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Maintaining inherited occupations in changing times: the role of tourism among reindeer herders in northern Sweden

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ABSTRACT
Tourism is often identified as able to provide opportunities for indigenous populations. In northern Sweden, correspondingly tourism has been proposed to create employment opportunities and help preserve Sámi indigenous culture. Although there are numerous studies on the topic, they are lacking in a time dimension and comprehensiveness. Often they are based on limited case studies and narratives of those members of the indigenous population who have engaged in new activities successfully. Therefore, this work aims to investigate on a national scale how widespread are tourism occupations among reindeer herders and what are some of the characteristics of those engaged in them. This paper uses detailed census and population register data containing personal and professional information on reindeer herders in Sweden and their families spanning 50 years. The findings suggest that involvement in tourism is more common among reindeer herders than farmers. Moreover, involvement in tourism is highly gendered with women being more likely to be engaged in it. Findings also show that the type of tourism professions people are engaged in is more a result of the available geographical resource than an inherent inclination among reindeer herders to work with specific fields such as nature-based attractions.

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Introduction
Tourism is often seen as a way to make a livelihood for indigenous populations (Butler & Hinch, 2007). On a global scale, indigenous economies based, for example, on pastoralism, farming, hunting, fishing and gathering are facing serious opposition from non-traditional economy sectors (Thomas, 2000). In northern Sweden, alongside the predominantly indigenous industry of reindeer herding, the economy was dominated by primary industries in the twentieth century, such as mining and forestry and has been in decline for a number of decades. As a response, both globally as well as in northern Sweden, tourism has been proposed to offer opportunities to alleviate poverty (Goodwin, 2007; Graburn, 2015), create employment opportunities in peripheral areas (Hall, 2007; Lundmark, 2005; Saarinen,
Although the studies on the topic are numerous, they are lacking in a time dimension and comprehensiveness. Often they are based on limited case studies and narratives of those members of the indigenous population who have engaged in new activities successfully. Moreover, the rate at which tourism is chosen as a way forward is unknown since tourism is usually considered in isolation only and not relative to other industries. Thus, socio-economic characteristics of those engaging in tourism are rather unknown, though it has been argued that this could be related to gender (Müller & Pettersson, 2001) or to some kind of marginality in relation to the indigenous community (Smith, 1989). The availability of detailed data in Sweden, where numerous personal and professional characteristics are accessible at the individual level, allows for a far more inclusive assessment of the role of tourism in the survival of an indigenous industry, including the economic and spatial facets of such an occurrence.

With this in mind, this paper aims to investigate on a national scale the role of tourism within the predominantly indigenous and inheritable industry of reindeer herding in Sweden. It specifically asks how widespread are tourism occupations among reindeer herder families and what are some of the characteristics of those engaged in them. Furthermore, in order to see how those changes equal changes in other primary industries in the Swedish north, comparisons with the agricultural sector will also be made. By revealing the extent of the phenomenon on a large scale, this research intends to add integral knowledge to the existing body of literature regarding indigenous occupations and the suitability of tourism in northern Sweden. It does so by using census and population register data on individuals engaged in reindeer herding over the past 50 years. The paper is structured as follows: after this brief introduction and aim, a theoretical framework on factors influencing reindeer herding is presented followed by the methodology and background to herding in Sweden. After which the results are presented followed by a discussion and brief conclusion.

**Theoretical framework**

This section will explore the existing theory and concepts on what shapes involvement in reindeer herding and how tourism is presented as having the potential to complement herding. First, it briefly explores intergenerational factors that determine how individuals get involved in herding to begin with and the consequences of leaving herding behind.

Nowhere is occupational inheritance more widespread than in land-based occupations such as agriculture and animal husbandry. For example, Laband and Lentz (1983) show that farmers are five times more likely to pursue their father’s careers than non-farmers. The reasons behind this have to do with the child’s exposure to the profession early on. For the majority of occupations, skills are acquired on the job as an adult. For occupations with a strong inheritance dimension, such as farming, the necessary skills may be acquired as a consequence of growing up. Which means that by the time the child reaches adulthood, the choice of choosing that occupation entails the least costs relative to choosing any other one, if another occupation is chosen the skills and knowledge achieved so far is wasted (Elder & King, 1996; Laband & Lentz, 1983).

Occupational inheritance among reindeer herders is likely more extensive. In reindeer herding, besides the work experience achieved during childhood, cultural values
established as a child play an important role in both entering the occupation and remaining involved in it. This is mainly due to the fact that reindeer herding in Sweden is closely associated with indigenous Sámi identity. Even though only about 10–15% of all Sámi in Sweden are involved in reindeer herding, the occupation is still closely associated with Sámi culture and identity (Beach, 2007; Omma, Holmgren, & Jacobsson, 2011). The acquaintances, contacts and social connections made during childhood, or more accurately inherited, are also important in terms of entering the occupation. Reindeer herding in Sweden is an exclusive occupation where it is extremely difficult for an individual not born into an existing herding family to enter the occupation. The ‘closed-shop’ nature of reindeer herding, detailed by Beach (2007), means that even though by law many individuals have the right to become herders, in practice few outside existing herding families actually do. Of the individuals with the sufficient skills and opportunities to be involved in herding, drawbacks exist in terms of leaving the occupation. Without maintaining ownership of some reindeer, by selling his or her animals a person simultaneously makes the decision to abandon herding permanently. Permanent abandonment of reindeer herding has severe intergenerational consequences. Given the constraints on entering herding described above, the decision to abandon means that the next generation has also lost the right to herd (Nordin, 2007).

Struggling indigenous communities can be found throughout the Polar regions and in most cases in the last few decades tourism has grown in significance in terms of providing economic development to those communities (Snyder, 2007). In small communities in the Canadian far north, for example, tourism ventures run by community members have been seen as able to combat social problems such as alcoholism, drug use and suicides (Robbins, 2007). The diversification of the regional economy through tourism is also prevalent in other Polar regions such as Greenland (Snyder, 2007) and arctic Russia (Pashkevich & Stjernström, 2014). Regarding the other Nordic countries, in both Norway and Finland, members of the indigenous community are involved in the tourism industry (Tuulentie, 2006). While the role of tourism among reindeer herders is likely similar in all Nordic countries when compared to other Polar communities around the globe, there might be some differences present. First off, the reindeer herder economy is stronger in Norway than in Sweden and Finland where costs are higher in relation to the profit made (Keskitalo, 2008). At the same time, reindeer herding in Finland, unlike Sweden and Norway, is not an exclusive right of the Sámi and is often practiced by the non-indigenous community. As a result, the relationship between tourism, the indigenous community and reindeer herding might differ between the three Nordic countries. Identifying such differences is beyond the scope of this study, nevertheless the pressures faced by reindeer herders in Sweden discussed here are likely very similar to the other Nordic countries.

The various degrees of involvement in herding are being shaped by certain pressures exerted on an individual. It could be argued that these pressures can be either random events where decisions are spontaneous and less intentional or they can be a series of foreseen, accumulating events that lead to a more planned decision regarding degree of involvement. At the same time, these same pressures can be due to uncontrolled events where decisions are involuntary or they can be due to controlled events where the decisions are of a voluntary nature (Figure 1). Below, the available literature on the topic is examined in relation to how each of these pressures applies to individuals and their decision to engage in reindeer herding.
Within quadrant I of Figure 1 can be found random, uncontrolled events that push an individual away from reindeer herder. Reindeer herding is a physically demanding occupation where injuries as the result of accidents are common. One study in Finland during the second half of the 1980s shows that more than 30% of reindeer herders were in some sort of work-related accident (Pekkarinen, Anttonen, & Hassi, 1992). And work-related deaths among the reindeer herding Sámi in Sweden are found to be higher than among the Swedish population at large (Ahlm, Hassler, Sjölander, & Eriksson, 2010; Hassler et al., 2005).

Besides involuntary decisions such as those due to injuries that force someone to abandon herding, the existing literature points towards other random events but of a voluntary nature that instead can be said to pull an individual away from herding, these events can be found under quadrant II in Figure 1. Such circumstances are usually connected to life events which create a connection to regions further south and away from the reindeer herding areas. Marriage obligations to a non-herder outside of Sápmi (the Sámi homeland), for example, have been shown to influence an individual to sell off her herd as it was impossible to reconcile the time demands for both (Olofsson, 2004).

Alongside these random, singular events, there are other accumulating events that equally influence degree of involvement only they are part of a more planned decision. The increased hardships experienced by herders over time, for example, which lead to an involuntary decision to reduce involvement fall under quadrant III of Figure 1. External pressures currently facing reindeer herding are serious and diverse. Among them are climate change (Eira et al., 2008), predators (Dahlström, 2003) as well as loss of grazing rights (Müller & Pettersson, 2001) and loss of habitat to other land uses such as forestry,
hydroelectric dams, mining and recreation (Axelsson & Sköld, 2006). Additionally, income from herding is often inadequate, most reindeer herding enterprises have few reindeer in their possession which means that they are unable to provide full-time employment even for one person (Gustavsson, 1989). The problem is particularly acute in Norrbotten where, as explained by Gustavsson (1989), the majority of herding enterprises have much fewer animals than considered adequate to make a profit. With the increased use of motorized equipment such as heavy snowmobiles in harsh terrain, the occupation came to be much more physically demanding (Kaiser, 2011), such increased use of heavy terrain vehicles also increased the risk for fatal accidents so much so that it is considered one of the most dangerous occupations in Sweden (Hassler, 2005). In addition, the increased difficulty of herding work affects women to a greater extent than men (Jacobsen, 2012). Women are also more exposed to pressures relating to family obligations, such as childcare that would require significant time away from herding (Kaiser, 2011).

Finally, in quadrant IV can be found the pressures that are the result of accumulating yet controlled events culminating in planned and voluntary decisions leading an individual away from herding and towards other occupations. Secondary employment opportunities can provide additional sources of income for a family, see below, or they can be favored due to a possible extension of use of the reindeer herding areas. Nature-based tourism, for example, has been claimed to be a preferred business venture among Sámi in the north. According to Palomino (2012), Sámi tourist entrepreneurs consider nature-based tourism as a chosen field of business as it builds on existing expertise and knowledge about the native homeland. This paper uses nature-based tourism in the sense to mean all activities connected to nature, including ecotourism and wilderness tourism, as well as the combination of nature and culture (indigenous) tourism (Lundmark & Müller, 2010). There is other evidence that points to the allure of tourism in northern Sweden. Brouder (2012) and Müller and Brouder (2014), for example, have shown that tourism has the potential to provide meaning and significance to small communities in the north, even when fiscal rewards were minimal. Pressures pushing people away from herding do not necessarily have to revolve around other desired occupations, instead they can relate to improved social environments. Like indigenous people worldwide, the Sámi are understood by the majority population under simplistic stereotypical images (Axelsson & Sköld, 2006), some evidence points to the fact that Sámi stereotypes, and the treatment of Sámi people that comes with it, are more positive in the south of Sweden than in the north where reindeer herding takes place (Olofsson, 2004). Therefore, a move south might be undertaken with the objective of increased living standards that come by living in a less prejudiced environment, even as it means less involvement or complete abandonment of herding. Pressures might also act to pull an individual away from herding only to allow reindeer herding to continue as a family occupation instead. Currently, as in the past, the reindeer herding economy is organized around the entire household (Nordin, 2007). With the decreasing profitability experienced in herding over the last few decades, household strategies are still important and are organized around two sources of income, one from herding and one from elsewhere. The additional income is used directly for purchases necessary for herding, such as fuel for snowmobiles and four-wheelers and tools (Nordin, 2007). There are therefore positive incentives to attract an individual towards other jobs with the intent of maintaining reindeer herding as a family occupation.
In summary, it can be noted that there are many pressures exerted upon individuals leading them to leave reindeer herding and get involved into other occupations. Overall, the majority of existing literature approaches the reduced involvement in herding as an undesired outcome of negative pressures. The typology presented in this theoretical framework aims to recognize that at least some of the existing evidence points to more positive forces serving to draw individuals away from herding and into other occupations. Tourism being one such positive force for a variety of reasons. It is a place-based industry, seasonal in nature and it is promoted not least by indigenous organizations and government as a viable solution (Müller & Pettersson, 2006). Tourism is also a relatively cheap venture to move into not necessarily requiring specialized skills (Ioannides & Petersen, 2003). Therefore, it presents great potential to allow reindeer herding to continue along various levels of involvement, making the current study a timely quantitative investigation on reindeer herders and their involvement in tourism as a complementary source of income in the whole of Sweden.

**Methodology**

To reveal the role of tourism in the predominantly indigenous industry of reindeer herding on a national scale, population register data on reindeer herders and owners in Sweden and their families spanning 50 years were analyzed. For comparison to another primary industry in the Swedish north, data on individuals working in the agriculture sector were also analyzed. Population register data are data from administrative registers. The register data used in this study are compiled by Statistics Sweden, which maintains and stores data on the entire Swedish population. Where register data are lacking, for example, occupational codes prior to 1985, described further below, data from the Swedish census are used instead. The data presented are available at the Umeå SIMSAM (Swedish Initiative for Research on Microdata in the Social and Medical Sciences) laboratory, Umeå University. It is a longitudinal database containing comprehensive information on the individual level, the database is the aggregate of both population register data and census data. The population under investigation is every child of every individual who was a reindeer herder or reindeer owner and farmer in the three northernmost counties of Sweden: Norrbotten, Västerbotten and Jämtland in 1960 as identified in the Swedish census. While reindeer herders, owners and farmers in 1960 were identified in the Swedish census, the same cannot be done for those working in the tourist industry. Tourism occupations can only be picked out from register data and are available from 1985 onwards.

By restricting the sample to children of parents who herded/farmed, we allow for an intergenerational analysis where the extent to which the occupations are inherited is taken into account. All individuals in the sample have parents with either herding or farming as a background. Additional information such as the standard industrial classification (SIC) codes, sex, age, income and place of residence for each individual was also retrieved. The information was retrieved for every five years from 1960 until 2010. This allows for each individual to be followed for 50 years during which the focus is on events occurring at certain ages of the individual, such as involvement in an occupation at a certain age.
The SIC codes show the industry from where the individual received his or her primary income for that year. This is a limitation in the data as they fail to account for secondary sources of income. As a result, the findings can never claim to show abandonment of an industry as it might still have continued only not have provided the main source of income. Missing variables were common in the data during most years. In such instances, individuals with missing information on a certain variable were excluded from that particular analysis. Due to such missing information and owing to the limitations in the SIC codes mentioned above, the findings are confined to descriptive statistics only. Additionally, the limited use of control variables in the analysis is a result of the aims of the study where the data are used more for the purpose of showing how common tourism occupations are among reindeer herders than seeking explanatory factors behind such findings. The findings are reported mostly through the use of bar and pie charts.

Besides the occupational status issues that arise from using SIC codes, the census categories used to identify herder parents deserve some clarification as well. For the purposes of this study, both occupational classifications of reindeer herder and reindeer owner as depicted in the Swedish census were used to identify reindeer herder parents. In Sweden, each reindeer must have assigned a registered reindeer herder. That herder must by law be of Sámi descent (SFS, 1971: 437). However, there are many more reindeer owners than herders and for these individuals reindeer husbandry is still a livelihood and reindeer do form a large part of their cultural identity. In this paper, the term reindeer herder is used for both registered reindeer herders and reindeer owners generally. This is done in an attempt to incorporate all people whose lives center around reindeer with all its cultural implications and not just strictly limit the analysis to those sole individuals qualified as official Sámi herders. Regarding Sámi identity, two aspects further blur the distinction between indigenous and non-indigenous in this study. First, indigenous identity is a multifaceted issue mostly dependent on individual self-recognition (Viken, 2006) and hence we cannot know who is indigenous or not departing from a population register. Second, while most of the reindeer owners are Sámi a small number of non-Sámi reindeer owners do exist in what are known as concession areas found close to the Sweden–Finland border (Beach, 2007). As a result, the population under investigation in this paper is predominantly but not exclusively indigenous while the industry they are involved in is considered an indigenous industry.

**Background to herding in Sweden**

Reindeer herding takes place over one-third of Sweden’s total area and it is an exclusive right of the Sámi (SFS, 1971: 437), the indigenous population of Northern Europe. That same exclusive right is extended to the majority of reindeer owners as well. In addition, membership to an RHC (Reindeer Herder Cooperative) [Sameby in Swedish] is also required before an individual has the right to own reindeer. There are 51 RHCs in Sweden and membership to an RHC is based on inheritance where only individuals born in a family with existing membership or ones marrying into one may become members (Beach, 2007). Data from Statistics Sweden show that in 1960, there was a total reindeer herder population of 2034, out of which 791 were considered herder professionals and the rest were either helpers or family members such as housewives and
children (Johansson & Lundgren, 1998). In 2010, there were 4678 reindeer owners in the whole of Sweden (The Sami Parliament, 2015a), but only around 2500 individuals are said to have their main income from reindeer herding (The Sami Parliament, 2015b). For individuals opting for a passive role in herding as well as for those that abandon herding completely, the employment opportunities in the north are limited. In efforts to stem the decline of rural areas of Sweden, tourism especially in the mountainous regions has been proposed as the industry able to step in and take over from the declining extractive industries (Lundmark, 2005). Such claims are strengthened by studies showing tourism employment in the Swedish north to have increased in the past decades (Lundmark, Fredman, & Sandell, 2006; Müller, 2013; Müller & Ulrich, 2007). Furthermore, in northern Sweden there is a Sámi component to tourism supply (Lundmark & Müller, 2010) and Sámi tourism is closely linked to images and representations of reindeer and herding (Müller & Pettersson, 2001; Olsen, 2003; Pettersson & Viken, 2007). For that reason and through the fact that RHC membership ensures them access to the resource (Müller & Huuva, 2009), reindeer herders are placed in an opportune position to link tourism and reindeer herding in a way that is favorable for both.

The three counties forming the research area are more than 200,000 km², roughly 45% of Sweden’s area, and have 640,000 inhabitants equaling 6.5% of the country’s population. Hence, it is a sparsely populated area with few major urban centers, mostly located on the coastline. Most of the landscape is dominated by boreal forest and variation can be found only in the Scandinavian mountain range along the Norwegian border in the west and small areas of tundra in the uppermost north. Tourism is highly concentrated, either to the three county capitals (30% of the 2.3 million guest nights in the region) or Kiruna, a mining town and home of the Icehotel in Norrbotten (13%), and Åre, a primary alpine skiing destination located in Jämtland (17%). Recently, Åre has developed into a four-season destination with added focus on lifestyle and adventure sports. However, despite this concentration of guest nights, tourism supply is available all over the region, possibly to a greater degree than expected when looking at the actual distribution of guest nights and population (Lundmark & Müller, 2010). A lot of those offers are likely small-scale businesses providing nature-based tourism activities such as canoeing, dogsledding and camping. Furthermore, hiking in the mountains has been an important tourist activity, still the advent of the Icehotel turned out to be a major innovation, turning the winter season into a major tourist season for the entire region (Müller, 2011). In this context, even novel attractions such as driving on snow and ice have been developed as spin-off activities of industrial car-testing in some towns in the region. During recent years, cross-border shopping tourists from Norway played an important source of income as well. However, in general the share of international tourism in the region is just below the national average of 23%.

From an employment point of view, tourism today is one of the important industries of the region (Müller & Ulrich, 2007). However, this is not necessarily due to development within tourism but rather a result of employment decline in other industries. Hence, involvement in tourism may sometimes not be a lifestyle choice but rather a last attempt to make a living in the northern Swedish periphery.
Results

There were 1520 individuals who had at least one parent as a reindeer herder or owner in 1960 in the three northernmost counties of Sweden, Norrbotten, Västerbotten and Jämtland, from hereon called the herder group; and 40,396 individuals who had at least one parent as a farmer in 1960 in the same counties, from hereon called the farmer group. The results show that the majority of these individuals never made their livelihood from either herding or farming, meaning that they did not follow their parents in their respective occupation. However, while only 5.11% (N = 2066) of the farmer group had at least some involvement in farming at the age of 30, in the herder group 39% (N = 594) had at least some involvement in herding at age 30. This observed strong occupational inheritance aspect of reindeer herding did differ among the sexes; however, while only 12% of women in the sample were involved in herding, for the men nearly 63% were involved. The prevalence of men in reindeer herding is also confirmed by the parents themselves. In 1960, out of all the parents of the herder group 958 were men while only 55 were women.

Out of those children of herders who have been involved in herding themselves the majority, almost 66%, lived in the northernmost county of Norrbotten, while in each of the remaining two northern counties, Västerbotten and Jämtland, lived a little over 15%. The remainder lived further south, outside the actual reindeer herding area. In the farmer group, the distribution among the three counties is slightly more uniform, in Norrbotten lived around 24%, in Västerbotten 44% and in Jämtland 28%, with the remainder living further south. The findings showing a small percentage of individuals found to have lived outside the three northernmost counties is likely due to the fact that, as discussed earlier, the sample is made up of children of herders and farmers from these counties and these occupations are land-based and spatially fixed with a strong inheritance aspect. In fact, out of those individuals who have not been involved in their parents’ occupation a much larger percentage lived outside these three counties, 17.8% from the herder group and 23.4% from the farmer group.

Childhood events

As discussed earlier in this paper, different skills and knowledge achieved during childhood can be important in identifying occupational decisions made in the adult years. For example, the results show that the degree of parental occupational involvement emerges as an important factor in the child’s decision to herd, but not as important in the decision to farm. It is important to note that only a small portion of the individuals in the sample have had parents who were involved only during early childhood (until age 12), and even fewer whose parents were involved only while they were infants. Most parents were involved in reindeer herding throughout the childhood years. Figure 2 shows the three different levels of parental involvement and how they relate to the children themselves being involved in the occupation, split by sex. More than 80% of individuals whose parents were involved in herding while they were infants had no involvement in herding themselves. If parental involvement extended until age 12, the children were more likely themselves to be involved in herding. However, if parental involvement in herding occurred all the way until age 13 or longer, which is usually when children
start owning animals themselves, then the children were most likely to engage in the occupation as adults. Differences exist by sex, out of the 709 women in the herder group sample only 85 had any involvement in herding and all those had at least one parent whose involvement extended past early childhood. None of the women in the sample with lesser parental involvement engaged in herding themselves. This positive correlation between individual and parental involvement did not apply to the same extent for the farmer group. Among the farmer group around 2–3% of the women regardless of parental involvement had themselves gotten involved in farming. While for the men that number varies from 5.5% to 9% regardless of parental involvement.

The results also show involvement in herding to not vary according to parental income, recorded at age 12. Figure 3 shows parental income (available only from 1970 and onwards) obtained chiefly from reindeer herding against child’s involvement. Here, income appears to have a small role in the likelihood that a child chooses to engage in herding. Regardless of parental income from herding, which has been adjusted for inflation each year, around 37–50% of individuals get involved in herding themselves. The 2nd, 3rd and 4th quartile brackets show almost no change in the share of children choosing to get involved in reindeer herding.

Figure 2. Occupational inheritance in reindeer herding by sex.

Figure 3. Parental income (available only from 1970 and onwards) obtained chiefly from reindeer herding against child’s involvement.
Occupational alternatives

When examining which economic sectors those individuals not engaged in herding or farming go into, the majority, 77% from the herder group and 65% from the farmer group, worked in the tertiary sector at age 30. The proportion was much larger among women than men, where more than 90% of women in both groups worked in the tertiary sector at age 30. When looking specifically at tourism (available only from 1985 and onwards) some differences emerged between the herder and farmer groups. Occupations in tourism were more prevalent among the herder group than the farmer group. In all, 11.1% ($N = 190$) of the sample in the herder group had worked in tourism at least once while only 4.6% ($N = 2119$) did in the farmer group. Women in both groups were more likely than men to be involved in tourism. In the herder group, 14.5% of women and 7.7% of men were involved in tourism while in the farmer group 5.5% of women and 3.8% of men were involved in tourism.

As discussed in previous sections, herding is often complemented by income from other sources including tourism. The results show that 26.6% of those involved in herding were also involved in tourism at one point during the study period, while only 4.2% of those involved in farming were also involved in tourism during the same time. The involvement in tourism does differ among counties as well. In the herder group, the proportion of those involved in tourism within each county is as follows: 10.8% for Norrbotten, 11.1% for Västerbotten, 14.7% for Jämtland and 12.0% for all remaining counties. For the farmer group, the share of individuals involved in tourism is noticeably smaller: 4.0% for Norrbotten, 3.9% for Västerbotten, 6.6% for Jämtland and 5.0% for all remaining counties.

Lastly, Figure 4 shows a breakdown of the type of tourism occupations people are involved in. Among the herder group, the largest percentage of people, 39%, were involved in providing accommodation. The second largest percentage, 23%, belongs to those involved with tourist attractions such as museums, amusement parks and nature reserves. Bars and restaurants was the third largest category composed of 21%. In contrast, for the farmer group, bars and restaurants as well as operation of sports facilities such as ski resorts played a more prominent role than in the herder group. Accommodation while still occupying the largest percentage category was notably smaller than in the herder group at 29%.
Discussion

Research shows reindeer herding to be an occupation largely inherited and difficult to get involved in otherwise. The results show herding to have a strong inheritance factor where 39% of the herder children in the study had at one point herding as their main occupation themselves. The same inheritance factor was not observed to the same extent among the farmer children, where only 5.11% had farming as their main occupation at least once. Occupational inheritance among reindeer herders was shown to be highly gendered, where men were more likely than women to become reindeer herders. The difference being quite considerable, with the majority of males, 63%, involved in herding while only 12% of women were. While the exact reasons for this difference cannot be discerned from these data, it could be related to how the pressures faced by herders shown in Figure 1 act differently according to gender. This is confirmed by other studies that point to women as being the most likely to be subjected to other obligations such as those around the home and rearing children (Kaiser, 2011) as well as being disproportionately affected by the increased physical demands of herding that comes with the use of heavy snowmobiles and other terrain vehicles in rough terrain (Jacobsson, 2012). The rate at which children followed into their parents’ footsteps was dependent on the age of the child and degree of parental involvement among the herder group but not among the farmer group. Hence, this study supports assertions made by Laband and Lentz (1983) and Elder and King (1996) that show skills and knowledge achieved during different childhood years play a role in decisions regarding careers in adulthood. In this study, parental involvement in herding past the age of 12, which presumably offers the greatest chances of gaining valuable skills early on, meant the greater the likelihood of involvement in herding in adulthood.

The majority of the individuals involved in reindeer herding, almost 66%, were from the northernmost county of Norrbotten, confirming existing literature stating that most
of the herding enterprises are found in Norrbotten (Gustavsson, 1989). This has relevant implications as the total number of reindeer is regulated by the local government of each county, and increasing one’s herd size is mostly dependent on accommodating actions of other herders, for example, retirement (Jacobsson, 2012). According to a report from the Swedish Board of Agriculture (2003), Norrbotten has the smallest number of reindeer per person with an average of 31 reindeer per owner, compared to the average of 164 reindeer per owner in Västerbotten and 156 for Jämtland. Therefore, it can be interpreted that additional sources of income are most necessary in Norrbotten. A pattern not validated by tourism occupations in this study, see below.

Current research shows reindeer herding to be more than a profession providing an income but an occupation closely linked with Sámi identity itself (Beach, 2007; Nordin, 2007; Omma et al., 2011). This study looks at parental income from herding and how that compares with the child’s involvement in the profession. It finds the rate of involvement in herding to not vary between different parental income brackets. Generally, for all categories of parental income around 38–50% of children become involved in herding. Indicating that income is not a leading factor in choosing the occupation, and other factors such as the interrelationship between reindeer herding and Sámi identity might explain better the willingness and drive to become involved in herding. Although this cannot be confirmed by this study.

Regarding the role of tourism, the results show that occupations in tourism were more common among the herder group than the farmer group. Furthermore, when looking at those from the herder group who became herders themselves, the results show that more than 26% were also involved in tourism at one point. Whereas that same category among the farmer group was composed of only 4.2%. This is of great significance as even though tourism is expected to succeed the declining primary industries in the north (Lundmark, 2005), and tourism supply in the north is closely connected to representations of reindeer and herding (Olsen, 2003; Pettersson & Viken, 2007), the extent to which reindeer herders are linked to tourism has not been shown on such a large scale before. By showing that tourism is more common among those involved in herding than farming, this study hints that involvement in tourism might allow for the continuation of herding by providing additional sources of income (Nordin, 2007).

Furthermore, the results show that women were more likely than men to be engaged in tourism in both groups, with women from the herder group having the largest share to have worked in tourism. Such a pattern is supported by previous studies, for example, by Müller and Pettersson (2001) who suggest that it is women who are more likely to engage in tourism as they are the ones most likely to be leaving herding due to the increased physical demands that haunt the profession already mentioned above.

The county of Jämtland has the largest share of individuals involved in tourism for both herder and farmer groups. This probably can be explained by the rather mature tourism industry in the county (Müller & Ulrich, 2007). This study does not find tourism to be more prevalent in Norrbotten versus the other counties under investigation, even though the average number of reindeer per herder, and by association the potential profit from them, is lowest in Norrbotten (Gustavsson, 1989). Implying that while the link between reindeer herders and tourism is present as described above, it does not necessarily mean a causal relationship where engagement in tourism is solely a response
to difficulties in herding. Instead, the results can be interpreted to show that there is a role for tourism among reindeer herders but the relationship is more complex than these data are able to pick out.

Concerning type of tourism professions individuals in the sample got involved in, accommodation was the largest category among both the herder and farmer groups. While more details regarding the category cannot be obtained from these quantitative data, existing research shows that small and family businesses in tourism typically relate to accommodation services (Getz & Carlsen, 2005). Attractions, which include museums and nature reserves, were the second largest category among the herder group. As detailed in the theoretical framework above, nature-based tourism is a preferred business venture among Sámi as it builds on already existing expertise about the surroundings (Palomino, 2012). However, it is a significant share among the farmer group as well, the third largest category after accommodation and bars and restaurants, and nearly as large as in the herder group. Subsequently, it can be interpreted that working within nature reserves or other attractions is more a result of the available geographical resource than an inherent inclination among reindeer herders to work with nature-based attractions.

The current study presents only a descriptive analysis on the role of tourism among reindeer herders on a large scale. It is the first of its kind to examine such an extensive area. There are, however, limitations that confine the explanatory power of the results. For example, by using the SIC codes in the database, a selection is made towards those individuals who have only received their main income from reindeer herding or farming. Positively, this could be interpreted as selecting those individuals that actually make a livelihood from these professions. At the same time, it excludes many other individuals who are involved in herding or farming but do not receive their main income from it. In those cases, those individuals were categorized as not following in their parents’ footsteps in this study when in fact they were, resulting in an overestimate of those that were not at all involved in either herding or farming. Another limitation relates to the tourism SIC codes available in the database. All SIC codes that make up the tourism categories are available only from 1985, as a result those counted as never having worked in tourism are probably overestimated given that some might have worked in the profession only before 1985.

**Conclusions**

Existing research on reindeer herders in Sweden shows that involvement in herding is shaped by various pressures. As a result, involvement in herding is situated along a continuum ranging from more active roles in herding to more passive ones (Nordin, 2007). Reduced involvement in herding does not necessarily have to be an undesired outcome. There is existing evidence showing positive forces that draw an individual away from herding and into other occupations. Either by providing additional income necessary to allow herding to continue as a family occupation or by giving people an opportunity to work in desired nature related occupations, with tourism occupations being some of those hinted at in the existing literature. The role of tourism among reindeer herders in Sweden is given increasing prominence given difficulties of solely making a living out of herding. At the beginning of this text, it was presented that tourism is seen as a way
to make a livelihood for indigenous populations by providing employment opportunities. It is an occupation requiring few specialized skills upon entry, it is seasonal in nature and place-based. Yet the rate at which tourism is chosen as an occupation among reindeer herders in Sweden has not previously been shown. This study addressed this issue by asking how widespread tourism occupations among reindeer herder families in all of northern Sweden are. It looked at some of the characteristics of those engaged in them, and how that compares to geographically matched individuals in another land-based occupation, farming. This study upholds existing claims that emphasize links between tourism and Sámi reindeer herders (Lundmark & Müller, 2010; Tuulentie, 2006; Viken, 2006), it does so by showing tourism to be more prominent among herders than among farmers in the Swedish north. In line with previous studies (Müller & Pettersson, 2001), it also shows that involvement in tourism is highly gendered. The results presented here show that nearly twice as many women as men were involved in tourism at least once during the study period.

The type of tourism occupations individuals engaged in did not differ much between the herder and farmer groups. Accommodations and attractions were proportionally the largest categories among the herder group, followed by bars and restaurants. It can be argued that these three categories are closely interlinked with each other, and possibly dependent on each other. Without employment in attractions, for example, might not be any employment in accommodation or bars and restaurants either. No such conclusions can be drawn from this study but by showing the almost equal share of employment in these categories, this study makes known the most important categories of tourism employment on a large scale. With this knowledge, further research can investigate if there are interlinkages between these categories and to what extent they are dependent on each other.

This study also showed the share of those herders involved in tourism to differ only slightly among the three counties explored. Even though existing studies hint profitability from herding to be lowest in Norrbotten given a low reindeer per herder ratio (Gustavsson, 1989), the lack of predominance of tourism in Norrbotten uncovered in this study shows that there is no direct causal relationship between profitability in reindeer herding and tourism occupations. A complex relationship between tourism occupations and reindeer herding in the Swedish north is therefore derived from this study. Further research is needed to tease out these complexities to better understand the role of tourism among indigenous reindeer herders of Sweden.

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