Arctic tourism development: comparative study of Murmansk region and Norway

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Abstract. The study focuses on tourism development in the Arctic on the example of Murmansk Region, Russia, and Norway. The study quantified the tourism industry in Murmansk Region and Norway, proposed a tourism development model in the form of a system of econometric equations, estimated prospects for the Arctic tourism in Norway using the above-mentioned model, analysed positive developments in Norwegian tourism, and presented recommendations aimed at improving Arctic tourism in Murmansk Region, Russia.

Keywords: tourism industry, Arctic tourism, tourism development strategy, Murmansk Region, Norway, ADL-model.

1. Introduction

Even in the 21st century the Arctic remains Terra Incognita, or a little-known area for people today. This makes Arctic tourism quite a promising economic sector for any circumpolar country. Arctic tourism can be divided into two groups: (1) movements of non-resident visitors to the area (inbound Arctic tourism), and (2) movements of resident visitors (domestic Arctic tourism). International Arctic tourism includes such geographical areas as Alaska, the North Pole, Iceland, Norway, Canada, Greenland, and northern regions and seas of the Arctic Ocean of Russia.

Tourism can be one of the main sources of income in northern regions, especially for the local indigenous population, and an opportunity for development of the local economy. Arctic territories of Greenland, Norway (Svalbard), Iceland and Canada attract many tourists. One of the reasons for it is that the environment in the Arctic is currently one of the cleanest on the planet. 2.5 million square kilometres of the Arctic region is under protection [1].

Tourism can easily become one of the most profitable industries in the country as it can generate high revenues with relatively low expenditures. However, a good infrastructure is a prerequisite for tourism to be this profitable. Thus, this makes the Arctic not only a natural resource storeroom of the planet but also a region of a great recreation potential.

An analysis of development and management of Arctic tourism [2] revealed some factors that might hinder tourism development in the region. However, they can also act in favour of Arctic tourism promotion. These factors can be divided into environmental, social and economic, and natural and geographical factors. It should be mentioned that the factors are interconnected, therefore the division into groups is of an artificial nature. Arctic territories are usually remote regions for both inbound and domestic tourism. Remoteness of Arctic territories involves high financial expenditure on tourism and travel arrangements due to low accessibility of transport, poor development of
transportation network and the lack of transportation choice, as compared to conventional tourist destinations. Thus, remoteness of Arctic territories requires an appropriate level of infrastructure development [3]. On the one hand, this requirement demands significant financial expenditures, and on the other hand, it involves considerable human intervention into the natural Arctic infrastructure, which negatively affects the sensitive environment of the region.

The Arctic attracts tourists with its harsh climate, extreme low temperatures, extraordinary sights and natural phenomena. European Arctic territories enjoy a more comfortable temperature regime due to the influence of the Gulf Stream, as compared to the eastern part of the Arctic. This fact serves as another competitive advantage that promotes tourism in the European Arctic. Apart from this, it creates some particular conditions for extreme tourism development in the eastern Arctic.

A great diversity of Russian Arctic territories, that include the northern part of the mainland from Murmansk to the Far East and a number of archipelagos and islands, offers unbounded tourist experience and creates unlimited tourism business opportunities.

The purpose of the study is to conduct a comparative analysis of tourism development in Murmansk Region and Norway and to propose a tourism development plan in the Arctic territories of Murmansk Region based on the findings.

2. Methodology and Data
As determined by the purpose of the study, a comparative analysis of tourism development in Murmansk Region and Norway based on modelling of their Arctic tourism industry development was chosen as the primary methodology. The tourism development model was presented in the form of a system of econometric equations. Each equation is an ADL model [4, 5].

Three factors were chosen as endogenous variables describing the tourism industry:
- Expenditure on tourism in t year, in United States dollars.
- Revenue from tourism in t year, in United States dollars.
- Investments into tourism in t year, in United States dollars.

Each endogenous variable has its own exogenous variables. The following factors were chosen as exogenous variables:
- The number of people employed in the industry in t year.
- The number of travel agencies in t year.
- Direct expenditures on tourism as taken from the country’s GDP in t year.
- The number of incoming visits, or the number of non-residential visitors staying in the country for less than 12 months.
- The number of departures, or the number of departures by residents from their home country to any foreign country for any reason.
- R&D expenditures, or expenditures on research and development in t year, in % from the country’s GDP.
- Global Innovation Index, or the country’s rank in innovation development.
- Global Competitiveness, or the country’s rank and the rank of its individual manufacturers on local and global markets calculated with the use of specific indicators.
- CO2 emissions, or the amount of carbon dioxide emissions in the country generated by natural gas combustion, tonne/person.
- Average wage in the country, or an average wage of country’s residents, in United States dollars.
- State expenditures, or state expenditures on tourism, in United States dollars.
- Road density, or the ratio of country’s road network to its land area.
- Railway length, or the length of rail tracks regardless of the number of parallel railways.
- Travel services, or all services and goods acquired by non-residential visitors during their stay in the country, in United States dollars.

Data used in the study cover the time period from 2000 to 2017. The data were collected from the following sources: [Arctic stat socioeconomic circumpolar database. Online resource. Available at http://www.arcticstat.org/]; [Federal Tourism Agency. Statistical data on federal subjects of the
3. Results

3.1 Analysis of tourism development in Murmansk Region

Murmansk Region is Russia’s constituent entity located on the Kola Peninsula in the European part of the Arctic. Its territory belongs to subarctic and temperate climates with long but mild winters and cold and short summers. Its territory makes up 0.8% of Russia’s total land area. It borders on Finland and Norway in the west and shares a land border and the Kandalaksha Gulf of the White Sea with Arkhangelsk Region in the south. It is bounded by the Barents Sea in the north-east.

Its administrative centre is the city of Murmansk. Other major cities include Kandalaksha, Kirovsk, Monchegorsk, Apatyty and Olenegorsk. As of 2018, its population was 753,557.

The geographical location of Murmansk Region provides the region with all essential resources. Being an Arctic territory, Murmansk Region has a low population density. Western and central parts of the Kola Peninsula are covered by numerous mountain ranges with the height of some rising as high as 800-1200 metres above sea level. There are many rivers and lakes in Murmansk Region as well as forests and tundra.

The administration of Murmansk Region is currently aiming to strengthen tourism in the region and to establish a tourism cluster. According to the regional law of Murmansk Region on government support to tourism development in the region [http://kolaenc.gov-murman.ru/], tourism is described as a priority in the region’s economic development that determines primary directions of its tourism policy.

Establishment of a tourism cluster in Murmansk Region involves various sites and tourist routes. For instance, they are the city of Kirovsk and its ski slopes, the Khibiny Massif and its unique minerals, climbing routes of any difficulty and water routes to numerous rivers and lakes and the White Sea.

The Kola Peninsula is famous for salmon fishing and white whales. Foreign companies invest significantly large sums of money (about $6 million a year) in fishing tourism [7]. Establishment of a tourism cluster in Murmansk Region can be achieved through introduction of international transit routes.

Arctic cruises and Arctic-related business events and scientific conferences as well as educational trips are in high demand at foreign tourists [8].

Murmansk Sea Shipping Company shows great support to tourism and its development.

It organizes cruises on nuclear icebreakers to the North Pole and Franz Josef Land. These two-week cruises are highly popular with fans of exotic trips from all over the world. Every year, about 10 million tourists around the globe go on a cruise [9]. Murmansk Region has a great advantage there in the form of an ice-free port.

Therefore, Murmansk Region possesses main factors that encourage tourism development in the region. Earlier, they were listed as factors that might act in favour of Arctic tourism promotion. Murmansk Region possesses these factors due to historical and geographical circumstances. There is a number of unique natural phenomena that can be observed in Murmansk Region, such as midnight sun and polar night, three terrestrial ecosystems (taiga, tundra and forest tundra) and the ice-free Barents Sea.

Positive tourism development factors.

Murmansk Region is located relatively close to the acclaimed tourist centre of Russia, the city of Saint Petersburg. This fact, together with a rather developed infrastructure in the region, makes Murmansk Region an attractive destination for tourists [10]. Murmansk Region also enjoys other tourism-encouraging features, such as the shortest night, the most extreme snowmobile safari, and other activities.
Current issues. Small businesses do not invest in infrastructure. Poor infrastructure (no hotels, roads of low quality, high prices, etc). Poor service in the airport. No infrastructure for business.

Possible solutions. It is recommended to concentrate on attracting tourists to Murmansk Region who would like to indulge in active recreation, in particular fishing, hunting and sport, as the region has potential in developing these areas.

Nature of the Kola Peninsula is the main asset of Murmansk Region. Natural resources generate various tourist products, for example, downhill skiing, snowmobile safari, water sports and fishing.

3.2 Analysis of tourism in Arctic Norway

Norway is a country located in the western and northernmost portion of the Scandinavian Peninsula and the archipelago of Svalbard. It is bordered by Finland and Russia to the north-east and by Sweden to the east. It is bounded by the Atlantic Ocean, the North Sea and the Skagerrak strait to the south and the Barents Sea to the north. A great part of Norway is covered by the Scandinavian Mountains. The country, rich in natural resources, is currently actively promoting tourism. Norwegian nature is dominated by mountaneous and forest massifs, tundra, glaciers, waterfalls and seas.

There are three large national parks in Norway: Dovrefjell–Sunndalsfjella National Park (DSNP; 1,693 km²), Rondane-Dovre National Park (RNP; Rondane-963 km², Dovre-289 km²) and Hallingskarvet National Park (HNP; 450 km²) [2].

Norway is located in the northern part of the eastern peninsula near the North Pole. The country is home to a unique natural phenomenon of the Northern lights. Norway mostly belongs to the temperate climate apart from its northern regions where the subarctic climate dominates. Its biggest cities are Oslo, Bergen, Trondheim and Stavanger. Norway has a developed economy, a strong industrial sector and high life expectancy.

Norway was among the first countries that implemented principles of sustainable tourism [11], which started to attract more and more tourists into the country. Spitsbergen is an island in the Arctic Ocean. It is one of the northernmost inhabited regions in the world. The Spitsbergen island, as well as the archipelago of Svalbard, currently belongs to Norway.

Norway is famous for its world-renowned fjords and varied topography. They are the main attractions that promote eco-tourism in the country. Besides, downhill skiing has been gaining a lot of popularity lately as the country is opening more winter resorts that offer the same experience and service as Austrian and Swiss ones.

In 2015, the Norwegian government established a national tourism strategy and adopted a programme for the development of national parks and wildlife preserves [2]. With that, the government announced a new focus on managing inter-industrial tourism networks from the point of view of sustainable development. Sustainable development of inter-industrial tourism networks [12, 13] means increasing tourism flows and producing more tourism products while considering the local economy and preserving flora and fauna. The Norwegian government lists the Arctic and the Far North as its priority areas.

Sustainable development of inter-industrial tourism networks can be made possible on the basis of intensive introduction of innovations and efficient entrepreneurship. Norway is currently encouraging development of micro-businesses in the area of nature tourism. These businesses are profitable and competitive due to their innovation-oriented nature and high adaptability. Tourism businesses actively adopt new technologies, especially when developing attractive tourism products. Although it is essential that the state is involved in tourism development at the national level, this involvement is usually of a passive nature, as it is the private sector that encourages innovations in the tourism industry. The main trend in innovation-induced tourism development in Norway is conceptual innovations that ensure comprehensive solutions and constant monitoring by mobilizing internal and external investments.

An example of such comprehensive solutions in tourism can be establishment of a joint brand by various tourist organizations together with the destination brand [11]. However, specificities of the interorganizational network structure should be taken into account. Tourist organizations are
interdependent and have to integrate products and services to serve customers at a particular destination efficiently. Interorganizational networks have the potential to become the backbone of tourism destinations as they can coordinate actions, relocate resources and provide customers with better products and services.

Therefore, it can be stated that nature is the biggest advantage of Norway, and its natural resources are the main source of the tourism potential. Norway’s unique nature makes it possible to enjoy many kinds of tourism there, for example, downhill skiing, educational tourism, extreme tourism, etc.

Norway has a well-developed economy, which has a positive influence on the development of tourism infrastructure.

### 4. Discussion

Content analysis of the selected endogenous and exogenous variables for each country resulted in a general form of a model for the country’s tourism industry:

\[
Y_t = a_0 + a_1 y_{t-1} + a_2 y_{t-2} + \ldots + a_k y_{t-k} + b_1 x_{t-1} + b_2 x_{t-2} + \ldots + b_m x_{t-m} + c_1 z_{t-1} + c_2 z_{t-2} + \ldots + c_p z_{t-p} + \ldots + \epsilon_t
\]

The analysis of the system of equations showed the following regression equation coefficients of Norway’s tourism industry:

\[
Y_t = -1596783887 + 0.306 Y_{t-1} - 11752691.52 X_{t-1} + 478752302.12 X_{t-2} + 425.912 X_{t-3} + 60114421.18 X_{t-4} - 90808215.3X_{t-5} + 1731206.76 X_{t-6} + 7303831611 X_{t-7} + 4794735.005 X_{t-8}
\]

The final system of equations helps evaluate the degree to which exogenous variable influence endogenous ones and forecast endogenous variables.

The analysis showed that expenditures on tourism have a significantly strong influence on tourism development in Norway. This is reasonable as the country is actively seeking to attract as many tourists as possible. The second strongest influence on tourism dev...
The state of tourism in Murmansk Region of the Russian Federation was analysed accordingly. The analysis showed the state of tourism in Murmansk Region as positive, however, it also identified some issues that need to be solved in the near future. Having analysed the state of tourism in Murmansk Region and competitive weaknesses of tourism in the Russian Federation, a road map can be designed to improve tourism in a particular region.

5. Conclusion

Murmansk Region offers various kinds of tourism, however, some of them fail to attract a sufficient number of tourists. It is advised to prioritize some particular kinds of tourism and concentrate on their development and improvement. They are set out below.

Fishing is one of the most famous activities of the Kola Peninsula, and salmon fishing is the most popular kind of fishing there. Lovozersky and Tersky Districts have most rivers known for their populations of salmon.

Diving is another kind of tourism that should be prioritized as the peninsula is washed with the White Sea and the Barents Sea. It gives tourists a great opportunity to learn about flora and fauna of seas and visit sunken ships which are also a great tourist attraction.

Murmansk Sea Shipping Company organizes cruises on nuclear icebreakers to the North Pole and Franz Josef Land.
Downhill skiing is attracting more and more tourists into the region annually. Due to its location in the Arctic, there is snow in Murmansk Region for almost 8 months out of the year, which gives a competitive advantage to the region over its rivals. The region hosts international and national skiing competitions and offers tourists skiing routes of various difficulty levels.

The Russian government does not support the local tourism industry as sufficiently as the Norwegian government. Outbound tourism prevails over inbound tourism, therefore it is crucial to strengthen domestic and inbound tourism, hereby establishing a favourable environment for tourism development in Murmansk Region.

The volume of investments directed at tourism development is insufficient. Moreover, there is underdeveloped marketing infrastructure of selling tourist products on international and Russian markets and poor tourist service.

Having identified issues that need to be addressed immediately, a programme aimed at improving the tourism industry in Murmansk Region can be established. It is recommended to concentrate on attracting the larger number of tourists from regions in close proximity to Murmansk Region that have large populations and transport accessibility. Within the Russian Federation, such regions are Saint Petersburg and Leningrad Region and Moscow and Moscow Region as they offer direct flights to Murmansk. Although other cities of the Russian Federation should certainly not be totally excluded, the main issue here is that a great tourist flow from other cities is currently deemed not significant due to a high cost of flights.

As to foreign tourists, it is recommended to concentrate on Norway, Sweden and Finland as they are located in close proximity to the region.

Another crucial step is attracting investments into the tourism industry and establishing its system of development priorities. Attracting investments into tourism requires pooling of resources by travel agencies, hotels, transportation corporations as well as the state support. Moreover, establishment of a beneficial investment climate by the local administration might also result in local and foreign investment attraction leading to successful development of the key tourist destinations in Murmansk Region.

The building of a positive tourist image of Murmansk Region requires designing and realizing advertising and marketing campaigns in the framework of bilateral and multilateral projects with other cities and regions. It is advised to establish information centres for tourists in cities of Murmansk Region in order to utilize the existing tourist resources to their full capacity.

To enhance promotion of tourist products in local and international markets, it is recommended to design advertising materials targeting Russian and European tourist markets, organize promotional tours for leading Russian, European and Far Eastern travel agencies, present tourist products at various international and local conferences and trade shows, and assist companies of Murmansk Region in their building of relationships with main foreign travel agencies. Media support can be realized through various travel media outlets (National Geographic, Vokrug Sveta) and television programmes. It is also possible to invite journalists from such outlets to different events organized in Murmansk Region and publish reports on web-sites and online message boards.

Tourists must have the following impression of Murmansk Region:

Murmansk Region is incredible northern nature full of miracles that offers such amazing and unique experience as seeing the Northern lights, diving in the Barents Sea, trying crab and salmon fishing and riding reindeers.

Contrary to popular belief, Murmansk Region is not harsh winters; Murmansk Region enjoys mild winters due to the Gulf Stream and snow staying on the ground from November to May.

Murmansk Region is refreshment for those who seek to visit preservation areas and enjoy active recreation. Murmansk Region has a short but warm summer.
Murmansk Region is famous for its polar nights that last only two months.

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