

Saimaa University of Applied Sciences
Business Administration, Lappeenranta
Degree Programme in International Business Management
International Business Management

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AIRPORT PERFORMANCE IMPROVEMENT

CASE MIKKELI CITY AIRPORT

Master`s Thesis 2014

Abstract

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The purpose of the study was to find reasons why Mikkeli City airport performance should be improved and most of all how it could be done. The aim of the study was to find good practices from the best practices example Stockholm Skavsta airport for Mikkeli City airport for improving the airport performance.

This study is qualitative research using case study approach where research data was collected using interviewing and analysing of secondary data. Study was carried out using the benchmarking technique for finding the ways of improving the performance of Mikkeli City airport. Performance indicators used in the study were input: employment effect and production capacity, and output: quantity of passengers. Hypothesis of the study was that from Stockholm Skavsta airport could be learned practises, which can be used to improve the performance of the Mikkeli City airport.

The results of the study show that there is significant potential in Mikkeli City airport to improve the performance of the airport. Employment effect of the Mikkeli City airport is now 5.5 FTE and within 10 years it could be 35 FTE with 500,000 passengers. City of Mikkeli is gaining economic benefit directly from the municipality tax. The amount is now 28 930€ and it could be after 10 years 211 700€. From employees on the Mikkeli region 0.03% are employed by the Mikkeli City airport and after 10 years 0.19%. Production capacity of the Mikkeli City airport is with current facilities 12 planes and maximum 3600 passengers per week. Lengthening the opening hours the production capacity could be 70 planes and maximum 21,000 passengers per week. Lengthening the runway and opening hours the production capacity could be 70 planes and maximum 42,000 passengers per week. These calculations are hypothetical and do not take into account any variables. The study also shows that developing the performance of the Mikkeli City airport could gain big economic benefits to the Mikkeli region. Besides the municipality tax, the municipality could gain economic benefit from the passengers arriving to the region. According to the calculations tourism income could be with 500,000 passengers, 25€ million. Also the study confirms the hypothesis that there are practices in Stockholm Skavsta airport the Mikkeli City airport should apply in practice: 1. Segmentation: to become leading tourism airport in Finland, 2. Destinations: offering wide range of tourism destinations and 3. Ownership: privatizing the airport.

Keywords: regional airport, performance indicators, economic benefit

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GLOSSARY OF TERMS

AERODROME Any area of land or water designed for the taking off and landing of aircraft. Small aerodrome without air traffic control services, light aerodromes any place for the taking off and landing, for instance, field.

AERONAUTICAL REVENUE

Aeronautical or commercial revenues are those sources of income that arise directly from the operation of aircraft and the processing of passengers and freight, for instance fees for landing and passengers.

AIRFIELD A place where planes can fly from, especially one used by military planes. Also an area of land given over to runways, taxiways and aprons.

AIR TRANSPORT MOVEMENT (ATM)

Air transport movement is the handling of aircraft at the airport. Requires approximately the same effort as handling 100 WLU (1 WLU = one passenger or 100 kg of freight).

AIRPORT A civil aerodrome designed for the take-off and landing of passenger-carrying aircraft for the general public and/or cargo aircraft. Part of the air transport system. Consists of infrastructure divided to airside and land-side.

AIRPORT COMMERCIALISATION

The transformation of an airport from a public utility to a commercial enterprise and the adoption of a more business-like management philosophy.

AIRPORT PRIVATISATION

Transfer of full or majority ownership of facilities and services to the private sector by a variety of methods as share flotation's, the adoption of strategic partnership and the introduction of private management contracts.

AIRPORT THROUGHPUT UNIT (ATU)

Performance indicator of output of the airport. Used with big international airports. Combines the passengers and freight with aircraft movements. Airport throughput unit is counted as: $ATU = (\text{passengers} + 10) \times (\text{freight tonnes} + 100) \times ATM$ (air transport movement).

BENCHMARKING

The process of making performance comparison between two organizations (external benchmarking) in order to make improvements.

BEST PRACTICES

Practices that, over time, have proven cost-effective, efficient and successful in developing airport.

CUSTOMER

Customers for an airport are airline operators and passengers.

FULL TIME EQUIVALENT (FTE)

Amount of full-time employees, part-time employees should convert to FTE's when counting the employment effect of the airport.

KPA

Key Performance Areas of performance corresponding to the expectations of providers, regulators, users and other interested parties.

KPI (PI)

Key Performance Indicator (Performance Indicator), basic tool – metrics – for measuring airport performance. Are divided to key performance areas.

NON-AERONAUTICAL REVENUE

Non-aeronautical or commercial revenues are those generated by activities that are not directly related to the operation of aircraft, but those from commercial activities within the terminal and rents for terminal space and airport land.

WORK LOAD UNIT (WLU)

Performance indicator of output of the airport. Combines passengers and freight. One WLU = one passenger or 100 kg of freight.

(CROCKER 2005; GRAHAM 2014; ICAO 2013; LONGMAN 2001.)

1 INTRODUCTION

An airport's buildings, runways, passengers, employees, aircrafts etc. create the place where the journey really begins; a fast transport mode, which can take you within few hours to the heart of Europe. This study is a story about small regional airport in eastern part of Finland. The story began before the Second World War and it has overcome challenging times. Today the airport is at a crossroad and it has to choose the way to go on. Today the main users of the airport are the Finnish Army by using the airport to transport staff to and from its South Savo Regional Office of Army Command Finland and the active leisure time and aviation training users. This study is a story about Mikkeli City airport.

1.1 Background of the study

In 2014 we are having challenging times. Worldwide we have an economic recession, GDP's are not increasing as economists have wanted, and our Finnish government is talking about the balancing of the public economics. Mikkeli City airport is municipality owned and it has been working mainly by public funding. According to the EU legislation this has to be stopped: Mikkeli City airport operations should be based on profitable business, not to violate against EU legislation about governmental support for aviation (Ministry of Transport and Communications 2014).

The Mikkeli City airport is important not only for helping people from South Savo to travel from Mikkeli, but also for the enterprises having operations in South Savo, transferring people and goods, and also bringing new customers and tourists to Mikkeli. TAK Oy (Tutkimus- ja Analysointikeskus 2011) has studied the amount of money Russian flight tourists are leaving to Lappeenranta area, also location of small regional airport in Eastern part of Finland, and according to their research, one passenger leaves to the region 140€. The money is used mainly for services. According to these calculations, 100,000 Russian tourists, who will come to the area because of fast and cheap flights, would leave at minimum 14€ million to the area, and in some scenarios even more. (Tak Oy 2011.)

In the Mikkeli City airport's catchment area, a 150 km radius covers over 500,000 people in Finland, including Lappeenranta, Imatra, Kouvola, Savonlin-

na, Varkaus, Heinola, Lahti and Jyväskylä, which is 9.2% of the whole Finnish population. From these cities, regional airports belonging to the State-owned Finavia airport network can be found in Lappeenranta, Varkaus, Savonlinna and Jyväskylä. In 2013 Lappeenranta had 98 300, Varkaus 6 759, Savonlinna 12 215 and Jyväskylä 50 570 annual passengers from which in Lappeenranta 99.8% (98 153), in Varkaus 25.7% (1 737), in Savonlinna 22.3% (2 718) and in Jyväskylä 26.4% (13 333) were international passengers (Finavia 2013). Eastern part of Finland has an advantage, which other regions in Finland do not have, the distance from the City of Mikkeli to St. Petersburg is only 320 km. St. Petersburg and the whole Leningrad region with its over 8 million inhabitants provides a unique possibility to gain Russian tourists to the area. Flight time from Moscow to Mikkeli is 1.5 hours and from St. Petersburg to Mikkeli 0.5 hours. (City of Mikkeli 2012; Finavia 2013; Mikkeli City airport 2012; Paananen 2014a.)

The situation with all the regional airports in Finland have also challenging times ahead. A work group appointed by the Ministry of Transport and Communications, should complete the air transport strategy for Finland at the end of 2014. The strategy will include considerations of the impacts of various airport network alternatives on regional accessibility and the service level in Finnish airports. (Ministry of Transport and Communications 2013a.)

The aim of the work group is to produce a comprehensive evaluation of Finland's airport networks, using different criteria; economic indicators, service level, regional accessibility, and the needs of airport managing bodies and airlines. The most crucial for regional airports is the considered level of service. According to the Ministry of Transport and Communications (2013b) it is important that the journey to the airport takes less than three hours, and that the total length of the entire travel chain from the regions to the Helsinki-Vantaa airport doesn't exceed six hours. A three-hour train or bus trip is a competitive alternative for short-distance flights together with the waiting time at the airport. The group will also examine the needs of tourism and business operations in the impact area of the airport. According to the Finland's ex-Minister of Transport, Ms Merja Kyllönen (Ministry of Transport and Communications

2013b), the strategy is aimed to secure Finland's competitiveness and maintaining good air connections to and from the country. (Ministry of Transport and Communications 2013b.)

Finland is a country of extensive area and long transport distances. It is admitted by the Finnish Ministry of Transport and Communications (2012) that good traffic connections are also a key condition for regional development and one of the most important factors influencing the location and operating environment for companies. That's why the question about the future of the regional airports influences more widely than one could imagine. And behind all of this is the most powerful thing in the whole world – money. If there is not enough money to run all the current regional airports, some actions have to be taken. These actions can be closing down or privatizing some of the regional airports. If some regional airports are closed down it has big influences to the region, not only for the accessibility of the region, but also more widely for the business life of the region. Direct and indirect influences can cost a lot for the regions, and that is why some of the regions have been attracting aviation companies with different kinds of contributions. Many municipalities are using directly the taxpayers' money to secure the flights to the regional airport. There are now many discussions for and against efforts for maintaining regional airports.

The author's interest in the subject of this thesis arises from work experience in a municipality-owned business development company doing close cooperation with aviation companies and other aviation related partners for maintaining regional airport in use for long-distance flights from Finland to overseas destinations. The situation at the Finnish regional airports is now crucial. Economic crises, increased costs, decreased amount of passengers and the fast changing environment in aviation has set big challenges for maintaining regional airports. Air transport strategy by the Ministry of Transport and Communications will set governmental priorities according to the need for accessibility and national strategy outlines for regional airports. Now it is a time for regional airports to develop their business strategies and convince relevant parties that maintaining a regional airport can be a profitable business as a business unit, and it has many positive effects on the region and its development.

1.2 Objective and delimitations

The main objective of this thesis is to make a proposal for Mikkeli City airport for developing airport performance. The aim is to present an airport performance comparison between Mikkeli City airport and a best practise example, Stockholm Skavsta airport. The comparison between these airports will be done using metrics such as employment, production capacity and the quantity of passengers for offering justifications why regional airport is worth maintaining and worth future development. This model provides the information for decision-makers and other airport performance interested parties about the factors behind the importance of the regional airport on the regional level.

The results of this study will give decision-makers in the City of Mikkeli the bigger picture behind the passenger figures, which will help them to make decisions about the future of Mikkeli City airport, and whether the Mikkeli City airport is worthy of future development. In case the airport performance is not improved, it can have big influences on the region, and once the airport is closed down, it is not easy task to open it again for traffic.

This study is limited to airport performance comparison between best practise example – Stockholm Skavsta and Mikkeli City airports, but if necessary to understand the business environment of these airports, facts from other airports are also included. Also Finnish state owned Finavia is mentioned many times, because it is an authority responsible for the airport network in Finland, and for offering air traffic control and aviation security services in the whole of Finland. The air transport strategy proposal will also have an influence not only for the future of the regional airport network, but also for the future of the Mikkeli City airport.

1.3 Research questions

The main research question in this thesis is:

- How to improve the performance of Mikkeli City airport?

Purpose of this question is to prepare proposal for the City of Mikkeli about what could be done to improve the performance of the Mikkeli City airport. To be able

to answer this question, the performance of Mikkeli City airport is compared to performance of the successful partially privatised Stockholm Skavsta airport, in Sweden and to learn from their experience how it is possible to develop small airports, once in military use, to become one of the biggest passenger hubs in Scandinavia.

The sub-questions are:

- Why to improve the performance of Mikkeli City airport?
- What is airport performance and how it is measured?
- What can be learned from Stockholm Skavsta airport -case?

This issue is relevant for all the regional airports in Finland gaining economical independency and possible profit from the airport business. It is not an easy task to do and now the EU legislation has forced municipality-ran airports to gain it. It is now a question of trying to achieve economical independence or not.

1.4 Theoretical framework

Theoretical framework of the study is built on the key performance areas and key performance indicators of airport performance studies. Main sources of information have been used from the studies conducted by Mrs Anne Graham from University of Westminster, London, and Mr Hans-Arthur Vogel from IUBH International University of Applied Sciences, Bad Honnef and Bad Reichenhall, and also University of Westminster, London. They have studied and published studies about airport performance individually, together, and with other researchers within the decade of 2000. (Graham 2014; Graham 2005; Vogel 2004; Vogel, H. –A., Graham, A. 2010.)

Main sources of information used in this study are input – output performance indicators according to Graham and Vogel (Graham 2014, p. 86; Vogel 2004, pp. 24–25). Also other key performance indicators have been used when comparing the performance of airports. Within the airport organisations the performance indicators have been introduced by ACI Europe – European region of Airports Council International (2014), ICAO – International Civil Aviation Organi-

sation (ICAO 2013; 2012) and American Federal Aviation Administration (through ACRP – Airport Cooperative Research Programme 2011). Graham (2014, pp. 87–88) also introduces the performance indicators used by senior management level. According to Humphreys et al. (2002, p. 80) performance measures of the airport can be divided into financial, commercial and operational performance measures and these are commonly used measures when moving towards privatising airports. In the financial sector creditors and investors in airports are using financial measures of key performance indicators – key ratios, to be able to compare the performance of an airport with other business sectors (Graham 2014, p. 90; Vogel 2004, p. 25).

The use of input – output ratios or performance indicators of an airport can give an understandable picture about the performance of an airport for those who are not accepting credit applications or making investment decisions, or those who are not making worldwide performance comparisons for members of airport organisations, or those who are not giving detailed information about the airport for airport management, but for those who are interested about airports and about the basic performance of an airport. They can give a picture about what is happening inside the airport and they can be used for comparing incomparable airports. The use of other indicators in comparison needs comparable airports and comparable information about these airports. This study, as a part of development project for the Mikkeli City airport, can give with input – output ratios a comparison between Mikkeli City airport and the best practices example airport, basic information about the performance of Mikkeli City airport and how it could be improved.

Graham (2014) has been used as a main source of airport business information. Graham's book is about managing airports. It gives a wide picture of the airport business starting from the airport definition and ending with environmental effects of an airport. Also researchers as Graham Francis, Ian Humphreys, and Jackie Fry (2002; 2005), Ian Humphreys and Graham Francis (2002) and Oum et al. (2003) have studied a lot about airport business, and some of their studies have also been used as theoretical framework in this study.

This thesis is justified as providing a proposal for performance improvement for the City of Mikkeli for future development of the airport. Many master's theses studies have been made about the services provided at the regional airports and the service expectations of different passenger groups at the regional airports. The main concern at this moment is how to develop airport operations to be able to bring customers, passengers and aviation companies to the airport.

1.5 Research method

Current study is qualitative research using case study approach. According to Eriksson et al. (2008, p. 5), qualitative research is an adequate method of knowledge production and that a qualitative approach, such as a case study, is concerned with interpretation and understanding reality. Gillham (2010, p. 10) argues that qualitative methods are also descriptive and inferential in character. Qualitative methods focus on evidence that will enable understanding the meaning of what is going on, according to Gillham (2010, p. 10), and all evidence is pulled into the case study from researcher's data collection from what people say and what they do. A case study, according to Gillham (2010, pp. 1–2), investigates answers to specific research questions and seeks a range of different kinds of evidence, which is there in the case setting and which has to be abstracted and collated to get the best possible answers to the research questions. Using multiple sources of evidence, each with its strengths and weaknesses is, according to Gillham (2010, p. 2), a key characteristic of case study research. Second characteristic of case study is, according to Gillham (2010, p. 2), that research can not start with a priori theoretical notions because until the researcher gets in there and gets hold of the data and gets to understand the context, researcher won't know what theories or explanations work best or make the most sense. According to Eriksson et al. (2008, pp. 120–121), case study researcher is an interpreter who both constructs the case and analyses it and that the uniqueness of the case justifies the appropriateness of the case study approach.

In this study, data collection was conducted using two methods. According to Eriksson et al. (2008, p. 126), case studies are usually considered more accurate, convincing, diverse and rich if they are based on several sources of empir-

ical data. In this study first of all has been used interviewing and second, an analysis of the secondary data. Interviews were open-ended interviews with just a few key open questions, e.g. "elite interviewing". According to Gillham (2010, pp. 63–64), the elite interviewing means that the interviewed person is someone in a position of authority, or expert, or authoritative people who are capable of giving answers with insight and a comprehensive grasp of what is being researched. Principal sources of data are the interviews made with Juha-Pekka Paananen, Managing Director, Global Navigator Oü, who is responsible for the development project of the Mikkeli City airport, Sakari Silvennoinen, Director of the Mikkeli City airport, Dot Gade Kulovuori, Managing Director of the Stockholm Skavsta Airport AB, and Eric Carlgren, Municipality Director of the Municipality of Nyköping. No questionnaires were done, but these sources answered the questions concerning the inputs and outputs of the airports and also the questions concerning the history and current situations of these airports. Municipality Director of Nyköping, Eric Carlgren opened the municipality point of view about the Stockholm Skavsta airport. To complement the picture about the business environment of airports, multiple data sources such as various international publications, articles, books and statistics, in air transport journals, databases, webpages etc. were studied. Some of that information and those theories are brought to this work to give guidelines about what general theories exist about airports as a business unit and to introduce the airport business more widely.

As an analytical technique of collected data in this study, benchmarking, which is today widely used airport performance technique, has been used. The use of this management tool has increased together with the commercial and business pressure within the airport sector. According to Graham (2005, p. 99), benchmarking has been viewed as a particularly difficult task because of the diversity in the outputs, inputs and operational environments, but in recent years various developments have encouraged the airport industry to change its attitude towards benchmarking. According to Graham (2005, p. 99), many airports have become much more commercially oriented and have adopted a much more business like management philosophy. Transformation away from the view of airports as public utilities towards being considered as commercial enterprises

has according to Graham (2005, p. 99), led to airports seeking ways to gain insights into their operations and to improve their performance by benchmarking themselves against others. Many airports no longer see their role as merely providers of infrastructure but according to Graham (2005, p. 100), instead they view themselves more and more as just any other industry that requires a wide range of business competencies and skills together with the adoption of effective management and business techniques, including benchmarking. According to Patterson (1996, p. 8), benchmarking helps companies in two ways by first focusing on significant improvements rather than incremental improvements to help identify real-life targets, and secondly by providing a measurement system which helps figuring out what benchmark moves you need to measure your own processes.

Financial metrics and productivity measures are the two basic approaches to performance measurement in airport performance studies. Different analytical techniques have been used to measure airport performance with a variety of input and output variables. Two basic approaches of performance indicators are partial versus total measures. While Partial Factor Productivity (PFP) measures examine the relationship between one or more inputs (e.g. labour, capital etc.) and one or more outputs (e.g. passengers, freight, etc.), Total Factor Productivity (TFP) and Data Envelopment Analysis (DEA) are producing an overall measurement of the combined factor inputs in relation to the total output produced. Total Factor Productivity (TFP) and Data Envelopment Analysis (DEA) can't be used in Mikkeli City airport case because of the need for multiple inputs in generating multiple outputs. (Vogel 2004, pp. 35–39; Oum et. al. 2003, p. 287.)

To be able to find an answer to the research question “How to improve the performance of the Mikkeli City airport”, the performance of the airport is benchmarked with the performance of the Stockholm Skavsta airport by means of partial factor productivity (PFP) which measures the relationship between one or more inputs (e.g. labour, capital etc.) and one of more outputs (e.g. passengers, freight, etc.). As inputs are seen the economical effects of the direct and indirect employment, and as capital input the production capacity of the airport i.e. the capacity of aircrafts the airport can handle. Output is the amount of passengers

the airport could handle in the current situation at the Mikkeli City airport and after lengthening the runway. Also the economic effects of the amount of passengers to the Mikkeli region are counted.

Main limitations of the partial benchmarking measures are that they tend to be very much data led and relate to areas where data is readily available rather than where performance assessment is ideally needed (Humphreys and Francis 2000 via Graham 2005). Also partial measures only give “partial” and rather disjointed diagnosis of the situation and can be misleading if only selected indicators are chosen. (Graham 2005, p. 106.)

The hypothesis in this thesis is that Mikkeli City Airport could improve its performance by learning practises from Stockholm Skavsta airport. That is why the theoretical and empirical material stands for the fact that Mikkeli City Airport could improve its performance.

1.6 Structure of the study

The first chapter of this study gives an introduction of the case and also justifies the importance of the study. In the theoretical part of the study, in the second chapter of the study, the airport industry is introduced, first introducing the airport operations, and the formulation of how revenues and costs of an airport are built. Then the airport network of Finland is introduced and the current situation and future prospects of an aviation sector, especially in Finland is presented by concentrating on the economic effects of an aviation sector to the Finnish economy. Third chapter is about airport performance and what performance management techniques in airport studies have been used and what kind of performance indicators there exists when performance of an airport is presented and compared with another airports. In fourth chapter the Mikkeli City and Stockholm Skavsta airports are presented with general information and history of these airports.

In the empirical part of the study the Mikkeli City airport performance is benchmarked with the performance of the best practise example airport – Stockholm Skavsta airport. In 2013 Skavsta had 2.2 million passengers (Stockholm Skavsta airport 2014a; Swedish transport agency 2014a), but its success story

has begun from a similar situation with Mikkeli City airport almost 20 years ago. The survey is trying to find the key issues Mikkeli could adopt from Stockholm Skavsta airport to be able to improve its performance. Profitability is the main concern when thinking about service development at the regional airports, but there are not many ways to do it. At this very moment either the government is funding regional airports or the municipalities via different contributions. In the public discussion has arisen a question about running the regional airport without the help of public sector as an entirely private business. One of the ways of doing it is to collect the money for running the airport from the tourists who are using the airport. It is called passenger fee. Low-cost airlines are against it, because it would raise the ticket prices, but in the long run if the users of the airport aren't paying for the airport operations, who will?

The study ends with the chapter where the proposal for Mikkeli City airport is presented. The proposal includes practices, which have come up when making the airport performance comparison. Stockholm Skavsta airport is a unique case and there can be found many issues the Mikkeli City airport could use for improving airport performance. A proposal for the City of Mikkeli with main practices from the comparison is presented.

2 AIRPORT INDUSTRY

2.1 Airport operations

Airports are an essential part of the air transport system. They provide all the needed infrastructure to enable passengers and freight to transfer from surface to air modes of transport and to allow airlines to take off and land. The basic airport infrastructure (Figure 1) consists of runways, taxiways, apron space, gates, passenger and freight terminals, and ground transport interchanges. The airport system is divided to airside and landside of an airport. On the airside of an airport is the aircraft flow and on the landside passenger flow. (Graham 2014, p. 1; Rauhamäki et. al. 2006, pp. 47–48.)

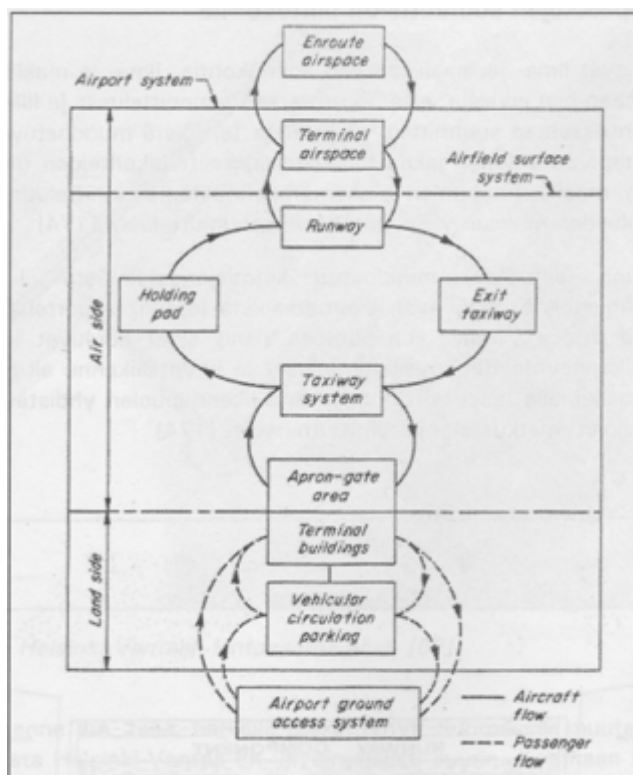


Figure 1. Airside and landside of an airport.
(Adapted from Horonjeff 1975 via Rauhamäki et al. 2006, p. 48.)

Airports bring together a wide range of facilities and services to be able to fulfil their role within the air transport industry. These services include air traffic control, security, and fire and rescue in the airfield. Handling facilities are needed

for transferring passengers, baggage, and freight successfully between aircraft and terminals, and processed within the terminal. Airports can also offer a wide variety of commercial facilities ranging from shops and restaurants to hotels, conference services and business parks. (Graham 2014, p. 1.)

Development of the airport sector has moved from an industry characterised by public sector ownership and national requirements, into a new era of airport management where the private sector and international airport companies play a major role. According to Graham (2014) airports are now complex enterprises that require a wide range of business competencies and skills, as any other industry. Airports are no longer just infrastructure providers, but providers of facilities to meet the needs of their users. (Graham 2014, p. 6.)

2.2 Revenues and cost structure of airport

Within the airport, commercialisation and more business-like management philosophy has been adopted. Airport operations can be divided to revenues and cost structures. According to ACI, Airports Council International (worldwide professional association of airport operators), airport revenue is usually classified into two main categories: aeronautical or aviation and non-aeronautical or commercial revenues (Figure 2). Aeronautical revenues are those sources of income that arise directly from the operation of aircraft and the processing of passengers and freight such as landing fees, passenger fees, aircraft parking and hangar fees, security fees, handling fees (if handling is provided by the airport operator), terminal rental fees (e.g. in USA) and other aeronautical fees, for instance, air traffic control, lighting, air bridges and so on. Non-aeronautical revenues are those generated by activities that are not directly related to the operation of aircraft, notably those from commercial activities within the terminal and rents for terminal space and airport land, such as retail*, food and beverage (F&B)*, car hire*, advertising*, car park*, recharges (for gas, water, electricity etc.) and other non-aeronautical revenue (consultancy, visitor and business services, property development etc.). (* Usually called as “concession revenue” if provided by a third party.) (ACI International 2012; Graham 2014, pp. 74–75.)

Then there are a few categories that can be classified as either type of revenue. For example, handling revenues are usually treated as aeronautical revenues, unless handling is undertaken by handling agents or airlines when the associated revenue (rent or fee based on turnover) is included under rents or concession revenue items. In the USA there are terminal rental fees paid by the airlines that are classified as aviation revenue, while usually rents are considered as commercial items. Revenue received by the airport from aircraft fuel companies or from airlines as a fuel throughput fee could be regarded as directly related to aircraft operations and hence an aeronautical revenue. This can also be considered as commercial revenue and hence a non-aeronautical item. Revenues, including interest received and income earned from subsidiary companies, are usually included under a different “non-operating” revenue category. (Graham 2014, pp. 75–76.)

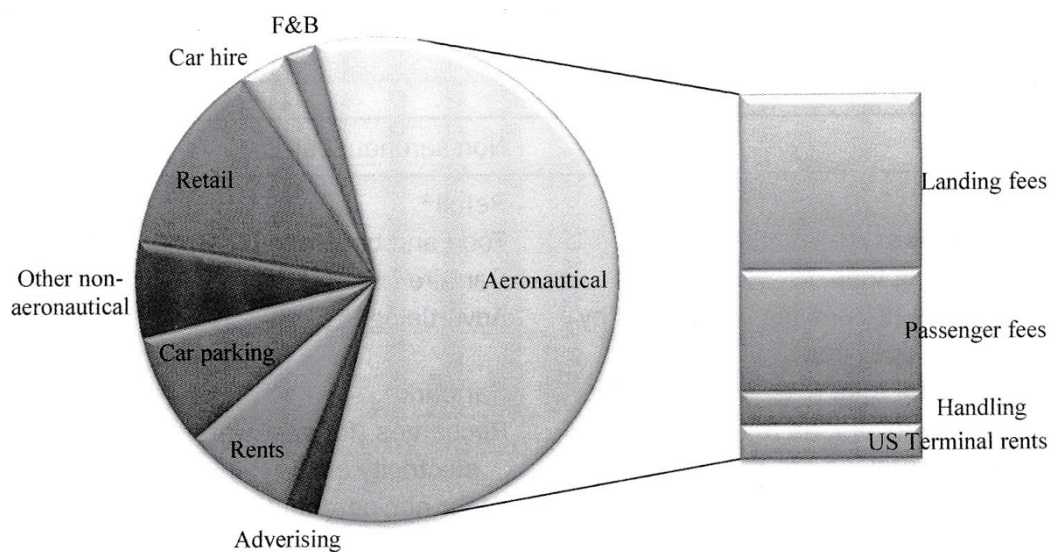


Figure 2. Revenue structures at ACI airports. (Adapted from ACI economics survey 2011 excluding non-operating items (covers 604 airports representing 62% of worldwide traffic) via Graham 2014, p. 76.)

Cost structures of an airport have no industry standard as revenue structures. ICAO (International Civil Aviation Organization 2013, p. 63) recommends divid-

ing costs to operations and maintenance (personnel costs, supplies, contracted services), administrative overheads, capital costs and other costs. ACI (Airports Council International economics survey of 2011 via Graham 2014, p. 77) uses classification shown in the Figure 3. Personnel costs are the highest costs for airports, followed by contracted services (outsourcing cost to third parties); communications, energy and waste; and maintenance. When these costs are differentiated by function, then terminal and landside operations are the most important, followed by administration, airside operations and security. This ACI differentiation doesn't include depreciation as an operating cost. (Graham 2014, p. 76.)

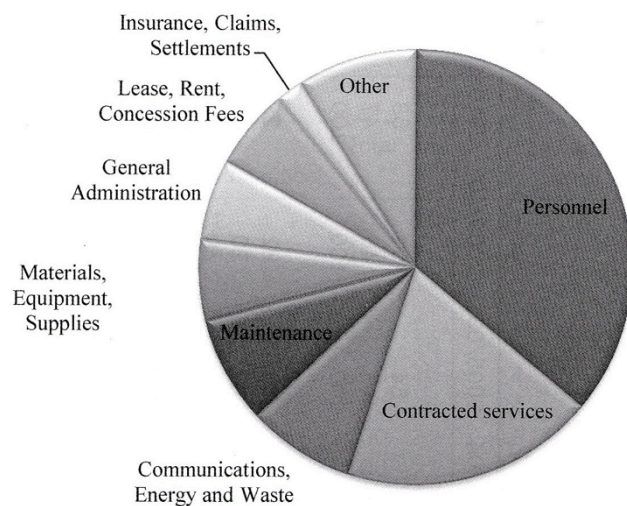


Figure 3. Cost structures at ACI airports. (Adapted from ACI economics survey 2011 (covers 604 airports representing 62% of worldwide traffic) via Graham 2014, p. 77.)

2.3 Airport network in Finland

Aviation is an important part of Finland's functional and effective transport system and according to the Finnish Transport Safety Agency – Trafi (2013), is one of the main building blocks of competitiveness of Finland. The country is geographically remote, and without regular air connections it would be difficult to travel or transport goods to the major European markets quickly and conveniently. Within Finland, flying is also the quickest and most convenient mode of

travel. Finnish Transport Safety Agency – Trafi, is the state`s national civil aviation authority with responsibility for ensuring that air transport is as safe and as environmentally friendly as possible and also for promoting the facilitation and flow of air traffic. (Trafi 2013.)

On an international level, Trafi co-operates with Civil Aviation Organisation (ICAO), who sets the minimum standards and issues recommendations for international air transport. On European level, aviation authorities co-operate under the European Civil Aviation Conference (ECAC) for promoting safety, efficiency and sustainable development in civil aviation. High standard of flight safety throughout Europe is also the aim of the European Aviation Safety Agency (EASA), which is the joint aviation authority for all EU countries. In the future European Union will take more responsibility for publishing most standards relating to airworthiness, maintenance, and flight operations and licensing. On national level, Trafi is responsible for regulating military, state aviation (customs, police, Border Guard), ultra light, amateur-built and historical aircraft flight operations in Finland. The basic rules for Finnish aviation are established in the Aviation Act. Aviation regulations are divided into series as General, Aerodromes and Ground Aids, Air Navigation Services, Airworthiness, Operations, Personnel Licensing and Training, Security, and in the near future International. (Trafi 2013.)

In Finland can be found 25 airports (Table 1 and Picture 1) belonging to the Finavia airport network, which is a public limited company owned by the Finnish State. Two independent airports, not part of the Finavia airport network, from which Mikkeli is municipality owned and Seinäjoki owned by the Rengonharju Foundation. All these airports have the permission from Trafi for aviation operations and offer air traffic control services for the aircrafts to take-off and land. Besides these airports, in Finland can be found 56 (on 3.3.2014) small aerodromes or airfields, having permission from Trafi for aviation operations, but they do not offer air traffic control services. Different interest groups run them: municipalities, privatized airport companies, foundations, aviation clubs or individual persons. These airfields are mainly used for leisure time aviation. Also, several other aviation related places can be found, for instance fields or light

aerodromes for take-off and landing for small leisure time air vehicles. These places are run without aviation permission from Trafi and they do not offer air traffic control services. Users of such a places are the leisure aviation users. In Finland can also found 24 heliports, from which most of the heliports are located, within the hospitals or central hospitals. (City of Seinäjoki 2013; Finavia 2014a; Lentopaikat 2014; Mikkeli City airport 2012; Trafi 2014.)

AIRPORT	2013	2012	Change, %
Helsinki	15,279,043	14,858,215	2.8
Oulu	877,080	1,078,533	-18.7
Tampere	466,671	570,739	-18.2
Rovaniemi	427,029	403,892	5.7
Turku	324,667	454,948	-28.6
Vaasa	319,315	374,141	-14.7
Kuopio	261,151	282,900	-7.7
Kittilä	237,222	263,427	-9.9
Ivalo	146,314	145,455	0.6
Joensuu	131,291	146,197	-10.2
Lappeenranta	98,300	93,762	4.8
Kuusamo	74,583	86,486	-13.6
Kajaani	74,558	77,852	-4.2
Kokkola-Pietarsaari	68,991	87,076	-20.8
Kemi-Tornio	57,681	65,761	-12.3
Mariehamn	52,514	54,797	-4.2
Jyväskylä	50,570	65,220	-22.5
Pori	26,229	35,313	-25.7
Enontekiö	20,169	21,282	-5.2
Savonlinna	12,215	13,206	-7.5
Varkaus	6,759	6,650	1.6



Table 1 and Picture 1. Finavia network airports with passenger volumes. (Adapted from Finavia 2014b.)

According to interim report of working group responsible for the Finnish air transport strategy by the Ministry of transport and communications (2013c), the Finnish airports are divided into six categories: the main airport being the Helsinki-Vantaa with 15 million annual passengers. To basic regional airport network, with connection flights to Helsinki-Vantaa and with general aviation or mixed general and military aviation belongs Oulu, Rovaniemi, Vaasa, Kuopio and Maarianhamina. Airports supporting tourism and seasonal flights are Kittilä, Ivalo, Kuusamo, Kajaani and Enontekiö. Airports within cities, with international

flights are Tampere-Pirkkala and Turku. Other airports are found in Helsinki-Malmi, Joensuu, Lappeenranta, Kokkola-Pietarsaari, Jyväskylä, Kemi-Tornio, Pori, Savonlinna, Varkaus, Halli, Kauhava and Utti. To the sixth category belong Mikkeli and Seinäjoki airports. From these airports, Halli, Kauhava and Utti are military airports and Helsinki-Malmi will be closed down until 2016. (Ministry of transport and communications 2013c, pp. 15–18; Helsingin Sanomat 2014.)

Revenue for the Finavia Group (including Helsinki-Vantaa airport, Airport network, Passenger services, Air navigation services, Airpro, and Real estate operations) in 2013 was 352.8€ million, which was -2.0% compared with 359.2€ million in 2012. Revenue for Helsinki-Vantaa airport was 149.3€ million, which was 1.6% better than 146.9€ million in 2012. Revenue for airport network in 2013 was 41.3€ million, which was -3.7% from 42.9€ million in 2012. Result of the whole Finavia Group for the 2013 was 15.1€ million, which was 4.3% from the revenue and -3.0% worse than 15.5€ million with 4.3% from the revenue in 2012. Almost half of the profit of Helsinki-Vantaa is needed to cover the expenses of the airport network. According to Lassi Hilska from Ministry of Transport and Communications (2013c; 2013d), in 2011 from Finavia network airports only Helsinki-Vantaa made a profit, and all the regional airports needed compensation for 22€ million to cover the expenses. It is estimated that in 2020 passengers in Helsinki-Vantaa will be 20 million and in 2030 there will be 23 million passengers, and in the whole airport network 25 million passengers in 2030. (Finavia 2014c; Ministry of transport and communications 2013c, p. 18, 24; Ministry of Transport and Communications 2013d, p. 11.)

2.4 Development of aviation sector

Economic benefits from air transport to Finland have been estimated to be 3.2% (in 2010 – Table 2) from Finnish GDP being 5.830€ million. This figure includes 2.784€ million directly (direct effect – the output and employment of the firms in the aviation sector) contributed through the output of the aviation sector, including airlines, airports and ground services. 1.735€ million indirectly (indirect effect – the output and employment supported through the aviation sector's Finnish based supply chain) contributed through the aviation sector's supply chain, and 1.310€ million contributed (induced effect – employment and output sup-

ported by the spending of those directly and indirectly employed in the aviation sector) through the spending by the employees of the aviation sector and its supply chain. The figure does not include the indirect sum of 1.223€ million from catalytic benefits through tourism which could raise the overall contribution of aviation sector to Finnish GDP to up to 7.053€ million being 3.9% of the GDP. Catalytic effects are benefits associated with the aviation sector. These can include the activity supported by the spending of foreign visitors travelling to Finland via air, and the level of trade directly enabled by the transportation of merchandise. It is also estimated that aviation sector pays over 1.053€ million taxes including income tax receipts from the employees, social security contributions and corporation tax levied on profits. A further 19€ million is raised through sales tax. According to Oxford Economics (2011) it is estimated that an additional 909€ million of government revenue is raised via the aviation sector's supply chain and another 686€ million through taxation of the activities supported by the spending of employees of both the aviation sector and its supply chain. (Oxford Economics 2011, p. 4.)

	Direct	Indirect	Induced	Total	% of whole economy
<i>Contribution to GDP (€ million)</i>					
Airlines	563	450	241	1,255	0.7%
Airports and Ground Services	2,221	1,285	1,069	4,574	2.5%
Total	2,784	1,735	1,310	5,830	3.2%
Catalytic (tourism)	487	498	238	1,223	0.7%
Total including catalytic	3,271	2,233	1,548	7,053	3.9%
<i>Contribution to employment (000s)</i>					
Airlines	10	6	3	20	0.8%
Airports and Ground Services	52	17	15	84	3.4%
Total	62	24	18	104	4.2%
Catalytic (tourism)	7	8	3	18	0.7%
Total including catalytic	69	31	21	121	5.0%

Table 2. Aviation's contribution of outputs and jobs to Finland in 2010. (Adapted from Oxford Economics 2011, p. 14.)

The future growth of air traffic will depend on the economic growth and on the technological advances that allow decreasing the cost of air travel. Also market liberalization has greatly stimulated air traffic growth in the past and it is estimated to continue. According to ICAO (2010) during the first steps of the liberalization process the growth rates are the fastest and they stabilize to a standard

level after the market has absorbed the changes. For instance, in Europe the development of aviation sector has been fast in 2004 and 2007 when European Union got new member states from Eastern Europe, because the level of aviation sector was lower in the new member states than in other member states in the Europe. According to the interim report of Ministry of transport and communications (2013) it is estimated that the aviation sector will be growing globally 4.5–5% annually until 2030. Most of all the aviation will be growing in China and other parts of Asia on average 6–7% annually. Annual growth in Europe and in Northern-America will be around 2% until 2030 because of the current level of aviation development in the areas. Today the main aviation area is within Europe and Northern America and with flights between them, but in 2030 the main aviation area in the world will be in Asia and in the Pacifics. (Ministry of transport and communications 2013c, p. 4; ICAO 2010, pp. 4–5.)

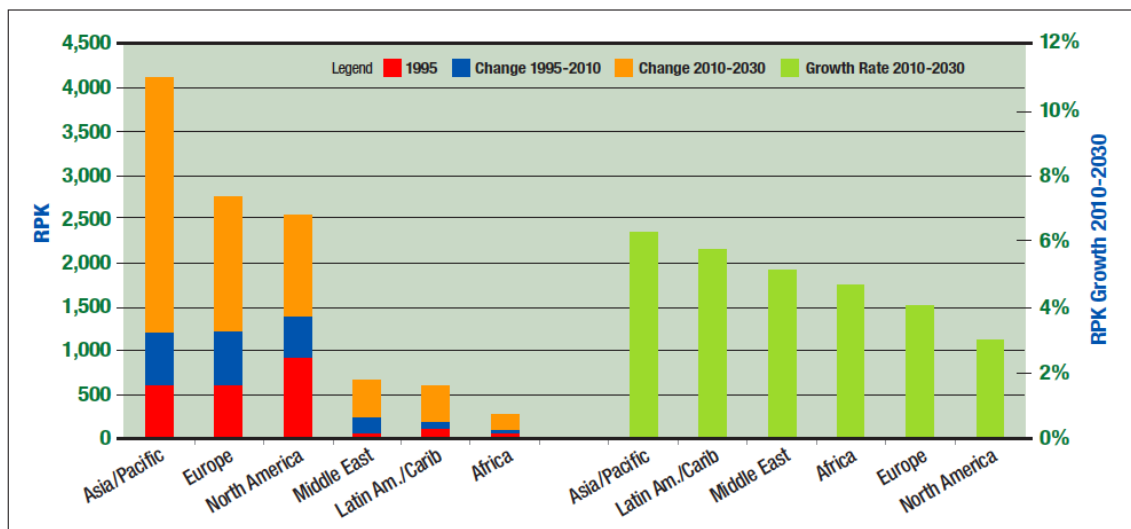


Figure 4. Passenger Traffic Forecast by ICAO Statistical Region according to revenue passenger kilometres (RPK) through to 2030. (Adapted from ICAO 2010, p. 5.)

Ministry of Employment and the Economy have estimated that the growth of international tourism would bring over 7€ billion income to Finnish national economy in 2020. Within this calculation the impact of aviation only in tourism sector would increase the employment up to 121,000 persons and the share of

GDP to 3.9%. According to Lassi Hilska from Ministry of transport and communications (2013e), over half of the international trips over the Finnish borders were done via Finnish airports. (Ministry of transport and communications 2013c, p. 5; Ministry of transport and communications 2013e, p. 5.)

The share of aviation within all the Finnish domestic trips is now 1%. The share of aviation from all the domestic trips increases fast for the trips over 550 kilometres. Within long distances the share of aviation is one of the third from all the domestic trips. According to the future scenarios through 2025 by Finnish Transport Safety Agency – Trafi (2012), the amount of domestic flights in Finland will not increase, instead it may decrease. Still it is estimated that in the future, regions may still have scheduled connection flight opportunities with Helsinki-Vantaa but not between other regions. (Ministry of transport and communications 2013c, p. 7; Ministry of transport and communications 2013e, p. 5; Trafi 2012, p. 41.)

Trips from Finland to abroad, especially to Central Europe increased in 2013 (Figure 5 and Table 3). According to Statistics Finland's survey (2014a), Finns made 7.8 million leisure trips abroad in 2013. The main leisure destinations for Finnish residents were: 1. Estonia (most of all day and overnight cruises); 2. Sweden (most of all day and overnight cruises); 3. Spain (increase of 21% to Continental Spain). Other European destinations, which increased the amount of Finnish passengers, were Russia, Germany, France, Turkey, and United Kingdom. The number of domestic leisure trips with paid accommodation was almost 6.6 million, from which one million trips were made to Lapland and Kainuu. Also the amount of business trips within Finland and to abroad decreased from the previous years. According to Statistics Finland (2014a), leisure trips of an average Finn in 2013 were: 1.5 domestic leisure trips with paid accommodation; 1.3 trips abroad that include overnight stay in the country of destination; and 0.5 same-day trips abroad or cruises to neighbouring areas. Accommodation and tickets for leisure trips are mainly booked online. When travelling abroad the package tours are more popular than in domestic travelling, from leisure trips to abroad including at least one overnight stay in the destination country, 33% were package tours. For the study all together 18,246

persons aged 15 to 84 permanently resident in Finland were interviewed. (Statistics Finland 2014a, pp. 1–3; 11–12.)

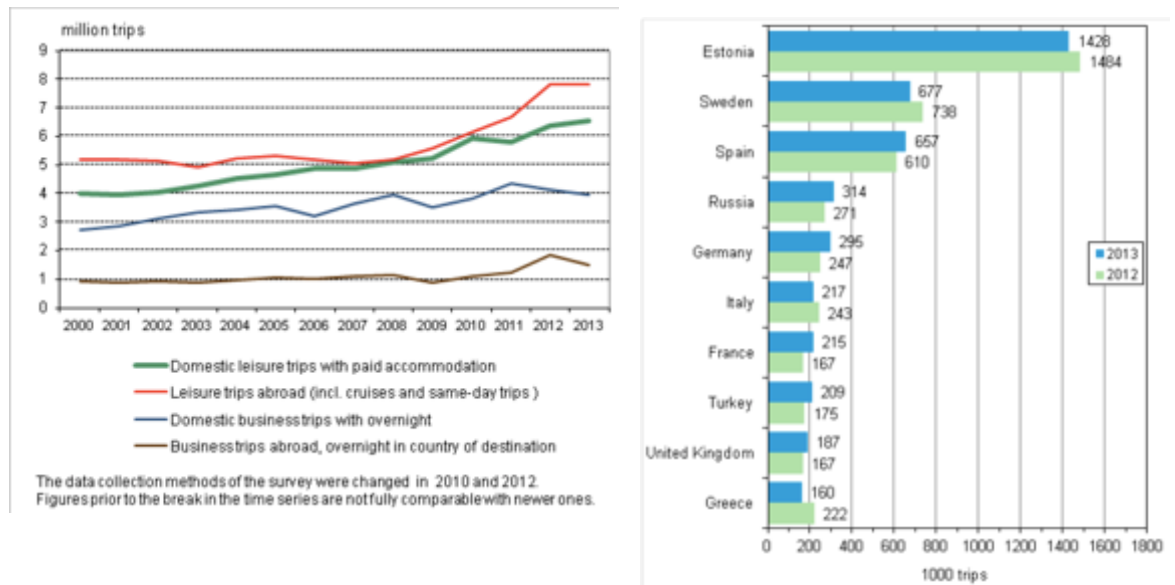


Figure 5 and Table 3. Finnish travel 2000 to 2013 and Finnish residents' favourite destination countries for leisure trips with overnight stay the destination in 2013 and 2012. (Adapted from Statistics Finland 2014a, pp. 1–2.)

Consumer prices for aviation tickets also influences the development of aviation sector in Finland. According to the Statistics Finland (2012) the domestic flights in Finland were in 2011 more expensive than the international flights (Table 4). (Statistics Finland 2012, p. 50.)

1990 = 100	1990	2000	2006	2008	2009	2010	2011
Lentomatkat - <i>Flights</i>	100,0	173,1	166,4	159,8	173,2	154,9	147,7
Lentomatkat Suomessa - <i>Domestic flights</i>	100,0	190,4	219,6	244,9	257,5	261,4	230,6
Lentomatkat ulkomaille - <i>International flights</i>	100,0	165,6	150,9	140,7	153,5	133,6	128,9

Table 4. Consumer prices of flights in 1990–2011.
(Adapted from Statistics Finland 2012, p. 50.)

Interim report of the air transport strategy (Ministry of transport and communications 2013c) presents four different scenarios for future development of the Finnish airport network. According to the first scenario, Finavia would maintain the Finnish airport network with 25 airports until 2030 and Mikkeli City Airport and Seinäjoki would be part of the airport network as independent airports as now, but the subsidies from the Finnish state would be cut according to the EU legislation. Second scenario suggests that airport network would be given up and Helsinki-Vantaa would continue as an independent airport. In this model regional airports could lower their airport fares, which would bring more competitors to Mikkeli City Airport. Today the air carriers can get discount from Finavia for new routes from the landing fees (first year -70%, second and third year -50%) and in the long-distance flight (over 5 000 kilometres routes) on fourth and fifth year also -50%. Also discount from passenger fees can be granted -70% within the first year and on the regional airports (not Helsinki-Vantaa) -50% on also the second year. Still it is estimated that some of the regional airports could not survive without the contribution from the Finavia airport network or from the state, municipality or region. Third and Forth scenarios are about different kinds of airport network models where some of the airports were moved away from Finavia airport network. These scenarios will be decided after evaluating the economical, social, transportation, environmental and security impacts. (Ministry of transport and communications 2013c, pp. 18–21.)

The air transport strategy preparation is criticised for concentrating too much on the needs of Helsinki-Vantaa airport and Finnish air carrier Finnair, of which the Finnish state owns 55.81% (Finnair 2014). According to aviation journalist Jyri Raivio's opinion (2013), the interim report can be understood like this: Helsinki-

Vantaa will be independent, but a Finavia-owned airport with 23 million annual passengers and these passengers are brought to Helsinki-Vantaa from Oulu, Rovaniemi, Vaasa, Kuopio and Maarianhamina by scheduled flights, one in the morning, second in the afternoon and third in the late night. For tourism purposes will be kept open Kittilä, Ivalo, Kuusamo and Kajaani, but only in the high season. These small airports are kept open by the profit of Helsinki-Vantaa, from which is paid dividends to the government and further as subsidies to the airports. Other airports have to survive on their own. Tampere-Pirkkala has military aviation; others do not have even that. Most of the rest of the airports, 14 airports belonging to Finavia network and Mikkeli City Airport and Seinäjoki, will be growing grass by 2030. Not to mention the economic effects on the national economy or the loss of income from tourism, which is crucial for tourism regions in Finland. According to the mayor of the Enontekiö municipality Mikko Kärnä (2014), direct tourism income for the municipality of Enontekiö is 22€ million annually and it will be lost without direct flight connection to the region. (Raivio 2013; Kärnä 2014.)

3 AIRPORT PERFORMANCE

Systematic monitoring and comparing of airport economic performance has been practised more widely from 1980`s. Until that airports weren`t under commercial or business pressure and benchmarking as study techniques within public sector was suffering the lack of experience. It was difficult to make meaningful comparisons because of varying involvement in airport activities and different accounting policies. With airport commercialisation and privatisation has come a marked interest in performance comparisons and benchmarking. As airports have become more commercially oriented, they have been keen to identify the strong performers in the industry and adopt what are seen as best practises. (Graham 2014, p. 85.)

Investors and bankers, who are traditionally much more used to using financial ratios and other benchmarking techniques, are interested to identify possible business opportunities and to ensure their chosen airport investment continues to perform well. Airlines, which are now operating in a much more cost-conscious and competitive environment, have an interest in identifying those airports that are being inefficiently managed, because they are lobbying against increases in user charges. Economic regulators of privatised or autonomously managed airports also have good reason to monitor airport performance to ensure users are being charged fairly and that the airports are run efficiently. Local communities may also be interested to ensure that the airport is being run in an efficient manner so that they can benefit fully from the economic benefits, such as tourism and inward investment, that the airport can bring. (Graham 2014, p. 85.)

In this chapter, the theoretical framework of the study is introduced and the reasons behind choosing benchmarking as technique for analysing the collected data is justified. Best Practice Benchmarking as a tool is introduced as well as performance indicators for airports. Justifications for City of Mikkeli why Best Practice Benchmarking can be used when analysing the performance of an airport using input–output ratios for improving the performance of Mikkeli City airport are presented.

3.1 Performance management techniques for airports

Studies about airport performance management techniques used by top busiest passenger airports have been done for instance by Francis et al. (2002) and Fry et al. (2005). According to studies of Francis et al. (2002, p. 243), from respondents 46% agreed that when their organisations are seeking possibilities for improving their performance the most popular technique used by airports was best practice benchmarking. According to ACI Europe (2012, p. 2) airport benchmarking is divided into two types of comparisons: (1) Internal (or self-benchmarking), where an airport compares its performance with itself over time; and (2) external (or peer benchmarking), where an airport compares its performance against other airports, either at a single point in time or over a period of time. The idea behind the Best Practice Benchmarking is to search outside of the organisation for best practice to gain competitive advantage. (Francis et al. 2002, pp. 239–243; ACI Europe 2012, p. 2.)

Performance management techniques used by respondents

Technique	Percentage used by respondents ^a
Best Practice Benchmarking	46
Total Quality Management (TQM)	41
Activity Based Costing	36
Environmental Management Systems (e.g. ISO14000)	27
Balanced Scorecard	25
Business Process Reengineering	23
Quality Management Systems (e.g. ISO9000/BS5750 or similar)	23
Business Excellence Model/EFQM	12
Value Based Management	9
Malcolm Baldrige Award	5

^aNote that respondents could use more than one method.

Table 5. Performance management techniques used by respondents. (Adapted from Francis et al. 2002, p. 243.)

Total Quality Management (TQM) was also popular among the respondents (41%). The technique is used for improving airport performance quality. For the same purpose are used the Quality Management System (23%), Business Ex-

cellence Model (12%) and Malcolm Baldrige Award (5%). Activity Based Costing (36%) is used for improving and understanding the cost structure and resource utilisation of an airport. Value Based Management tries to measure financial performance in terms of the creation value for shareholders (9%). Balanced Scorecard (%) tries to create a balance between a range of financial and non-financial performance criteria. According to the respondents 95% had used data collection surveys, 25% interviews and 20% consultants. (Francis et al. 2002, p. 243.)

The response rate was 32% from 195 questionnaires from the top 200 busiest passenger airports as ranked by ACI in terms of total passengers for 1999. Geographically, 48% were from North America, 38% from Europe, 5% from Pacific, 5% from Asia, 2% from Latin America/Caribbean and 2% from Africa. From these airports 29% were handling 1–4 million passengers, 24% from 5 to 9 million passengers, 23% from 10 to 19 million passengers and 24% from 20 and above million passengers. 67% of the airports were publicly owned, 19% privately and 14% Part privately–part publicly owned. (Francis et al. 2002, pp. 242–243.)

According to the survey of Francis et al. (2002, pp. 243–244) the focus on benchmarking was with similar airports, 72% of respondents reported they were using benchmarking, 46% that they were involved specifically with Best Practice Benchmarking and from these respondents 97% compared themselves to other airports. 42% of respondents compared service qualitative data and 50% of respondents compared financial data. According to Francis et al. (2002, pp. 244–245), in the future the respondents may be able to gain more benefits in terms of performance improvement from benchmarking if they place more emphasis on learning from the processes that are generating the relative measures of performance. Also further benefits from benchmarking may be realised if managers consider looking for exemplar practices of the processes they are trying to manage and improve at dissimilar airports. According to Francis et al. (2002, p. 245) looking at the management issues from this wider perspective may be more risky but can give greater benefits, benchmarking has the potential to play an increasingly important role in performance management and improvement at airports given the pressures coming from changing ownership patterns, in-

creased commercial business focus, regulation, rapid passenger growth, globalisation of airport ownership, increased concern for the natural environment and technical innovation. Performance improvement can create competitive advantage and can offer potential to improve the efficiency and effectiveness of airport management across the range of challenges. (Francis et al. 2002, pp. 244–246.)

3.2 Performance Indicators for airports

The airport industry is very diverse and heterogeneous with a high degree of quality differentiation, different ownership and regulatory structures, different mixes of services and operating characteristics, as well as external constraints such as location and environmental factors. Because of these reasons, measuring and comparing the performance of airports is difficult. The task is even more challenging when the best practice benchmarking is done between successful international airport as Stockholm Skavsta airport and small Finnish regional airport, Mikkeli City airport, which is just at the start of its development path to make decisions about the future of the airport. It is important to develop performance measures, which will provide meaningful comparison between the study objects. According to Oum et al. (2003, p. 286), there is no accepted industry practice for measuring and comparing airport performance. (Oum et al. 2003, p. 286.)

The aviation institutions and organizations such as ACI Europe – European region of Airports Council International (ACI Europe 2014), ICAO – International Civil Aviation Organisation (ICAO 2013; 2012), and American Federal Aviation Administration (through ACRP – Airport Cooperative Research Programme) have provided their own variations on the key performance areas and indicators. ACRP (2011) has a rather technical approach and focuses on the implementation of a performance management system while ICAO (2013; 2012) has more strategical focus, and the most important of them is ACI Europe – European Region of Airports Council International (ACI Europe 2014), with the widely used key performance areas and indicators within airports worldwide. ACI is the worldwide professional association of airport operators. ACI Europe represents over 450 airports in 44 European countries. This study objects Mikkeli

City airport and Stockholm Skavsta are not members of ACI Europe. In 2012, member airports of ACI Europe handled 90% of commercial air traffic in Europe, over 1.6 billion passengers, 16.7 million tonnes of freight and more than 16 million aircraft movements. ACI Europe (2014) has collected data about KPI's – Key Performance Indicators, from its 36 active members representing 106 airports since 2003. In the next table (Table 6) is presented the Key Performance Areas (KPA) and Key Performance Indicators (KPI) according to the ACI Europe. (ACI Europe 2014; ACI Europe 2012, pp. 9–10.)

KPA					
Core	Safety and Security ¹⁰	Service Quality	Productivity/ Cost Effectiveness	Financial/ Commercial	Environmental
1. Passengers	1. Runway Accidents	1. Practical Hourly Capacity	1. Passengers per Employee	1. Aeronautical Revenue per Passenger	1. Carbon Footprint
2. Origin and Destination Passengers	2. Runway Incursions	2. Gate Departure Delay	2. Aircraft Movements per Employee	2. Aeronautical Revenue per Movement	2. Waste Recycling
3. Aircraft Movements	3. Bird Strikes	3. Taxi Departure Delay	3. Aircraft Movements/Gate	3. Non-Aeronautical Operating Revenue as % of Total Operating Revenue	3. Waste Reduction Percentage
4. Freight or Mail Loaded/Unloaded	4. Public Injuries	4. Customer Satisfaction	4. Total Cost per Passenger	4. Non-Aeronautical Operating Revenue per Passenger	4. Renewable Energy Purchased by the Airport (%)
5. Destinations - Nonstop	5. Occupational Injuries	5. Baggage Delivery Time	5. Total Cost per Movement	5. Debt Service as % of Operating Revenue	5. Utilities/ Energy Usage per Square Meter of Terminal
		6. Security Control Clearing Time	6. Total Cost per WLU	6. Long-Term Debt/ Passenger	6. Water Consumption per Passenger
		8. Check-in to Gate Time	7. Operating Cost per Passenger	7. Debt to EBITDA	
			8. Operating Cost per Movement	8. EBITDA /Passenger	
			9. Operating Cost /WLU		

¹⁰ Although the terms safety and security are used interchangeably, they describe different topics in the field of aviation. Whereas "Safety" refers to the technical or operational issues and problems that can appear during a flight or at an airport (fire protection, elasticity of wings, etc.), "Security" describes all external dangers that can impact the flight processes, like terroristic attacks or trespassing.

Table 6. Key Performance Areas (KPA) on horizontal level and Key Performance Indicators (KPI) on vertical level, according to Airports Council International (ACI).

(Adapted from ACI Europe 2012, pp. 9–10; introduced according to Franken 2013, pp. 13–14.)

The Key Performance Areas (KPA) and Key Performance Indicators (KPI) guide according to Airports Council International (ACI) is a rather open construct and it tries to gather together all the needs of different types of airports. According to examples of ACI Europe (ACI Europe 2012), privatized airports are likely to fo-

cus on different financial Performance Indicators than non-profit government-owned airports. Larger airports are likely to focus on different Performance Indicators than smaller airports. Airports with large developable land areas are likely to focus on different Performance Indicators than tightly constrained airports in large urban areas. Even among airports with similar characteristics, managers will have different views regarding which Performance Indicators are most important, and how many Performance Indicators the airport should track. A smaller set of closely monitored Performance Indicators is likely to be a more effective performance management tool than a larger set of Performance Indicators that attracts less focus. According to ACI Europe (2012), over time, the set of Performance Indicators of most importance to the individual airport will change as new issues arise. A key example of this is the currently evolving area of Environmental Performance Indicators, which until recently was not a key performance management area for many airports. (ACI Europe 2012, pp. 1–2.)

On the European Union level, there are no common metrics and indicators used for measuring and comparing airport performance. Mobility and Transport Department (DG – Directorate-General) under the European Commission is the body responsible for airport issues on European Union level. According to European Commission DG Mobility and Transport (2012), air transport mode is strategically important sector, with its contribution to the EU's overall economy and employment: aviation supports 5.1 million jobs and contributes 365€ billion, or 2.4% to European GDP. Despite the current economic crisis, global air transport over the long term is expected to grow by around 5% annually until 2030. Almost 800 million passengers travel each year by air from, to and within the European Union and has caused the situation that if this present trend continues, nineteen of European airports will be unable to accommodate any more flights by 2030. The goal of European Commission in DG Mobility and Transport in airport issues is with legislative proposals for European Parliament and the Council in order to become Community Law to help solving capacity shortage at Europe's airports and improve the quality of services offered to passengers. (European Commission 2012.)

European Commission does not have performance indicators for airports, but it is a member of Eurocontrol, an organization which with non-EU member states aims towards safe, efficient and environmentally-friendly air traffic operations across the European region. Eurocontrol was founded in 1960, and it works closely with member states, air navigation service providers (ANSPs), civil and military airspace users, airports, the aerospace industry, professional organisations, intergovernmental organisations and the European Institutions. Eurocontrol has defined Key Performance Areas (KPAs), and associated performance indicators to measure the performance of Air Traffic Management. The most used from KPIs by Eurocontrol are the indicators for comparing and measuring delays. In their annual NM Network Operations Report 2013 – ANNEX III – Airports (Eurocontrol 2013) the airport performance is self-benchmarked with previous years, using indicators as yearly ATFM arrival delay by cause of delay (Aerodrom Capacity, ATC Capacity, Staffing, Weather, Environment, Other), arrival punctuality, departure punctuality. This might be the cause for the need for Mobility and Transport Department (DG – Directorate-General) under the European Commission to understand the capacity of European airspace and the reasons for delays when planning the use of airspace. (Eurocontrol 1999, pp. 41–42; Eurocontrol 2013.)

Within the academic literature many studies about airport performance indicators can be found. Among these are Graham and Vogel (Graham 2014, p. 87; Vogel 2004, 24–25), who have studied the airport performance indicators individually and together for many years (Graham 2005; Vogel 2004; Vogel, H.-A., Graham, A. 2010). They have defined input – output performance indicators in measuring airport performance of an airport which can assess different aspects of its performance and identify where its strengths and weaknesses lie. These indicators according to Graham and Vogel (Graham 2014, p. 87; Vogel 2004, 24–25) can be grouped forward into certain categories, such as cost efficiency, labour and capital productivity, revenue generation, and commercial performance and profitability (Table 7). In addition to these input – output ratios, a few other key measures, for instance share of revenue from aeronautical sources, can give further insights into comparative performance. In the next picture is presented the latest version of the key performance indicators (KPIs)

according to Graham (2014, p. 87), which are typically used at senior management level. Each KPI has an important target that links to the airport achieving its strategic and operational goals. The WLU – work load unit, originated from the airline industry and it is a standard gauge of output combining both passengers and freight. One WLU means one passenger or 100 kg of freight. (Graham 2014, p. 87; Vogel 2004, 24–25.)

INDICATOR	AREA
COST EFFICIENCY	COSTS EXCLUDING DEPRECIATION PER WLU * COSTS INCLUDING DEPRECIATION PER WLU DEPRECIATION COSTS PER WLU LABOUR COSTS PER WLU DEPRECIATION SHARE OF OPERATING COSTS LABOUR SHARE OF OPERATING COSTS
LABOUR PRODUCTIVITY	WLU PER EMPLOYEE REVENUES PER EMPLOYEE
CAPITAL PRODUCTIVITY	WLU/TOTAL ASSETS REVENUES/TOTAL ASSETS TOTAL ASSETS PER EMPLOYEE
REVENUE GENERATION	REVENUES PER WLU AERONAUTICAL REVENUES PER WLU NON-AERONAUTICAL REVENUES PER WLU AERONAUTICAL SHARE OF TOTAL REVENUES
COMMERCIAL PERFORMANCE	CONCESSION PLUS RENTAL REVENUES PER PASSENGER CONCESSION REVENUES PER PASSENGER
PROFITABILITY	OPERATING MARGIN OPERATING PROFIT EXCLUDING DEPRECIATIONS PER WLU OPERATING PROFIT INCLUDING DEPRECIATIONS PER WLU OPERATING PROFIT INCLUDING/EXCLUDING DEPRECIATION/TOTAL ASSETS NET RETAINED PROFIT AFTER INTEREST AND TAXATION PER WLU
<p>* Some analysts use passenger numbers rather than work load units (WLU) and may include aircraft movements as an airport output measure. Only operating revenues and costs are included to economic performance. Interests, extraordinary items, taxation and dividends are excluded with the exception of the final indicator: net retained profit after interest and taxation per WLU.</p>	

Table 7. Performance indicators commonly used to assess economic performance.
(Adapted from Graham 2014, p. 88.)

The economic performance measures commonly used to assess economic performance are only partial measures of performance giving an indication of performance according to the chosen inputs and outputs. They need only limited data, if available, are easy to count, and simple to understand. They can highlight strengths and weaknesses, but they cannot give the “big picture” about the performance of an airport. They give only partial diagnosis of the current situation of an airport and can easily mislead if only selected indicators are chosen.

To be able to cover all areas of an airport performance many measures are needed. It is also difficult to take into account the differences in the prices of the input, for instance the costs for labour or choosing an output measure, which covers a number of outputs. (Graham 2014, p. 91.)

The move towards privatisation and the new commercial emphasis at European airports has led to new performance measures being introduced to reflect the changing management goals. New measures, which are presented by Humphreys et al. (2002, p. 80), can be divided into three categories: financial measures to monitor commercial performance, measures to meet the requirements of government regulators, and environmental measures. Commercial pressure from ownership forms that demand a degree of financial accountability have led many airports to become more focussed on measuring operational and business performance within the airport company. Operational performance measures that relate passenger level of service to international standards are still widely used. According to Humphreys et al. (2002, p. 80) the major weakness with this type of measure is that they are too crude. The level of service delivered is contingent upon various passenger characteristics and a certain design may deliver totally different levels of service for passengers depending on the purpose and nature of their journey. The business passengers' view of a particular level of service can be different when comparing passengers' view with a passenger travelling on a package holiday. (Humphreys et. al. 2002, pp. 80–81.)

FLAP group^a financial performance measures (source: authors)

Revenue	Cost
Traffic income per passenger	Staff cost/employee
Traffic income per WLU	Passenger/employee
Traffic income per turnover %	WLU per employee
Commercial income per passenger	Staff cost per passenger
Concession income per passenger	Staff cost per WLU
Duty and Tax free income per international departing passenger	Other direct costs per passenger
Other concession income per passenger	Other direct costs per WLU
Property income per passenger	
Property income per work load unit	<i>Unadjusted reported accounts</i>
	Profits/equity %
	Debt/equity %

^a The FLAP group made up of representatives of Frankfurt, London, Amsterdam, and Paris airports.

Table 8. Commercially based performance measures. (Adapted from Humphreys et. al. 2002, p. 81.)

These commercially based performance measures reflect the diversification of the business under new commercial and privatised ownership structures and the subsequent management drive to satisfy shareholders. Whilst traditional WLU measures are present there is now also the inclusion of commercial concession and duty free income measures. As well as revenues, attention is paid to costs (again not exclusively in terms of WLU) and the impact of the organisation's capital structure. (Humphreys et. al. 2002, p. 81.)

Increasingly airport managers are interested to know how efficiently the airport is using its infrastructure and how cost-effectively it is using it. The financial sector, such as creditors and investors, are more focused on ratios related to the business potential of the airport. Putting traditional airport indicators to the financial terms as EBITDA (profit excluding depreciations: earnings before interests, tax, depreciation and amortisation) and EBIT (profit including depreciations: earnings before interest and tax) gives the possibility to make comparisons of airports between different business sectors. (Graham 2014, p. 90; Vogel 2004, p. 25.)

Analysing an airport's performance has become an important task for those who are directly or indirectly involved with the airport industry. With the new approach of the airport business there is an increasing interest in monitoring and

comparing the performance of individual airports. In simple terms, airport performance measures analyse the relationship between inputs and outputs at an airport. This relationship can be expressed in both financial and physical terms. As in any other business, labour and capital are the major inputs of the airport system. The simplest physical measure of the labour input is the total number of employees. Any part-time and temporary staff should be converted to full-time equivalents. To be able to capture the effect of the cost of labour as well as productivity per head, the labour input can also be measured in financial terms: employee wages and salaries. (Graham 2014, p. 86; Vogel 2004, pp. 24–25.)

Measure of capital input is much more difficult. In physical terms, capital input is measured by the production capability or capacity of the system. At an airport this cannot be assessed by one measure. The capacity of the runways, terminals, gates and so on, all have to be considered. Capacity can be measured on an hourly, daily or annual basis. Depreciation or asset values can be used to measure the financial capital input. According to Graham (Graham 2014, p. 86) these will, however, reflect the accounting policies of the specific airport and may not always be closely related to its economic production capability. (Graham 2014, p. 86; Vogel 2004, pp. 24–25.)

The financial measurement of output can be measured by considering the total revenues generated. Output of an airport can be assessed in three ways: in terms of quantities of aircraft, passengers or freight. According to the Graham (Graham 2014, p. 87) these measures do not cover all aspects of an airport, for instance airports` role as a retail facility, but they do capture the key outputs. The use of aircraft movements is not ideal; as such measures will not make difference between different sizes and different types of aircraft. Airports can handle both passengers and freight, and this suggests the use of an output measure that combines both of them, such as the WLU (work load unit). According to Graham (Graham 2014, p. 87) some have argued that the focus should be on passenger numbers, as freight handling at airports is very much an airline activity and has little impact on an airport`s economic performance. (Graham 2014, p. 87; Vogel 2004, pp. 24–25.)

The WLU (work load unit) is commonly used when measuring the performance of an airport. Still there are few problems when using it. WLU links two outputs together, but the same weight of passengers and freight doesn't involve using the same resources. According to Graham (Graham 2014, p. 87) WLU formula should therefore reflect the relative importance or value of the different outputs and perhaps should include an aircraft movement element. Costs or employee numbers associated with the different outputs theoretically could be used to determine the scaling factor, but there is problem of joint costs or joint tasks undertaken by the staff. An alternative scaling parameter could according to Graham (Graham 2014, p. 87) be the relative prices of the outputs, but this assumes a close relationship between price and cost which is not usually the case at airports because of market imperfections, regulation and government interference and cross-subsidies between different traffic. There is the additional problem that there are even different costs and revenues associated with different passenger types, the most notable examples being international and domestic passengers or terminal and transfer passengers. (Graham 2014, p. 87.)

Transport movement is taken into account in LeighFishers (via Graham 2014, p. 87) annual global benchmarking and it uses a different measure of output than work load unit (WLU), the airport throughput unit (ATU). The airport throughput unit is also suggested in Transport Research Laboratory (via Graham 2005, p. 6), which combines output measures of WLUs per ATM (air transport movement). It is defined as: $ATU = (\text{passengers} + 10) \times (\text{freight tonnes} + 100) \times ATM$. In this model the WLU relationship of 1:10 between passengers and freight is kept the same, but unlike WLU, this model includes an aircraft movement component. According to LeighFisher, the value of 100 was derived by looking at past studies and determining that handling one air transport movement (ATM) required approximately the same effort as handling 100 WLU. (Graham 2014, p. 87.)

4 AIRPORT PRESENTATION

Case companies studied in this thesis are the Mikkeli City airport in Mikkeli, Finland by comparing its performance with the well-performed Stockholm Skavsta airport in Sweden. In this chapter these airports are introduced and their historical backgrounds are opened.

4.1 General information

Stockholm Skavsta airport and Mikkeli City airport have many differences but also some similarities. In the next table are presented general information about these airports.

General information	Mikkeli City airport	Stockholm Skavsta airport
ICAO-code	EFMI	ESKN
IATA-code	MIK	NYO
Address	Mikkelin lentoasema Lentokentänkatu 4–6 FI-50150 Mikkeli Finland	Stockholm Skavsta Flygplats AB Box 44 SE-611 22 Nyköping Sweden
Phone	+358 (0) 15 366 427	+46(0) 155 28 04 00 (Switchboard)
Fax	+358 (0) 15 151 674	+46(0) 155 28 04 49
E-mail	airport@mikkeli.fi	info@skavsta.se (General Airport information)
Web	http://www.mikkeli.fi/palvelut/mikkelin-lentoasema	www.skavsta.se
Airport Location	230 km northeast of Helsinki City 4 km west of Mikkeli City	100 km southwest of Stockholm City 7 km northwest of Nyköping City
Amount of inhabitants at the region in 2013	Mikkeli 54 614, 19 th biggest City in Finland	Nyköping 53 000 60 th biggest municipality in Sweden
Other interesting	Highest number of free-time residences in 2013 – 10 195 in whole Finland	1 000 enterprises offering tourism services, 15% from passengers are staying at the region
Catchment area	150 km radius covers over 500,000 people, which is 9,2% of the population	100 km radius covers 2.4 million people, 27% of the population
Started operations	1930` s, during the WW II in military use, today Army	1930` s, opened for civil aviation in 1984

	Command Finland	
Runways	Runway 1 – 5584 ft. (1700m) (After lengthening runway 2300m)	Runway 1 – 9442 ft. (2800m) Runway 2 – 6690 ft. (2000m)
Operating hours	Mon 0600–1000 EET (GMT + 02.00) Tue–Thu 0600–1000 EET and 1600–1800 EET Fri 1400–1600 EET Otherwise only by agreement	0600–2200 GMT 2200–0600 GMT only by agreement
Ownership	100% City of Mikkeli	90.1% ADC & HAS Airports Worldwide, 9.9% Nyköping
Amount of passengers 2013	2 916 domestic passengers 99% international 1%	2 165 040 domestic passengers 0.015% international 99.985%

Table 9. General information about the airports of Mikkeli City airport and Stockholm Skavsta airport.

(Adapted from Carlgren 2014; City of Mikkeli 2014a; 2014b; 2014c, City of Nyköping 2014; Mikkeli City airport 2012, Statistics Sweden 2013; Stockholm Skavsta airport 2014a, Worlds Airport Codes 2014a and 2014b.)

Mikkeli City airport is not a big airport when comparing it with Stockholm Skavsta airport. Next is a picture from Mikkeli City airport from the air. It has good traffic connections and good location not far from the City centre.



Picture 2. Mikkeli City airport from the air. Picture by Sakari Silvennoinen. (Paananen 2014a.)

Stockholm Skavsta is much bigger airport than Mikkeli City airport with it's big passenger terminal with six gates and two runways. Next is a picture from Stockholm Skavsta airport from the air.



Picture 3. Stockholm Skavsta airport from the air.
Screen shot from Google maps on 4th of March 2014.

Stockholm Skavsta airport was in 2013 the fourth largest airport in Sweden with its 2.2 million annual passengers, from which 2.2 million were international and 324 were domestic. Ownership of the airport is public private partnership with ownership of 90.1% ADC & HAS Airports Worldwide and 9.9% of the municipality of Nyköping (Stockholm Skavsta airport 2014a.). According to Swedish transport styrelsen (Swedish Transport Agency 2014a), bigger airports than Stockholm Skavsta in Sweden in 2013 according to the amount of passengers were Stockholm Arlanda 20.7 million passengers, from which 15.8 million international and 4.9 million domestic, Göteborg Landvetter 5 million passengers from which 3.6 million international and 1.4 domestic, and Stockholm Bromma 2.3 million passengers from which 254 thousand international and 2 million domestic. (Swedish Transport Agency 2014a.)

In Sweden there are 49 airports which are approved by Swedish transport agency for aircraft and helicopter operations. At these airports can be found air navigation support. Also four airports without air navigation support are also

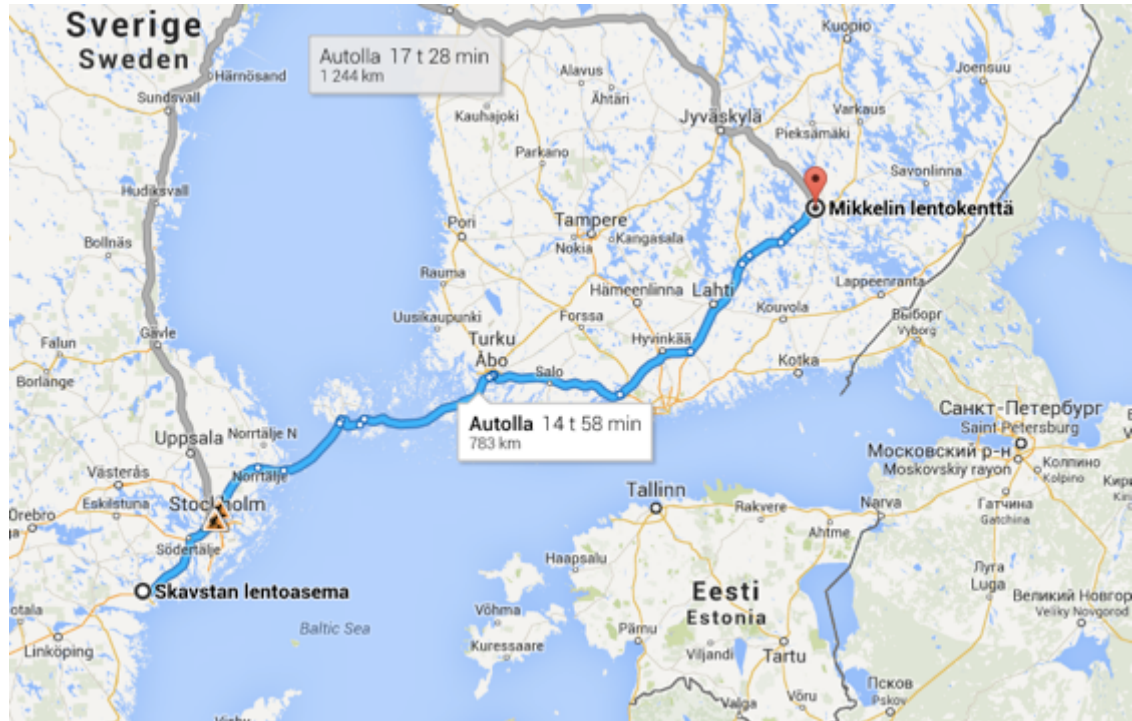
approved by Swedish transport agency, but they are in use only in good weather conditions. Airports in Sweden are mainly owned and run by Swedavia AB, region, municipality or enterprise. Swedish transport agency is responsible for controlling of all the Swedish airports to be sure of the high level of air security. (Swedish Transport Agency 2014b.)

In Finland, 25 airports belong to the Finavia, public limited company owned by the Finnish State, run Finnish airport network (Finavia 2014a). Besides them in Finland can be found two privately owned airports in Seinäjoki and Mikkeli. Seinäjoki airport is run by Rengonharju Foundation, which is owned by municipalities of Seinäjoki, Ilmajoki, Kurikka, Jalasjärvi and Lapua. Passengers at the Seinäjoki airport were in 2012, 6 325 passengers, and in 2011, 39 381 passengers. The airport has domestic flights in winter to and from Seinäjoki – Kittilä, charter holiday flights from Seinäjoki to holiday destinations, private charter flights, first aid flights and leisure time aviation. (City of Seinäjoki 2013.)

Mikkeli City airport is 100% owned by the Municipality of Mikkeli. Mikkeli City airport with its 1658 annual passengers in 2012 is not the smallest airport in Finland (Mikkeli City airport 2012). According to Finavia (2012), smaller airports than Mikkeli in 2012 were: Halli Kuorevesi 0 passengers, Helsinki-Malmi 0, Kauhava 1 622 and Utti 34 passengers. Passengers of the military flights are not counted. These airports do not have scheduled flights but they are in active authority, pilot training and leisure time aviation use. Passengers of Mikkeli City airport consist mainly of flights of private charter flights, pilot training flights, first aid flights and leisure time aviation. Flight passengers of Finnish Air Force and Eastern Command Headquarters' South Savo Regional Office connection flights are not counted. The airport does not have domestic or international scheduled passenger traffic at this time. (City of Mikkeli 2014a; Mikkeli City airport 2012.)

Mikkeli City airport has a goal to reach 500,000 annual passengers within 10 years according to the Mikkeli City airport development project run by Juha-Pekka Paananen (Paananen 2014a). With this amount of passengers it would be in third place compared to the passengers statistics in 2013 (Finavia 2013), after Helsinki-Vantaa 15.3 million, from which 12.9 international and 2.4 domes-

tic passengers, and Oulu with 877 thousand passengers, from which 745 thousand international and 132 thousand domestic passengers. (Finavia 2013.)



Picture 4. Locations of Stockholm Skavsta airport and Mikkeli City airport. Screen shot from Google maps on 4th of March 2014.

Stockholm Skavsta airport is located 100 km southwest from the City of Stockholm and 7 km northwest from the City of Nyköping. Stockholm Skavsta's catchment area, a 100 km radius, covers 27% of Sweden's population, which is 2.4 million. (Stockholm Skavsta airport 2014a.)

Mikkeli City airport is located 230 km northeast from the City of Helsinki and 4 km west from the City of Mikkeli. Mikkeli City airports catchment area, a 150 km radius covers over 500,000 people in Finland, including Lappeenranta, Imatra, Kouvola, Savonlinna, Varkaus, Heinola, Lahti and Jyväskylä, which is 9.2% of the whole Finnish population. But the location of Mikkeli City airport is unique because of the closeness of St. Petersburg and the larger Leningrad region with over 8 million inhabitants. Flight time from Moscow to Mikkeli is 1.5 hours and from St.Petersburg to Mikkeli 0.5 hours. (City of Mikkeli 2012; Mikkeli City airport 2012; Paananen 2014a.)

4.2 History in brief

The history of Stockholm Skavsta airport started in the 1930`s, when a minor airfield was built near the farm called Skavsta within a few kilometres of the City of Nyköping. The airfield served as a war airfield to an air force division. 1941 the air wing F11 was stationed in Skavsta to survey the Swedish borders during the World War II. During the following 20 years, F11 was the largest air wing in Sweden, but in 1974 the Swedish government decided about termination and six years later it was shut down. (Stockholm Skavsta airport 2014b.)

In 1984 the airport was opened for civil aviation by the municipalities of Nyköping and Oxelösund. On 23rd of September 1984 the Nyköpings/Oxelösunds Flygplats AB was inaugurated. These municipalities bought the airport from the Swedish Army for 1 Swedish Crown. “The price was cheap but maintaining the airport took a couple of million Swedish Crowns per year”, confirmed the Municipality Director Eric Carlgren from the Municipality of Nyköping. Annual passengers the airport gained 50–100 000. In 1990`s the airport name was changed to Stockholm Skavsta Airport. In 1997 the cooperation with Ryanair started within the first route out of Great Britain Skavsta–London. In 1998 Nyköping municipality sold shares of 90.1% of the airport to the British TBI becoming the first privately owned airport in Sweden. According to the Municipality Director Eric Carlgren: “the municipality wanted to have shares in the airport company because the airport was and is a big part of the development of the City of the Nyköping”. It was good also for TBI, because of the local knowledge received from the City to the airport company. (Carlgren 2014; Kulovuori 2014a; Stockholm Skavsta airport 2014b.)

In 2003 Ryanair located their Scandinavian base at Skavsta airport with three aircrafts and six new routes. In 2004 the cooperation with Wizz Air began with two routes and Ryanair placed the fourth aircraft to Skavsta airport. In 2005 the Spanish Infrastructure group ACDL acquired all the TBI airports. In 2006 tour operators Fritidsresor (TUI) and Ving started their charter holiday flights from Skavsta airport. In 2007 Ryanair expanded its base to six aircraft and 30 destinations and the Skavsta airport became the third largest airport in Sweden. After the renegotiation with Ryanair the sixth aircraft was removed from Skavsta

airport. In 2013 the US-based ADC & HAS Airports Worldwide completed the acquisition of part of the TBI airports, including Stockholm Skavsta. Today the Skavsta airport is the fourth largest airport in Sweden with over 30 Ryanair routes and seven Wizz Air routes. (Kulovuori 2014a; Stockholm Skavsta airport 2014c.)

The history of Mikkeli City airport is quite similar with the history of Stockholm Skavsta airport. Mikkeli City airport was also built in the 1930's and it was ready for the use in 1937. The initiative for building the airport in Mikkeli came from the Finnish Air defence union. In the early years the airport was used in leisure time aviation. During the World War II the airport was occupied mainly by Finnish Air Forces and even today the airport is used for Eastern Command Headquarters' of South Savo Mikkeli Office connections' flights. The airport was the base for Air Squadron 12 with its Closter Gladiators, and air bombing squadron 44 with its Blenheim aircrafts. Also fighter planes, four Brewsters, were located in Mikkeli City airport. After the war the airport has been in active leisure time aviation use. (City of Mikkeli 2012.)

At the Mikkeli City airport there have been several attempts to run scheduled flights to Helsinki. First attempt was in 1951–1952 by Savon Lentolinjat Ltd with two planes. Second was 1959–1960 by Flight Service with one plane. Third attempt was 1970–1972 with by Sir – Air Ltd with two planes. Fourth attempt was in 1973 by Finnair, owned by the Finnish state. In the 1970's–1980's the airport was in active leisure time and pilot training aviation use. (City of Mikkeli 2012.)

In 1980's postal flights were operated from Helsinki to Mikkeli, first by Finnavigation Ltd, but they were transferred to land transportation in 1997. Also other freight was carried to Mikkeli City airport from Helsinki by Siimes Aviation Ltd and Finnair and from 1986 Finnavigation Ltd (daughter company of Finnair) by their scheduled flights until they stopped flights completely to Mikkeli in 1993. The biggest amount of passengers at the Mikkeli City airport was in 1987 when the amount of passengers was 28 222. (City of Mikkeli 2012.)

In 1990 there were three daily flights (Mon to Fri) from Helsinki–Mikkeli and one on Saturday and one on Sunday plus the freight flights two times per night on

weekdays. Employees at the airport were 18. Morning flights were operated by Finnaviation Ltd and the day and evening flights were operated by Air Botnia Ltd. In 1993 passengers were only 13 542 and the Finnaviation Ltd/Finnair Ltd stopped flying to Mikkeli. Subsidies were paid to Air Botnia Ltd by the government and the City of Mikkeli for operating Helsinki–Mikkeli flights three times a day. In 1998 Air Botnia Ltd became a part of SAS. After challenging years Air Botnia Ltd stopped Helsinki–Mikkeli flights in 1999. In the same year Flying Enterprise started flights from Mikkeli to Helsinki two times a day. Route wasn't profitable and the shares of Flying Enterprise were sold to Skyways Holding Ltd belonging to SAS. In 2000 the City of Mikkeli denounced the agreement with the operator. In 2000, flights from Savonlinna–Mikkeli–Helsinki were started by Golden Air, with the morning flight to Helsinki and the evening back. The plane stayed overnight in Savonlinna. 2004–2005 flights were operated by European Executive, first in cooperation with Savonlinna, then without Savonlinna. In October 2005 scheduled flights to Helsinki were stopped and the Mikkeli City airport has not had scheduled passenger flights ever since. (City of Mikkeli 2012.)

5 AIRPORT PERFORMANCE COMPARISON

Mikkeli City airport is now at a crossroads. It has to decide whether it will make effort on gaining scheduled flights and more passengers to the airport, or will it focus on the current situation, where the airport is in active military, first aid and leisure time use. Almost 20 years ago, Stockholm Skavsta airport had the same situation. They chose to develop the airport and today with its over 2 million annual passengers we can say that it is the best option for best practice benchmarking example for Mikkeli City airport. But because today these airports are on different levels on their development paths, it is impossible to compare the performance of these airports by using the most popular key performance indicators, which was introduced in Chapter 3.2 Performance Indicators for Airports. Mikkeli City airport does not have much to measure, but the idea of input – output ratios, introduced by Graham and Vogel (Graham 2014, p. 86; Vogel 2004, pp. 24–25) does not give too tight frames for the analysis of such a incomparable pair of airports. In this approach it doesn't matter if the airports have different ownership patterns, different locations, different environmental factors and so on. They have employees, they have production capacity, and they have aircrafts and passengers, but most of all in this study the main findings can be done behind these inputs and outputs of the airports. Aircrafts allow people to reach the Mikkeli region and the other way around. It is a fast way from Mikkeli region to other destinations. Passengers bring money to Mikkeli City airport and wider to the Mikkeli region. Not to mention the direct and indirect employment effect the bigger amount of passenger can create for the region. According to the strategy of the City of Mikkeli (2013), the goal for 2017 is to get new enterprises up to 140 annually (now 122 annually), increase the workplaces in service sector for 1 100 persons and add the number of tourism enterprises from 400 up to 440, decrease unemployment rates, and increase the number of tourists staying overnight in the region from 216 500 up to 280 000 annually. These are the reasons for comparing and measuring the airport performance of Mikkeli City airport and Stockholm Skavsta airport.

5.1 Airport input

Labour and capital are the major inputs of the airport system according to Graham and Vogel (Graham 2014, p. 86; Vogel 2004, pp. 24–25). Personnel costs are the highest costs for airport, but over the years these costs for airports have been decreasing due to more outsourcing being undertaken by airport operators, particularly in the handling area, and in many cases the use of a more productive labour force as a result of a focus on greater efficiency. Various technological developments have also reduced the need for so many staff. However, airport operators tend to have less willingness for reducing staff costs compared with some industries, including the airline sector, as the majority of staff functions tend to be related to the essential safety and security aspects of operating and airport. Airports are fixed-cost businesses, having longer planning horizons than airlines and requiring major investments in runways, terminals and equipment. As a result, airports have limited flexibility to adjust these costs when traffic fluctuates. According to Graham (2014), if passenger demand falls by 10%, the operating cost will reduce by just 4.4%. (Graham 2014, pp. 76–77.)

Airport inputs as labour and capital are seen from the airport point of view as costs, but from Mikkeli municipality point of view labour and capital inputs can be seen as source of income for the City. Capital input means the production capacity of the airport system: runways, terminals and gates. It can be measured an hourly, daily or annual bases. To be able to have production capacity at an airport, it needs employees to make it possible. Labour i.e. employees pay taxes to the municipality from their salaries and those employees who are living in the area are most probably spending their salaries in the region. The bigger the airport capacity is the more employees are working at the airport and the more passengers are using the Mikkeli City airport as gateway to and from the Mikkeli region.

5.1.1 Direct and indirect employment

In this analysis with direct employment is meant the employees of an airport taking care of running the airport: airport management, administration/financial and property operations, air traffic control, security, and technical support. Also

handling is seen as direct employment, because at Mikkeli City airport and Stockholm Skavsta airport handling (check-in, boarding, baggage handling, marshaling, dispatch) is done in-house. With indirect employment is meant the employees who are working at the airport, but with passenger services, such as retail, food and beverage, car hire, car park etc.

Direct employment in Mikkeli City airport, with 2 916 passengers in 2013, was 5 FTE (full-time equivalent) and indirect employment 0.5 FTE. Border and customs formalities can be organised at the airport when needed. (Silvennoinen 2014a.)

Direct employment in Stockholm Skavsta, with 2 165 040 passengers in 2013, was 115 FTE (full-time equivalent) and 173 heads (Stockholm Skavsta has many part time staff, who only come when needed). According to Managing Director of Stockholm Skavsta airport, Dot Gade Kulovuori (2014b), without handling operations Stockholm Skavsta would have 30–40 FTE, which is the same amount of employees as when the airport had 200,000 passengers. (Kulovuori 2014b.)

Indirect employment in Stockholm Skavsta, with passenger services as service center, retail, food and beverage, car hire, car park, car wash, foreign exchange and tourist information at the airport and at the business park within the Stockholm Skavsta airport where approximately 40 companies are located are all together approximately 1 300 employees. (Stockholm Skavsta airport 2014a; 2014d.)

Airport operations	Mikkeli City Airport	Stockholm Skavsta
Airport management	0,5	3 directors, 6 managers
Admin/Finance/Property	0,5	12
Air traffic control	1	LFV (air navigation services of Sweden) is the supplier
Security	1	Outsourced to Securitas
Technical support	1	15
Handling	1	76 (incl. Rescue)
Passenger services	0,5	App. 1 300

Table 10. Direct and indirect employment effects of Mikkeli City airport and Stockholm Skavsta airport.
(Adapted from Kulovuori 2014b; Silvennoinen 2014a; Stockholm Skavsta airport 2014a.)

Municipality income comes from municipal income tax, corporate tax, property tax and from governmental compensation in order to compensate for the differences between the municipalities in demographic and economic conditions. In 2013 the Municipality of Mikkeli gained 163€ million from municipality income tax, 9€ million from corporate tax, 15€ million from property tax and 101€ million from governmental compensation. Municipal income tax is remarkable for the economy of the municipality. Last year the municipality income tax in Mikkeli was 19.75% and for this year, 2014, the City of Mikkeli increased the municipality tax up to 20%. According to the Association of Finnish Local and Regional Authorities (2010) in 2010 the municipality income tax rate in Finland was on average 19%, but the effective municipality tax rate from earned income was 14%. This is because of the influence of the depreciations to the amount of income, which is taken into account when counting the municipality tax. The mathematic formula which defines the amount of municipality income tax goes as follows: from earned income are subtracted depreciations in municipality taxation and the result is the earned income in municipality taxation. This amount has to be multiplied by the municipality tax rate and the result is the municipality income tax according to the earned income. From this sum is subtracted depreciations in taxations and the result is the amount of municipality income tax, which must be paid to the municipality. For example: an earned income of 20 000€ – depreciations 4 000€ in municipality taxation = 16 000€ multiplying with municipality tax rate 20% = municipality tax of 3 200€ before the

depreciations in taxation. The total amount of municipality tax is then 3 200€ municipality tax before the depreciations in taxations – depreciations in taxations 700€ = 2 500€. According to Association of Finnish Local and Regional Authorities (2010) if the municipality increases the level of municipality income tax by one per cent the effect to the effective municipality tax rate is 0.7% from earned income. That is why in our calculations we are using effective municipality tax rate according to Association of Finnish Local and Regional Authorities (2010) of 14.7% (responses to the municipality income tax rate level of 20% in Mikkeli) to make sure that the results of the calculations are as much as possible following the real municipality tax income result for the City of Mikkeli. (City of Mikkeli 2014b; Association of Finnish Local and Regional Authorities 2010, pp. 1–2.)

In these calculations about municipality income tax, we are using the monthly wage of 2 980€ in 2013 in public sector in Finland according to Statistics of Finland (2014b).

Direct employment effect of the Mikkeli City airport to the City of Mikkeli is now: $2\,980\text{€} \times 12 \text{ months} \times 14.7\% \times 5 \text{ FTE} = 26\,283.6\text{€} \sim 26\,300\text{€}$ per year. This means that the direct employment effect of the Mikkeli City airport to the municipality of Mikkeli is 26 300€ in 2014. Of course now when the owner of the airport is the municipality itself, it is also responsible for paying the salaries.

If this idea of direct employment effect is further developed, as far as 10 years ahead, the goal for developing the Mikkeli City airport is to reach 500,000 passengers within 10 years (Paananen 2014a). It also can have effects on the ownership pattern of the airport. According to Statistics of Finland (2013), the average monthly salary in private sector in Finland was 3 428€ in 2012. According to Juha-Pekka Paananen (2014b) it could be possible to run the Mikkeli City airport with 25 FTE when there would be 500,000 passengers, with right scheduled flights. This calculations doesn't take into account any variables as increases in level of salaries or increases in level of municipality tax. Direct employment effect is as follows: $3\,428\text{€} \times 12 \text{ months} \times 14.7\% \times 25 \text{ FTE} = 151\,174.8\text{€} \sim 151\,200\text{€}$. This means that the direct employment effect of the Mikkeli City airport to the municipality of Mikkeli would be 151 200€ in 2024. Privatisa-

tion of the airport would cut the costs of City of Mikkeli, and instead the City could get more benefits from the airport development.

If the Mikkeli City airport would have 500,000 passengers within 10 years, it would also have an effect on the indirect employment of the airport. 500,000 passengers already need different kinds of services, and it would be a good business opportunity for many kinds of firms. As in Stockholm Skavsta, Mikkeli City airport could offer passenger services such as service center, retail, food and beverage, car hire, car park, car wash, foreign exchange and tourist information at the airport and so on. Today the indirect employment effect of the Mikkeli City airport is: $2\,980\text{€} \times 12 \text{ months} \times 14.7\% \times 0.5 \text{ FTE} = 2\,628.36\text{€} \sim 2\,630\text{€}$. This sum can not be seen as income to the City of Mikkeli because the City is now responsible for paying the salaries. According to Juha-Pekka Paananen (Paananen 2014b), indirect employment could be with 500,000 passengers 10 FTE. This calculations does not take into account any variables such as increases in level of salaries or increases in level of municipality tax. Indirect employment effect could then be after 10 years as follows: $3\,428\text{€} \times 12 \text{ months} \times 14.7\% \times 10 \text{ FTE} = 60\,469.92\text{€} \sim 60\,500\text{€}$. That is already direct income for the City of Mikkeli.

At this time, the economic benefits of the Mikkeli City airport for the City of Mikkeli have not been high. According to Centre for Economic Development, Transport and the Environment (2013), in 2012 enterprises in Mikkeli region were 5 369 and employees all together 17 748 from which 0.03% were employed by Mikkeli City airport. If the amount of all the employees in the region would be the same after 10 years, the effect of the Mikkeli City airport with direct employment of 25 FTE would be already 0.14%. And with direct employment of 25 FTE and indirect employment 10 FTE the effect would be already 0.19% from all the employees of the Mikkeli region. According to the City of Nyköping in Sweden (City of Nyköping 2014), where the Stockholm Skavsta airport is located, 4 533 enterprises were located in the Municipality of Nyköping in 2013. Employees all together at the municipality area were 23 449, from which the biggest employer is the municipality itself with 3 836 employees and the Stockholm Skavsta is the 8th biggest employer with 190 employees employ-

ing 0.81% from all the employees on the municipality region. (Centre for Economic Development, Transport and the Environment 2013; City of Nyköping 2014.)

5.1.2 Production capacity of the airport system

Capital in the sense of production capacity or capacity of the airport system, e.g. capacity of the runways, terminals, gates, hourly, daily or annual basis can also be seen as input of an airport. The airports production capacities are counted on a theoretical basis and it does not take into account any variables.

Production capacity of Mikkeli City airport with one runway of 1 700 metres and with one gate is one plane within 1.5 hours. With current opening hours the production capacity of the airport is 12 planes, 24 movements per week, on Mondays 2 planes, on Tuesdays–Thursdays 3 planes per day and on Fridays 1 plane, on a yearly basis it means 624 planes, 1 248 movements annually (Table 11). With similar opening hours as in Stockholm Skavsta airport the capacity of Mikkeli City airport could be 10 planes, 20 movements per day, 70 planes, 140 movements per week and 3 640 planes, 7 280 movements per year (Table 11).

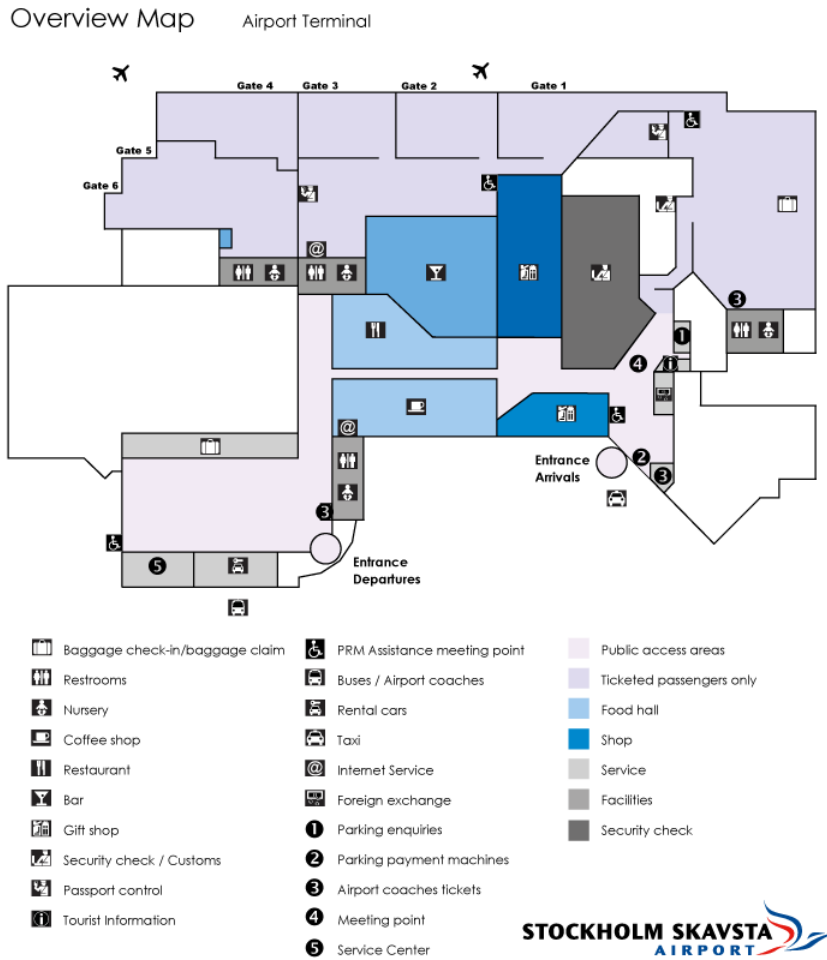
Production capacity of the airport system	Mikkeli City airport	Stockholm Skavsta
Runways	1 –1700 m (2300 m)	1 – 2800 m 1 – 2000 m
Terminal	1	1
Gate	1	6
Hourly capacity	1 plane – 2 movements within 1,5 hours	4–12 planes/8–24 movements per hour depending on direction of wind and share of starts/landings
Opening hours	Mon 0600–1000 EET (GMT + 02.00) Tue–Thu 0600–1000 EET and 1600–1800 EET Fri 1400–1600 EET Otherwise only by agreement	0600–2200 GMT daily 2200–0600 GMT only by agreement
Daily capacity	Mon – 2 planes/4 mov. Tue–Thu – 3 planes/day/ 6 movements Fri – 1 plane/2 mov. With opening hours of Stockholm Skavsta 10 planes/20 movements day	From 64 planes/128 movements up to 192 planes/384 movements per day depending on direction of wind and share of starts/landings (6 simultaneous flights – two simultaneous arrivals)
Annually	624 planes – 1 248 movements (with current hours) 3 640 planes – 7 280 movements (with Skavsta hours)	From 23 296 planes/46 592 movements up to 69 888 planes/ 139 776 movements limited to 37 500 planes/ 75 000 movements according to environmental permit

Table 11. Production capacities of Mikkeli City airport and Stockholm Skavsta airport.

(Adapted from Kulovuori 2014a; 2014c; Silvennoinen 2014a.)

Stockholm Skavsta airport (2014a) has two runways, 1st runway of 9 442 feet –2 800 meters, and 2nd runway of 6 690 feet – 2 000 metres. According to the terminal map of the Stockholm Skavsta airport (Picture 5), there is one big passenger terminal with six gates. According to the Managing director of Stockholm Skavsta airport, Dot Gade Kulovuori (2014a), the terminal building with current gates has capacity of 3 million annual passengers and six simultaneous flights from which are two simultaneous arrivals. At the stands can be six aircrafts parked at the same time. Runway capacity is 4–12 planes/8–24 movements per hour depending on direction of wind and share of starts/landings. Stockholm Skavsta is now capable of handling 3 million passengers per year, and it is designed for further expansion. According to the environmental permit, annual ca-

capacity of the airport is 37 500 planes/75 000 movements and 6 million passengers. (Kulovuori 2014a; 2014c.)



Picture 5. Terminal map of the Stockholm Skavsta airport. (Adapted from Stockholm Skavsta airport 2014d.)

5.2 Airport output

Chosen output of the airport can be assessed in term of quantities of aircraft, passengers, or freight. Stockholm Skavsta has over 2 million passengers annually, but Mikkeli City airport has less than 3 000 annual passengers. The quantity of aircrafts is comparable with the quantity of passengers and Mikkeli City airport doesn't have freight, and that is why these calculations are concentrated

on the quantity of passengers. Because Mikkeli City airport does not have many passengers, a few calculated future scenarios of the quantities of passengers Mikkeli City airport could handle in the future after developing the airport and its services and the economical effects of these theoretically calculated amounts of passengers to the Mikkeli region are presented. The airport outputs are counted on a theoretical basis and they do not take into account any variables such as capacity utilization.

A runway with the length of 1 700 metres makes the landing possible for planes with only 100–150 passengers. In the development project for Mikkeli City airport (Paananen 2014a) has arisen the question about investment for lengthening the runway up to 2 300 metres. After the investment, also the bigger aircrafts (250–300 passengers) could land at Mikkeli City airport. At the Mikkeli City airport is only one passenger terminal available but there are possibilities to change the use of hangar next to the terminal into a new passenger terminal.

The history of Mikkeli City airport is interesting. First attempt to organize scheduled flights from Mikkeli to Helsinki was in 1951. Since then there has been several carriers trying to offer Mikkeli – Helsinki scheduled flights but these attempts have turned out to be unsuccessful. Flights to Helsinki have been organised not only individually, but also with cooperation with City of Savonlinna. According to City of Mikkeli (2012) the biggest amount of passengers at the Mikkeli City airport was in 1987 when the amount of passengers was 28 222. Scheduled flights from Mikkeli to Helsinki stopped in October 2005 and the Mikkeli City airport has not had scheduled passenger flights ever since. According to the passenger statistics of Mikkeli City airport between 1993–2013 (figure 5.4), the amount of passengers has been decreasing since 1994, being 14 262 in 1994 and ending up to 2 916 in 2013. These passenger figures do not take into account the passengers of Finnish Army Command. (City of Mikkeli 2012; Silvennoinen 2014a; 2014b.)

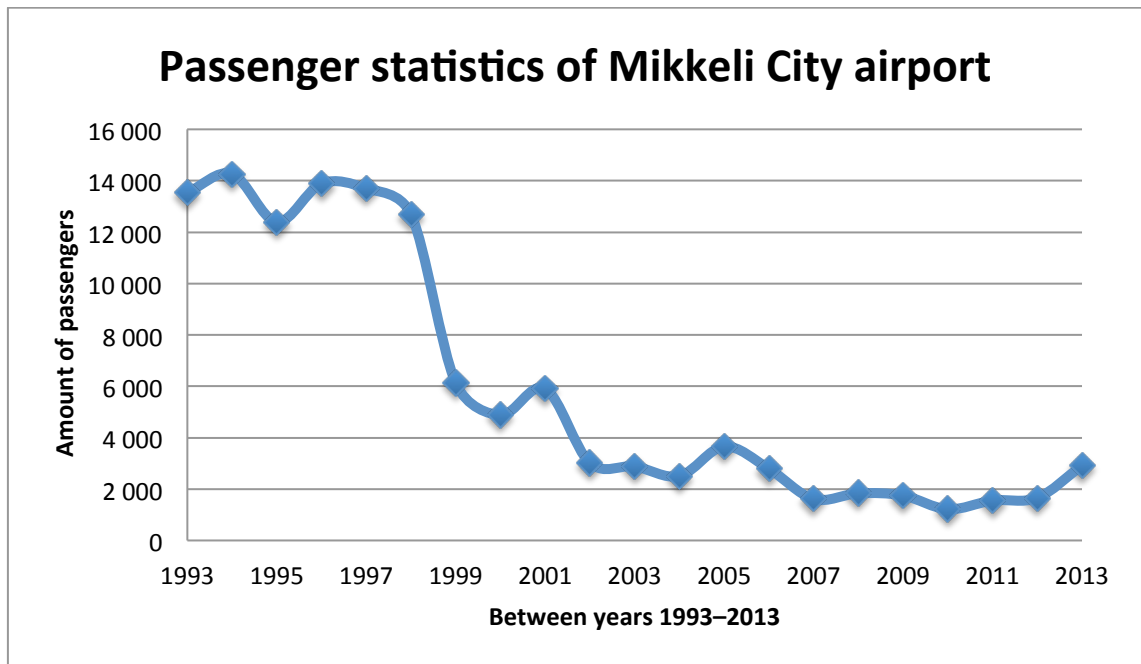


Figure 6. Passenger statistics of Mikkeli City airport between years 1993–2013. (Adapted from Silvennoinen 2014a; 2014b.)

Stockholm Skavsta has also very interesting history. First international scheduled route at Stockholm Skavsta started in 1997 when Ryanair established their first route out of Great Britain – Stockholm Skavsta – London Stansted. Passengers in first year were 128 862. According to the Eric Carlgren (2014), Municipality Director of Nyköping, the Municipality of Nyköping operated the airport in 1984–1998 gaining 50–100 000 annual passengers and using money yearly for maintaining the airport a couple of million Swedish Crowns. In 1998 the airport was sold to the British company TBI, and it became the first privately owned airport in Sweden. TBI owned 90.1% of the shares and the Municipality of Nyköping 9.9%. The municipality wanted to have shares in the airport company according to Municipality Director Eric Carlgren, because the airport was and is a big part of the development of the City of the Nyköping. It was good for TBI, because of the local knowledge they brought to the airport company. In 1998 TBI managed several airports, amongst them Belfast Int., and London Luton Airport. In 2005 TBI was acquired by the Spanish ACDL group. In 2013 most of the ACDL airport assets, including Stockholm Skavsta, were sold to the American company ADC & HAS Airports Worldwide. Their intention is to continue to invest and develop the airports. According to the passenger statistics of

Stockholm Skavsta airport (Figure 7), at that time when the airport was privatised in 1998 the airport had already 210 388 passengers. (Carlgren 2014; Kulovuori 2014a; Stockholm Skavsta airport 2014a; 2014b; Swedish Transport Agency 2014a.)

Next big step in the development of the Stockholm Skavsta was in 2003 when Ryanair placed their Scandinavian hub at Skavsta basing 3 aircraft at the airport. The amount of passengers increased from 319 123 passengers up to 974 716 passengers. In 2004, a fourth Ryanair aircraft was based at Skavsta and Wizz air opened two routes to/from Skavsta. The amount of passenger increased to 1 346 811 million passengers. In 2007 Ryanair bases 2 new aircrafts to Skavsta and operates about 30 routes from Stockholm Skavsta. The airport reaches 2 million (1 994 512) passengers. In 2012 Ryanair removes the 6th aircraft from Skavsta. In 2013 Skavsta had 2 165 040 million passengers.

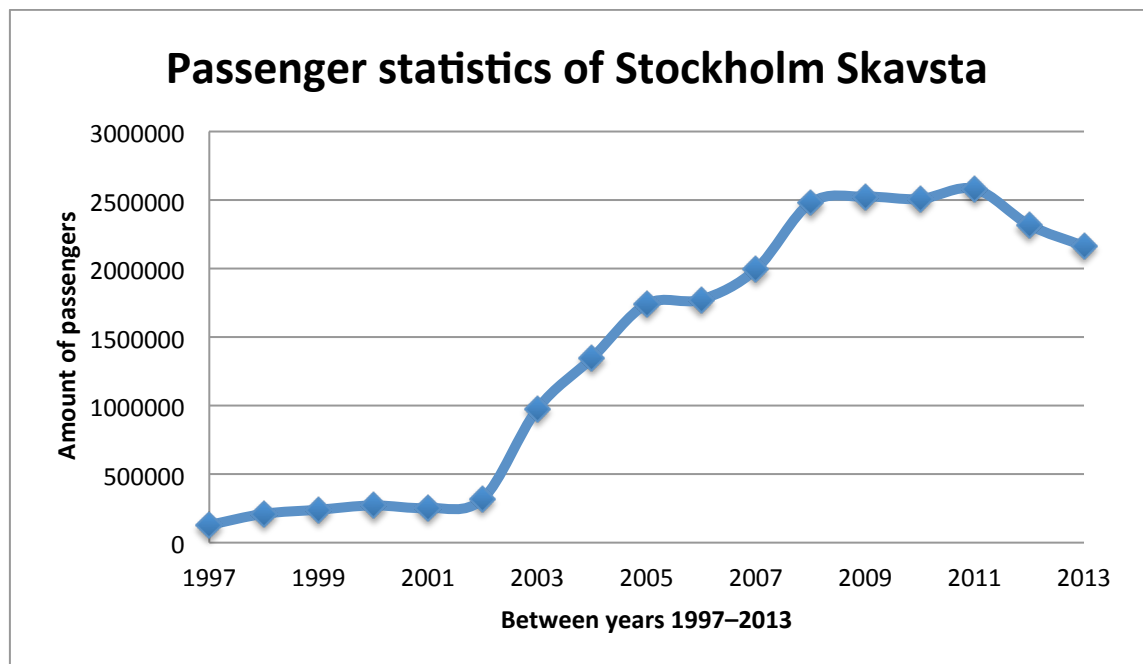


Figure 7. Passenger statistics of Stockholm Skavsta airport between years 1997–2013. (Adapted from Swedish Transport Agency 2014a.)

With the current production capacity of Mikkeli City airport with one runway of 1700 metres and with one gate it is possible to handle 12 planes/24 movements per week (calculation in Chapter 5.1.2). That means that the airport can handle one turn of one plane of 100–150 passengers, 12 times per week. This could mean a minimum of 2 400 passengers (24 movements per week x 100 passengers per movement) or maximum 3 600 passengers (24 movements per week x 150 passengers per movement) per week with current facilities and current opening hours of the airport. This amount of passengers would already be bigger than the current annual amount of passengers the airport is now handling. On a yearly basis the quantity of passengers would be a minimum of 124 800 and maximum 187 200 passengers.

If Mikkeli used Stockholm Skavsta opening hours, the daily amount of planes would be 10 planes/20 movements, and the weekly amount of passengers would already be minimum 14 000 (20 movements per day, 7 days a week x 100 passengers/movement) and maximum 21 000 (20 movements per day, 7 days a week x 150 passengers/movement) passengers without lengthening the runway of Mikkeli City airport. Annual figures would be with 100 passengers per plane, 10 planes per day, seven days per week, 728 000 passengers annually. And with 150 passengers per plane, 10 planes per day, seven days per week, 1 092 000 passengers annually.

The lengthening of the runway from 1 700 metres up to 2 300 metres would make possible to land to Mikkeli City airport with aircrafts of 250–300 passengers. It would mean with current opening hours, 12 planes/24 movements per week, minimum 6 000 (24 movements x 250 passengers per movement) passengers weekly and 312 000 passengers annually. The maximum level of passengers would be weekly 7 200 (24 movements x 300 passengers per movement) passengers and annually 374 400 passengers. Using Skavsta opening hours in Mikkeli, the level of passengers would be much higher. With daily 10 planes/20 movements, seven days per week, the minimum level of weekly passengers would be 35 000 (20 movements per day, 7 days a week x 250 passengers per movement) passengers. The annual amount of passengers would be a minimum 1 820 000 passengers. And with the bigger planes of 300 pas-

sengers the weekly amount of passengers could be 42 000 (20 movements per day, 7 days a week x 300 passengers per movement) and 2 184 000 passengers per year.

Airport opening hours	Runway 1700 meters	Runway 2300 meters
Current opening hours Mon 0600–1000 EET (GMT + 02.00) Tue–Thu 0600–1000 EET and 1600–1800 EET Fri 1400–1600 EET Otherwise only by agreement	Planes with 100 passengers: 2 400 /weekly 124 800 /annually Planes with 150 passengers: 3 600 /weekly 187 200 /annually	Planes with 250 passengers: 6 000 /weekly 312 000 /annually Planes with 300 passengers: 7 200 /weekly 374 400 /annually
According to Skavsta opening hours 0600–2200 GMT daily 2200–0600 GMT only by agreement	Planes with 100 passengers: 14 000 /weekly 728 000 /annually Planes with 150 passengers: 21 000 /weekly 1 092 000 /annually	Planes with 250 passengers: 35 000 /weekly 1 820 000 /annually Planes with 300 passengers: 42 000 /weekly 2 184 000/annually

Table 12. Summary of Mikkeli City airport output calculations.

These calculations are only theoretical. Stockholm Skavsta airport system has annual production capacity of from 23 296 planes/46 592 movements up to 69 888 planes/139 776 movements, but the amount of movements is limited to 37 500 planes/75 000 movements and 6 million passengers according to the environmental permit. The capacity of current terminal and gates are 3 million passengers. So these production capacity and airport quantity calculations only give an idea that with current opening hours and with current length of the runway it could be possible to gain 100,000 annual passengers to Mikkeli City airport. Calculations are made that one plane means two movements so one plane has arrival and departing passengers. Calculation does not take into account the capacity utilizations such as unsold places on the planes, delays or other variable issues, which could have an influence to the calculations in real life situations. (Kulovuori 2014c.)

According to calculations of Juha-Pekka Paananen (2014a), with the amount 100,000 passengers, the Mikkeli City airport could already cover its costs. The

yearly costs of running the Mikkeli City airport are now 514 688€ (City of Mikkeli 2014c) and they could be covered with 5–7 scheduled flights per week to the airport, for instance with Boeing 757 or Airbus 320. According to these calculations (Chapter 5.1.2.) the production capacity of the Mikkeli City airport system could handle the amount of planes and passengers with current facilities, but the airlines are using bigger planes (250–300) because of the cost structure of the airlines and that is why the need for lengthening the runway of the Mikkeli City airport is needed for further development of the airport. The income to the airport would be gathered from different sources, but taking into account only the passenger fee, €10 per passenger, it would already mean €1 million income to the airport (Paananen 2014a). The Mikkeli model would be much more cost efficient than for instance the Lappeenranta airport now. With yearly 100,000 passengers the Lappeenranta airport is now making big losses, approximately over 1€ million, and the future of the Lappeenranta airport as a part of Finavia airport network is not clear (Ministry of Transport and Communications 2013c).

5.3 Economic benefits for the City of Mikkeli

Airports have a strategic importance to the regions they serve. According to Graham (2014) airports can bring greater wealth, provide substantial employment opportunities and encourage economic development and can be a lifeline to isolated communities, they have an effect to the environment in which they are located and on the quality of live of residents living nearby. (Graham (2014, p. 1)

Next are presented two studies acquired by the City of Lappeenranta to give an answer to a question about how much money flight passengers are leaving to the region. First study is made by Tak Oy in 2011. According to Tak Oy (2011), one flight passenger, not from the region of South-Karelia, will leave to the region 140€ per person when departing/arriving to the City. Money was used as follows: accommodation 19€, Restaurants, bars and cafes 21€, groceries 20€, department stores 15€, clothes and footwear stores 21€, and other expenses 36€. Tak Oy (2011) has made the study in cooperation with the City of Lappeenranta and state owned airport network company Finavia. Flight Passenger

Study is about the economic benefits of the Lappeenranta airport answering to the questions who are the passengers at the airport, what is the reason for flight, how much money they have spent and are the passengers satisfied with the services of the City of Lappeenranta. Study was conducted in from July 5–26, 2011 by asking questions from 10–36 passengers per departing flight. Flights were chosen 16. All together answers were 456. According to Flight Passenger Study made by Tak Oy (2011) flight passengers will leave to the Lappeenranta region approximately 5.5€ million and air traffic will benefit the region up to 7.9€ million annually in 2011 using estimated amount of passengers 117 000. According to the study, almost half of the passengers are staying in the City after returning from the trip. Spending of inhabitants of South-Karelia was not studied, other Finns used 35€, Russians 145€ and other foreigners 153€. From the passengers 27% were inhabitants of South-Karelia, other Finns 11%, Russians 54%, from which 48% from St. Petersburg and other foreigners 8%. (Tak Oy 2011, pp. 1–2; 17–18.)

Second study is made by MC-Info Oy (2014) ordered by Wirma Lappeenranta Oy, which is the business development company owned by the City of Lappeenranta. The study is about economic benefits of the air traffic for the Lappeenranta region. According to the study flight passenger will leave 155€ to the region. Study was conducted by asking 172 flying passengers about their spending in Lappeenranta region during March 2014. From 172 passengers 40% answered that they will use money in the region. This figure includes the one day visitors and visitors staying overnight. The amount of used money was 155,23€ without value added taxes. According to the study of MC-Info Oy (2014) with 400,000 passengers the Lappeenranta region could gain 21.5€ million euro tourism income, 5.7€ million with salaries and 150 FTE. (MC-Info Oy 2014, pp. 3; 11–15.)

According to the studies of Tak Oy and MC-Info Oy, flight passengers are using money in the region from 140€ (Tak Oy) up to 155€ (MC-Info Oy) per passenger. If we think about the margin of error, which can be +/-48€ (Tak Oy 2011, p. 2) we could use in our calculation the amount of money of 100€, which each passenger could leave to the region. In Mikkeli City airport case, the amount of

money passengers are leaving to the region could be from 291 000€ with 2 916 passengers (including arriving and departing passengers) in 2013, and per person using 100€, up to 25€ million with the 500,000 passengers, which is the 10 years development project goal of the Mikkeli City airport, using 100€ per person. All together the economic effect to the Mikkeli region is with the current situation as follows. Direct employment effect is 5 FTE with municipality tax of 26 300€ annually. Indirect employment effect is 0.5 FTE with municipality tax of 2 630€ annually being all together 28 930€. Tourism income with 2 916 annual passengers could be 291 000€.

Reaching the goal of 500,000 passengers annually within 10 years would have effects to the economics of Mikkeli region as follows: Direct employment effect could be 25 FTE with municipality tax of 151 200€. Indirect employment effect could be 10 FTE with municipality tax of 60 500€. Now 0.03% from the employees of the region is employed by airport, and after 10 years the per cent from all the employees of the area employed by the Mikkeli City airport could be 0.19%. Current production capacity is 12 planes/24 movements and 3 600 passengers per week and 624 planes/1248 movements and 187 200 passengers annually. With longer opening hours the production capacity could be 10 planes/20 movements per day, 70 planes and 21 000 passengers per week and 3 640 planes/7 280 movements and 1 092 000 passengers annually. Output of the Mikkeli City airport could be in the current situation minimum 124 800 passengers annually and maximum 187 200 passengers annually. If one passenger would use money 100€, Mikkeli region could gain minimum 12.5€ million and maximum 18.7€ million annually with current opening hours and with current runway. With lengthening the runway and lengthening the opening hours according to the Skavsta model the Mikkeli City airport could gain minimum 1 820 000 passengers annually and maximum 2 184 000 annual passengers. According to this calculation the Mikkeli region could gain minimum 182€ million and maximum 218.4€ million as income from the Mikkeli City airport passengers. These amounts are hypothetical: they would mean that all the planes should be fully booked and that the airport should be open 16 hours per day, turning one plane per 1.5 hours. When keeping the 500,000 annual passengers as a goal

for Mikkeli City airport tourism income for the Mikkeli region would be 25€ million and this amount of money is realistic.

6 PROPOSAL FOR MIKKELI CITY AIRPORT

The aim of this work was to prepare a proposal for the City of Mikkeli about how Mikkeli City airport performance could be developed by comparing the performance of the Mikkeli City airport with a best practise example, Stockholm Skavsta airport. Skavsta case is unique and it is not the purpose to make a proposal for Mikkeli to follow the Skavsta example with the same steps. Skavsta case is not even possible to copy: time is different, and the business environment is different. As the Managing Director of Stockholm Skavsta airport Dot Gade Kulovuori (2014b) said, when asked about the reasons behind the success story of Skavsta, that things were “a lot easier in those days”. The Marketing Manager of Stockholm Skavsta airport was in the right place at the right time, when meeting with Chief Executive Officer of Ryanair, Mr. Michael O’Leary. But there is something Mikkeli could adopt when developing the Mikkeli City airport. These propositions are segmentation, destinations and ownership.

First of all – segmentation. To become leading tourism airport in Finland.

Mikkeli City airport should concentrate either to become leading leisure aviation base or leading tourism airport. Leisure aviation base would be possible with current facilities, but becoming leading tourism airport there are need for lengthening of the runway up to 2 300 metres. Stockholm Skavsta has two runways 2 800 and 2 000 metres. When choosing the tourism airport segment the municipality could gain bigger income from employees working at the airport and from tourism income. Theoretically calculated, the annual production capacity of Mikkeli City airport could be with longer runway and longer opening hours 3 640 planes or 7 280 movements and over 2 million annual passengers. If Mikkeli could gain 500,000 annual passengers it would bring over 25€ million income to the municipality. In this calculation is not counted the salaries of the employees of the Mikkeli City airport, which most likely are living in Mikkeli region and spending biggest part of their salaries in the area. It doesn’t either take into account the catalytic effects to the municipality from the enterprises offering tourism services for the increasing amount of tourists coming to Mikkeli region. According to the Municipality Director of Nyköping Eric Carlgren (2014) from the

passengers of Stockholm Skavsta airport 15% (325 438) are staying over night in the region, and 1000 enterprises are offering tourism services.

Stockholm Skavsta has the Ryanair base with 5 based aircrafts and with over 30 destinations and Wizz air with seven destinations. Fritidsresor (TUI) also offers direct charter holiday flights with 2 destinations. Skavsta has chosen tourists and business people as their main customers and they offer around 30 destinations annually. This means that it is important to choose the right customer segments because it is not possible to serve everybody with limited resources. In Mikkeli these customer segments could be, besides Finnish military forces, either the leisure aviation or tourism and business people. A lot of new business possibilities could be for Mikkeli City airport now when the Helsinki-Malmi airport will be closed down. Helsinki-Malmi has been in really active leisure aviation use and the Mikkeli City airport could be in the future active leisure aviation base. Or another possibility could be following the Skavsta example when offering a wide range of routes for tourists and business people. Possible solutions could be cooperation with tour operators, as Fritidsresor (TUI) in Skavsta and air carriers with possibilities to operate with smaller aircrafts (100–150 passengers) until lengthening the runway of Mikkeli City airport. By following the Skavsta example, Mikkeli City airport could be the leading tourism airport in Finland within 10 years. But to be able to reach the goal, it would need the investment for lengthening the runway and for passenger facilities. Value of this investment is according to the calculations of development project of the Mikkeli City airport made by Juha-Pekka Paananen (2014a) from €8 up to €10 million.

Second of all – destinations. Offering wide range of tourism destinations.

Possible destinations from Mikkeli City airport are popular holiday destinations, and big passenger hubs so that passengers could easily continue travelling to overseas destinations and also these destinations, from where the biggest tourism groups are coming to Mikkeli region. The main destinations from Stockholm Skavsta are routes within Europe (Stockholm Skavsta airport 2014c). According to the statistics of Stockholm Skavsta (Swedish Transport Agency 2014a) there have been flights outside of Europe, but mainly in summer season. Same thing has been with the domestic flights. At Skavsta in 2013 from over 2 million pas-

sengers (2 165 040), domestic passengers were 0.015% and international were 99.985% (Stockholm Skavsta airport 2014a). According to the future scenarios thorough 2025 by Finnish Transport Safety Agency – Trafi (2012) the amount of domestic flights in Finland, will not increase, but instead it may decrease. In Finland, the Seinäjoki airport has had domestic flights during the winter season, to Kittilä. This could also be one big possibility for Mikkeli City airport, charter holiday flights within the country to northern parts of Finland, for example, Kittilä, Kuusamo and others. In the summer season flights to southern parts of Finland, for instance Turku would be good. To destinations with distances over 550 km, where by car or by train would be time-consuming and difficult to travel, these domestic flights could be also done by smaller planes.

Helsinki has been the main destination by plane from Mikkeli, but is it worth trying to organize? By car it takes 2.5 hours and by train approximately 2.5 hours. The connection flights to Helsinki from Mikkeli have not been popular. Several air carriers have tried it since 1951 and the biggest amount of passengers was in 1987 when the amount of passengers was 28 222 (City of Mikkeli 2012). Flight time from Mikkeli to Helsinki is not long, approximately 30 min, but if the travel destination is located in the City centre of Helsinki, there has to be counted also the travel time from the airport to the City, minimum 45 min. Also the flight schedules mean a lot. If a person has to be in Europe at nine, and the connection flight from Helsinki-Vantaa is leaving at eight, the flight from Mikkeli should be early enough to be able to reach the connection, and vice versa, when the person is coming back in the evening via Helsinki-Vantaa to home in Mikkeli. Direct flights to the destination from Mikkeli City airport, as from Stockholm Skavsta airport, would be the best option for Mikkeli City airport. It would also serve better the Finnish people in Mikkeli region and more widely inside the radius of 150 kilometres from Mikkeli where 500,000 people, 9.2% of the Finnish population are living. Most of the competitor airports of Mikkeli City airport are concentrating to gain flights from the region to Helsinki-Vantaa.

According to the Statistics Finland (2014a) the main leisure destinations for Finnish residents were in 2013 first of all Estonia (most of all day and overnight cruises), second of all Sweden (most of all day and overnight cruises), and third

of all Spain (increase of 21% to Continental Spain). Other European destinations, which increased the amount of Finnish passengers, were Russia, Germany, France, Turkey, and the United Kingdom. The number of domestic leisure trips with paid accommodation was almost 6.6 million, from which one million trips were done to Lapland and Kainuu. Also the amount of business trips within Finland and to abroad decreased from the previous years. (Statistics Finland 2014a.)

Huge possibilities for the inhabitants of the Mikkeli region could be offering flights to bigger passenger hubs, for instance to Stockholm Skavsta, to be able to reach a wide range of destinations with low amount of effort for traveling. Travel time to Skavsta would be around 1.5 hours, and after that almost the whole of Europe could be reached. The theme for further research could be inquiries for representatives of businesses and other organisations in the Mikkeli region about the needs for international connections and destinations. Also the inquiry could be directed to the inhabitants of the Mikkeli for asking also about the opinions and needs for international connections and destinations.

This destination issue should also be thought of from another point of view. According to the strategy of the City of Mikkeli (2013) the goal for 2017 is to get new enterprises up to 140 annually (now 122), increase the workplaces in service sector for 1 100 persons and add the number of tourism enterprises from 400 up to 440, decrease unemployment rates, and increase the number of tourists staying over night in the region from 216 500 up to 280 000 annually. Theme for further research could be a survey about the countries or cities of destination from where the tourists to Mikkeli are coming. Then marketing actions could be directed to these destinations and with direct flights to Mikkeli, more tourists could be gained to the region. Mikkeli had the highest number of free-time residences in 2013 in Finland – 10 195 (City of Mikkeli 2014b). Could there be need for direct domestic flights to their holiday destinations? These flights could also be organised with smaller planes during the best tourism season.

Potential passenger group. When comparing Mikkeli with Skavsta, Mikkeli has one big advantage that Skavsta lacks – location next to a huge passenger po-

tential – St. Petersburg and the Leningrad region. Stockholm Skavsta is located next to the capital of Sweden, Stockholm (0.9 million inhabitants) from 100 kilometres from the City, radius 100 km covering 2.4 million people which is 27% of the Swedish population, but next to the City of Stockholm are also located the two big airports: Stockholm Arlanda and Stockholm Bromma, which are in passenger figures bigger airports than Skavsta. Arlanda is located 42 km from Stockholm with 20.7 million passengers from which 76.3% are international and 23.7% domestic. Bromma is 9 km from Stockholm with 2.3 million passengers from which 11.1% are international and 88.9% domestic. Also, the second biggest airport of Sweden is located not so far from Skavsta. Göteborg Landvetter is located 450 km from Stockholm and has 5 million annual passengers, from which 72% are international and 28% domestic. (Swedish Transport Agency 2014a)

One big passenger group for Mikkeli City airport could be Russian tourists. Within a flight time of 30 minutes is live over 5 million inhabitants in the City of St. Petersburg. According to the studies about the travel destinations and the overnight stayings of Russian tourists (for example, Worlds Tourism Organisation and European Travel Commission 2009), the European destinations recording the highest number of nights of Russian tourists staying in 2007 were Turkey, Italy, Spain, the United Kingdom and Greece. Four of these countries, Turkey, Italy, Spain and Greece, are popular summer holiday destinations and the United Kingdom is an important destination for business, educational and VFR (visiting friends and relatives) travel from Russia. Over the study period 2000–2007, many destinations reported double-digit growth in overnight volume from Russia: Austria, Croatia, Czech Republic, Estonia, France, Italy, Latvia, Lithuania, Malta, Monaco, Portugal, Romania, Sweden, Switzerland and Turkey. The strongest annual increase was recorded by Montenegro. When choosing the destination, Russians value destinations, prices and transport connections, for instance direct flights. (Worlds Tourism Organisation and European Travel Commission 2009, pp. 48–49; 117–118.)

Travel time from St. Petersburg to Mikkeli is by car 4 hours (5 hours to Helsinki), of course depending on the traffic at the border, and by train 3.5 hours with one

change (3.5 hours to Helsinki). It is estimated that within the increase of the economic development in Russian Federation the level of salaries is increasing and so is increasing the possibilities for Russians to travel abroad. In 2011 the average household net-adjusted disposable income (the amount of money that a household earns each year after taxes and transfers) per capita was estimated at 17 230 USD a year, which is lower than the OECD average of 23 938 USD (OECD 2011). According to the studies of Worlds Tourism Organisation and European Travel Commission (2009) Russian outbound travel by purpose of trip points to a 56% share for holiday trips, 19% for other leisure and 25% for business travel. Russians are interested in sun and beach opportunities, but also history and culture. Russians as a passenger group could be helping the Mikkeli City airport to gain its goal – 500,000 passengers annually, but also it could help the City of Mikkeli to gain its strategic goals – increase over night stayings in the region, amount of workplaces and amount of tourism enterprises. (Worlds Tourism Organisation and European Travel Commission 2009, pp. 32–33.)

Mikkeli City airport has a competitive advantage over the Pulkovo airport in St. Petersburg in that Mikkeli City airport can offer lower fares for air carriers than Pulkovo airport, which will increase airport charges in 2014 – 19% and until 2018 up to 51.9%. Being after that 30% more expensive than Sheremetjevo D-terminal in Moscow, which is now the most expensive airport in Russia. The reasons behind this decision are that Pulkovo airport has to pay 11.5% from the turnover to the City of St. Petersburg, and because of the costs of credit 1.2 billion euro for expansion of terminal 3. (Delovoi Petersburg 2013.)

Third of all – ownership. Privatizing the airport company, leaving part of the ownership to the City of Mikkeli. The City of Mikkeli should privatise the Mikkeli City airport, but still keep part of the ownership in its own hands. Possibilities for getting best possible benefit from the airport company after selling the shares of the airport should be studied further. Stockholm Skavsta is today 90.1% owned by ADC & HAS Airports Worldwide, and 9.9% by the Municipality of Nyköping. Under the ownership of the Municipality of Nyköping the Stockholm Skavsta had 50–100 000 annual passengers before the deal with Ryanair

in 1997. In 1998 the airport was privatised, when selling the shares of 90.1% of the Airport, including the land, to British company TBI. Within 10 years of time, Stockholm Skavsta gained almost 2 million passengers. When thinking about the goal of Mikkeli City airport, 500,000 passengers, Stockholm Skavsta gained it within 5.5 years. It was before Ryanair placed their Scandinavian hub at Skavsta in 2003 basing 3 aircrafts to the airport. In the sixth year Skavsta had already one million passengers. According to the Municipality Director of the Municipality of Nyköping Eric Carlgren (2014) the municipality wanted to keep part of the ownership because the airport is seen as a big development part of the City of Nyköping. The City still has the 9.9% ownership of the airport company, but it has no other income since the selling of the airport shares. According to Eric Carlgren (2014), it was a big sum of money, and it was used for local energy company's investments. That is why the City of Mikkeli, if privatizing the Mikkeli City airport, should study the privatizing options carefully to be able to get the best possible benefit. Municipality Director Carlgren (2014) also said that the Swedish government-owned airport network company, Swedavia, was not interested to take over the Skavsta airport. According to the scenarios of Air transport strategy in Finland, Finnish government-owned airport network company Finavia, seems not interested to take over Mikkeli City airport. (Carlgren 2014; Kulovuori 2014a; Ministry of Transport and Communications 2013c; Swedish Transport Agency 2014a.)

Annual production capacity of Mikkeli City airport is with current opening hours 624 planes/1 248 movements, but with Skavsta opening hours 3 640 planes/7 280 movements. This amount of planes is not possible to handle in Mikkeli City airport without investments to the infrastructure. Airport output i.e. quantity of passengers is with current runway maximum 1 092 000 annual passengers but after lengthening of the runway 2 184 000 annual passengers. These amounts are just theoretical, but it should be noticed that the Mikkeli City airport has big growth potential. The goal for the development project for Mikkeli City airport is realistic. The quicker the City of Mikkeli is ready to develop the Mikkeli City airport further, the quicker the City can have a possibility to get direct, indirect and catalytic benefits from the airport especially from the output i.e. passengers of the airport.

At the end. Mikkeli City airport has also a chance to do nothing. Airport will be kept open mainly for Finnish Army Command, private charter flights, and pilot training flights, first aid flights and leisure time aviation, but before deciding for the future of the airport, all the possibilities should be counted carefully. Most of all the goals for future development of the airport should be kept realistic. According to Municipality Director Eric Carlgren (2014), still, after 2 million annual passengers, in the City of Nyköping is openly discussed about the need for an airport in the region. Still it is a fact that with international connections, Mikkeli has bigger potential to gain regional benefits than without these connections. It would mean a loss of jobs and economic activities of regional businesses, loss of purchasing power and demand for consumer goods. It would have a big influence for the future development of the Mikkeli region, but it is difficult to estimate the loss solely in terms of money. Within this study we have counted the direct and indirect effect of the employment for the region and the amount of money the passengers could leave. These effects – over 25€ million – would be counted as a loss for the region. Not to mention all the other uncountable benefits starting from the reputation and attractiveness among tourists.

7 CONCLUSIONS

Future of the Mikkeli City airport is current at this very moment. Governmental support for running the airport will be stopped after a transition time and completing the Air Transport Strategy to Finland at the end of year 2014 have created a new environment for Mikkeli City airport where the City of Mikkeli has to decide what do. It is not cheap to keep the airport open as currently costs for running the Mikkeli City airport are approximately 500 000€ annually, and it is not the task for the municipality to run the airport or even cover the expenses of running the airport from the taxpayers` pockets.

The main research question in this thesis was: How to improve the performance of Mikkeli City airport? And the sub-questions were: Why to improve the performance of Mikkeli City airport?, What is airport performance and how it is measured? And: What can be learned from Stockholm Skavsta airport case?

This study was a qualitative case study research using interviewing and secondary data analysis as the study method. Analytical technique of collected data has been used benchmarking, comparing the performance of Mikkeli City airport with successful partially privatised Stockholm Skavsta airport, with an approach of partial factor productivity (PFP) performance indicator measures, which examine the relationship between inputs as employment and production capacity and output of quantity of passengers.

Results of this study shows that direct employment effects of Mikkeli City airport is currently 5 FTE and indirect employment effect 0.5 FTE with 2 916 annual passengers. Direct employment effect of Stockholm Skavsta airport is 115 FTE with 173 heads, from which many are part time employees. Indirect employment effect of Stockholm Skavsta is approximately 1300 heads working approximately in 40 companies, which are offering different kinds of passenger services. City of Mikkeli gets municipality tax income from the Mikkeli City airport personnel 26 300€ annually. The goal for Mikkeli City airport is to achieve 500,000 passengers within 10 years. With this amount of passengers the direct employment effect could be 25 FTE and indirect 10 FTE. In Stockholm Skavsta the current direct employment effect would be with 2 165 040 passengers 30–40

FTE without handling services, which are now made in-house, which is the same amount of employees the airport had with 200,000 passengers. Achieving the 500 000 annual passengers the City of Mikkeli could get municipality tax income from the Mikkeli City airport personnel 211 700€ annually. Today in the City of Mikkeli 5 369 companies are employing 17 748 people. Mikkeli City airport with its 5.5 employees employ 0.03% from the whole workforce. After actualizing the 10 years goal, with 35 employees the 0.19% of the whole workforce would be employed by the Mikkeli City airport. In municipality of Nyköping, where the Stockholm Skavsta is located, 4 533 companies are employing 23 449 people. Stockholm Skavsta airport with its 190 heads is the 8th biggest employer of the municipality and it employs 0.81% from the whole work force.

Production capacity of Mikkeli City airport is 1 plane/2 movements within 1.5 hours. Production capacity of Stockholm Skavsta airport is 4–12 planes/8–24 movements per hour depending on direction of wind and share of starts and landings. Skavsta airport can handle 6 simultaneous flights from which 2 simultaneous arrivals. With current opening hours daily capacity of Mikkeli City airport could handle 2 planes/4 movements on Mondays, 3 planes/6 movements daily on Tuesday, Wednesday and Thursday, and 1 plane/2 movements on Fridays. Daily Stockholm Skavsta capacity is from 64 planes/128 movements up to 192 planes/384 movements depending on direction of wind and share of starts and landings. Weekly capacity in Mikkeli City airport is with current opening hours 12 planes/24 movements but when lengthening the opening hours according to Stockholm Skavsta, 16 hours per day, the Mikkeli City airport weekly capacity could be already 10 planes/20 movements day and 70 planes/140 movements per week. Weekly production capacity in Stockholm Skavsta is from 448 planes/896 movements up to 1344 planes/2 688 movements depending on direction of wind and share of starts and landings. Annual production capacity in Mikkeli City airport is with current opening hours 624 planes/1248 movements and with Skavsta opening hours 3 640 planes/7 280 movements. Annual production capacity of Stockholm Skavsta is from 23 296 planes/46 592 movements up to 69 888 planes/139 776 movements. According to environmental permit the annual production capacity of Stockholm Skavsta airport is limited to 37 500 planes/75 000 movements.

Output of the airport is the quantity of passengers the airport can handle. In Stockholm Skavsta the annual amount of passengers is currently over 2 million. The current capacity of Stockholm Skavsta with current facilities, one terminal and six gates, is 3 million passengers and it is designed for further expansion. But according to the environmental permit, the annual capacity is limited to 6 million passengers. Production capacity at Mikkeli City airport has to be counted in two ways, with current facilities and after lengthening the runway from 1 700 metres up to 2 300 metres. With current facilities, runway of 1 700 metres and current opening hours, it is possible to land to Mikkeli City airport by planes with 100–150 passengers. Weekly capacity with 12 planes/24 movements would be minimum 2 400 passengers and maximum 3 600 passengers. And after lengthening the runway and opening hours according to Skavsta, the weekly production capacity would be with 70 planes/140 movements and planes with 250–300 passengers minimum 35 000 passengers and maximum 42 000 passengers. Annual capacity of Mikkeli City airport with current facilities and 624 planes/1248 movements is minimum 124 800 passengers and maximum 187 200 passengers. Annual production capacity with lengthening the runway and opening hours according to Skavsta with 3 640 planes/7 280 movements is minimum 1 820 000 passengers and maximum 2 184 000 passengers.

Production capacity and passenger quantity calculations are hypothetical and they do not take into account any variables such as the capacity utilizations or weather conditions or other variables, which could have influence on the calculations in real life situations.

The study results verify that in theory it is possible to gain 100,000 annual passengers with current facilities and 500,000 annual passengers after lengthening the runway and opening hours. 500,000 annual passengers means weekly 5–7 scheduled flights. It also verifies that with 100,000 annual passengers the yearly expenses of 500 000€ for running the airport could be covered. 100,000 annual passengers would bring a 10€ per passenger fee, which already means 1€ million income. It also shows that strategic goals for 2017 of the City of Mikkeli could be reached, new service sector enterprises, increase in service sector workplaces, decrease in unemployment rate and increase in tourist staying over

night. In Nyköping, when the Stockholm Skavsta has over 2 million passengers, 1000 enterprises are offering tourism services and 15% from the passengers, currently 325 438, are staying over night in the Nyköping region. In Mikkeli, after reaching the goal for 500,000 passengers annually, 75,000 passengers would stay over night in the Mikkeli region.

The main objective of this study was to prepare a proposal for the City of Mikkeli for developing the Mikkeli City airport performance. These proposals are: becoming the leading tourism airport in Finland, offering a good selection of tourism destinations and privatizing the airport. Now is the time when the City of Mikkeli has to decide what to do with the Mikkeli City airport. Is the airport concentrating to become a leading leisure aviation base or is it ready to follow the Skavsta example and invest in the airport to become the leading tourism airport in Finland. Stockholm Skavsta is offering around 30 destinations annually, mostly within Europe. From annual two million passengers, 99.985% are international passengers. Estimations show that domestic flights within Finland will decrease but the international flights within Europe will grow from 2% up to 5% annually until 2030. Europe is the direction the Mikkeli City airport should also follow. Third example from the Stockholm Skavsta airport is privatizing the airport. Municipality of Nyköping still has 9.9% from the airport company's shares. To be able to invest money for developing the Mikkeli City airport, big investments of 8–10€ million must be made. The City itself cannot make such an investment, so other investors are needed. Stockholm Skavsta was first in the hands of British TBI, then Spanish ACDL and now American ADC & HAS Airports Worldwide having now bigger experience and bigger knowledge of the airport business and also wider experience about how to make the airport become a profitable business. This is also the knowledge the Mikkeli City airport now lacks.

The purpose of this study was to find how to improve the performance of Mikkeli City airport and giving reasons why Mikkeli City airport performance should be improved. Main findings of the study to question how to improve the Mikkeli City airport performance are lengthening the runway and opening hours and gaining new customers to the airport: passengers, leisure aviation activists and most of

all aviation companies offering air connections. The reason for this, is money. According to direct and indirect employment a current effect of about 28 930€ up to 211 700€ after reaching the goal for 500,000 passengers within 10 years. Tourism income is with current passengers 291 000€ and it could be after 10 years and 500,000 passengers 25€ million. With 100,000 passengers the airport could cover its expenses and after transition time there is a need for income when the governmental support ends. Passenger fee 10€ per passenger leads to 1€ million income. This amount would be left to the airport. Tourism income 100€ per tourist – 10€ million. This amount would be left to the Mikkeli City area. What is meant by airport performance and how it is measured depends on the views of interested parties. Since there are no widely accepted industry practices for measuring and comparing airport performance, all the interest groups around the airport have their own indicators. Creditors and investors are using the traditional financial key ratios, to be able to compare the performance of the airport with other businesses. Senior management of the airport operators are using other indicators, mostly to be able to estimate that is the airport operating and using its infrastructure as cost efficiently, productivity, and profitable as it could, compared with competitors. Indicators can be divided to financial measures monitoring the commercial performance, measures to meet the requirements of government regulators and environmental measures. Commercial pressure from ownership forms that demand a degree of financial accountability have led many airports to become more focused on measuring operational and business performance within the airport company. Also aviation organisations are using their own performance indicators. American Federal Aviation Administration through Airport Cooperative Research Programme (ACRP) is using a technical approach and is focused on the implementation of a performance management system. International Civil Aviation Organisation (ICAO) has a more strategical focus. The most used performance indicators are presented by European region of Airports Council International (ACI Europe). It is a set of key performance areas and key performance indicators, which can be used differently depending of the need of airport and its managers. Eurocontrol, which has aim to understand the capacity of European airspace and the reasons for delays when planning the use of airspace is interested in such an indicators as delays, and punctuality of arrivals and departures.

As to what could be learned from Stockholm Skavsta case for Mikkeli City airport for improving the airport performance are according to the proposal for the City of Mikkeli as follows: becoming leading tourism airport in Finland, offering good selection of tourism destinations, and privatizing the airport.

Hypothesis of the study was that from Stockholm Skavsta airport could be learned practises, which can be used to improve the performance of the Mikkeli City airport. This study shows the hypothesis to be correct. These issues are segmentation: to become leading tourism airport in Finland, destinations: offering wide range of tourism destinations and ownership: privatizing the airport.

This research is reliable when conducting the study using benchmarking with an approach of partial factor productivity (PFP) when analysing the data and finding the answer to the research questions. Partial factor productivity showed well the relationship between inputs such as employment and production capacity and output of quantity of passengers. Collected data is valid corresponding to the requirements for minimum amount of data according to Graham and Vogel (2014; 2004) for comparing airport performance using input and output indicators. This study has validity, where used data, method and results, justifies the proposals for the City of Mikkeli for developing the Mikkeli City airport performance. Study method measures the phenomenon, using employment effect, production capacity and quantity of passengers, and is reliable and it can be replicated. According to the researcher there can be variations in what kind of economic benefits the City could gain from increased passenger volume depending on the effective municipality tax rate and the level of passenger fee and tourism income sum per passenger. Study results and arguments made according to the analysis of the collected data are also reliable and can be replicated.

Themes for further research could be an analysis of potential investors for continuing the Mikkeli City airport development project, which could need funds of 8–10€ million and finding the best possible partners for a future privatized Mikkeli City airport company. Another big need for future research would be finding out what aviation companies would be interested to operate from Mikkeli, and making a marketing proposal for the Mikkeli City airport.

In the end it is important to study the Mikkeli City airport development very carefully. There is a possibility to do nothing to the airport, but after transition time, there are no possibilities to get funds from the government for running the Mikkeli City airport. But if there is willingness to develop the airport to become a leading tourism airport in Finland the goals for the future have to be realistic. In Nyköping it is still discussed, even after gaining over 2 million annual passengers, about the need for the airport. There are issues such as regional accessibility, reputation and attractiveness among tourists, which cannot be counted in money alone. According to our study, economic benefits for the City of Mikkeli after gaining 500,000 annual passengers, would be over 25€ million annually. Without first investing money for the development of the Mikkeli City airport this sum can never be counted as income to the City.

AFTERWORD

Making the current study has been a really interesting journey to the world of aviation. It has turned out to be very interesting world and in the future I definitely hope to become a part of it one way or another.

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