1997–2012), but we know less about their hunting preferences and motivations. In our analysis, anybody born after the year 1981 was considered a “millennial,” although the youngest respondents were born in 1999 so there is a small overlap with Generation Z. Although millennials cannot be assumed to be NTPHs based on their age alone, they represent an important demographic for recruitment and retention. There are reasons why millennial participation in outdoor activities may be declining even in rural areas (Larson et al., 2019). Children’s leisure time is shrinking (Louv, 2005) and youth are spending more of that leisure time with electronic media (Vahlberg, 2010). The increased use of electronic media is problematic for hunting participation, as technology use negatively impacts an individual’s likelihood of hunting
(Robison & Ridenour, 2012). There are many challenges with recruiting and retaining the millennial generation, such as a higher technological aptitude and an expectation of immediate reward for effort (Millenbah & Wolter, 2009). Despite the challenges of recruiting millennials and Generation Z, they are both essential groups to target given that many existing hunters are aging out. Multiple popular media articles have even cited the rise of “millennial hunters” (Deabler, 2019; Severson, 2019). Our analysis found that, compared to other hunters, millennials (born 1981 or later) do not hold significantly different motivations to start hunting than hunters born before 1981. However, we found that these millennials were more likely to rate the desire to provide meat and manage the herd as important retention motives than individuals born before 1981. This finding hints that the “locavore movement,” a newer phenomenon, could take time to enter the hunting population, starting with the younger hunters.

By 2050, more than 50% of Americans will be Black, Indigenous, or people of color (U.S. Census Bureau, 2012). Research has shown that individuals who are not white have limited connections to hunting and are drastically under-represented in the hunting population (Enck et al., 2000; Floyd & Lee, 2002; Poudyal et al., 2008). Recruitment and retention of racial and ethnic minorities have proven difficult, but could provide a new base of support for hunting. Unfortunately, perhaps because of these trends, we did not have an adequate sample size to explore any effects of being a racial/ethnic minority on reasons to start and continue hunting.

We should mention several additional limitations to this study. First, the study was of existing hunters and these individuals have already been recruited and retained in the hunting community. Therefore, we relied on the memories of hunters to relay what was important when they started hunting. Also, we were missing the voices of potential hunters who remain unrecruited, a key population that will impact long-term hunting participation. The upside of investigating existing NTPHs is that we can identify the motivations of those who were able to overcome constraints and be recruited and retained in hunting. Perspectives from both populations can be important for improving future recruitment strategies.

Second, there was a low representation of some of the NTPH groups in our sample (i.e., only 27 females). This low representation of NTPHs in our sample underscores the need to recruit these individuals, but our low sample size suggests caution when interpreting these results broadly. Specifically, this finding highlights the need for more research targeted at the specific NTPH groups and their interactions.

Third, we used each respondent’s current address to calculate urban-rural representation. This method did not account for where the respondent grew up, which has been shown to be important for socialization into hunting (Heberlein & Ericsson, 2005), possibly explaining the low predictive power of the urban-rural variable.

Fourth, one of our motivation items referenced, “The desire to manage the wildlife herd.” Although most of our respondents had hunted deer (84%), the item would have been better phrased as “wildlife population,” thereby representing this management desire across all hunted species. Therefore, inference gained from this item might only be applied to white-tailed deer hunters. Overall, it will be interesting to see if the results of our study can be generalized to other hunting populations or if these differences only exist in Alabama WMA hunters.
Fifth, it would have been helpful to include interaction effects to further explore possible effects of overlapping non-traditional backgrounds, but a model including multiple NTPH backgrounds and all of the interactions among them would have been too complex given our sample size (i.e., a low proportion of hunters from non-traditional backgrounds).

Finally, it is important to note that motivations are just one concept used for understanding hunter behavior. What an individual says that motivates them (i.e., explicit motives) can differ from what actually motivates them (i.e., implicit motives; Arlinghaus, 2006; Schroeder et al., 2017). Therefore, motivations should only be treated as one piece of the puzzle when trying to understand hunter recruitment and retention. Future research that investigates the relationships between specific non-traditional backgrounds and hunter behaviors, preferences, determinants of satisfaction, and constraints could help to build a more comprehensive understanding of NTPHs and strategies to increase their participation and support for hunting.

**Conclusion**

Our study indicated that traditional hunters did not differ substantially from NTPHs in their motivations to start or continue hunting. However, we found that some specific non-traditional backgrounds (e.g., females, adult-onset hunters, those from non-hunting families) were associated with different socialization pathways, recruitment motivations, and retention motivations. This finding suggests that there are potential differences in the motivations among certain groups of NTPHs and traditional hunters, which would imply the need for targeted recruitment and retention efforts that might increase hunting participation. Our results also substantiate the idea (e.g., Larson et al., 2013) that motivations of hunters during recruitment can differ from their motivations to continue hunting. Finally, our findings suggest that attention be given to the specific non-traditional backgrounds of hunters and hunting recruits as opposed to simply labeling them as NTPHs.

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