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LOG950 Logistics

Relationship between air transport and tourism in Norway

Diana Morales Muñoz

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Preface

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I would also like to give special mention to Uttam Kumar Regmi, Ph.D. candidate for his constructive feedback and uncountable efforts on assisting me on the writing process; and to Jorge Oyola Mendoza, Ph.D. candidate and friend, for the help and support given throughout all these years.

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Diana Morales Muñoz.
Molde, Norway.
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Summary

Air transport is by far one of the most reliable and fastest transportation means. It provides not only the opportunity to communicate within a nation, but a worldwide transportation network offering intercontinental connections. Tourism, on the other hand, has become one of the most visible signs of human movement at a global level.

The aim of this study is to analyze the factors that may influence the relationship between air transport and tourism in Norway by the development of qualitative and quantitative analyses.

The study was conducted by the comparative analysis of the information in order to evaluate the factors that influence the subject of study, followed by a case study on Ålesund Vigra airport.

The analysis indicates that there is a strong correlation between air transport and tourism in Norway, even though when the amount of air passengers and the number overnight are not growing at the same pace, Norway is strongly dependent on air transport.

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List of abbreviations

Abbreviation	Definition
EEA	European Economic Area
EFTA	European Free Trade Association
EU	European Union
GDP	Gross Domestic Product
LCC	Low Cost Carrier
NATO	North Atlantic Treaty Organization
PAX	Passengers
UNWTO	United Nations World Tourism Organization
WTTC	World Travel and Tourism Council

1. Introduction

Air transport is by far one of the most reliable and fastest transportation means. It provides not only the opportunity to communicate within a nation, but a worldwide transportation network offering intercontinental connections. The various forms of transportation that exist nowadays, provide each country the infrastructure necessary to satisfy the social and economic needs that lead to the growth and development of its economy. Tourism, [on the other hand], has become one of the most visible signs of human movement at a global level, benefiting from increased prosperity, a desire to travel and the benefits which new transport technology has brought to aid increased accessibility of destinations to tourists and other travelers (Page 2009).

Air transport and tourism allows the economic and social homogeneity between countries. From the economic point of view, both sectors encourages the investment of infrastructure with the purpose of improving the access to new businesses or to new travel destinations creating new sources of employment, it also allows geographically distant markets to establish business relationships boosting the productivity by enabling access to economies of scale. From the social point of view, it allows maintaining personal relationships even if there is a big geographical distance; it also improves the living standard and encourages the locals to overcome.

1.1 Objective of study and research questions

Transportation occupies one-third of the amount in the logistics costs and transportation systems, influence the performance of logistics system hugely, this activity is required in the whole production procedures, from manufacturing to delivery to the final consumers and returns. Only a good coordination between each component would bring the benefits to a maximum (Tseng, Yue and Taylor, 2005); but

air transport should not only be considered purely on the transportation of goods, this mode of transportation is one of the most used in the tourism industry.

The reason why Norway was chosen to bring into further investigation is because this country is considered as a remote region which refers to the distance between the region and the main economic centers of Europe. Remote areas are per definition separated from central areas by distance and should thus be expected to be particularly dependent on air transport (Lian, 2010).

It is also worth to mention that Norway has one of the most beautiful scenic landscapes in the world, fjords and mountains surround this beautiful country allowing the tourists to experience different activities that make this country unique. It is a highly developed and industrial country measured as one of the richest countries in the world. These aspects make Norway an enjoyable destination for tourists and an interesting country to develop this research.

Therefore, the main objective of this thesis is to find the relevance of air transport for touristic activities in Norway, leading to the following research questions:

- How important is tourism in Norway?
- How important is air transport in Norway?
- Is tourism demand increasing air transport demand in Norway?
- Is there a relationship between air transport and tourism in Norway?

1.2 Structure of the thesis

This study is structured by four different parts that include the five main chapters of the project. The four parts are going to be listed below.

- Part one: Chapter 1 and 2.

The chapter one is the introduction, which gives an overview of the subject of study, setting the scene of the problem and states the goals and objectives of the topic. Also there is the formulation of the questions that would be bringing into further investigation.

The chapter two is the literature review, which gives a brief background of the topic which is going to be address, such and historical development and definitions.

- Part two: Chapter 3

Chapter three is the methodology; which is the link between the subject and the objective of the investigation, it includes the theoretical framework of the thesis, which provides and introduction to the study, by being familiar with the theoretical terms, leading to the abstraction of the main subjects of analysis; this will also lead to the construction of arguments for the future research.

- Part three: Chapter 4.

This part is formed by the comparative analysis of the information that will be drawn in order to evaluate the factors that influence the subject of study, followed by a case study on Ålesund Vigra airport.

- Part four: Chapter 5.

This chapter reveals the conclusions of the investigation as well as the limitations and the recommendations for further research.

1.3 Scope

The study aims to find the relevance and relationship between air transport and tourism in Norway, based on the comparison of behaviors of air transport and tourist demand over the last eleven years.

2. Literature review

Norway has actively implemented the restructuring measures needed to achieve economic growth. Extensive trade and contacts with other countries have given Norwegian industry a foundation on which to develop an advanced economy; it has been ranked the best country to live in several times during the past decade (NEUSA, 2012).

The aim of this chapter is to show the historical background of the country and the literature that makes a significant contribution to the area of study, as well as all the material that is relevant to the subject.

2.1 Norway

Norway is a highly developed, industrial country located at the northwest of the Scandinavian Peninsula. It borders on the east with Sweden, Finland and Russia and on the west with the North Sea; it has an open, export-oriented economy. Listed as one of the richest countries in the world, it has also achieved top-rankings with regard to standard of living, life expectancy, overall health and housing standards (NEUSA, 2012).

2.1.1 Some facts about Norway

Norway has a constitutional democracy that has a population of around 5 million habitants, with the area of 385 199 km², having a population of 12.8 per km². Almost 80 per cent of the population live in urban settlements, where the population density is 1 615 per km^2; however, the density is also increasing in sparsely populated areas due to the construction of roads, holiday houses and power lines etc. (Statistics Norway, 2012; NEUSA, 2012).

It is structured by 429 municipalities along the country. Municipalities are a fundamental part of the infrastructure of our welfare society; it has a broad responsibility for public welfare services (Regjeringen.no, 2012).

The languages spoken in Norway are Bokmål and Nynorsk, both used for public administration, education and official purposes and an indigenous language Sami, used on the northern counties of Troms and Finnmark (Visit Norway, 2012).

2.1.2 Economic development

Norway was occupied right up to the German capitulation of 1945, which led to the exploitation of the Norwegian economy. During the course of the war the Germans had commandeered 40 per cent of Norway's GDP, but after World War II, Norwegian government set the goal to build up the country within five years, with the purpose of boosting industrialization by concentrating in heavy industry; but it actually moved even more rapidly than expected. “By 1948-49 the country's real capital stood well above the pre-war level. The subsequent years were characterized by steady growth and progress” (NEUSA, 2012).

From the 60s, the oil age changed completely the Norwegian economy. In 2010, Norway was the world’s sixth-largest oil exporter and second-largest gas exporter. It weathered the economic crisis well, thanks to substantial government savings and high oil prices, but is exposed to Europe’s economic problems since 80 percent of its trade is with EU member states. The government continues to save a large portion of its oil export revenues in investment funds outside of the country as insurance against depleting reserves (The Heritage Foundation, 2012).

The economic policy of the country stabilizes and stimulates growth, influencing the structure and distribution of income. Regions in Norway that are not as wealthy as others, receive the support of the other areas, as well as the help of credit institutions to support the local industries; the GDP per capita is high, and wealth is relatively equally distributed among the population (NEUSA, 2012).

A significant share of the Norwegian economy consists of service industries, including wholesale and retail trade, banking, insurance, engineering, transport and communications and public services (Finansdepartamentet, 2009).

Since 1949, Norway has been a member of the North Atlantic Treaty Organization (NATO); is not a member of the European Union (EU) but maintains close economic interaction between the countries of the EU and the European Free Trade Association (EFTA) under the European Economic Area (EEA) agreement.

The Norwegian economy [nowadays] is diversified and modern, benefiting from high levels of flexibility and institutional strengths that include strong protection of property rights and an efficient legal framework, together with openness to global commerce, prudent and transparent regulations sustain economic dynamism and a commercial environment that is innovative and resilient (The Heritage Foundation, 2012).

Norway is a country with a prosperous and stable economy; it has the economic and natural sources to continue stimulating the growth and the strength to survive even through economic recession.

2.2 Evolution of air transport in Norway

The industrial boost in Norway, has led to the development of new routes in the air transport market, with the purpose to develop economic trades with other countries and achieve their economic growth. On the other hand, the opening of these new routes has awakened the interest of tourists to come to this Scandinavian country.

According to Avinor's report (2008), there are strong factors that will lead to the growth of air traffic in Norway, which are:

- Long-term economic growth
- Significant population increase
- Continued decentralized settlement, trade and industry
- Expected increase in immigration
- The globalization of trade and industry

This section is the background and introduction to air transport in Norway, the importance, the economic benefits, and the changes along the years.

2.2.1 Deregulation of the airlines

Deregulation in the Scandinavian markets follows from the regulatory changes in the European Union. Even though Norway is not an EU member, Norwegian airline policy has to comply with EU rules (Randøy and Pettersen, 1997).

During the last 25 years commercial transport has been deregulated in many countries. The wave of deregulation started in the United States of America in 1978. The main purpose of deregulating an industry is to enforce competition (Elvik, 2006).

Norway opened for free entry in the domestic markets in April 1994, except for the regional network. This part of the Norwegian domestic market remained totally regulated until 1997 (Randøy and Pettersen, 1997).

One of the most visible effects of the deregulation was the emergence of hub-spoke networks. Airlines were now free to determine the optimal network type, and in most cases this was the hub-spoke network, which allows for the exploitation of density economies (Pels, 2008).

Norway was operated by two main airlines, SAS and Braathens SAFE; the air routes were monopolized by the two airlines and for this reason, the prices were high and activity was low. Later on, both airlines increased capacity by entering routes operated

by their competitor. As a result both established more or less similar overlapping nationwide route networks (Lian, 2010).

The deregulation of the airlines has changed the industry dramatically; also, the development of modern ways of transportation has increased the interest for traveling, causing an exponential growth in tourism (Stynes, 1997).

2.2.2 Introduction of Low Cost Carriers

In the case of Norway, deregulation increased air transport demand, but at the same time the prices also increased, so instead of being a benefit for the society it was a disadvantage, until the appearance of Low Cost Carriers (LCC).

The monopolization of the Norwegian air transport market by the two main companies (SAS and Braathens SAFE) caused a raise on the prices and the capacity on the market was low. After 2002, the LCC carrier Norwegian made its appearance allowing the public another option with lower prices and it has been successful until now.

The advent of Low Cost Carriers (LCC), has been one of the most striking developments in the air transport industry in Europe since its liberalization in the 1980s and 1990s (Pels, Njegovan and Behrens, 2009). Low cost carriers transformed the air transport industry all around the world. It triggered the growth of tourism and consequently a growth in economy. These carriers brought a number of innovations to the industry, perhaps most obviously in relation to simplifying the consumer product in return for a lower fare (Pels, Njegovan and Behrens, 2009).

The most important low cost carrier in Norway is Norwegian. Norwegian's vision is "Everyone should afford to fly". The business idea of this company is to give everybody the opportunity to travel by air, attracting customers by offering competitive, low fares and a high-quality travel experience based on operational excellence and helpful, friendly service (Norwegian Air Shuttle, 2012).

In matters of tourism, LCCs are now destined for people that travel for leisure, with flexibility on their trip and who are willing to sacrifice the benefits that a full fare flight would offer. For that reason, the emergence of low cost airline permits the growth of tourism; it allows the public to save the money on travel fare because these types of carriers aim to keep costs as low as possible.

2.2.3 Importance of air transport in Norway

According to the Association of European Airlines (2012), air transport is fundamental to European mobility, prosperity and political cohesion. It plays a vital role in facilitating European economic growth and social inclusion, providing revenues to otherwise isolated regions and helping people broaden their horizons. Air transport plays a crucial role in the integration of an enlarged Europe, supplying essential links between Europe's regions and with the rest of the world.

Avinor (2008) reports other aspects that show the importance of the industry in Norway:

- 13 % of all domestic flights are linked to the oil and gas sector, with 550,000 helicopter flights per annum to installations on the continental shelf.
- On an annual basis, 400,000 patients are transported on scheduled flights. The importance to the health sector is particularly high in the northern Norway region.
- Aviation makes it possible to hold nationwide cultural and sporting events.
- The industry offers assistance to passengers such as unaccompanied minors, the elderly and disabled. This makes it an important social asset for families throughout the country, covering more than 250,000 journeys a year.
- Air cargo is crucial to the economy, the health sector etc. The majority of cargo volume and value is linked to functions that are socially vital.
- An analysis of trade and industry in Stavanger provides documentary proof of the significance of aviation to the competitiveness of Norwegian trade and industry in a globalized world.

- An equivalent analysis in Finnmark County indicates that aviation is extremely important to trade and industry and to settlement in the regions.

2.2.4 Economic Benefits of Air Transport in Norway

Norway's integration into the global air transport network transforms the possibilities for the Norwegian economy by (Oxford Economics, 2011):

- Opening up foreign markets to Norwegian exports;
- Lowering transport costs, particularly over long distances, helping to increase competition because suppliers can service a wider area and potentially reduce average costs, through increased economies of scale;
- Increasing the flexibility of labor supply, which should enhance locative efficiency and bring down the natural rate of unemployment;
- Encouraging Norwegian businesses to invest and specialize in areas that play to the economy's strengths;
- Speeding the adoption of new business practices, such as just-in-time-inventory management that relies on quick and reliable delivery of essential supplies;
- Raising productivity and hence the economy's long-run supply capacity. It is estimated that a 10% improvement in connectivity between regions relative to GDP would see a Kr 1.5 billion per annum increase in long run GDP for the Norwegian economy.

Norway has actively implemented the restructuring measures needed to achieve economic growth. Extensive trade and contacts with other countries have given Norwegian industry a foundation on which to develop an advanced economy. High investments in production equipment, improved and extended education as well as technical and organizational expertise in industry and public administration have also helped to promote growth (NEUSA, 2012).

According to “Economic Benefits from Air Transport in Norway”, the Oxford Economics report (2011) says that the air transport contributes to the Norwegian Gross Domestic Product (GDP) in the following way:

The aviation sector contributes Kr 47.7 billion (2.0%) to Norwegian GDP. This total comprises:

- Kr 22.8 billion directly contributed through the output of the aviation sector (airlines, airports and ground services);
- Kr 14.1 billion indirectly contributed through the aviation sector’s supply chain;
- Kr 10.8 billion contributed through the spending by the employees of the aviation sector and its supply chain.
- In addition there is Kr 13.9 billion in ‘catalytic’ benefits through tourism which raise the overall contribution to Kr 61.7 billion or 2.6% of GDP.

The long-term economic growth benefits the population, as soon as there is an increase on the economic solvency of the individuals, thus, people tend to start consuming the products that perhaps they were not able to consume before.

2.2.5 Aviation authorities in Norway

The Norwegian Civil Aviation Authority, is an administrative agency responsible for ensuring safe and efficient operation of civil aviation. It issues regulations, lays down standards for civil aviation activities in Norway, grants licenses and operating permits to persons and companies intending to conduct aviation and related activities. It also oversees compliance with regulations and conditions (Regjeringen.no, 2012).

Avinor was established as a limited company, wholly owned by the state, on 1 January 2003. The ownership is administered by the Ministry of Transport and Communications. The company was formerly the administrative company Luftfartsverket.

This company is responsible for planning, developing and operating the Norwegian airport network, operating 46 airports in Norway, thereof 12 in cooperation with the armed forces. Operations also include air traffic control towers, control centers and technical infrastructure for aircraft navigation.

On the figure below (2-1) are shown the Norwegian airports operated by Avinor:

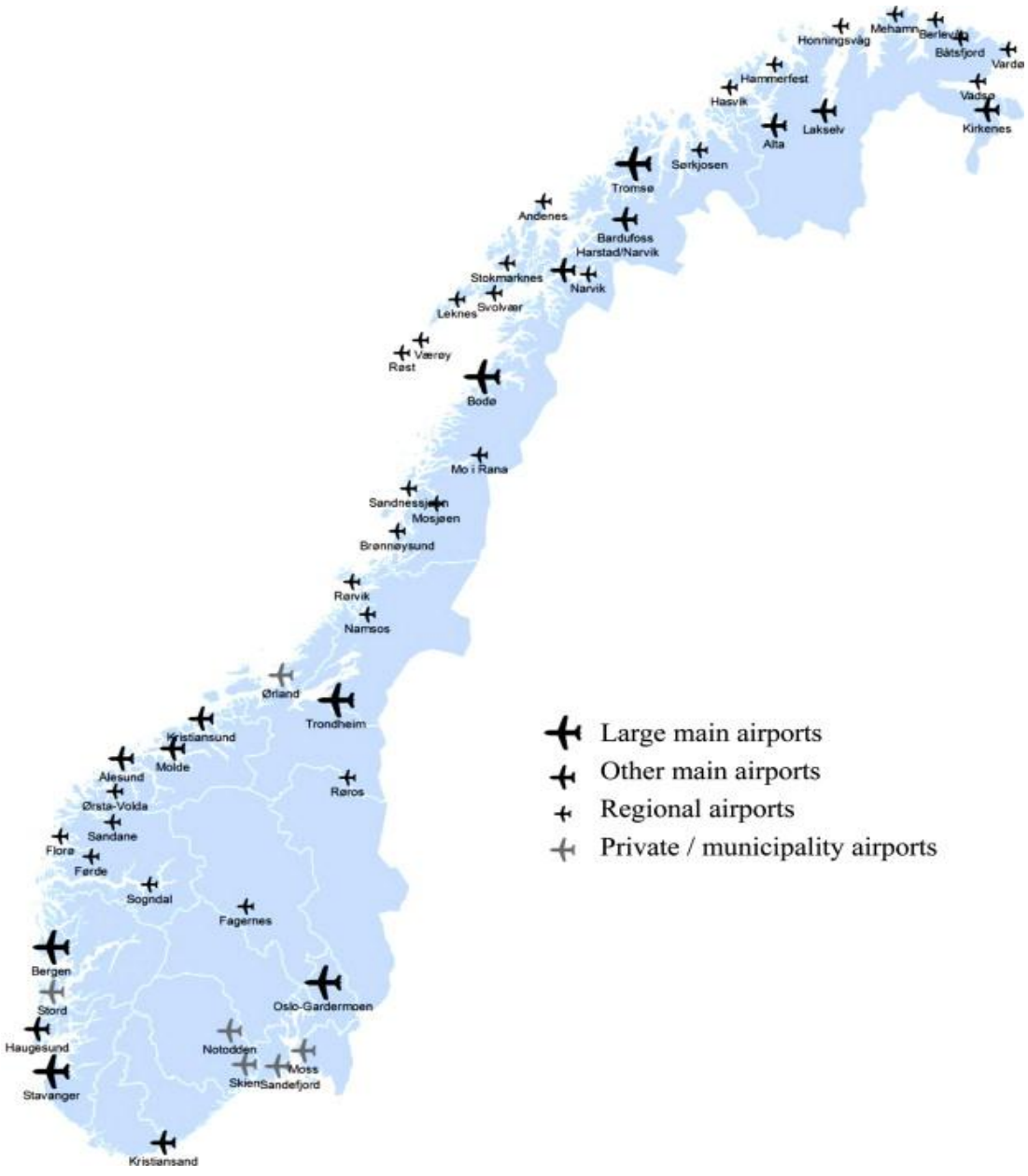

Fig. 2-1. Norwegian Airports. Source: Lian, 2010.

2.2.6 Airport network in Norway

Aforesaid, Norway is considered a remote region. The main characteristic of a remote region is that they are distant from economic centers; [they are known] by their small local market and a relative inaccessibility to potential markets (Halpern, 2010).

Avinor operates 46 airports in Norway, thereof 12 in cooperation with the armed forces. Operations also include air traffic control towers, control centres and technical infrastructure for aircraft navigation (Avinor, 2012).

The size and length of the country, with sparsely populated settlements from north to south, provides some idea as to the challenges faced in terms of accessibility. The challenges are further exacerbated by the topography and climate of the country (Halpern and Bråthen, 2011).

Due partly to the low population density, mountainous terrain, long coastline and arctic climate, Norway's land-based transport system is relatively undeveloped, especially outside of the main towns (Halpern and Bråthen, 2011). The awkward geography of the country and sparse population means that those living in many regions in Norway are dependent on network air travel (Lian, 2010). Rail infrastructure is limited to a conventional mainline network of long-haul routes from Oslo heading west to Stavanger and Bergen, and north to Åndalsnes, Trondheim and Bodø. The only high-speed line is the Gardermoen Line, connecting the city of Oslo to Oslo Gardermoen Airport (Halpern and Bråthen, 2011).

So based on the previous literature review, it can be said that Norway is forced to rely on air transport, the geographic position, topography and at the same time the underdevelopment of land transportation enhances the importance of air transport, therefore the importance of airport distribution.

It has been documented [in Norway] that two out of three inhabitants have access to an airport within a one-hour journey time. The cover is particularly good in western

and northern Norway. The significance of this can also be illustrated by the fact that 99.5 % of the population are able to travel to Oslo and get back home again on the same day (Avinor, 2008).

The country is served by a good network of domestic connections. International connections are available from all of the large-sized airports and a number of medium-sized airports. Norway has the second highest density of commercial airports in Europe with 11 airports per million inhabitants (Halpern and Bråthen, 2011).

Airports (as providers of infrastructure for air services) play a crucial role in the development of tourism in peripheral areas because they promote the accessibility of areas that would otherwise suffer the consequences of high distance costs from potential markets (Schürmann and Talaat, 2000; Halpern, 2008).

2.3 Tourism in Norway

The World Tourism Organization (UNWTO), which is a specialized agency of the United Nations and the leading international organization in the field of tourism, defines tourists as people who are travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited. Statistics Norway (2012) defines tourism as overnight stays away from all year residences regardless of the purpose of travel, and with the minimum duration of one night.

Summarizing the previous definitions, for this thesis tourism will be defined as the fact of moving from the usual environment to another different environment spending at least one overnight and no more than one consecutive year, regardless of the purpose of the travel.

2.3.1 Government's tourism strategy

The Government wants Norway to become a globally leading, innovative, dynamic, knowledge based economy in areas where it has an advantage. Proactive industrial policy is essential to ensure innovation and change. The Government aims to facilitate this through the general parameters in society and through more specific projects in selected sectors (Regjeringen.no, 2008).

Tourism is one of five areas ascribed priority in the Soria Moria Declaration. This declaration is a Norwegian policy statement that states that national strategies will be developed within the five industries where Norway has expertise or a special advantage. It must also contribute to promoting international collective goods and to building a better organized world. This strategy is intended to stimulate better profitability and wealth creation in the Norwegian tourism industry (Regjeringen.no, 2008).

The main objectives of the government's tourism strategy (Regjeringen.no, 2008) are:

- Greater wealth creation and productivity in the tourism industry
- Sustainable rural communities through year-round jobs in tourism
- Norway – a sustainable destination

In other words, the investments made in tourism must be based on the increase of the wealth within the tourism industry; focus tourism in rural areas with the purpose of creating jobs that will promote better quality and stable life all year round; and lastly, promote tourism in Norway focusing on the environmental perspective.

The Norwegian government's goal of attracting tourism emphasized its strategy on the distribution of wealth and the sustainability of the country, contributing to the promotion of good travel and tourism experiences.

2.3.2 Norway's touristic attractions

Tourism is an evolutionary development in the use of leisure and represents an expanded opportunity for the exercise of choice in the selection of recreational activities (Mathieson and Wall, 1982).

In 1993, Poon advocated the concept of "new tourism" which is based on the desire of tourists to experience something different and pursue more nature-based, cultural and/or active interests (Poon, 1993; Halpern, 2008). Norway is the right place to experience something new, since nature has always been the main element in Norwegian tourism.

Norway offers a strong relationship between the natural and cultural sectors. Although Norway's main touristic attractions are focused on the natural landscapes such as the fjords, the mountainous wilderness, the coast and the artic landscapes that provide an opportunity to experience different activities such as hiking, glacier walking, skiing, fishing and cycling, there are also other destinations that offer a variety of social and cultural life, for example, Oslo and Bergen.

Norway currently has seven locations on UNESCO's world heritage list. Urnes Stave Church, Bryggen in Bergen, Røros Mining Town, the Rock Art of Alta, West Norwegian fjord landscapes (the Nærøy fjord and the Geiranger fjord), the Vega Archipelago and the Struve Geodetic Arch. The status as world heritage area places high demands on the management of natural and cultural values (Regjeringen.no, 2008).

Fjord Norway is a region located in west Norway; it consists of the four counties Rogaland, Hordaland, Sogn & Fjordane and Møre & Romsdal; these regions offer small towns and villages, spectacular bridges and natural attractions surrounded by the fjords. The fjords are natural formations from the erosion of a valley by the glacial activity creating a beautiful mountain scenery.

Norway also provides tourists the opportunity to witness natural phenomenon that can only be seen in the northern countries. During the winter period the northern lights or aurora borealis can be appreciated and during the summer the midnight sun.

Tourism in the mountains and interior is often based on activities such as hunting, lake fishing, farm tourism, hiking, cycling and winter sports. There are challenges related to great seasonal variations (Regjeringen.no, 2008).

2.3.3 Economic benefits of Tourism

Tourism has a variety of economic impacts. Tourists contribute to sales, profits, jobs, tax revenues, and income in an area. The most direct effects occur within the primary tourism sectors [like] lodging, restaurants, transportation, amusements, and retail trade. Through secondary effects, tourism affects most sectors of the economy (Stynes, 1997).

Figure 2-4 shows graphically how travel and tourism contributes in different ways to the economy.

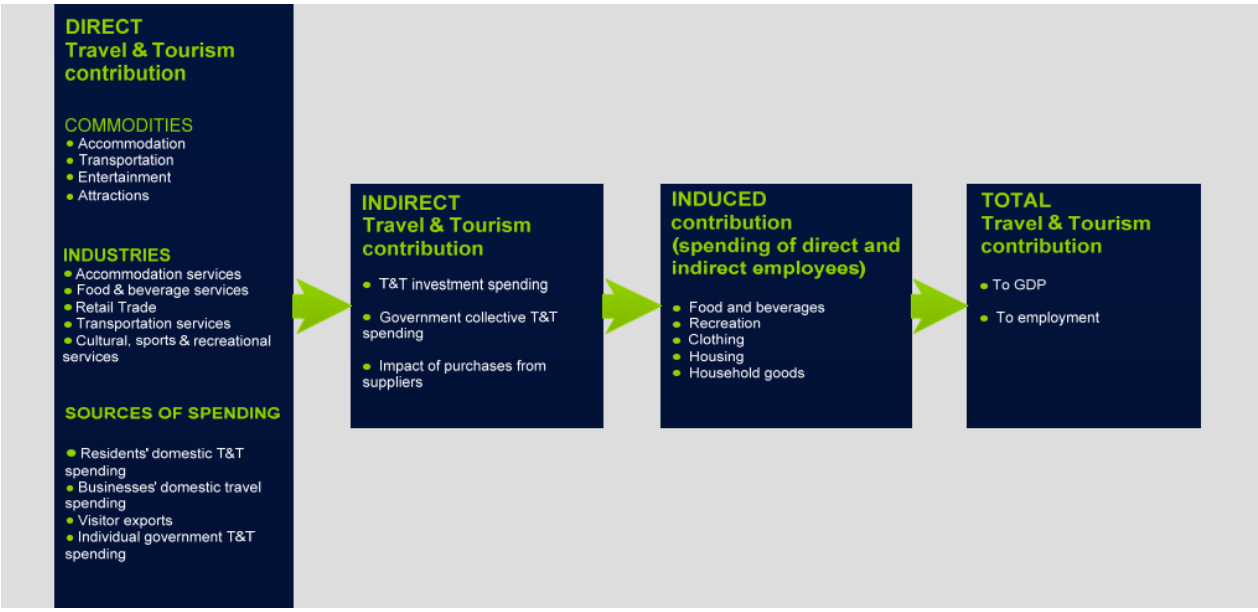

Fig. 2-2. Transport and tourism contributions in Norway. Source: WTTC (2012)

The World Travel and Tourism Council (WTTC) shows on the report "Travel and Tourism Economic Impact 2012" from Norway (fig 2-4) that the travel and tourism industry contributes directly to the economy by the accommodation, transportation, retail, cultural services, creating sources of spending and indirectly contributes by the government investments and by the purchase from suppliers. Air transport and tourism also leads to an induced contribution by the spending of direct and indirect employees on services, creating a multiplier effect that makes the money circulate in the economy of the country. These contributions have as a result the creation of employment and the increase of GDP.

Tourism businesses depend extensively on each other as well as on other businesses, government and residents of the local community. Economic benefits and costs of tourism reach virtually everyone in the region in one way or another (Stynes, 1997).

Tourism, both for business and leisure purposes, makes a large contribution to the Norwegian economy, with foreign visitors spending just under Kr 27.9 billion in the Norwegian economy each year. Approximately 44% of those passengers who arrive by air probably spend over Kr 12.2 billion in Norway (Including foreign visitors arriving on both domestic and foreign carriers) (Oxford Economics, 2011).

Summarizing, tourism benefits economically a community in various ways. It increases revenues by sales, creates jobs and also benefits society indirectly by encouraging the growth of investment in different sectors of the economy.

2.3.4 Key facts about tourism in Norway

There are some key figures from previous years that are worth mentioning, in order to understand the trends of tourism in Norway, (Statistics Norway, 2012).

- The travel industry accounted for approximately 3.3% of the Gross Domestic Product (GDP), and 6.3% of total employment in 2009.

- Foreign tourists had over 7.9 million overnight stays in Norway in 2010, of which German tourists accounted for 21%. Danes and Swedes accounted for 12%.
- Norwegians aged 16-79 travelled on a total of 22.9 million overnight-trips in 2010. 17.6 million of these were holiday trips.
- The average cost of a hotel room was NOK 859 in 2010.
- Overall, tourists spent NOK 106 billion in Norway in 2010. Foreign tourists spent NOK 31 billion.
- In 2009, there were 13 999 local kind-of-activity-units in the Norwegian tourism industry. They had a total turnover of NOK 89 billion.

Aforesaid, tourism has become one of the most benefiting activities for the society; it contributes to the increase of prosperity by the creation of employment in different sectors, i.e. transport, accommodation, food service, and travel and tour companies. It also encourages the cultural exchange between tourists and locals.

2.4 Relationship between air transport and tourism in Norway

As mentioned earlier, much of Norway can be considered as being remote in the context of Europe. It is expected to rely on air transport, so in order to bring tourism to Norway, air transport is crucial.

The development of aviation has given rise, from its very start nearly half a century ago, to the most extravagant expectations of future achievements (Strausz-Hupé, 1955). The financially rewarding traffic generators for commercial aviation are, of course, the high-speed, long-range, nonstop air routes linking developed parts of the world (Heymann, 1962). Air transport stimulates the expansion of international trade and the exchange of information (Strausz-Hupé, 1955), and is also one of the most affordable, comfortable, convenient, safe and less time consuming means of transportation facilitating tourism.

According to Lian and Denstadli (2010) the amount of tourists travelling to Norway by air, has grown steadily over the past 10 years. Air transport lies at the heart of global business and tourism. Through its speed, convenience and affordability, air transport has expanded the possibilities of world travel for tourists and business travelers alike, allowing an ever greater number of people to experience diversity of geography, climate, culture and markets (Oxford Economics, 2011).

The main task of Norwegian aviation is to contribute beneficially to social and economic development in Norway by providing safe, efficient and eco-adapted air transportation within all regions of the country and to make arrangements that enable the nation to participate actively in global economic and social development (Avinor, 2008).

The benefits that international aviation has [*sic*] brought to the developing countries are, of course considerable. It has forged links between them and the outside world that, by now, are generally efficient and well established. In the process, it has enlarged the horizons for tourism and has quickened commercial intercourse (Heymann, 1962). Air transport services also contribute as a catalyst in industrial development particularly in connection with exploitation of location-specific natural and human resources (Bråthen, 2011).

According to Lumsdon and Page (2004) and Page (2009) there are two interconnected approaches to transport and tourism, which are:

- Transport *for* tourism, where it is means to an end, being utilitarian, and the level of satisfaction is related to cost and speed of travel, so the mode of travel has no direct intrinsic value itself.

- Transport *as* tourism, where the transport mode is the containing context for travel such as a cruise and a basis for the tourist experience. Here travel cost principle in transport for tourism does not apply where the transport is the

main benefit, or at least many of the attributes associated with the mode of transport are beneficial.

These approaches define the transport *for* tourism as offering low essential value, whereas transport *as* tourism offers a higher essential value.

Air transport is largely considered to be transport *for* tourism, especially in the context of this study, which considers air transport as a means of traveling to/from Norway, ad is therefore primarily utilitarian with focus on access, cost and speed of travel, and with low essential value.

Without transport and its associated infrastructure, human mobility for the purpose of tourist travel would not occur, and certainly not on the massive scale (Page, 2009); therefore no study of tourism can ignore the critical role which transport plays in terms of the interrelationship and interconnections that exist with tourism (Page, 2009). Air transport is critical, particularly to access to remote regions or regions that are distant from the main target markets.

2.5 Theoretical framework

Prior to build the actual analysis it is necessary to address the framework; hence, the aim if this chapter is to define the concepts and the theories that will be used later on in the analysis of this study.

Passengers traveling by air

This term will be referred to in the analysis as the total amount of passengers (domestic and international) traveling specifically by air, including scheduled and non-scheduled flights. The time series would be by year or by season depending on the type of analysis.

Guests per night

For matters of this investigation, tourism will be defined as overnight stays away from all-year residences regardless of the purpose of travel, and with the minimum duration of one night.

2.6 Chapter summary

It has been mentioned the term of "new tourism", which is defined as the desire of tourists to experience active, cultural and nature-based activities and Norway possesses the most beautiful landscapes which make it the right place to experience those activities. Norway is also the right country to analyze the impact of air transport because it is considered as a remote region, and as mentioned before, remote regions are expected to rely on this type of transportation.

The benefits that the deregulation of the airlines has brought to Norway are many, economically speaking it has opened foreign markets to Norwegian exports, it has lowered transport costs over long distances and it has encouraged Norwegian businesses to invest and specialize in areas that play to the economy's strengths.

Both, air transport and tourism are triggers for the Norwegian economy, therefore, this is the base point of this study, the analysis conducted aims to determine the importance of those factors.

Air transport	Tourism
Deregulation of the air transport markets	Government's tourism strategy
Introduction of LCCs	Norway's touristic attractions
Aviation authorities in Norway	Key facts about tourism in Norway
Airport network in Norway	Economic benefits
Importance of air transport in Norway	
Economic benefits	

Table 2-1. Summary of the key elements for the main subject areas.

3. Methodology

This chapter describes the methodological approach taken by the study, meaning the procedures for the research, the data collection techniques, the research questions and objectives and the validity and reliability of the study.

The approach taken by this study is based to some extent on the methodology used by Ph. D. candidate at *Høgskolen* i *Molde* Uttam Kumar Regmi (2009) on his Master's Degree Thesis "Relationship Between Air Transport and Tourism: A Case Study of Nepal".

3.1 Research design

The study is divided in two different parts; the first part aims to analyze the relationship between air transport and tourism in Norway and the second part consists on a case study for Ålesund.

The analysis will be based on qualitative and quantitative methods. According to Creswell (2009), the quantitative research is a means for testing objectives by examining the relationship between variables. The variables can be measured by statistical procedures. On the other hand, the author describes the qualitative research as exploring and understanding the meaning to a social or a human problem.

3.1.1 Relationship between air transport and tourism

This first part consists of the analysis of three main elements:

- Tourism demand in Norway
- Air transport demand in Norway
- Relationship between air transport and tourism in Norway

The qualitative process involves mainly a behavioral interpretation of the demand of tourism and air transport independently. The analysis will be measured by the judgment of the behavior of the data; the interpretation of the information will be based on the observations and impressions. Some of the interpretations will include quantitative data (i.e. percentages, values and numbers).

The analysis of the relationship between air transport and tourism in Norway will also be developed qualitatively interpreting inductively the behavior of the data. In addition, a quantitative analysis will investigate the dependency between two variables using Pearson's correlation analysis, which provides the following coefficient ranges:

Correlation coefficient	Results
+1	There is a perfect positive correlation between two variables
-1	There is a perfect negative correlation between two variables
Being +/-0.1	A weak correlation
Being +/-0.5	A moderate correlation
Being +/-0.7	A strong correlation

Table 3-1. Correlation coefficient ranges.

Summarizing, the process involves an analysis of air transport demand, tourism demand as well as the relationship between them, by interpreting behaviors through qualitative and quantitative methods.

3.1.2 Case study for Ålesund

The second part consists of a case study for Ålesund, developing quantitative analysis comparing different variables that may affect the demand for air transport and tourism in the area, focusing on highlighting how air transport and tourism have effectively contributed to the region over the last eleven years.

The type of research selected for this study is analytical, which according to Kumar (2011) the researcher uses facts of information already available and analyzes these to make a critical evaluation of the material.

3.2 Objective and research questions

As mentioned previously, the main objective of this study is to find the relevance of air transport for touristic activities in Norway exploring different factors developing qualitative and quantitative analyses, focusing on answering the following questions:

- How important is tourism in Norway?
- How important is air transport in Norway?
- Is tourism demand increasing air transport demand in Norway?
- Is there a relationship between air transport and tourism in Norway?

3.3 Data collection

Following a similar methodology to Regmi (2009) the qualitative analysis will be based on observations of historical data provided by the websites “Statistics Norway” (www.ssb.no), Avinor (www.avinor.no) and “Statistikknett Reiseliv” (Web statistics in tourism) (www.statistikknett.com), focusing the research on cultural and social factors that may influence air transport and tourism separately as well as the relationship between them.

The quantitative analysis will include the study of two factors developing a correlation analysis, analyzing the relationship between air transport and tourism. This information is also based on historical data from the website "Statistics Norway" and "Statistikknett Reiseliv" as well as the information provided by Avinor's website (www.avinor.no). The outcome of the analysis will provide important information about the impact of the qualitative analysis.

For the case study, information about changes in routes to/from Ålesund Airport during the last eleven years was kindly provided by the airport manager from Ålesund Vigra Airport, Tor Hånde 'appendix A'; the data about the changes in demand for air transport and tourism in the area was collected from "Statistics Norway", "Statistikknett Reiseliv" and Avinor.

3.4 Reliability and validity of the study

Reliability and validity are ways of demonstrating and communicating the rigour of research processes and the trustworthiness of research findings (Roberts, Priest and Traynor, 2006).

To eliminate any concerns, it is necessary to ensure the **reliability** of the data. In this case, all the data considered for the first analysis (Relationship between air transport and tourism) was taken from Avinor, Statistics Norway and Statistikknett Reiseliv.

- **About Avinor:**

Avinor is the company which is responsible for planning, developing and operating the Norwegian airport network; the ownership is administered by the Ministry of Transport and Communications (Avinor, 2012).

- **About Statistics Norway:**

Statistics Norway is an independent professional organization subject to the guidelines and financial framework set by the Norwegian government; is responsible for coordinating all official statistics in Norway, and also acts as a driving force in the international statistics work. It has overall responsibility for meeting the need for statistics on Norwegian society (Statistics Norway, 2012).

- **About Statistikknett Reiseliv:**

It provides regional indicators, benchmarking and status analysis for the tourism industry taken from Statistics Norway and from other official statistics. It is also based on funding from county and regional tourism organizations. It has built up a set of standardized status analysis at the regional level (Statistikknett Reiseliv).

For the second part of the analysis (Case study for Ålesund) all the data was gathered from the same databases except for data related to the opening and closing of routes for Ålesund Vigra Airport which was provided by the Airport Manager Tor Hånde via e-mail.

Validity describes the extent to which a measure accurately represents the concept it claims to measure (Punch, 1998; Roberts, Priest and Traynor, 2006), which in other words means that the measurement variable has to represent the concept that is trying to measure.

- For tourism demand, the measurement is the total amount of overnights spent in Norway by tourists (Norwegians or foreigners), regardless of the purpose of stay.
- For air transport demand, the measurement is number of passengers traveling by air to and from Norway.

3.5 Chapter summary

In brief, table 3-2 will provide the main outlines for methodology that will be used for the development of the study.

Analysis	Method	Source
Tourism demand	**Qualitative:** judgment of the behavior of the data and interpretation of the information	Statistics Norway (2012) Statistikknett Reiseliv (2012)
Air transport demand	**Qualitative:** judgment of the behavior of the data and interpretation of the information	Avinor (2012)
Relationship between air transport and tourism	**Qualitative:** judgment of the behavior of the data and interpretation of the information **Quantititative:** Correlation analysis	Statistics Norway (2012) Statistikknett Reiseliv (2012) Avinor (2012)
Case study Ålesund	**Qualitative:** judgment of the behavior of the data and interpretation of the information	Statistics Norway (2012) Statistikknett Reiseliv (2012) Avinor (2012) Data provided by Ålesund Vigra Airport manager.

Table 3-2. Summary of the methodology

4. Data analysis

In this chapter, it will be developed the analyses covering the factors related to air transport and tourism considered in this study.

This first part involves on the analysis of three main elements:

- Tourism demand in Norway
- Air transport demand in Norway
- Relationship between air transport and tourism in Norway

The second part consists of a case study for Ålesund, developing quantitative analysis comparing different variables that may affect the demand of air transport and tourism in the area, focusing on highlighting how air transport and tourism have effectively contributed to the region over the last eleven years.

The data analysis is based on the secondary data from the three websites mentioned previously in the methodology (Statistics Norway, Statistikknett Reiseliv and Avinor).

4.1 Tourism demand in Norway

Aforesaid, tourism combines a large range of economic activities and services designed to meet the needs of tourists, therefore, this study will provide information on the behavior the tourists' preferences in Norway with the purpose to determine how important tourism in Norway is.

Firstly it is important to have an overview of the amount of tourists that come to Norway; in the figure 4-1, it can be seen that the total amount of overnights spent in the country by tourists (Norwegians or foreigners), as maintained an increasing demand over the last 11 years. According to Statistikknett, by 2000 the total amount of tourists was 16 364 658 while in 2011 the number raised up to 19 203 237, meaning

that, over the last 11 years the tourism demand in Norway has increased around 17%. In average from 2000 to 2011, Norway has had a tourism demand of 17 320 451 overnights spent per year regardless of the purpose of stay.

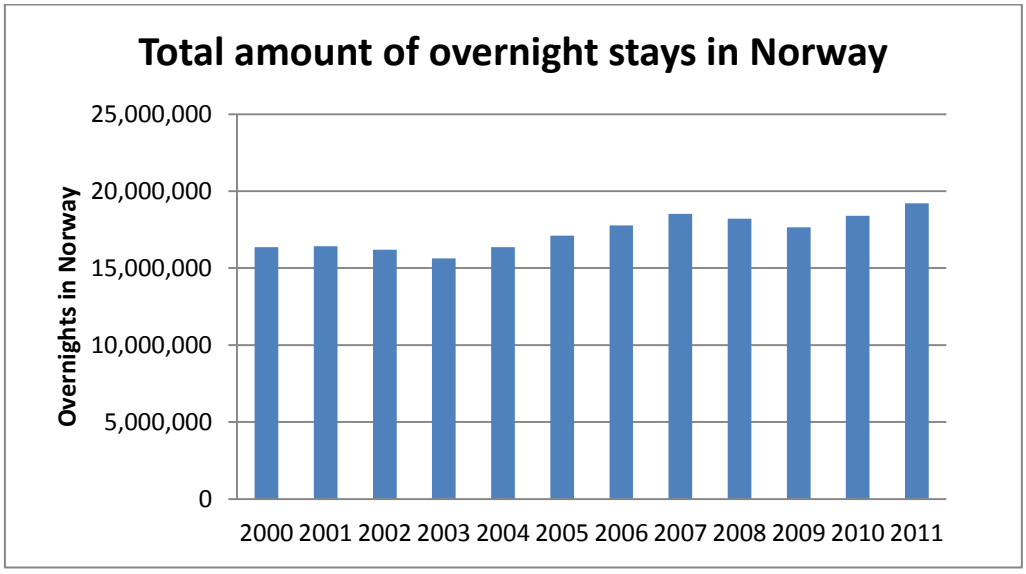

Fig. 4-1. Total amount of overnights spent in Norway. Source: Statistikknet Reiseliv (2012)

Now, considering the purpose of stay, figure 4-2 shows the total of overnight stays for employment purposes occupies the 43% of the total travels in 2011. In the case of holiday/leisure purposes the percentage is considerably lower (32%), this indicates that the majority of the travels are made with employment purposes.

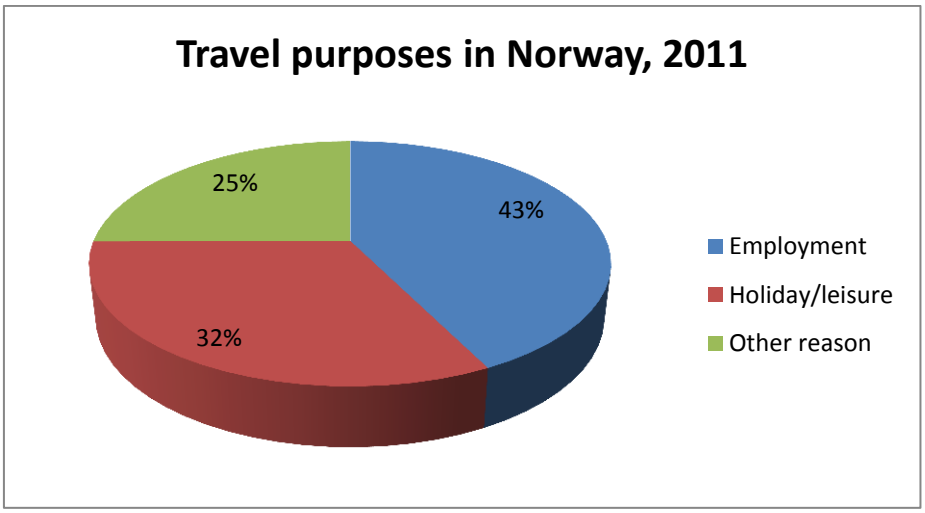

Fig. 4-2. Overnight stays by purpose of travel in Norway, 2011. Source: Statistikknett Reiseliv (2012)

As shown in figure 4-3, leisure travel spending (inbound and domestic) generated 71% of direct Travel and Tourism GDP in 2011 (NOK 71.5bn) compared with 29% for business travel spending (NOK 29.6bn) (WTTC, 2012). This means that even though business travels represent the largest percentage of overnight stays in Norway, leisure travels have a larger contribution to the GDP in Norway.

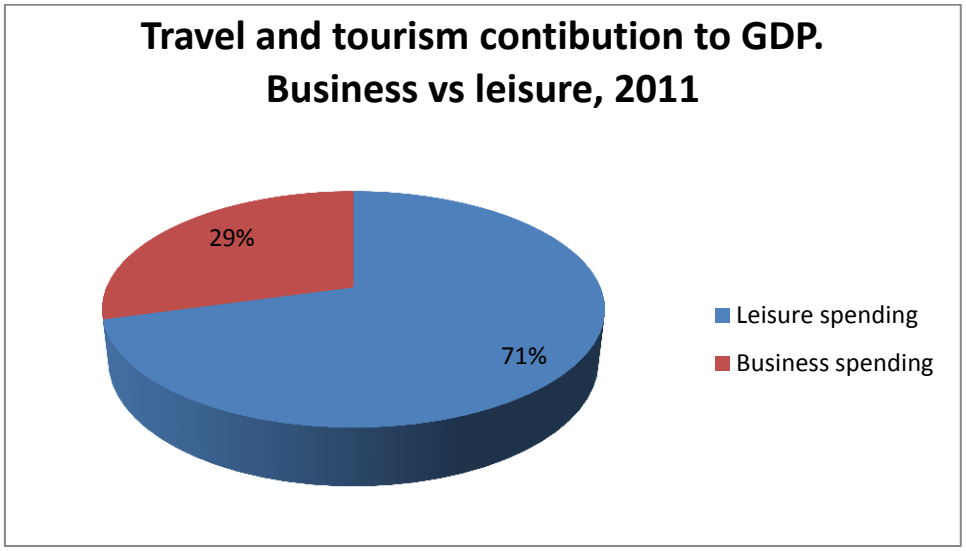

Fig. 4-3. Contribution of business and leisure travel and tourism to GDP, 2011. Source: WTTC (2012).

Figure 4-4 shows graphically the changes in demand for each travel purpose along the years with the intention of displaying the trend of the contribution of each factor over time. It can be seen, that the demand of overnight stays for employment purposes has experienced a significant growth from 2004 until 2008, but by 2009 it decreased significantly.

The trends of the three different purposes of stay, experience a drop in the ninth period which corresponds to the year 2008, the reason for this could be the global economic recession; this is a very broad conclusion that arises from the assumption of saying that the economic recession leads to decline in the worldwide economic activity causing a decrease on the amount of travels.

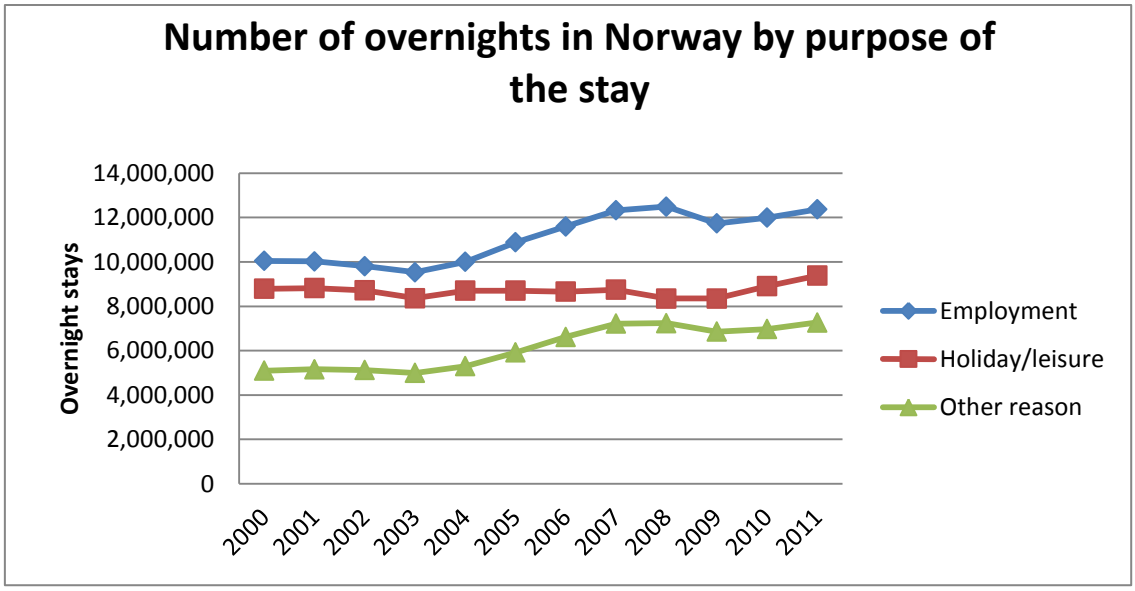

Fig. 4-4. Total overnights in Norway by purpose of stay. Source: Statistikknett Reiseliv (2012)

Since the higher amount of overnight stays in Norway is for employment purposes, it can be assumed that the preference of accommodation would be the hotels. Figure 4-5 displays the type of accommodation preferences in 2011, showing that 66% of the tourists rather stay in hotels while the 34% prefers the use of cabins, camping places or hostels.

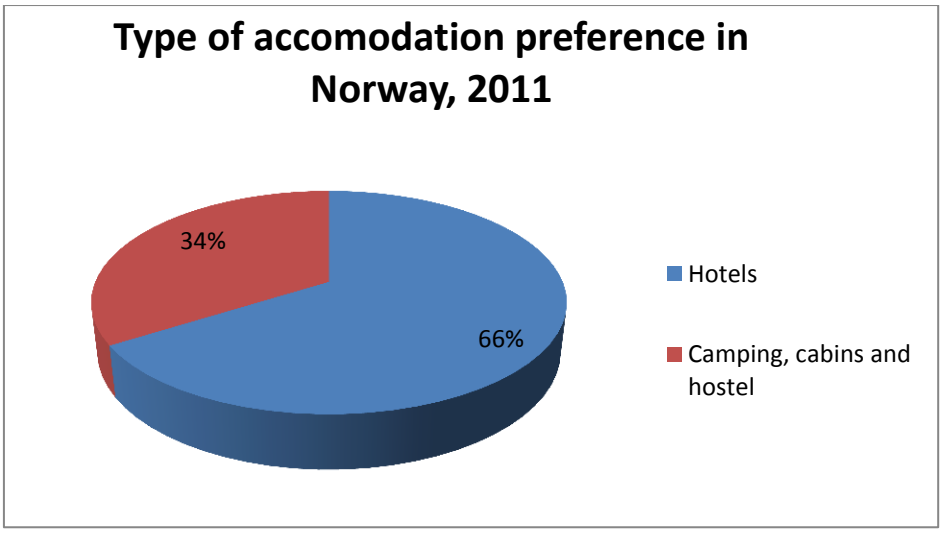

Fig. 4-5. Overnight stay accommodation preferences in Norway, 2011. Source: Statistikknett Reiseliv (2012)

Figure 4-6 presents the total of overnight stays by type of accommodation from 2000 to 2011, and it can be seen that the trend for the preference of cabins, camping places and hostels has experienced a gradual growth over the last years, while the hotel preference has varied, experiencing instability over the same period of time. In this case the effect of economic crisis is visible by 2009, decreasing the number of overnight accommodation in hotels.

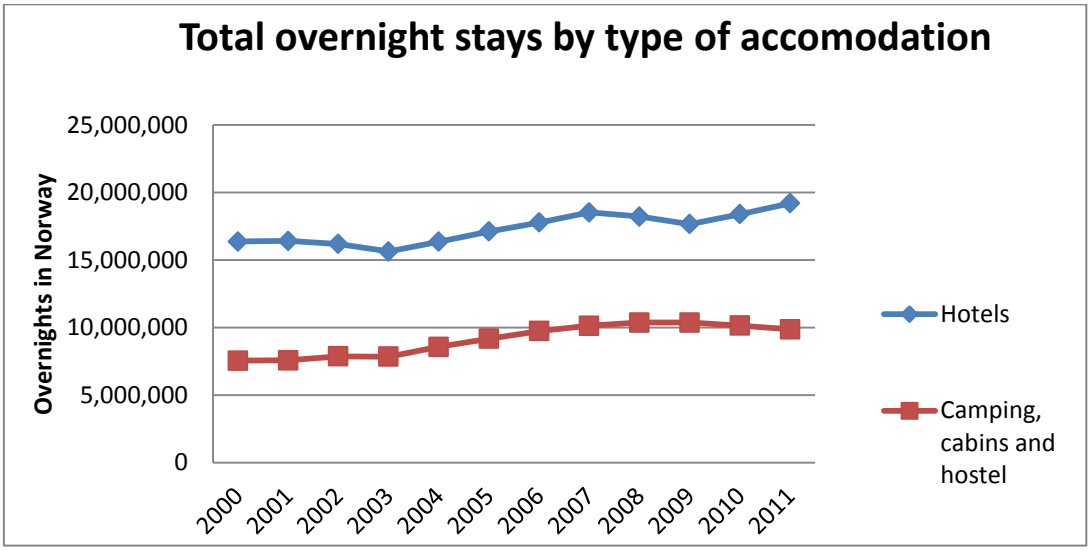

Fig. 4-6. Total overnights in Norway by type of accommodation. Source: Statistikknett Reiseliv (2012)

The age range is an important fact for the accommodation preference. Figure 4-7 illustrates the figures for 2007 (latest year registered), showing that the most active age range of travelers in Norway is from 25 to 44 years old representing 40% of the total tourists, but people from 45 to 79 years old represents the 47% of the travelers in Norway.

Hotels are considered more luxurious than cabin, camping places and hostels. Hostels are associated to young travelers with a limited amount of money to spare, while hotels provide more private and personalized accommodation. People from 45 to 79 years old, is more likely to stay in a hotel, therefore the conclusion that the hotel is the most preferred type of accommodation.

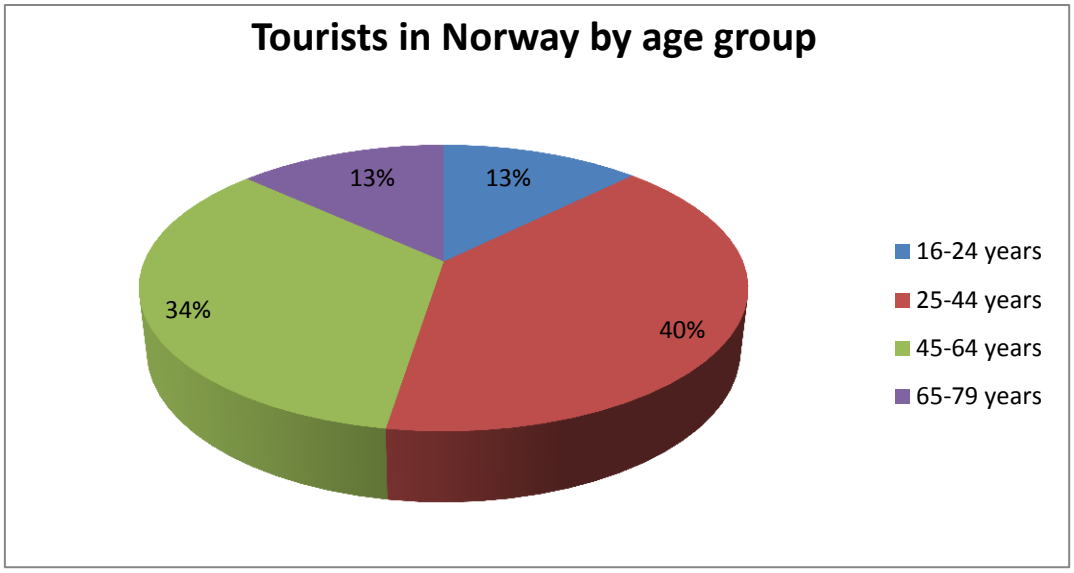

Fig. 4-7. Average of tourists in Norway by age group, 2007. Source: Statistics Norway (2012)

Considering the origin of the tourists, figure 4-8 shows that there are more overnights spent in Norway by Norwegians than foreigners. In 2011 the total amount of Norwegians staying overnight at a different location outside of their usual environment in Norway was 14 304 352, while the amount of overnight stays in Norway made by foreigners was 4 898 885 meaning that almost 75% of the tourists are Norwegians. It can also be seen that in 2009 (figure 4-8) the tourist demand experienced negative growth due to the economic crisis, but it recovered by 2010 and it appears to continue growing.

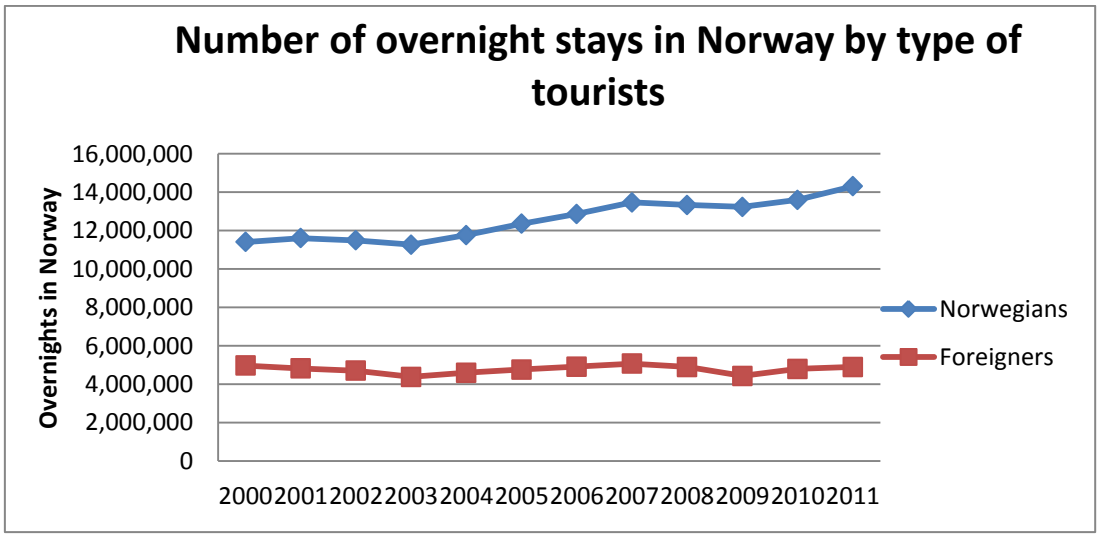

Fig. 4-8. Total amount of overnights spent in Norway by type of tourists. Source: Statistikknett Reiseliv (2012)

As can be seen in figure 4-9, domestic travel spending generated 69% of direct Travel & Tourism GDP in 2011 compared with 31% for visitor exports (i.e. foreign visitor spending or international tourism receipts) (WTTC, 2012).

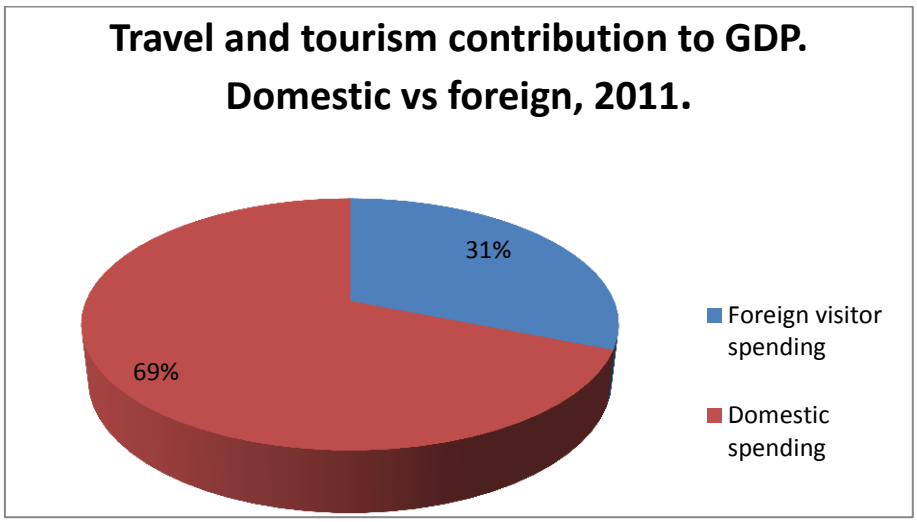

Fig. 4-9. Contribution of domestic and foreign travel and tourism to GDP, 2011. Source: WTTC (2012).

Domestic travel spending is expected to fall by 1.3% in 2012 to NOK 65.9bn, and rise by 0.9% pa to NOK 71.3bn in 2022. Visitor exports are expected to grow by 0.5% in 2012 to NOK 30.3bn, and rise by 4.1% pa to NOK 45.2bn in 2022 (WTTC, 2012).

Table 4-1 lists the main international markets for Norway according to overnight stays in 2011. Germany was the country with the largest amount of tourists during the year, followed by Sweden, Denmark and the UK.

Main international markets for Norway according to overnight stays in 2011	
Germany	699,776
Sweden	610,446
Denmark	491,279
UK	454,305
USA	298,754

Netherlands	278,474
France	211,972
Spain	206,561
Italia	152,965
Russia	143,854
Poland	122,886
Japan	97,875
China	86,179
Switzerland	77,785
Finland	76,315
South Korea	41,628

Table 4-1. Overnight stays in Norway by countries. Source: Statistikknet Reiseliv (2012)

The register of overnight stays by foreigners in Norway indicates that the country with the highest percentage change from 2005 to 2011 is Poland, which has increased almost by 200% (Figure 4-10). The reason for this could be that Poland is one of the countries with the largest group of labor migration in Norway, which explains the large amount of tourists over the last 6 years despite the current slowdown in the worldwide economy. Unlike Poland, demand for overnight stays from the UK has decreased by almost 25% in the same period of time.

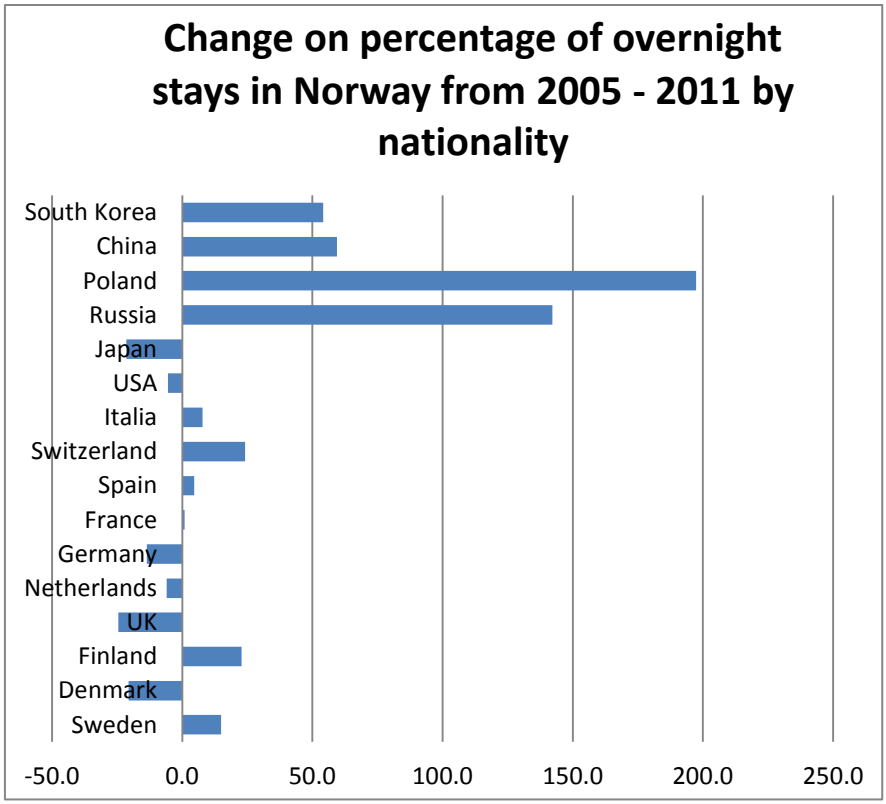

Fig. 4-10. Change on percentage of overnight stays in Norway from 2005 – 2011. Source: Statistikknett Reiseliv (2012)

The Asian market is relevant for this investigation due the long distance of this market from Norway. It is therefore expected that this type of tourist would arrive by air. As shown above, China and South Korea had experienced a positive change in percentage of 59.5 and 54.2 respectively over the past six years therefore, those countries are a potential market for air transport. This fact will be studied further in the analysis of the relationship between air transport and tourism.

Economically speaking, the direct contribution to GDP which refers to the GDP generated by industries that deal directly with tourists, including hotels, travel agents, airlines and other passenger transport services, as well as the activities of restaurant and leisure industries that deal directly with tourists in 2011 was NOK 72.9bn (2.7% of GDP) shown in figure 4-11. This primarily reflects the economic activity generated by industries such as hotels, travel agents, airlines and other passenger transportation services. But it also includes, for example, the activities of the restaurant and leisure industries directly supported by tourists (WTTC, 2012).

Compared to the previous years (figure 4-11), the direct contribution of tourism to GDP in Norway has experienced a negative growth since 2010, but it is expected to recover over a period of ten years.

Fig. 4-11. Direct contribution of travel and tourism to GDP, 2011. Source: WTTC (2012).

The direct contribution to employment refers to the number of direct jobs within the travel and tourism industry. Tourism generated 105,000 jobs directly in 2011 (4.1% of total employment). This includes employment by hotels, travel agents, airlines and other passenger transportation services. It also includes the activities of the restaurant and leisure industries directly supported by tourists (WTTC, 2012).

The contribution of tourism to employment is expected to decrease along the years leading to being part of a lesser percentage of the whole economy employment (figure 4-12).

Fig. 4-12. Direct contribution of travel and tourism to employment, 2011. Source: WTTC (2012).

According to WTTC, tourism is expected to have attracted capital investment of NOK 19.3bn in 2011, which it was lower than the previous years but it is expected to recover by 2012 (figure 4-13). Looking at the percentage of the whole economy GDP, the capital investment in tourism contribution will decrease.

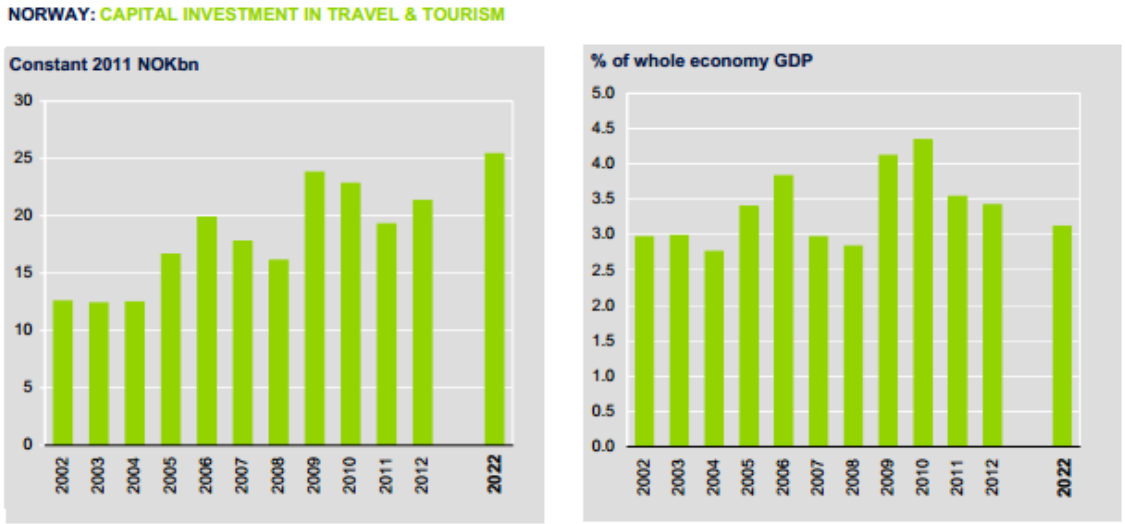

Fig. 4-13. Capital investment in travel and tourism, 2011. Source: WTTC (2012).

Nowadays, tourism in Norway is a strong sector which experiences a solid growth even against the complex environment of global economy. This study demonstrates that analyzing these previous factors will help to understand the behaviors of the touristic

sector in Norway. What is relevant to point out from this analysis is that Norway has an increase of national and international tourism; the most preferred type of accommodation is the hotel and the highest amount of overnight stays in Norway are for employment purposes.

Tourism is a strategic sector, because it allows economic growth, employment and human development.

4.2 Air transport demand in Norway

In order to find the importance of air transport in Norway is necessary to compare its demand with other means of transportation.

Figure 4-14, shows the total arrivals of inbound tourists in 2011 by the different means of transportation according to the Norwegian Foreign Visitor Survey from the Institute of Transport Economics in Norway (TØI), which covers in principle all travel to and from Norway by foreign residents (inbound tourism), regardless of travel purpose and accommodation used.

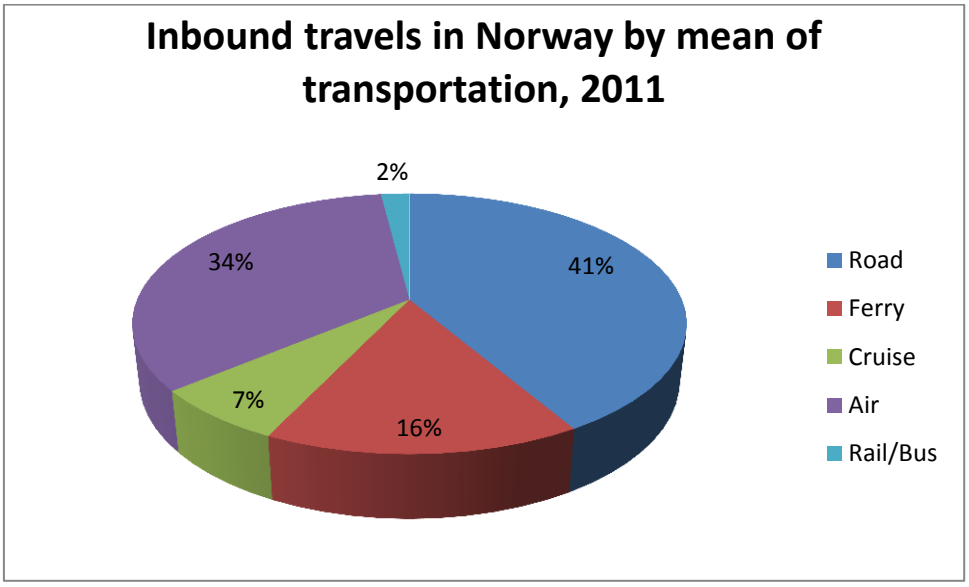

Fig. 4-14. Inbound travels to Norway by means of transportation, 2011. Source: TØI (2011).

It can be seen that much of the inbound tourism to Norway travels by road, occupying 41% of the total arrivals, followed by air transport with 34%. Bus or coach is the least preferred means of transportation having only 2% of the total arrivals. As mentioned before, these results cover all travel to and from Norway by foreign residents (inbound tourism), regardless of travel purpose and accommodation used.

Aforementioned, Norway is considered as a remote region, therefore, it is expected to rely on air transport, but surprisingly it is not the most preferred means of transportation for inbound tourism; in fact, paying close attention to the preference on type of accommodation, 34% of the tourists in Norway in 2011 prefers to stay cabins and camping places, which means that those tourists are more likely to use road and ferry as a means of transportation.

Figure 4-15, shows the percentages of the different types of transportation from which foreign visitors arrive in Norway by ferry. Private car is the most popular with 93%, the camper or motor home has 4% of the total of travels by ferry, and caravans and busses have 2% and 1% respectively.

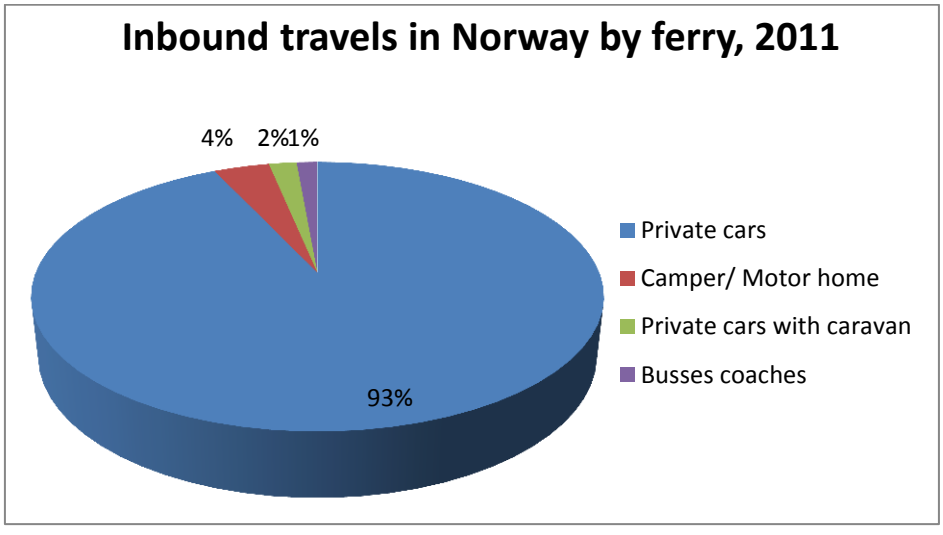

Fig. 4-15. Inbound travels in Norway by ferry, 2011. Source: TØI (2011).

The ferry is an important transportation means for inbound tourists because Norway has neighbor boarders only with Sweden, Russia and Finland therefore, if tourists from different nationalities want to arrive to Norway by car, they have to use the ferry.

The number of foreign motor homes continued to grow in 2011. Approximately 68,000 foreign motor homes visited Norway in 2011, and visitors travelling in these vehicles spent a total of 2.3 million guest nights in the country. Those are the highest numbers ever recorded for motor homes in Norway (TØI, 2011).

The purpose of trip influences the type of transportation, for example, figure 4-16 graphically shows the demand for type of transportation according to the purpose of trip.

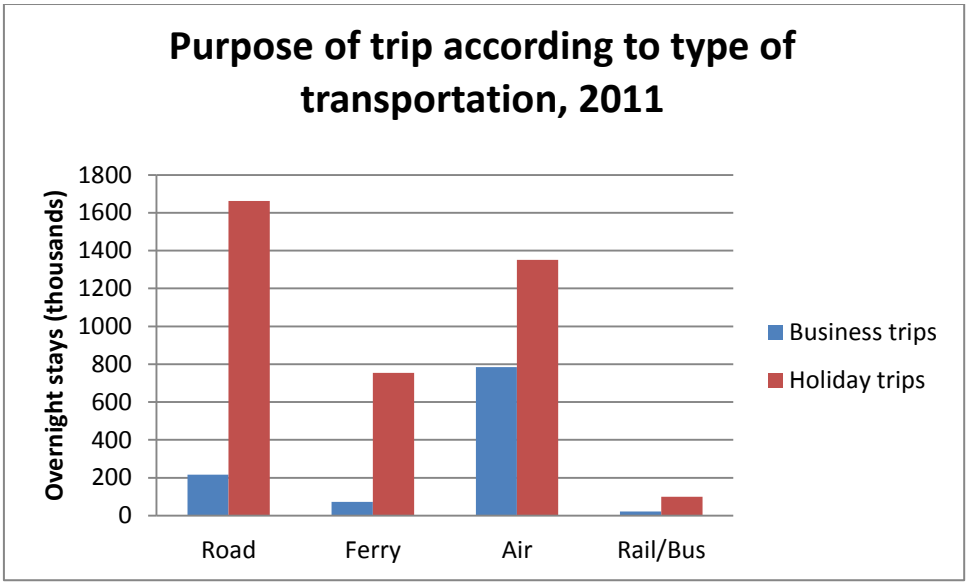

Fig. 4-16. Purpose of trip according to type of transportation, 2011. Source: TØI (2011).

For holiday trips in 2011, there were registered approximately 1 662 000 overnight stays by inbound tourists that traveled by road and 1 352 000 that traveled by air, whereas for business trips air transport had an approximate of 785 000 overnight stays and road transportation had 217 000, meaning that for holiday purposes road transportation is by far the most preferred mean to travel, and in the case of business travels air transport is the most preferred.

But focusing on air transport demand, Norway has experienced an increase in the number of passengers per year. Figure 4-17 presents the air passenger traffic (arrived and departed) from 2000 to 2011.

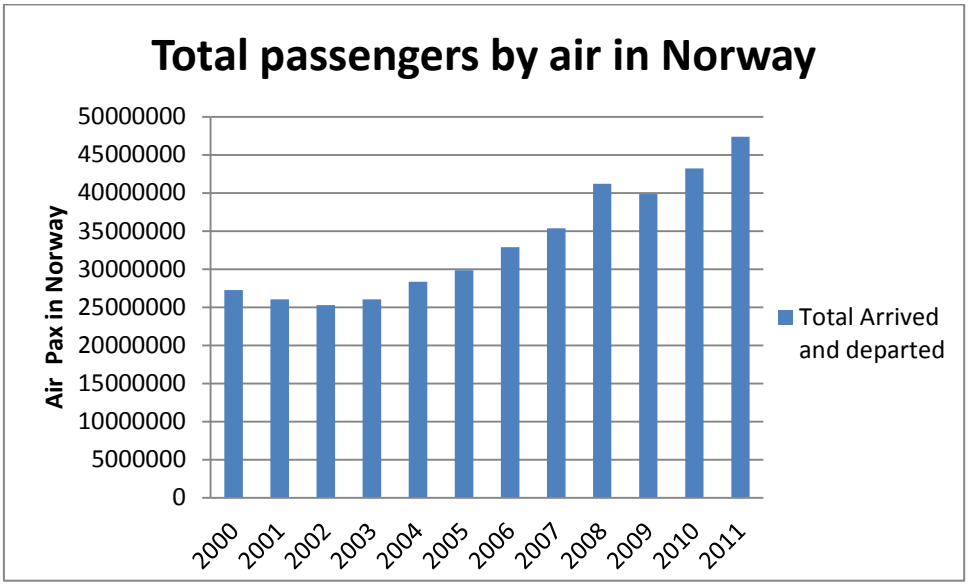

Fig. 4-17. Total passengers by air in Norway. Source: Avinor (2012)

Figure 4-17 visibly shows the effect of the economic crisis, experiencing a negative growth in 2008 but recovering after 2009. As can be seen, air transport demand in Norway has increased over the last 11 years. From 2000 to 2011, passenger demand in the air transport industry has increased over 73% having by the end of 2011 a total of 47 372 178 passengers.

Figure 4-18 shows the international direct connections from/to airports in Norway except Oslo and figure 4-19 shows the map for domestic connections in Norway.

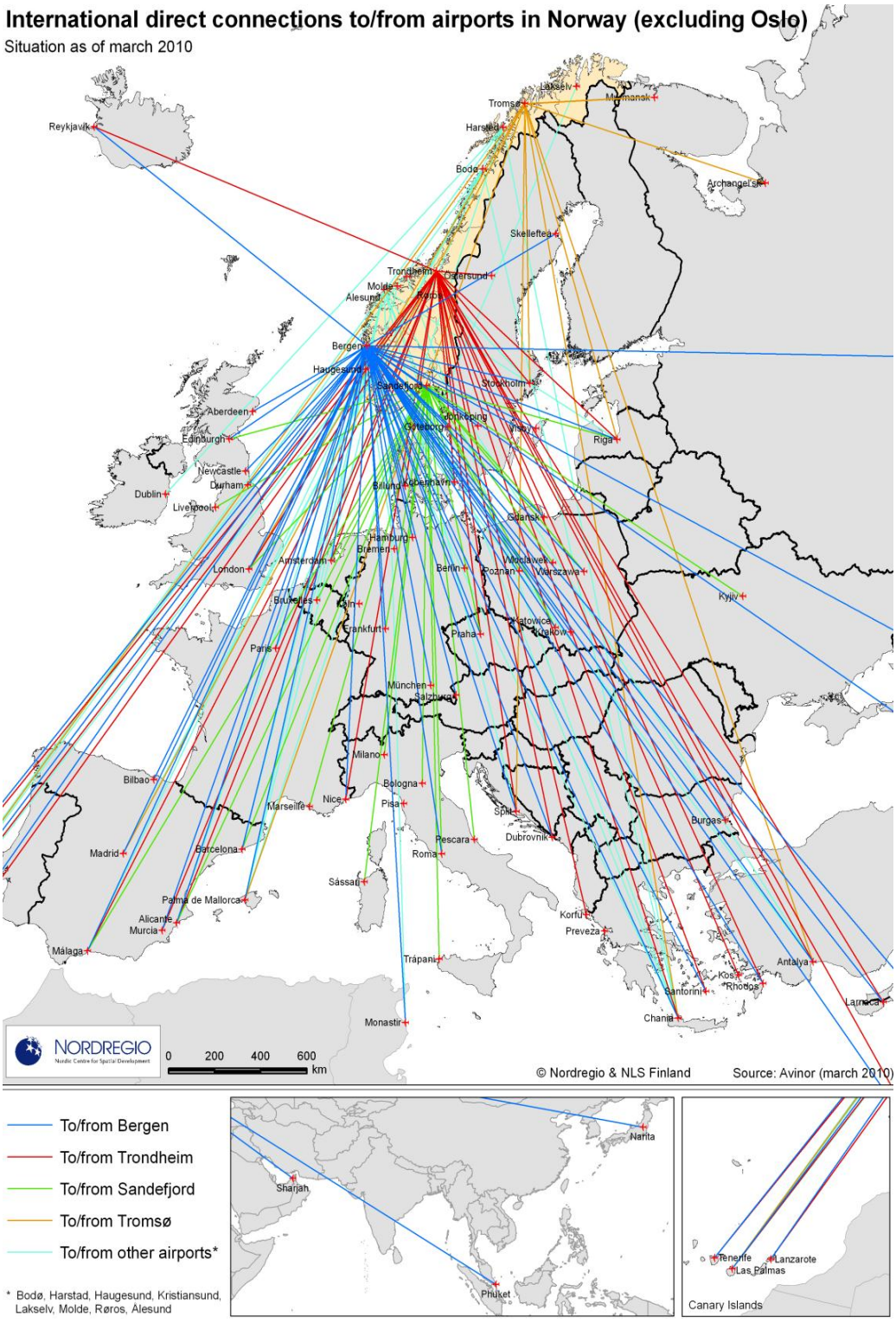

Fig. 4-18. International direct connections from/to airports in Norway excepting Oslo.

Source: Halpern and and Bråthen (2010)

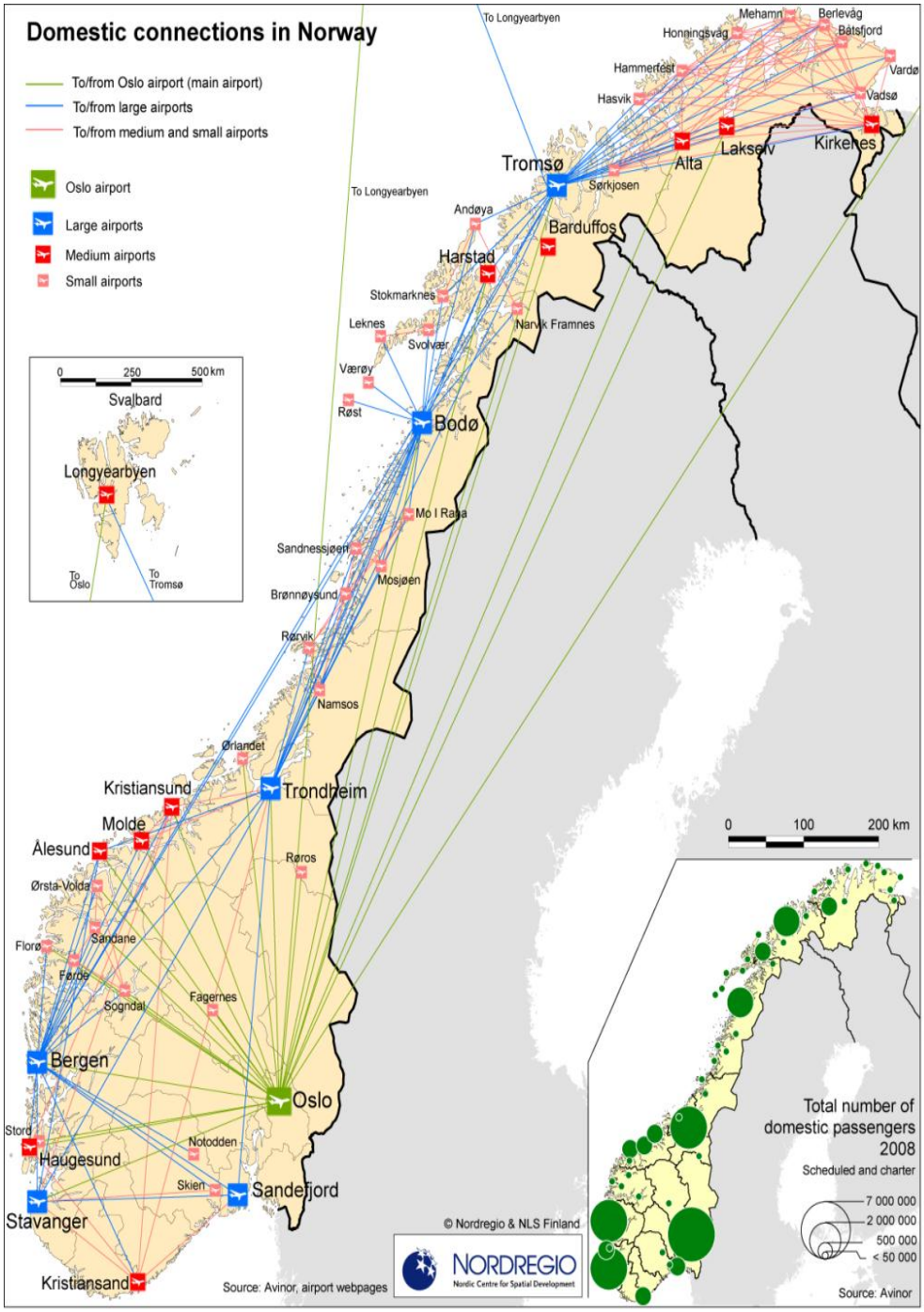

Fig. 4-19. Domestic connections in Norway. Source: Halpern and and Bråthen (2010)

According to Avinor (2012), the main airport in Norway is Oslo which is located in the capital of the country. By 2011, it served 21 100 000 passengers providing direct and indirect jobs to 13 000 people. There are around 52 carriers (scheduled and non-scheduled) that provide services at Oslo airport.

But as can be seen on the figures above, there are six large airports that are considered important as well: Tromsø, Bodø, Trondheim, Bergen, Stavanger and Sandefjord. These airports connect Norway nationally and internationally and are also considered as important touristic cities. Table 4-2 shows the number of passengers in 2011 in Norway's large airports.

Number of passengers in Norway's large airports	
Bergen	5 449 006
Stavanger	4 119 348
Trondheim	3 919 618
Tromsø	1 723 465
Bodø	1 556 924
Sandefjord	1 345 732

Table 4-2. Number of passengers in Norway's large airports. Source: Avinor (2012)

Aforesaid, in a European context Norway is considered as a remote area, thus, it is expected to rely on air transport, therefore, the airport network is well connected within the country as well as to the foreign countries.

Domestic traffic demand in Norway increased by 10% to 27 700 000 passengers. It represents 59% of Avinor's passengers, while international flights represent a lower percentage (figure 4-20).

Although international traffic demand has a lower percentage than domestic demand (41% of the total flights in Norway) it represents the greatest growth in 2011 was in international traffic with 11.1% growth to 15 900 000 million passengers.

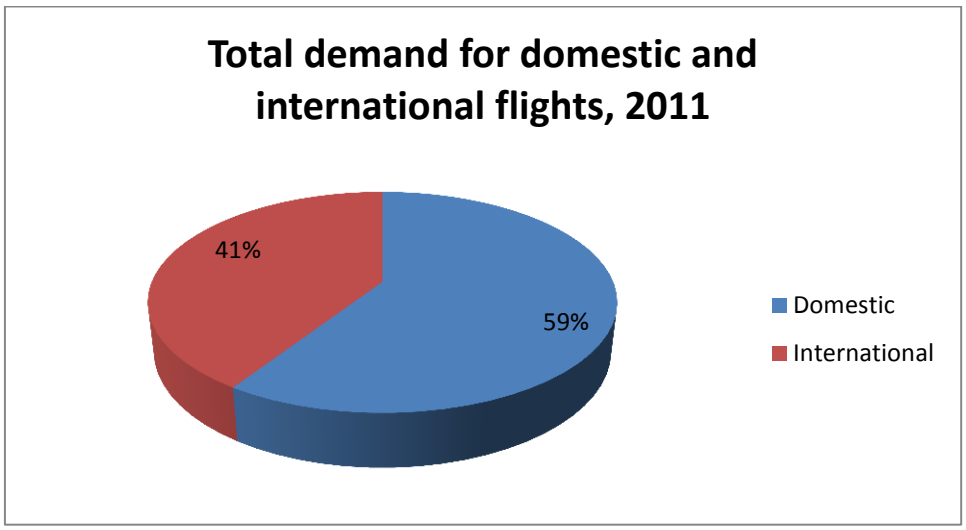

Fig. 4-20. Total demand for domestic and international flights, 2011. Source: Avinor (2012)

The fact that domestic flights are the ones with higher demand, matches with the fact that the highest percentage of tourists are Norwegians. The figure below (4-21) shows that 74% from the total overnight stays in Norway (2011) were Norwegians, while only 26% were foreigners.

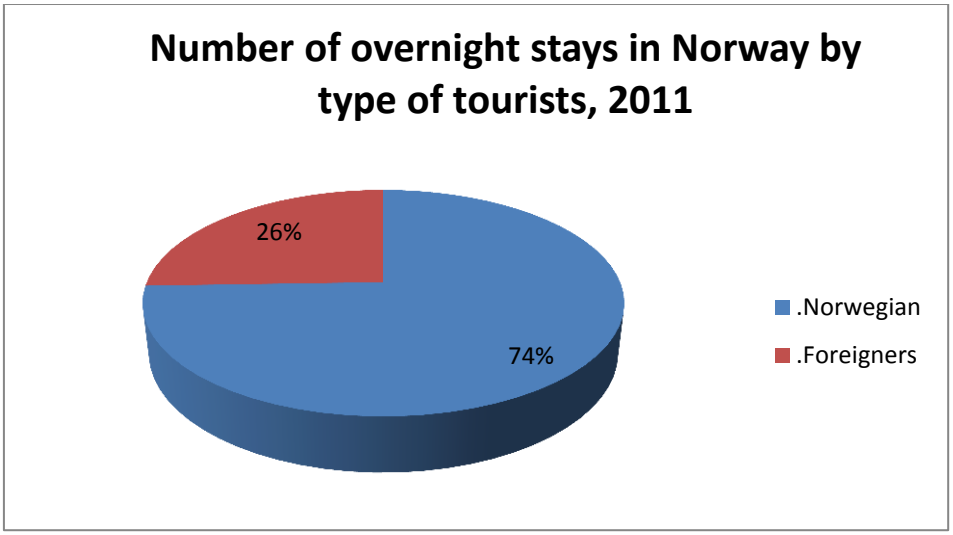

Fig. 4-21. Number of overnight stays in Norway by type of tourists, 2011. Source: Avinor (2012)

In the case of the scheduled and non-scheduled flights, 94% of the passengers flew on scheduled flights during 2011, whereas only 6% on non-scheduled flights, although non-scheduled traffic increased by 8.8% in 2011 (figure 4-22).

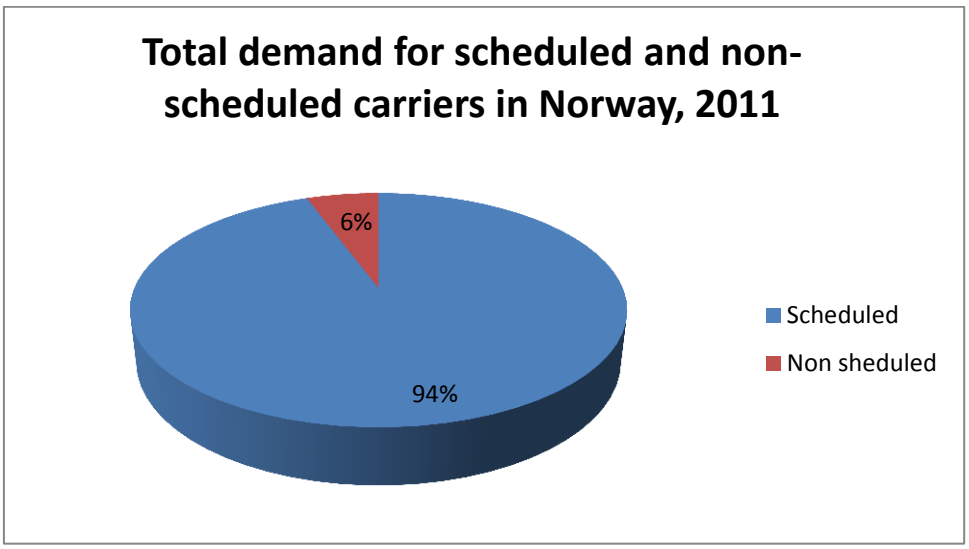

Fig. 4-22. Total demand for scheduled and non-scheduled flights, 2011. Source: Avinor (2012)

Flights on non-scheduled carriers normally operate seasonal routes to certain destinations, which is the contrary of the scheduled carriers that operate under regulated schedules offering regular flights to established destinations. Thus, it can be assumed that the reason why scheduled carriers represent 94% of the total demand is because non-scheduled flights tend to operate in certain seasons.

Air transport has a relevant importance in Norway; even before the worldwide economic crisis, the aviation sector in Norway continues to grow due the strength of its economy. The domestic market and scheduled flights are the ones with higher demand, but international market is gaining importance being 2011's greatest growth in demand.

4.3 Relationship between air transport and tourism in Norway

In order to find if air transport relates with tourism in Norway it is necessary to analyze both of the demands, in other words, the total of overnight stays in Norway (tourists) and the total of air passengers.

In the case that a relationship between air transport and tourism in Norway exists, it would be expected that changes in the data would be similar over time, i.e. if there is a growth in tourist demand, a similar growth in air transport demand would be expected.

The consistent pattern change in the case of total air passengers over time in Norway, indicates that there is an increase every year in air transport demand (figure 4-23).

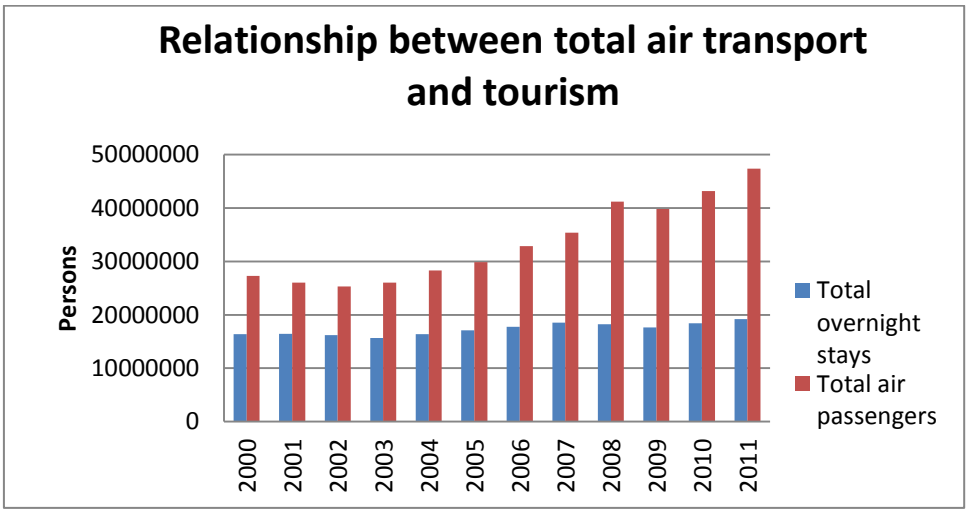

Fig. 4-23. Relationship between total air passengers and overnight stays. Source: Avinor (2012) and Statistikknett Reiseliv (2012).

Judging from the figure above, it cannot be concluded that air transport is related to tourism in Norway; the chart shows that the amount of air passengers is continuously increasing along the years, whereas for the overnight stays in Norway the amount of tourists has grown but not at the same rate as demand for air transport.

To prove if there is a relationship between air transport and tourism in Norway, it was necessary to rely on a quantitative analysis that would provide statistical evidence that could define if the factors where dependent of each other, and the following results are listed below:

Correlation analysis between air transport and tourism in Norway		
Number of observations	**Pearson correlation coefficient**	**Type of correlation**
12	0.920	Strong correlation

Table 4-3. Correlation analysis between air transport and tourism. Source Avinor (2012) and Statistikknet Reiseliv (2012)

The estimated correlation coefficient is 0.920, which shows that according to table 3-1 (in the methodology section) there is a strong correlation between the two factors 'appendix B'. Although this correlation did not seem obvious when analyzing the previous charts, the correlation analysis reveals that air transport and tourism in Norway are strongly correlated.

Concerning the international tourism and air transport, figure 4-24 shows that there is no strong relationship between passengers from international flights and international overnight stays in Norway. The amount of overnight stays remains fairly constant while the demand for international passengers grew steadily over the last eleven years.

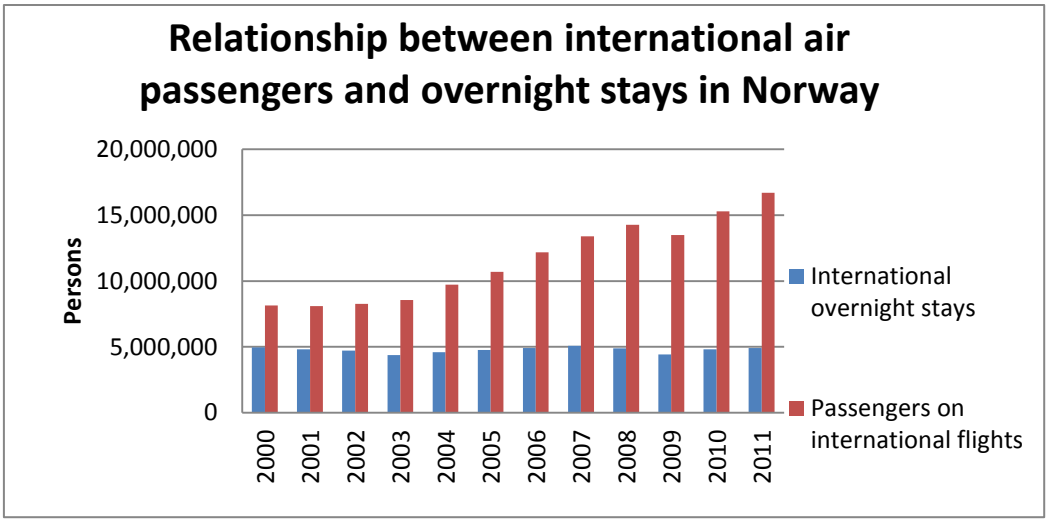

Fig. 4-24. Relationship between international air passengers and overnight stays in Norway. Source: Avinor (2012) and Statistikknett Reiseliv (2012).

According to the correlation analysis between international air transport and tourism in Norway, the correlation coefficient is 0.277, which shows that according to table 3-1 (in the methodology section) there is a weak correlation between the two factors 'appendix C'.

Correlation analysis between international air transport and tourism in Norway		
Number of observations	**Pearson correlation coefficient**	**Type of correlation**
12	0.277	Weak correlation

Table 4-4. Correlation analysis between international air transport and tourism. Source Avinor (2012) and Statistikknet Reiseliv (2012)

In this case it is important to mention that the passengers on international flights are not necessarily foreigners. In fact, the only specification that the data shows is that the information is from passengers arrived and departed from scheduled and non-scheduled international flights (Avinor, 2012); therefore, this could be the explanation for the values not being significantly correlated.

But if we take a look at the Asian market, figure 4-10 shows that China a South Korea have experienced an increase in percentage of overnight stays over the last years

(59.5% and 54.2% respectively); Japan on the other hand has decreased the percentage of tourists by 21.5%. Figure 4-25 shows the changes of overnight stays by Asian countries in Norway.

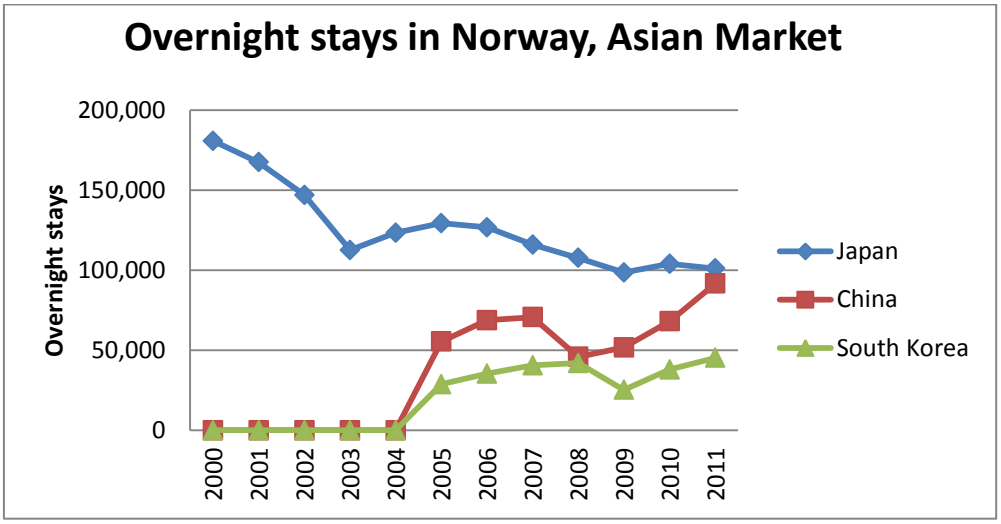

Fig. 4-25. Overnight stays in Norway, Asian Market. Source: Statistikknett Reiseliv (2012).

The registers of overnight stays in Norway from tourists coming from China and South Korea start since 2005, but as it can be observed, there has been an exponential growth until nowadays, registering in 2011 around 91 715 tourists from China and 45 272 from South Korea.

The route network from Norway to Asia consists of only two routes, a daily service by Thai from Bangkok and a thrice-weekly service by PIA from Lahore/Islamabad.

The increase in overnight stays from China in particular is reflected by air transport passengers. According to Avinor (2012), there were 81,000 passengers between Oslo and China in 2011.

Oslo airport (2012) reports that there are three Chinese cities which are featured among the top unserved destinations, which are routes with potential demand that are not being exploited: Beijing with 31,000 passengers, Hong Kong with 21,000 passengers and Shanghai with 17,000 passengers.

The increasing number of Asian overnight stays in Norway (tourists) means that the gaps in unserverd destinations could be filled.

4.4 Case study for Ålesund airport.

Ålesund is a municipality in Møre og Romsdal county. It is part of the Sunnmøre district and the center of the Ålesund region. It is also the administrative center of the municipality. The municipality has a population of approximately 43 000 inhabitants (Ålesund Komunne, 2012). Figure 4-26 illustrates the map of the region.

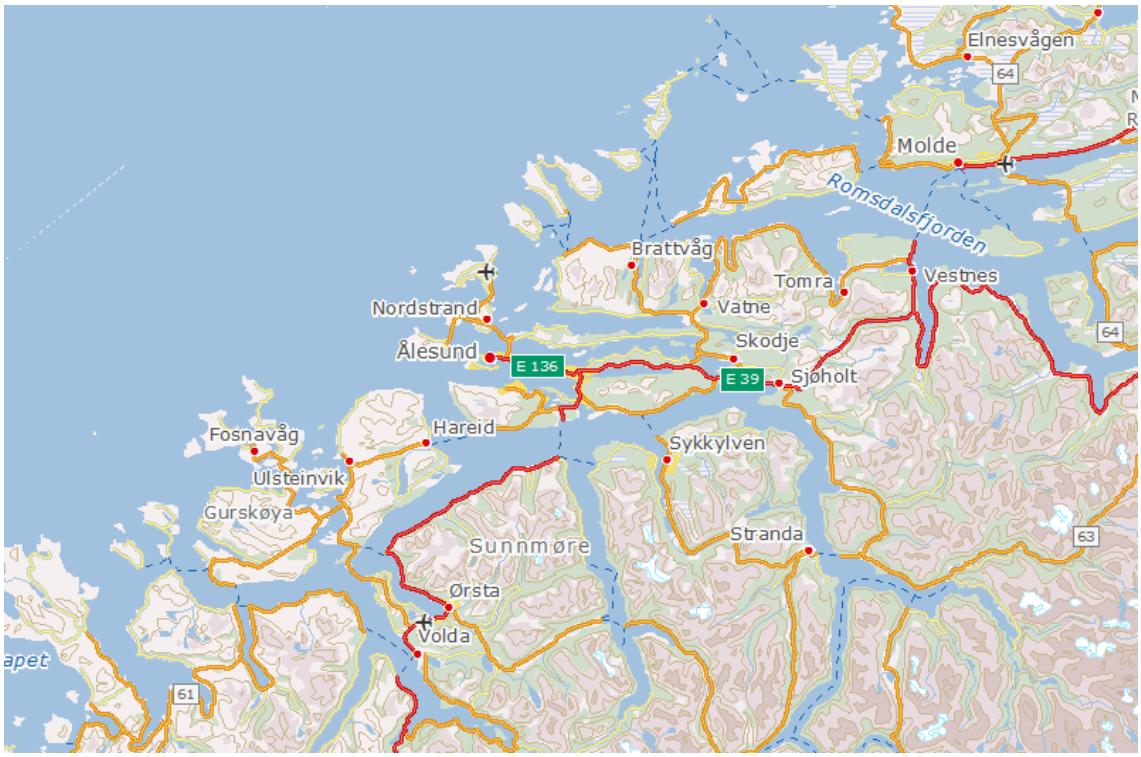

Fig. 4-26. Map of Ålesund Source: Visit Norway (2012).

This case study aims to highlight how changes in air service provision at Ålesund airport have influenced changes in demand for tourism in the Ålesund region.

4.4.1 Economy in the region

Ålesund is growing by about 1.2% per annum; it is forecasted that by 2020 there will be over 50 000 inhabitants. Nowadays 16 000 people have their daily work within the municipal boundaries.

The local economy is nationally and internationally oriented. It is considered as the capital of Norway's fishing industry and it is at the center of the "world's most outstanding maritime and marine cluster". Ålesund is an industrialized center with firms involved in the fishing industry, ship design, shipbuilding, equipment supplies, research and development and financial consultancy assistance within the marine and maritime industries (Ålesund Komunne, 2012).

Ålesund's economy is dependent on the tourism industry also. The region is home to some of the most breathtaking sights and has many well-known natural and cultural gems. The Geirangerfjord is unique and exceptionally beautiful – which is why this fjord landscape is included on UNESCO's World Heritage List. The town offers a wide range of sights and activities for meetings and incentives such as fascinating town history, Art Nouveau museum, viewpoint, open-air museum, aquarium, deep-sea fishing, wildlife safari and sightseeing trips (Visit Norway, 2012).

4.4.2 Transportation in the area

According to Visit Norway (2012), there are many ways to get to Ålesund:

By air

Ålesund Airport Vigra is a 20-minute drive from Ålesund town centre and has good connections to and from Oslo, Bergen, Trondheim, Stavanger, London, Copenhagen and Riga. There are also good connections from Ørsta/Volda Airport Hovden to and from most Norwegian towns and cities.

By rail

The railway station in the region is at Åndalsnes, about 120 kilometres from Ålesund, with a bus connection to and from Ålesund five times per day. Travelling time between Oslo and Åndalsnes is five hours and 30 minutes. The bus between Åndalsnes and Ålesund takes two hours and 30 minutes. For timetables and booking, please contact the Norwegian State Railways (NSB) and Nettbuss.

By bus

Nor-Way Bus Express runs throughout the region, with good connections to and from Oslo, Bergen and Trondheim. Travelling time between Oslo and Ålesund is approximately 10 hours, and between Trondheim and Ålesund approximately seven hours and 30 minutes.

Hurtigruten

Many people describe Hurtigruten as 'the world's most beautiful voyage'. It calls daily at Ålesund and Torvik on both its northbound and southbound voyages. The northbound service also makes the Ålesund - Geiranger - Ålesund round trip daily from April to September.

4.4.3 Ålesund Airport

Ålesund Airport, known as Vigra Airport, is located 10 kilometers north of the city, on the west coast of Norway; it is considered to be the gateway to the Norwegian fjords, and noted for its Jugendstil or Art Nouveau architecture.

The air traffic demand at Vigra airport has varied from 2000 to 2011 (figure 4-27). The reason for this is because the airport has experienced many changes along that period, i.e. the opening and closing of routes, integration of new airlines.

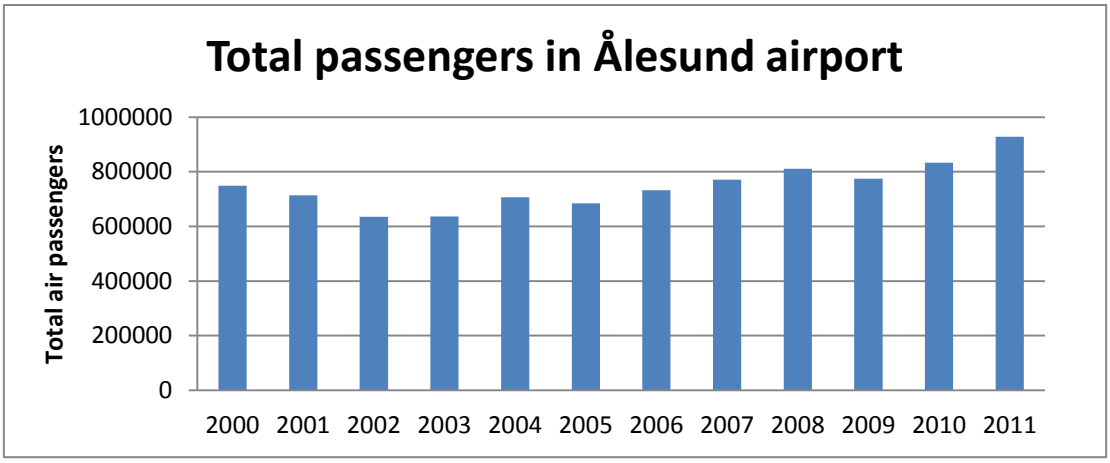

Fig. 4-27. Total passengers in Ålesund airport from 2000 to 2011. Source: Avinor (2012).

There are 18 national and international destinations from Ålesund Vigra airport, the national routes are operated by scheduled carriers while the international routes are operated by scheduled and by charter carriers (table 4-5).

Ålesund Vigra airport national and international destinations					
Alicante	Scheduled	Dalaman	Charter	Palma Mallorca	Charter
Antalya	Charter	Gran Canaria	Charter	Rhodos	Charter
Bergen	Scheduled	Haugesund	Scheduled	Riga	Scheduled
Burgas	Charter	Kristiansand	Scheduled	Split	Charter
Chania	Charter	London Gatwick	Scheduled	Stavanger	Scheduled
Copenhagen	Scheduled	Oslo	Scheduled	Trondheim	Scheduled

Table 4-5. Ålesund Vigra airport and international destinations. Source: Avinor (2012)

The number of passengers from scheduled airlines is higher than the number of passengers from non-scheduled carriers (figure 4-28); as mentioned before, flights on

non-scheduled carriers normally operate seasonal routes to certain destinations, which is the contrary of the scheduled carriers that operate under regulated schedules offering regular flights to established destinations.

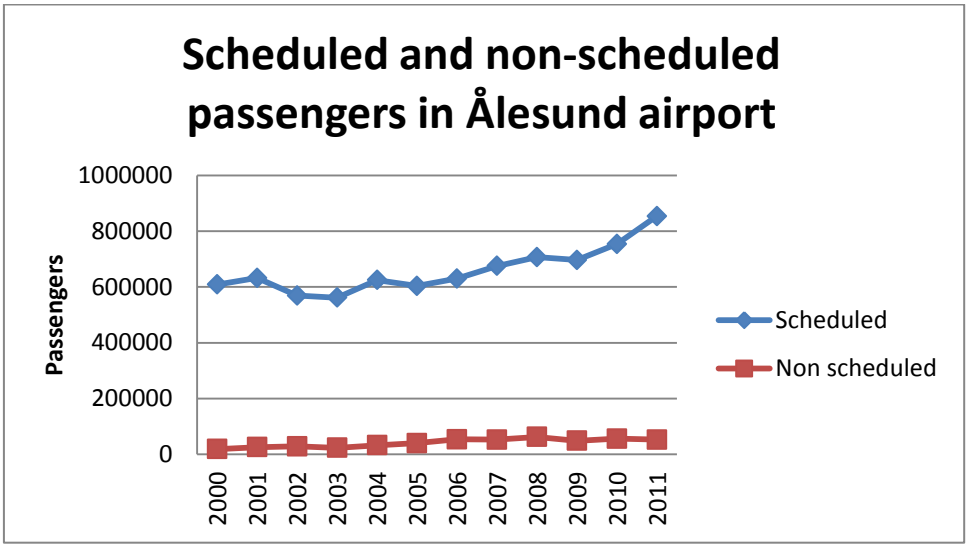

Fig. 4-28. Scheduled and non-scheduled passengers at Ålesund airport. Source: Avinor (2012)

Although there has been an increase of passengers on non-scheduled routes over the last eleven years, (18 585 in 2000 to 52 856 in 2011) the amount of passengers seem to remain fairly constant compared to the amount of passengers for scheduled routes. This could be due the fact that non-scheduled routes operate mainly during the summer, whereas the scheduled routes operate constantly during the year.

Table 4-6 shows the chronological changes that Ålesund airport has experienced over the past eleven years.

Year	Event	Airline
2003	Opening of route Ålesund-Oslo	Norwegian
2004	Closing of route Ålesund-Oslo	Norwegian
2007	Opening of route Ålesund-Stavanger	Citystar Airlines

	Opening of route Ålesund-Gatwick	SAS
2008	Reopening of route Ålesund-Oslo	Norwegian
	Closing of route Ålesund-Stavanger	Citystar Airlines
	Closing of route Ålesund-Gatwick	SAS
	Opening of route Ålesund-Copehagen	SAS
	Opening of route Ålesund-Riga	Airbaltic
2011	Opening of route Ålesund-Gatwick	Norwegian
	Opening of route Ålesund-Alicante	Norwegian

Table 4-6. Changes in routes at Ålesund airport.

Now, focusing only on the international passengers, the changes in Ålesund airport caused by opening and closing of new routes influences air traffic demand; figure 4-29 reflects the amount of passengers per year for international flights.

Fig. 4-29. Total international flights passengers at Ålesund airport from 2000 to 2011. Source: Avinor (2012).

As can be seen the first major increase in demand for international scheduled flights at this airport was in 2007 which coincides with the fact that in that same year the flight with SAS to London Gatwick was opened (table 4-6).

2008 represents a negative growth in demand for international flights at this airport, but even though the effect of the economic crisis was reflected, two more international routes were opened, Ålesund-Copenhagen by SAS and Ålesund-Riga by Airbaltic; but the route to London by SAS did not run with the same luck and it was closed.

By 2009, the economy started to recover and it was not until April of 2011 that Ålesund airport decided to implement new routes, being Ålesund-Gatwick and Ålesund-Alicante, opened in November, both routes are operated by Norwegian.

This recovery in demand for international flights is also reflected by the increase in overnight stays in the region.

Figure 4-30 shows the change in percentage of overnight stays on Ålesund from 2005 to 2011 and as can be seen, Poland has decreased the number of overnight stays in the region by 6% over the last 6 years. On the other hand, demand for overnight stays from UK tourists has grown by 10% since 2005.

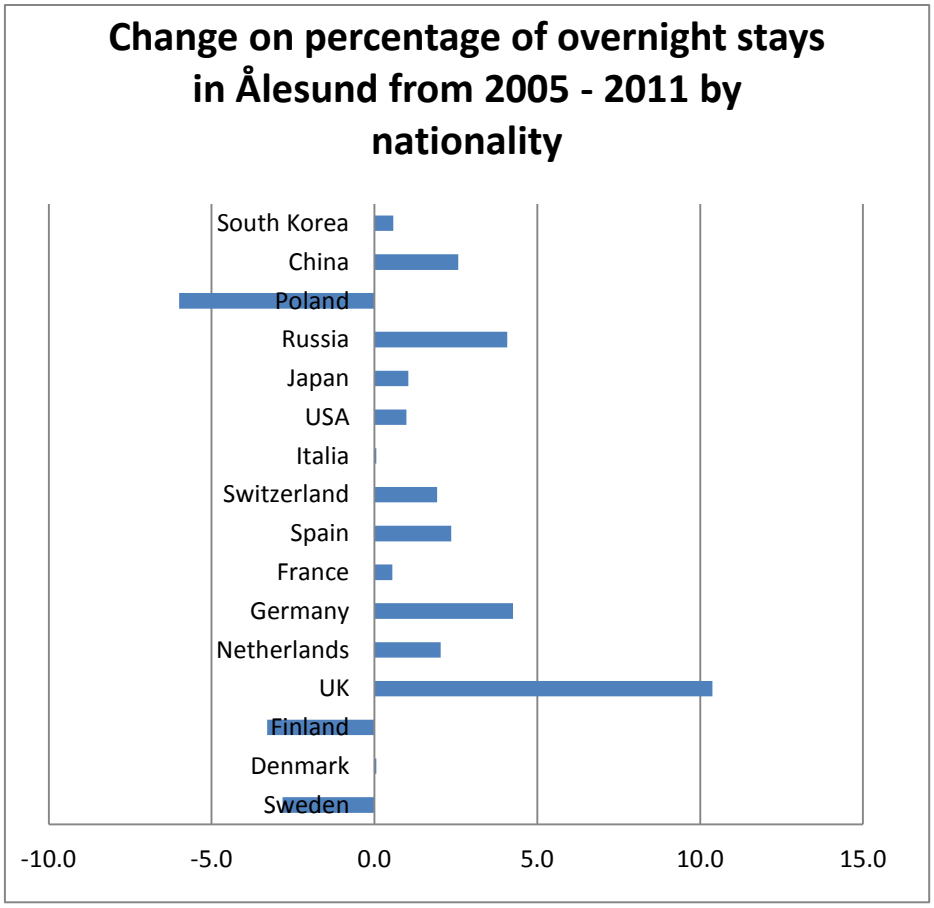

Fig. 4-30. Change in percentage of overnight stays in Ålesund from 2005 – 2011. Source: Statistikknett Reiseliv (2012)

Since the UK represents the country that has had a positive change in the demand for overnight stays in the region, it is important to further research demand from this specific country.

Figure 4-31 shows the total amount of overnight stays in the region by tourists coming from the United Kingdom. From 2007 when the first route to London Gatwick opened, there has been an exponential increase in overnight stays by people from the United Kingdom. The change in overnight stays by UK citizens in the Ålesund region from 2000 to 2011 goes from 4 193 to 24 235 having increased demand by around 477% over that period of time.

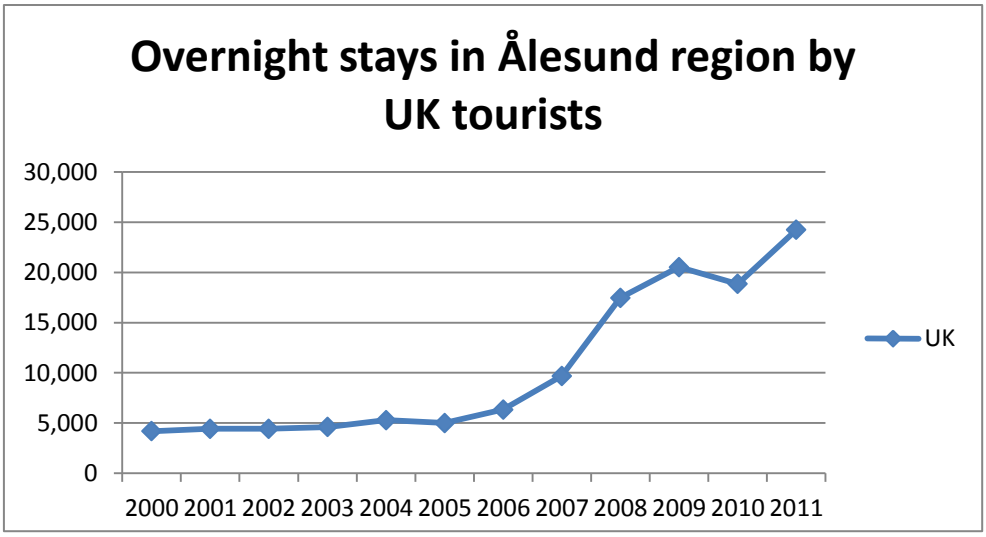

Fig. 4-31. Overnight stays in Ålesund region by UK tourists. Source: Statistikknett Reiseliv (2012).

The changes in the airport routes have also influenced the behavior of the overnight stays demand, as can be seen, figure 4-32 illustrates changes along the years. It can be seen from the figure that there might be a relationship between air transport demand and the demand for overnight stays in the area.

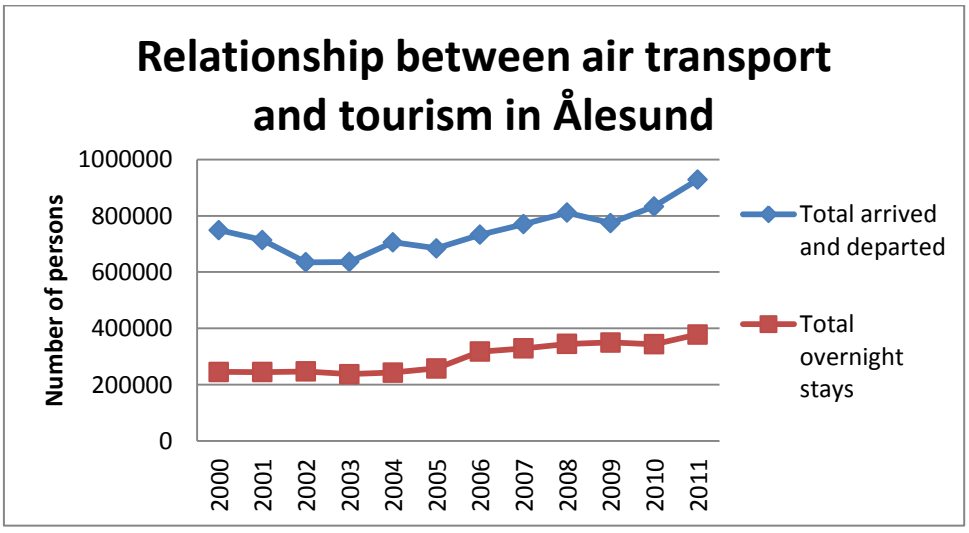

Fig. 4-32. Relationship between air transport and tourism in Ålesund Source: Avinor (2012) and Statiskknett Reiseliv (2012)

The correlation analysis indicates, that there is a strong relationship between air transport and tourism in Ålesund, with a correlation coefficient of 0.859 (table 4-7); (see also 'appendix D')

Correlation analysis between air transport and tourism in Ålesund region		
Number of observations	**Pearson correlation coefficient**	**Type of correlation**
12	0.859	Strong correlation

Table 4-7. Correlation analysis between air transport and tourism in Ålesund. Source Avinor (2012) and Statistikknet Reiseliv (2012)

The increase in overnight stays over the years means that the implementation of new routes boosts demand for overnight stays in the region for business or leisure purposes. New routes benefit the region economically and socially. They motivate economic growth, creating new sources of employment and new opportunities of progress. Table 4-8 show some of the key numbers from Ålesund region (2011).

2011	Key numbers
Accommodation sales (1000 kr)	243,062
Market sharenationwide (%)	7.38
Revenue per room (kr)	642
Income per sold rooms (kr)	833
Income per guest (kr)	1,052
Hotels (number)	22
Beds (number)	2,584
Residence time Norwegians (nights)	1.58
Residence time foreigners (nights)	1.79

Table 4-8. Ålesund regions key numbers from 2011. Source: Statistikknet Reiseliv (2012)

Economically, the region has per year an income of 243.1 million kroner from accommodation sales; there are 22 hotels in the region which makes a total of 2 584

beds which represents a revenue per room of 642 kroner. The average number of overnights per Norwegian tourists is 1.58 and for foreigners it is 1.79.

The market share that Ålesund represents nationwide by 2011 is 7.38% (defined in terms of overnight stays). This is not much, considering that the region has one of the most beautiful and internationally recognized natural attractions which is the Geiranger Fjord.

5. Conclusions, limitations and further research

5.1 Conclusions

This investigation aimed to find a relationship between air transport and tourism in Norway analyzing different factors that may influence the dependency between the two.

The results demonstrate that by 2011, Norway had of 17 320 451 overnights stays, the tourism demand from 2000 to 2011 has increased around 17% in average. The highest rate of overnight stays corresponds to employment purposes.

Leisure travel spending generated 71% of direct Travel and Tourism GDP in 2011 (NOK 71.5bn) compared with 29% for business travel spending (NOK 29.6bn).

The largest group of foreigner visitors in 2011 was from Germany, but Poland has increased the amount of overnight stays in Norway; Poland is one of the countries with the largest group of labor migration in Norway, which explains the large amount of tourists over the last 6 years despite the current slowdown in the worldwide economy. Unlike Poland, demand for overnight stays from the UK has decreased by almost 25% in the same period of time.

China and South Korea had experienced a positive change in percentage of 59.5 and 54.2 respectively over the past six years therefore, those countries are a potential market for air transport because they are expected that this type of tourist would arrive by air.

Air transport is essential for the integration and the development of the nations, especially in peripheral countries, due to its geographical location and population

distribution it could be thought that air transport would be the main transportation means in Norway, but in fact, aviation has a big competition in the tourism market.

Inbound tourism to Norway travels by road, occupying 41% of the total arrivals, followed by air transport with 34%. Bus or coach is the least preferred means of transportation having only 2% of the total arrivals.

Domestic traffic demand in Norway increased by 10% to 27 700 000 passengers. It represents 59% of Avinor's passengers, while international flights represent a lower percentage.

Air transport has a relevant importance in Norway; even before the worldwide economic crisis, the aviation sector in Norway continues to grow due the strength of its economy. The domestic market and scheduled flights are the ones with higher demand, but international market is gaining importance being 2011's greatest growth in demand.

The correlation analysis indicates that there is a strong correlation between air transport and tourism in Norway, even though when the amount of air passengers and the number overnight are not growing at the same pace, Norway is strongly dependent on air transport.

5.2 Limitations

Although the thesis has reach its aim of analyzing the relationship between air transport and tourism, the outcome would have been more significant if the analysis was made considering data from more than eleven years (Avinor and Statistikknet offer data only from 2000).

5.3 Further research

Oslo airport (2012) reports that there are three Chinese cities which are featured among the top unserved destinations, which are routes with potential demand that are not being exploited: Beijing with 31,000 passengers, Hong Kong with 21,000 passengers and Shanghai with 17,000 passengers.

It would be interesting to analyze those markets that particularly need air transport to come to Norway.

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7. Appendices

Appendix A: Information provided by the airport manager from Ålesund Vigra Airport.

Dear Diana,
Avinor doesn't keep any official record of new and closed routes for each airport, so it is up to our own memory to try and recall what has happened regarding your question.
Personally I have been in this position since May 2004, and I can give you feedback on what has happened since then. Prior to 2004 it is more complicated, but generally opening of new routes has more or less happened since 2006/2007.
Prior to that there were routes to Oslo, Bergen and Trondheim and not much else. Therefore there was also no closing of routes in this period. Here is what has happened since 2003:

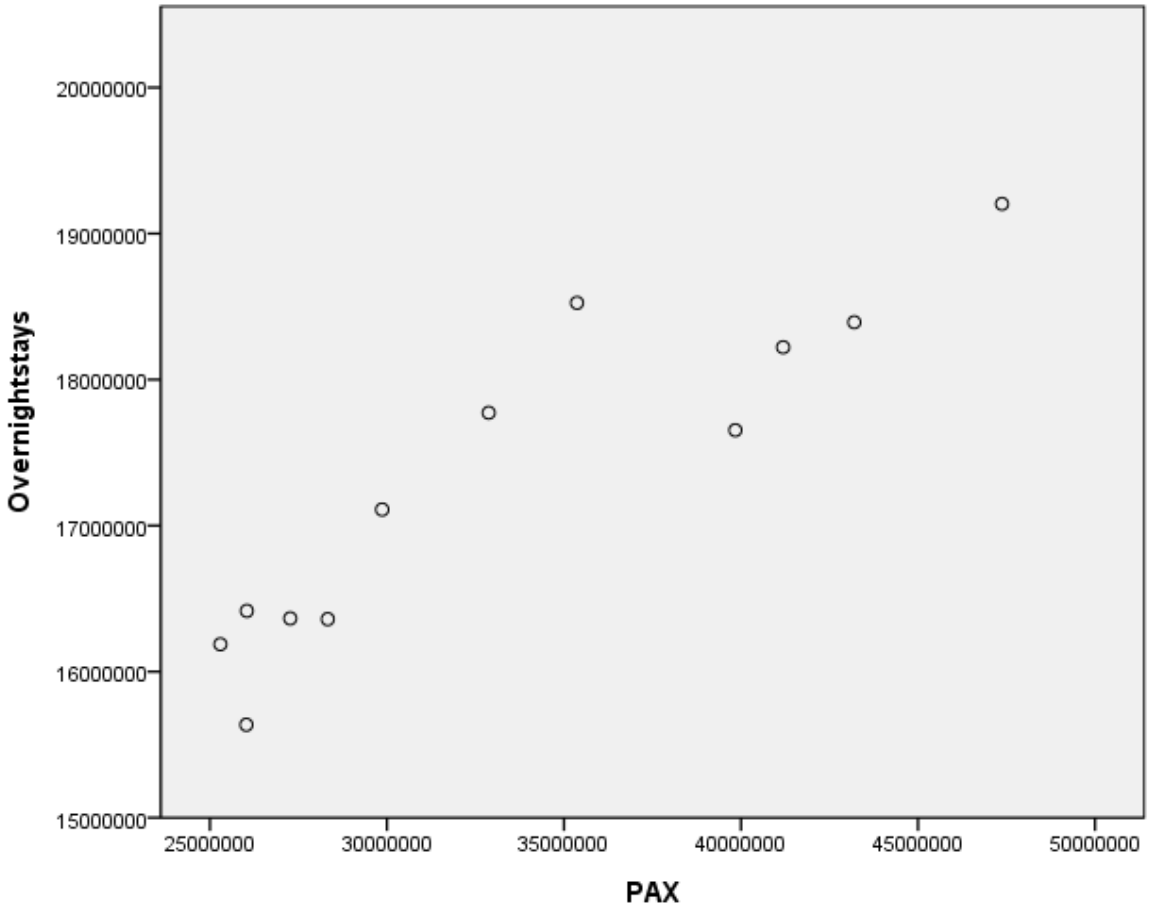
- In 2003 the newly formed Norwegian opened a route from Ålesund to Oslo to compete with the existing SAS route.
- In autumn 2004 Norwegian closed the route from Ålesund to Oslo.
- In 2008 Norwegian reopened the route from Ålesund to Oslo.
- In august 2007 City Star Airlines opened a route from Ålesund to Stavanger. The route was closed in early 2008 because City Star ceased all its operations.
- The 1st of June 2007 SAS opened 2 weekly flights from Ålesund to London Gatwick. The route closed in October 2008.
- In April 2011 Norwegian opened 2 weekly flights from Ålesund to London, Gatwick.
- In March 2008 SAS opened a daily flight to Copenhagen.
- In April 2008 airBaltic opened a route from Ålesund to Riga twice a week. Later capacity has increased to 3 times a week.
- In November 2011 Norwegian opened a weekly flight to Alicante, Spain.

This is what has happened regarding routes. There is also a large number of charter flights mainly to the Mediterranean in summer and the Canaries in winter from Ålesund Airport. The number of Charter flights has increased substantially since 2000.
To talk about openings or closings of destinations for charter flights, is a bit more complicated because destinations can change from year to year. As I understand charter flights was not your question either.

Best regards
Tor Hånde.

Appendix B: Correlation analysis between air transport and tourism in Norway

Analysis made on SPSS.

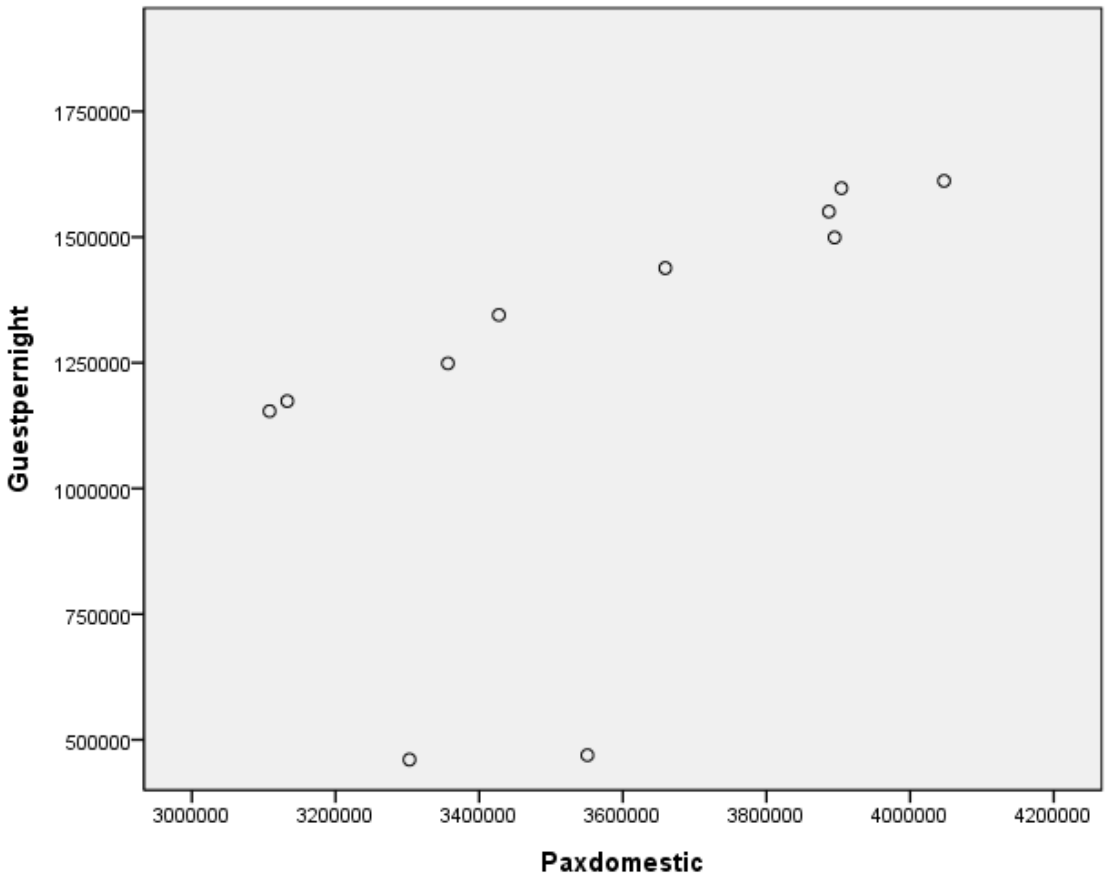


Correlations

		Overnightstays	PAX
Overnightstays	Pearson Correlation	1	.920**
	Sig. (2-tailed)		.000
	N	12	12
PAX	Pearson Correlation	.920**	1
	Sig. (2-tailed)	.000	
	N	12	12

**. Correlation is significant at the 0.01 level (2-tailed).

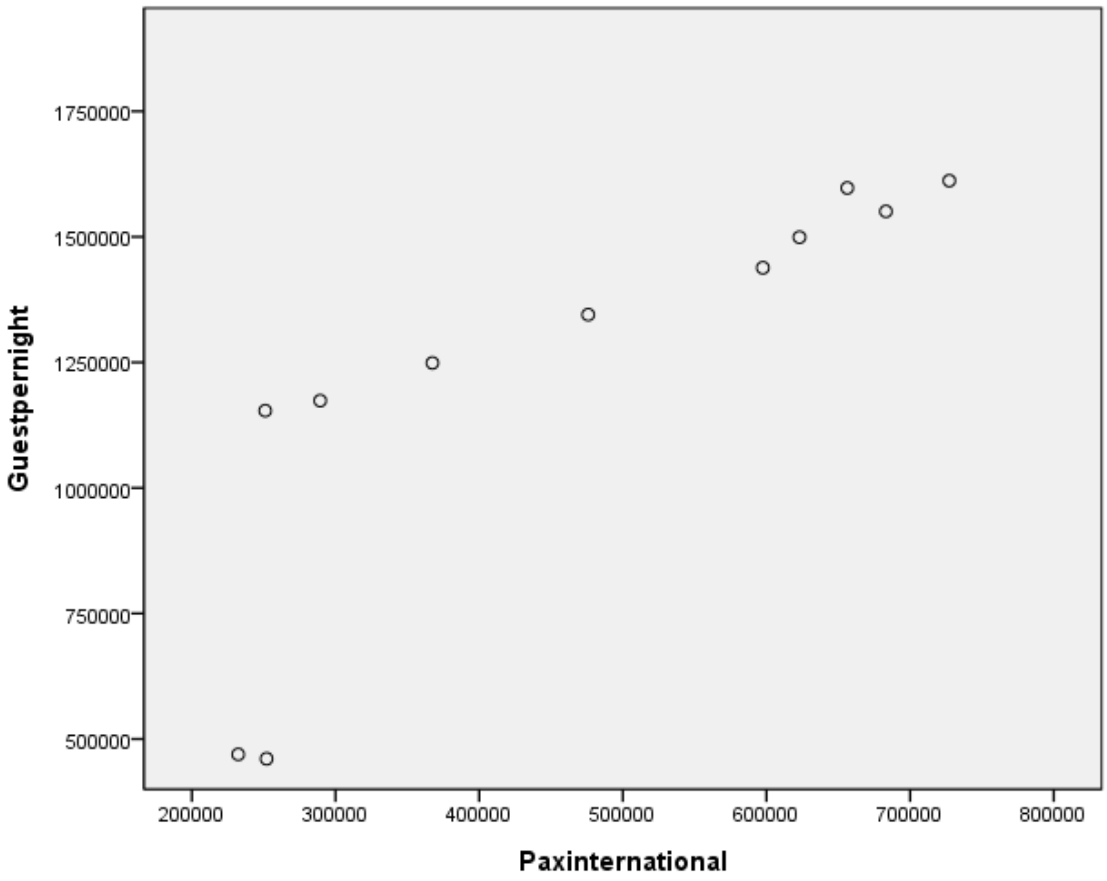
Appendix C: Correlation analysis between international air transport and tourism in Norway



Correlations

		Overnightstays	PAX
Overnightstays	Pearson Correlation	1	.277
	Sig. (2-tailed)		.000
	N	12	12
PAX	Pearson Correlation	.277	1
	Sig. (2-tailed)	.000	
	N	12	12

Appendix D: Correlation analysis between air transport and tourism in Ålesund region



Correlations

		Overnightstays	PAX
Overnightstays	Pearson Correlation	1	.859**
	Sig. (2-tailed)		.000
	N	12	12
PAX	Pearson Correlation	.859**	1
	Sig. (2-tailed)	.000	
	N	12	12

**. Correlation is significant at the 0.01 level (2-tailed).