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Natural amenities and the regional distribution of nature-based tourism supply in Sweden

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Introduction

Nature-based tourism can often be encountered in regional development strategies around the world, due to the assumed ability of this business to contribute to local job creation and income diversification, while having comparatively low requirements in training and infrastructure (e.g. Ashley, 2000; Dissart & Marcouiller, 2005; Saarinen, 2003; 2007; Spencely & Manning, 2013; Marcuiller, 2015; Mollard & Vollet, 2015). However, while nature-based tourism (hereafter NBT) may seem to be a relatively easy development avenue, its success is very much dependent on distribution of amenities.

There is a growing body of literature analyzing amenities, necessary for regional development through NBT (e.g. Green, 2001; Green, Deller, & Marcouiller, 2005; Hall & Boyd, 2005; Giaoutzi & Nijkamp, 2006; Hall, Müller & Saarinen, 2009; Dissart, Dehez & Marsat, 2015). While there is a positive link between amenity-rich areas (e.g. presence of national parks, heritage sites) and economic value enhancement through tourism, it is also suggested that the establishment of protected areas alone, for example, does not automatically result in increasing number of nature-based tourists and regional development benefits (Lundmark & Stjernström, 2009). Growing attention is paid to other factors important for tourism development, such as infrastructure, networks, quality of life and other aspects of social and cultural capitals, which are likely to vary from region to region (Green, 2001; Green *et al.*, 2005; Hall & Boyd, 2005; Fredman & Lundmark, 2008; Lundmark & Stjernström, 2009; Lundmark & Müller, 2010; Brouder, 2013).

These discussions on the challenges of regional development and tourism are very much applicable to the context of NBT in Sweden, which has significant regional variations in resource endowment and population density, with the largest share of its territory in the northern periphery. This creates different tourism development opportunities, affecting NBT distribution patterns, while the ways in which amenities contribute to the regional development dynamics are still insufficiently understood (Mollard & Vollet, 2015). As stated by Hall & Boyd (2005:11) “[o]ne of the greatest difficulties in developing tourism in peripheral areas is understanding the factors by which tourism firms chose to locate as well as the means by which governments can intervene in assisting the location of private firms”.

In light of the aforementioned, the aim of this study is to *examine regional variations of the NBT supply and analyze how amenities can explain localization patterns of NBT businesses in Sweden.*

This study elucidates geographic variations of NBT business operations and their dependence on the presence of amenities, using rich empirical data from a national survey of NBT service providers, which has been the most comprehensive survey of this sector in Sweden to date. This study presents a general overview of the NBT supply in the country (including methodological challenges associated with capturing this sector), regional variation in distribution of the NBT service providers and their specifics (on the level of *land*), and statistically tests the dependence of NBT operation density on presence of various amenities (on the level of *county*). The results of this research will shed more light on the dynamics of the NBT sector and will be useful for informing regional tourism development policies.

Theoretical Framework

Regional Development and Tourism

Importance of tourism for regional development has been particularly visible in the context of the Nordic periphery, which has traditionally been viewed as an economically vulnerable region, characterized by out-migration, declining and aging population and other challenges (Hall & Boyd, 2005; Kauppila, Saarinen, & Leinonen, 2009). While economic and political significance of tourism is growing, the major challenge has been finding ways to integrate tourism development and regional development in the best possible manner, ranging from “tourism first” to “regional development first” (Saarinen, 2007; Kauppila *et al.*, 2009). Combination of these two approaches may result in the successful use of tourism for regional development, however, also depending on the potential of the region (Kauppila *et al.*, 2009). In other words, it is important to keep in mind the resources, available at a given region, when discussing its potential for tourism and regional development.

Viewing tourism as a tool to stimulate regional development and diversify local economies is also common in Sweden. Located at the northern fringe of Europe, Sweden is a country low in population but rich in natural amenities. There has been a long tradition to extract wood, fish, minerals, ore and crops for industrial use, but more recently the service sector, including tourism, has become increasingly important (Statistics Sweden, 2014; Tillväxtverket, 2014).

There have been multiple approaches to identify resources, necessary for successful regional development through tourism (Macbeth, Carson & Northcote, 2004; Hudson, 2006; Hall, 2007). In this paper we utilize the concept of amenities, a widely accepted framework within the regional development literature (OECD 1999; Green *et al.*, Marcuiller, 2015).

Amenities and Nature-Based Tourism

Amenities can be generally defined as location-specific features, related to value or attractiveness of that location (Dissart & Marcouiller, 2005). In fact, NBT resources are primarily understood as natural amenities (undeveloped) and recreation facilities (developed, human-made), which make the natural amenities more accessible (Dissart & Marcouiller, 2005). Amenities could also be thought of as attributes of a place, where it is pleasant to live, work or visit, with reference to the experience and appreciation of the quality of these attributes. Overall, existing heterogeneous understandings of amenities can be summarized through two essential characteristics: amenities are localized and contribute to regional differentiation; amenities often are ‘public goods’, i.e. their monetary value is not always clear, which is particularly relevant to the case of Sweden (Mollard & Vollet, 2015)

Given the abundance of its natural amenities, Sweden is well positioned to develop NBT: the land and water are accessible through the Right of Public Access; there is a well-developed infrastructure in terms of roads, railways and public transportation. Around 90 % (of almost 10 million) of the increasingly urbanized Swedish population lives in the southern third of the country; natural resources vary from the fertile agricultural lands and deciduous forests in the south to the mountains and boreal forests in the north.

Historically, most of the protected nature areas in Sweden has been located in remote, scarcely populated and inaccessible regions, attractive to a limited number of outdoor recreation enthusiasts, barely expecting any infrastructure and services (Lundmark & Stjernström, 2009). Policies have not been supportive to tourism development in these areas either, and in several of the older national parks commercial activities have even been forbidden by regulation. The

tendency to organize NBT outside the national parks in Sweden is also visible in research among Swedish NBT service providers (Fredman & Margaryan, 2014).

More recently NBT has been recognized in Swedish environmental policies as a tool to contribute to economic development and increase local acceptance of nature protection (Zachrisson, Sandell, Fredman & Eckerberg, 2006; Fredman & Sandell, 2009), including a more liberal view on commercial activities in protected areas. There is also a growing tendency in the context of the Swedish NBT supply to place importance on both high level of naturalness and high level of comfort and facilities (Fredman, Wall-Reinius & Grundén, 2012; Wall-Reinius, 2012).

Thus, progress in the NBT development in Sweden and beyond suggests the need in better understanding the role of amenities, crucial for explaining the localization patterns of NBT supply, in its turn necessary for the successful integration of this type of tourism into regional development. As discussed above, the literature on NBT primarily highlights the importance of natural amenities, while human-made ones are also present but less pronounced (while also lacking empirically tested supply perspective). This enables us to formulate two hypotheses to test empirically in the context of Sweden in order to shed more light on the role of amenities in the geographical distribution of NBT business sector:

H₁. The larger natural amenities endowment the higher is density of NBT operations.

H₂. The larger natural and human-made amenities endowment the higher is density of NBT operations.

Data Collection

Capturing the Nature-Based Tourism Supply

The supply of NBT can be described as “*a complex combination of natural amenities, recreational sites, access, and private sector business activity that is influenced by an array of factors which act to provide opportunities to satisfy leisure-based travel demands*” (Dissart & Marcouiller, 2005, p.157). Fredman *et al.* (2009, p.24) proposed a minimalistic definition of NBT: “[*n*]ature-based tourism is human activities occurring when visiting nature areas outside the person’s ordinary neighbourhood”. From this definition it follows that the NBT industry represents activities in different sectors, directed to meet the demand of nature tourists (Fredman & Tyrväinen, 2010). These can be such traditional activities as hiking, skiing, kayaking, hunting and fishing, and also more alternative ones, such as mountain biking, windsurfing, paragliding, caving, etc. Transport and accommodation are generally not covered, but may be included if operations have a clear NBT emphasis (e.g. mountain cabins, nature camping) or when the transportation is in itself a part of the nature experience (e.g. cycling, sailing etc.).

Previous inquiries have also argued that the supply side of NBT businesses in the Nordic region is considerably less researched compared to its demand (Fredman & Tyrväinen, 2010). Main reasons of the asymmetry in research attention, when it comes to the availability of statistical data on NBT, lie in the design of the national industry classification system and the lack of specific inventories. In addition, absence of generally accepted definition of the NBT makes it challenging to capture this sector. Sweden, in accordance to international practice, has databases of registered business entities based on standard industrial classification (SIC) codes. Lacking their own code, NBT businesses are hidden under other industrial codes, making it difficult to get a holistic overview of the sector.

To overcome these challenges, we tested two data collection approaches. The first method was based on identification of the SIC codes in the databases of national organizations involved

in promoting NBT in Sweden (*Lantbrukarnas Riksförbund, Sveaskog and Ekoturismföreningen*). After identification of 6 most frequently occurring SIC codes (*mixed farming, forest management, outdoor and recreation activities, booking and reservation service, breeding of cattle and buffalos, other sport activities*), a pre-survey was conducted to test the reliability of the codes. From 160 229 companies registered under these codes, a subset of 300 companies was selected (50 per code). After contacting these companies by telephone (48 % response rate) it became clear that only 7 % of them provide NBT services. It was concluded that SIC codes have weak capacity to capture the NBT service providers in Sweden and could not be used as a reliable method for obtaining a nationwide NBT database.

The second method, which we eventually used for the data collection, was based on the geographical distribution. This approach employed collecting contact information of NBT service providers from the 308 tourist information bureaus all over Sweden. The approach is further based on the assumption that most of the “serious” NBT companies will be registered by the tourist bureau in their region. The bureaus were provided with a definition of NBT based on Fredman et al. (2009) and were requested to submit contact information of businesses in their region that fit to this definition. Additional information was gathered from the websites of the tourist bureaus (which however varied in their quality). Further, the websites of 17 regional tourist organizations (*länsturismorganisationer*) and 3 foundations, (*Upplandsstiftelsen, Skärgårdsstiftelsen and Väst kuststiftelsen*), were also reviewed. As a result, a database of 2046 NBT service providers was obtained which was used for the subsequent data collection.

Survey of NBT service providers

Prior to the distribution of the actual survey, several quality control techniques were applied. The websites of all the companies were checked, and companies with non-functioning websites were contacted by phone. Irrelevant companies were removed. Further, search by keywords was implemented via Google search engine to check for companies not captured by the tourist bureaus. Key words were based on the most common NBT activities in Sweden identified by Fredman *et al.* (2012). As a result of all these measures, the updated NBT sample contained 2060 companies. Following a pilot test survey on 50 respondents, the final questionnaire (in Swedish language) was distributed to the whole sample. The survey was administered online using NETIGATE software, in two rounds (May-June 2013 and November-December 2013).

The comprehensive survey contained 49 questions related to NBT service provision. The survey was designed based on the results of previous research – a national research program on outdoor recreation in Sweden, and related international studies on NBT supply. The outdoor recreation program did several extensive surveys in Sweden on topics related to both activity participation and NBT supply (Fredman et al., 2014; Lundmark & Müller, 2010). Relevant international studies were found in Norway (Stensland, 2014), Finland (Selby et al., 2011) and North America (Research Services Tourism British Columbia, 2005; Hordur et al., 2004).

When asked to rate importance of an item, a standard 5-point Likert scale (plus “don’t know” option) was applied. Each survey round was followed up by three reminders and non-response bias check via telephone. During the data collection process, 207 e-mails bounced back and 32 were removed after the first round of survey as confirmed non-NBT companies, reducing the sample to 1821. Further, 994 did not access the survey; 74 accessed but did not participate, 114 did not move beyond the first screening question (by stating that their business does not fit into the NBT definition provided and automatically ended the survey). All in all, after manually screening the data, the final result of the survey comprised 601 valid responses out of the working sample of 1821, which constitutes 33% response rate.

Data Analysis and Results

General overview

The collected data demonstrates that NBT in Sweden is a rather diversified sector which relies on multiple business operations – only about 20 % of the companies have one hundred percent of their annual sales from NBT, meaning that the majority combines tourism with other sources of income. The overall supply of NBT services to a large extent revolves around different types of water-based activities (kayaking, canoeing, rafting, fishing, etc.) when measured vis-à-vis importance to annual sales. Swedish NBT is also a predominately summer business (72.8% of all the respondents rated summer months as important or very important). Seasonality is also visible in the employment patterns since only 60 % of the companies reports at least one full time year round employee. The average annual sale is close to SEK 2 million, and the total sales of the Swedish NBT sector is estimated as at least SEK 3.6 billion. In addition to domestic tourists, the most important foreign markets are Germany (leading by far), Denmark, the Netherlands and Norway.

The most important amenities for NBT operations are forests, lakes and rivers/streams/waterfalls. In terms of wildlife – moose (*Alces alces*) and various species of fish and birds are the most important animals. Most companies are dependent on access to land with an external ownership and the Right of Public Access is very important to the three-quarters of all respondents. Hiking trails and cabins are the most important types of infrastructure.

Regional variations of NBT in the Three Lands of Sweden

In order to provide a rough general overview, we begin with exploring the regional variations of the NBT supply characteristics among the three Swedish lands (*landsdelar*) (Figure 1). These lands are Norrland, Svealand and Götaland, of which Norrland has the largest territory and the least population, whereas Svealand and Götaland are rather comparable. These regions extend from north to south and vary in their amenity endowment, so it is assumed that the NBT businesses, grouped according to these regions, will show differences along a number of parameters. Thus, from our survey we selected 28 variables, representing various types of amenities, important for NBT in Sweden. These are: types of landscapes and biomes (*forests, mountains, glaciers, lakes, rivers and waterfalls, coasts and archipelagos, wetlands, agricultural lands*); types of wildlife (*moose, reindeer, roe deer, bear, wolf, beaver, seal, birds, fish*); typical nature properties important for NBT (*opportunity to encounter wildlife; to visit areas with no people in sight; to visit noise-free areas; to experience nature's power*) and infrastructure (*hiking paths, cabins, camping sites, harbors, designated beaches, restaurants/cafes, visiting centers*). For explorative purposes only, a series of one-way ANOVAs (using IBM SPSS software) was run on these variables to set the scene of geographical variation in the importance of natural amenities among the NBT businesses. Out of these variables only 5 (*opportunity to experience nature's power, opportunity to visit noise-free areas; camping sites, restaurants/cafes, visiting centers*) did not show significant variation ($p < .05$) across the three lands. Based on their general importance for NBT and a relatively large mean value it can be assumed that they are important for all the three lands.

FIGURE 1 ABOUT HERE

Based on the geographic, demographic, economic and other specifics of Sweden it is rather safe to assume that the most pronounced differences in the NBT characteristics would lie between the northern and southern territories. In order to check this assumption we run two planned contrasts (independent linear). The results of the first planned contrast (Norrland vs. Svealand and Götaland) showed significant difference ($p < .05$, two-tailed, equal variance not assumed) in 21 out of 23 NBT characteristics, whereas the second planned contrast (Svealand vs. Götaland) demonstrated significant difference only in 14 cases out of 23. This already suggests that the differences between NBT characteristics in the northern region of Sweden and the rest are larger comparing to the differences between the mid and southern regions.

Thus, when we contrast Norrland against Svealand and Götaland, the differences can be found in evaluation of the following NBT parameters, which are of high importance for Norrland but are of lesser importance for the other two lands: landscapes and biomes (*forests, mountains, glaciers, lakes, rivers and waterfalls, wetlands*); access to certain properties of natural amenities (*opportunity to encounter wildlife; to visit areas with no people in sight*); wildlife (*moose, reindeer, bear, fish*); types of infrastructure (*hiking trails, cabins*). Conversely, NBT characteristics which were more important for Svealand and Götaland in contrast to Norrland are: landscapes and biomes (*agricultural lands, coastlines*); wildlife (*roe deer, beaver, seal*); types of infrastructure (*harbors, designated beaches*).

Further, moving south, contrasting Svealand vs. Götaland we see that parameters significantly more important for Svealand are: landscapes and biomes (*forests, mountains, lakes, rivers and waterfalls*), wildlife (*moose, reindeer, roe deer, bear, beaver, wolf, fish*), certain properties of natural amenities (*opportunity to encounter wildlife; to visit areas with no people in sight*), infrastructure (*cabins*). Interestingly enough, no variables were of higher importance for Götaland.

While the level of lands is convenient for getting a rough overview of the situation within the country, much of the local variance is lost at this level of aggregation. Therefore, for the main statistical analysis we zoom in to the administrative division of *län* or counties ($N=21$), which constitute the three Swedish lands as shown in Figure 1.

The Role of Amenities in the Distribution of NBT Operations per County

In our questionnaire the NBT companies were asked to indicate both the county they are registered in and to rate each county according to the frequency of their NBT operations. Tests of normality (Kolmogorov-Smirnov) show levels of significance at 0.07 and 0.08 for each variable (number of companies and number of operations per county). Given the very high correlation between the two measures ($r = .976$) we decided to use only the geographic location of NBT operations as a dependent variable for our analyses to increase accuracy in case a company is registered in one county but has operations in others. This difference should not be significantly large, since, as confirmed by additional data from our survey, the total expenditures of a company and the expenditures in the county of registration demonstrate near perfect correlation ($r = .94$, $p < .001$) and nearly identical means ($\mu = 659900.31$ and $\mu = 603329.6$ SEK respectively). Thus, we believe that the location of the NBT operations is a reliable variable to reflect relationships between natural amenities and the distribution of NBT supply at the county level.

The data for the independent variables was collected from Statistics Sweden (www.scb.se), National Board of Forestry (www.skogsstyrelsen.se) and the Swedish Association for Hunting and Wildlife Management (www.viltdata.se). In the choice of independent variables, capable of predicting the distribution of NBT businesses, we were guided by the results of our questionnaire as well as the previous literature.

Thus, the most important natural landscapes for the Swedish NBT, on average, were forests, lakes and rivers, while the most popular activities were those related to water. Forest land and freshwater lakes and rivers available for fishing, kayaking, canoeing, rafting and swimming, are found throughout the country to a variable degree. The coastline, on the other hand, while being a significant recreation landscape throughout many parts of Sweden is limited to 13 of the 21 counties. Consequently, our first hypothesis is that the area of forests, lakes and rivers in proportion of the total county land area as well as the presence of a coastline will have a positive effect on the density of NBT activities per county. As an additional indicator of (negative?) influence, the amount of forest harvested per county was also tested.

Further, the area covered by nature reserves was selected to represent protected areas in general. Lundmark & Müller (2010) in their web-analysis did not find protected areas to be an important precondition for the distribution of NBT product supply. Our data shows that while only 14 % of the companies reported activities within or in the 5 km range from a national park, 46 % indicated that protected areas in general are important for their business (rated 4 and 5), which enables us to assume that there is more NBT going on in nature reserves rather than national parks and the former might be a better predictor than protected areas in general. Hence, the area of nature reserves proportional to the total land area was chosen as the independent variable.

To capture the importance of wildlife, the data on moose hunt was selected. Moose is an iconic species of Scandinavia and our survey also confirms that it is the most important big mammal for the Swedish NBT business. Moose is hunted for meat and trophy, while hunting is an important activity both for locals and the tourism sector. Here, the number of moose taken per 1000 ha per county is used as a proxy for moose population density.

Finally, the presence of natural amenities is an important but insufficient factor for successful development of the NBT, as has been pointed out by previous research (Priskin, 2001; Lundmark & Stjernström, 2009; Haukeland, Grue & Veisten, 2010; Fredman *et al.*, 2012; Wall-Reinius, 2012). Consequently, our second hypothesis is that infrastructure concentration will have a positive effect on the density of NBT activities per county as well. Since one of the most basic components of any tourist infrastructure is accommodation, we include the data on the total number of hotels, holiday villages and hostels per county and the total number of overnight stays. As an additional indicator of auxiliary tourist infrastructure, the variable showing golf courses and downhill ski areas is also selected. Strictly speaking golf and resort-based downhill skiing as such do not fall into the chosen NBT definition, but these areas are considered good indicators of tourism infrastructure concentration, which has many spillover effects, attracting NBT operations. The NBT business is, for example, often clustered around ski resorts, particularly in the mountain regions. For example, many of the surveyed NBT businesses offer downhill skiing off-piste or use the ski area for other purposes (e.g. downhill mountain biking is a popular summer activity in Åre ski resort in Sweden). Additionally, the population density per county is also tested as an indicator of accessibility, relative lack of wild nature, and also to control for the possibility that the number of operations simply relates to the population.

Thus, six items related to natural amenities (proportion of land covered by *nature reserves, lakes and rivers, forest areas, moose take, forest harvested, coastline*), three items related to tourism infrastructure (number of *hotels, hostels and holiday villages, overnights stays* and area covered by *golf courses and downhill ski areas* (in hectares) and *population per km²*) were selected as independent variables to be tested in our statistical analysis presented below.

First, individual correlations (Pearson's, two-tailed) were run between the six independent variables and the dependent variable of *NBT operations*. Five out of the ten variables tested demonstrated significant correlation with the number of NBT operations per county. These are: two variables expressing natural amenities (proportion of land covered by *nature reserves*

($r=.48$, $p<.05$) and *lakes and rivers* ($r=.46$, $p<.05$) and three measures of tourism infrastructure (*hotels, hostels and hotel villages* ($r=.65$, $p<.01$), *overnight stays* ($r=.49$, $p<.05$) and *golf and downhill ski facilities* ($r=.60$, $p<.01$)). *Forest areas, forest harvested, moose take, coastline and population* did not have any significant correlation with the density of NBT operations per county. In fact, the county of Jämtland, for example, having the lowest percentage of the total population, has among the highest density of NBT operations, indicating that NBT in Sweden is not merely linked to the population (and consequently, infrastructure) distribution. This picture was also observed by Lundmark & Müller (2010) in their web-analysis of NBT product distribution.

Further, in order to test whether regional amenities can predict the distribution of NBT operations per county, we ran multiple hierarchical regression. First, we tested the role of natural amenities (H_1). We selected two variables expressing the natural amenities, which had high importance for the NBT in Sweden - *lakes and rivers* and proportion of *nature reserves*. The choice was based on the high importance of related parameters in our survey (i.e. importance of lakes, rivers and waterfalls, various water-based activities, fishing, operation in protected areas), regional variation in the importance of these resources (based on the ANOVA results) and correlation coefficient. In addition, given the relatively small number of cases ($N=21$) it was decided to limit the number of predictor to two, based on their theoretical importance as well as the consequences for the power of the model (rule of thumb of $n \geq 10k$) (Kleinbaum and Kupper, 1978; Field, 2009).

At step one of the two-step hierarchical regression, we entered *lakes and rivers*. The results showed that this variable alone had a significant predictive power, explaining a significant proportion of variance $F(1, 19) = 5.22$, $p<.05$, $R^2=.21$. At step two, we entered *nature reserves*, which contributed to the improvement of the model and explained greater proportion of variance $F(2, 18) = 4.68$, $p<.05$, $R^2=.34$, $\Delta R^2=.12$. Thus, with the variables expressing natural amenities alone we were able to explain 34% of the variance of the NBT operation distribution. The remaining 66% was, however, left unexplained, which could be attributed to not only other natural amenities not tested here, but also human-made amenities. To test this assumption we include in the model the human-made amenities we had at our disposal (H_2).

Since multicollinearity problem existed among the variables expressing tourism infrastructure ($r>.9$), it was decided to standardize them and create a composite variable. Highly correlated variables of *hotels, hostels and holiday villages, overnight stays* as well as proportion of land covered by *golf and downhill ski areas* were standardized and combined to express density of tourism infrastructure per country. Further, *lakes and rivers* and *nature reserves* variables were also standardized and combined (adhering to the chosen maximum predictor number) to express natural amenity dimension. As a result, two independent variables labeled *natural amenities* and *human-made amenities* were computed to be used in the second two-step hierarchical regression.

At step one, the *natural amenities* variable was entered into the model with the result of $b=.58$, $t(19) = 3.1$, $p<.001$. Natural amenities also explained a significant proportion of variance ($F(1, 19) = 9.88$, $p<.01$, $R^2=.34$). At step two, the variable *human-made amenities* was added, which further improved the model ($b = .55$, $t(18) = 3.9$, $p<.01$), and explained additional variance ($F(2, 18) = 16.76$, $p<.001$, $R^2=.65$, $\Delta R^2=.31$). Thus, natural and human-made amenities combined were able to explain 65% of the NBT operations variance, both holding a near-equal explanatory power.

Discussion and Conclusion

In this study we examined regional variations of the NBT supply and analyzed how regional amenities can help in understanding localization of NBT businesses in Sweden. Since tourism is routinely suggested as a tool for regional development, particularly so in more peripheral and natural resource dependent regions, it is important to shed more light on the regional amenities' role for its success. We contributed to this field of knowledge in the following way.

Our paper mitigated the existing knowledge imbalance by focusing on the supply side of the NBT, rather than the demand, pointed out by previous research (Fredman & Tyrväinen, 2010). By developing a way to circumvent the shortcomings of the standard industrial classification, unable to capture the NBT businesses as a distinct subgroup, our sample provided with what we believe to be the most comprehensive empirical information about this sector to date. Our paper followed a classical funnel model, starting with discussing the NBT characteristics on the country level, continuing on the level of a land and finally zooming in to the level of a county.

Significant variation in the importance of a number of NBT characteristics was already observed on the level of three Swedish lands- Norrland, Svealand and Götaland. The main variations between north and south in NBT were characterized by the higher importance in the north of such natural amenities as forests, mountains, lakes, rivers, waterfalls and wetlands; presence of wildlife, in particular, moose, reindeer, fish. Ability to experience wilderness with no people in sight, encounter wildlife and operate in protected areas was also of great importance. The character of northern NBT in general suggests higher demands towards "naturalness" aspect. The most important on-site NBT infrastructure in the north seemed to be hiking trails and cabins. Further, another vivid difference seemed to be lying in the importance of water-based amenities which Svealand and Götaland, in contrast to the north, ranked very highly.

When contrasting Svealand against Götaland, we did not see drastic differences in NBT variations. Svealand demonstrates the importance pattern of NBT characteristics (apart from the water-based activities) in many ways similar to Norrland but on a lesser scale, i.e. the average score of similar parameters is generally lower. Svealand, in short, truly occupies the transitional position between the north and the very south, having characteristics of both areas.

In general, there is a trend of decreasing magnitude of importance of the majority of the chosen NBT parameters with the progression from north to south, based on average importance values. Keeping in mind that the question in the survey stressed the importance of a particular parameter for one's NBT business operations (rather than e.g. general importance), the following assumptions can be made: the main difference lies not only in the diversity of the activities (e.g. predominance of winter-related activities in the north and water-based activities in the south) but also in the degree of importance of almost all NBT aspects. This can perhaps be explained by the higher level of dependence of northern NBT companies on primarily natural amenities and NBT as a source of income, which made the respondents from Norrland feel more confident and stronger in their rating style. Lundmark & Müller (2010, p.389) notice something similar, stating that "*[i]n summary it can be said that commercial nature-based tourism activities in Sweden obviously are available in the entire country, but peripheral areas tend to profile stronger in nature-based tourism*". It seems as if these NBT companies felt more invested and dependent on the amenities in question than their southern counterparts. In other words, in the north we will most probably find higher concentration of companies involved purely in NBT operations, while in the south the opportunities to combine them with other activities increases. This is also congruent with other variables from our data. When asked to report which percentage of income comes purely from NBT, the distribution of those reporting 80 to 100% was the following: within Norrland – 43.3%, within Svealand – 35.5% and within Götaland – 32.1%. It can be assumed that the NBTs of the north are more place-dependent in their operations, while in the south the emphasis is on the variety of activities. This suggests the need for deeper understanding of NBT in the north, with the attention to the specifics of

tourism and regional development in a peripheral area (Brown & Hall, 2000; Hall & Boyd, 2005; Müller & Jansson, 2007; Brouder, 2013; Müller, Lundmark, & Lemelin, 2013; Carson, Carson & Lundmark, 2014).

Finally, while in the discussions on NBT, natural amenities receive the bulk of attention for obvious reasons, the importance of human-made amenities is more often than not left insufficiently addressed. While arguments in favour of importance of human-made amenities for NBT were vocalized by previous research (e.g. Green *et al.*, 2005; Lundmark & Stjernström, 2009; Dissart *et al.*, 2015), most of the arguments come from theoretical, rather than direct empirical observations. Our paper empirically demonstrates the importance of both natural and human-made amenities.

Due to abundance of natural amenities across the country, some of them do not demonstrate significant regional variation in terms of affecting NBT operations distribution (e.g. forest areas, presence of moose) even though they are of high importance for NBT companies. It can be assumed that these factors are largely perceived as a “given” baseline on which additional NBT product differentiation has to be built. Further, even those variables that had sufficient regional variation and correlation with the NBT operations distribution (proportion of land covered by lakes and rivers and proportion of land covered by nature reserves- both factors showing regional variation and ranked highly by NBT companies) did not have overwhelming explanatory power on their own. Geographically, density of NBT operations tends to gravitate towards tourist-rich areas in general, where the NBT businesses benefit from the existing human-made amenities, even if not directly including them into their product. This is congruent with the previous research, stressing that richness in natural amenities is not an exhaustive (though the most eye-catching) factor for NBT development (Priskin, 2001; Green *et al.*, 2005; Hall & Boyd, 2005; Fredman & Lundmark, 2008; Lundmark & Stjernström, 2009; Lundmark & Müller, 2010; Brouder, 2013). This becomes particularly relevant in light of the recent trends in NBT demand observed in the Nordic countries and beyond, e.g. preference for shorter but higher quality vacation, preference for high levels of wilderness together with higher levels of comfort, increasing average age, education and income of tourists (Cordell & Super, 2000; Fredman & Heberlein, 2003; Vorkinn, 2011; Wall-Reinius & Bäck, 2011).

The Swedish example demonstrates that the borders between NBT and other forms of tourism in terms of their dependence on human-made amenities can, in fact, be rather blurred, and it can be assumed that NBT in many ways follows the distribution patterns of the tourism industry as a whole, contrary to a persistent belief in the uniqueness of this type of tourism. Even though natural amenities are an important prerequisite for NBT localization and development, it is their combination with human-made ones what creates the most favorable conditions, visible not only from a theoretical perspective but also from the empirical data. Regional development planning efforts considering tourism component should, therefore, avoid focusing on the richness of natural amenities as a necessary and largely sufficient condition for the successful NBT, without attentive integrative analysis of human-made and other amenities, important for tourism development in general.

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