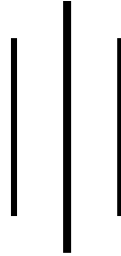
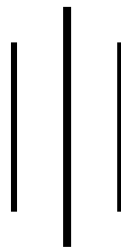


An Analytical Study on Market Potential of Janakpur Airport



By

Radheshyam Prasad Yadav
Campus Roll No.- 53/062-065
T.U. Regd. No.:- 7-1-15-395-96
Hari Khetan Multiple Campus



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April,2010

RECOMMENDATION

This is to certify that the thesis
Submitted by
Radheshyam Prasad Yadav

Entitled

"AN ANALYTICAL STUDY ON MARKET POTENTIAL OF JANAKPUR AIRPORT"
Has been prepared as approved by this department in the prescribed format of the
faculty of Management. This thesis is forwarded for evaluation.

.....
Rmbabu Prasad Chaurasiya
(Thesis Supervisor)
Hari Khetan Multiple Campus

.....
Shambhu Chaurasiya
(Head of Rearch Committee)
Hari Khetan Multiple Campus

.....
Bhagawan Pd. Yadav
(Campus Chief)
Hari Khetan Multiple Campus
Birgunj

VIVA-VOCE SHEET

We have conducted the viva-voce examination of the thesis

Presented by

Radheshyam Prasad Yadav

Entitled

“An Analytical Study ons Market Potential of Janakpur Airport”

And found the thesis to be original work of the student and written according to the prescribed format. We recommend the thesis to be accepted as fulfillment of the requirement of the Master’s Degree in Business Studies (MBS).

Viva-Voce Committee

Head of Research committee):- -----

Member (Thesis Supervisor):- -----

Member (External Expert):- -----

Date -----/-----/-----

DECLARATION

I hereby declare that the reported in this thesis entitled to a study to "AN ANALYTICAL STUDY ON MARKET POTENTIAL OF JANAKPUR AIRPORT " Submitted to the office the dean, faculty of management; T.U. is my original work done in the form of partial fulfillment of the requirements of the Master of Business Studies (M.B.S.) under the supervision of Mr. Rambabu Prasad Chaurasiya , a Lecturer of Hari Khetan Mutipal Campus.

Radheshyam Prasad Yadav

Roll No.:- 53/2062-065

T.U.Regd.No,:- 7-1-15-395-96

Hari Khetan Multiple Campus

Birgunj

Date:-

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Air services being the rapid, reliable and comfortable means of transportation, has become the most important service sector in the world. In the developed countries where land transportation has become much reliable air transportation is taken as luxury. But in countries like Nepal, where the topography is quite abnormal, air transportation has become the life-line of people in remote mountainous areas. Air services in various parts of our country still provides livelihood for the people as well as give rise of economic activities. However, with the changing pace of globalization and increase in tourism, civil aviation industry is getting transformed from a means of transportation to a service and commercial sector. As a result airports around the world are getting upgraded and facilitated in order to provide opportunities for commercial activities. But, in the Nepalese context, airports are still being operated as a part of the government liability to provide basic services to its people.

I have been able to complete the research report entitled “An Analytical Study on Market Potential of Janakpur Airport” with the cooperation of various persons and organisations. I have attempted to present the scenarios of revenue generation and air traffic flows in Janakpur airport and CAAN. I have also tried to highlight the efforts required to commercialize airports in the country.

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I would also like to express my heartfelt thanks to my family and dedicate this study to my father Awadhesh Pd. Yadav, wife Anita Yadav and children Pragya yadav & Samata Yadav.

I have tried to make this report relevant and avoid mistakes. However, I would like to apologize for any mistakes revealed.

Radheshyam Prasad Yadav

Roll No.:-53

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ACRONYMS

ACI	:	Airports Council International
AD	:	Anna Domino
BOT	:	Build, operate and transfer
BOOT	:	Build, own, operate and transfer
BS	:	Bikram Sambat
CAAN	:	Civil Aviation Authority of Nepal
Comm.	:	Communication
DCA	:	Department of Civil Aviation
Doc	:	Document
eg.	:	As for example
ft	:	Feet
Fig	:	Figure
FY	:	Fiscal Year
GCC	:	Gulf Consortium Countries
GDP	:	Gross domestic Product
GoN	:	Government of Nepal
HMG/N	:	His Majesty's Government of Nepal
ICAO	:	International Civil Aviation Organisation
i.e.	:	That is
Int'l	:	International
km.	:	Kilo meter
Ltd.	:	Limited
MoCTCA	:	Ministry of Culture, Tourism and Civil Aviation
Nav.	:	Navigation
NEPECON	:	Nepal Engineering Consultancy Services Centre Ltd.
No.	:	Number
OT	:	Operate and transfer
PEs	:	Public Enterprises
Pvt.	:	Private
Rs.	:	Rupees
STOL	:	Short Take-off and Landing
TDS	:	Tax deductions
TIA	:	Tribhuvan International Airport
T.U.	:	Tribhuvan University
UAE	:	United Arab Emirates
US\$:	United States Dollar
VDC	:	Village Development committee
viz.	:	Namely
%	:	Percent
&	:	And

CHAPTER- I

INTRODUCTION

1.1 Background of the Study

1.1.1 General

Nepal is a landlocked mountainous country. It lies in south Asian region. It is sandwiched between world's two giant countries India and China. The territory of Nepal is bounded by India from east, south and west and by China from north. Nepal is situated within latitude 26⁰22' to 30⁰27' N and longitude 80⁰04' to 88⁰12' E. The area of the country is roughly rectangular in shape and extends from east to west with an average length of 885 km and average breadth 193 km. It covers a total area of 147,181 sq km of land, which constitute 0.03 percent of the total area of the world and 0.3 percent of total area of the Asian continent. National census 2001 had reported the total population of the country to be 23,151,423, which has reached 28 million according to current estimates.

On the basis of its geographical topography, Nepal is divided mainly into three parts viz. Mountain region, Hill region and Tarai region. The southern plain Terai region contains only 17% of the total land in the country while the remaining 83% land lies in the Hill and the Mountain region, which are covered by hills and high mountains. Whereas the majority of total population of the country live in the plain Tarai region. High Himalayas including the world's highest peak Mount Everest and many other higher peaks lie in the northern part of the country. The high mountains, rivers, lakes and other majestic places in the country have made it renowned over the world as a tourist destination.

Nepal is one of the richest countries in the world in terms of bio-diversity due to its unique geographical position and altitudinal variation. The elevation of the country ranges from 60m above mean sea level to 8,850m, all within a distance of 150 km resulting into climatic conditions from Sub-tropical to Arctic. Such a unique topography has caused surface transportation a very hard

job in the country in terms of both feasibility and costs. Due to the inaccessibility of road transportation many parts of the country are yet to be connected with other parts. Out of the total seventy-five districts in the country more than one dozen are yet to be connected with road links to other districts. Lack of transportation facilities within the remote districts in the mountainous region has seriously impacted the socio-economic and other development activities.

1.1.2 Importance of Air Transportation

Air transport service is the only means of transportation in the far remote mountainous areas in a country like Nepal. It is essential for the movement of people and goods. Air transportation is no more a luxury in the remote, inaccessible mountainous areas where it is the only means for the mobility of people and transport of foodstuffs, medicines, construction materials and other essential goods. Civil aviation stands as the life-line of many parts of the country and every activity are stagnant in the absence of air services. Thus air transportation plays crucial role in the social, economic and overall development of the remote areas in the country. Besides these, air transportation being the most reliable, safe and rapid, is much demanded as an alternative means of road transportation. Similarly, it is the only means to reach the majestic high Himalayas, lakes and other holistic places that possess great feasibility for tourism promotion in the country.

The availability of air transportation in the remote areas has made livelihood better by ensuring the supply of essential goods, medicines, construction materials, etc. and transport of local products to outside market. Airports have resulted in economic activities and raised income level of the people, and hence, played significant role in the socio- economic development of the remote areas. Civil aviation in the country has also played crucial role in promoting tourism and boosting up the economy. Civil aviation and tourism industry is making significant contribution in GDP and is established as one of the major sources of foreign exchange earnings. The government of Nepal aims to develop airports and encourage private sector participation in domestic and international air services to boost up tourism industry and contribute in the promotion of economic activities and poverty alleviation.

1.1.3 Growth of Civil Aviation in Nepal

The history reveals that the formal beginning of aviation in Nepal took place in 1949 A.D with the landing of a four-seater single powered engine Beach-craft Bonanza aircraft of Indian ambassador at Gaucher, the present Tribhuvan International airport in Kathmandu. And the first charter flight service was started by Himalayan Aviation Dakota from Gaucher, Kathmandu to Calcutta in 1950. The government of Nepal made initiative for the organized development of civil aviation in the country by creating 'Department of Civil Aviation (DCA)' in early 1957 A.D. The government also created a public undertaking 'Royal Nepal Airlines Corporation' in 1958 and started domestic as well as international flights. Latter in 1959, in order to provide legal support to civil aviation sector the government promulgated Civil Aviation Act 2015. Nepal attained membership of International Civil Aviation Organisation (ICAO) in 1960 that was a milestone to connect Nepal in international air network. After joining the global network Nepal is actively participating in international conventions and treaties to boost civil aviation as a significant tool for socio economic development of the country. It has made bilateral and multilateral agreements with many countries to facilitate flights from various destination of the world.

The government has made its effort for infrastructure development to facilitate air services within the country for many destinations outside the country. Till now, it has made huge investment in civil aviation industry by constructing airports and establishing air navigation services in various parts of the country. As a result the number of airports in the country totaled to fifty-one including four under construction (Appendix I.I). The government has also adopted liberal sky policy since 1992 in order to encourage private sector participation in civil aviation industry. The supportive policy of the government for the promotion of air services has caused the emergence of a large number of airlines from private sector in the domestic as well as international services (Appendix I.II).

At present a dozen airports are not in operation due to the access of road network and lack of regular flights. Tribhuvan International Airport (TIA),

Kathmandu, is the only one international airport in the country serving flights for short and long external routes. Where as Biratnagar, Pokhara, Bhairahwa and Janakpur airports are operated as regional hub airports and the remaining are mostly short take-off and landing (STOL) airfields. The government of Nepal has announced to develop Dhangadhi airfield as a regional-hub airport and infrastructure development works are in progress with public and private participation model. On the other hand, Pokhara, Bhairahwa and other hub airports are getting upgraded as regional international airports to serve international flights to neighboring countries. The government has also decided to build a second international airport with modern facilities at Nijgadha in Bara district due to traffic congestion and geographical constraints for expansion of TIA.

1.1.4 Janakpur Airport

Janakpur airport lies in Janakpur Dham city, the wholly birthplace of Jagat Janani Janaki (Goddess Sita), which is located in the central Tarai region of Nepal. This airport situated to the south of the city is among the few oldest airports of the country and serve the people of Janakpur and Sagarmatha zone in the mid Tarai region. Janakpur airport located at an elevation of 256 ft above mean sea level and also serves large number of pilgrims from different parts of the southern neighbor India. The increasing number of tourists from India has made this airport potential destination for religious tourism. Moreover, the cultural Mithila art has been also adding to the attraction of tourists from third countries. Regular scheduled and charter flights are operated between Kathmandu and Janakpur by many domestic airlines such as Buddha Air, Yeti Airlines, Gorkha Airlines, Agni Air and Sita Air. This airport initially constructed by the Technical, Economic and Cultural development program of the Government of India in 1965 AD. The runway and parking areas of this airport are black topped and are serviceable for the whole year. It has in fact, reduced the 12 hours motor drive to the capital city Kathmandu and limited to 25 minutes fly.

This airport has also played significant role in social, economic and cultural development of mid Tarai region. This airport stands as the lifeline for

promoting tourism and attracting a large number of tourists from India and other countries. Janakpur Dham is an important religious place and popular destination for Hindu pilgrims. Availability of flights between Janakpur and various cities of the southern neighbor India such as Calcutta, Patana, Varransi, Lucknow, etc will boost up inflow of tourists and pilgrims. Thus, Janakpur airport possesses great potential for tourism promotion, economic and socio-cultural development of the country and the under developed Mithila region. With the on going state restructuring and allocation of resources, voices are being raised by the people of this region demanding transformation of Janakpur airport into second international airport of the country.

1.1.5 Concept of Airport Marketing

Airports are important places, which play crucial role for economic activities in a country. In the old days airports were operated and managed by the direct control of States as a junction of air transport. But the scenario has been changed now. Airports are no more a station providing flight for various destinations but are referred as a point of service generation and hospitality. As a result it is required to operate and manage airports efficiently to minimize cost and maximize benefits. Airports under the control of States failed to follow business principles, and hence, to generate sufficient resources required for facilitation. To market and retail services and facilities in airports, States worldwide are either creating autonomous entities to operate airports or privatizing them.

Privatization is a mechanism by which some level of airport management, operation, or ownership is transferred from public sector to the private sector. Its purpose is to introduce market competition into the operation of airports and to relieve government of the financial burden of providing the large investments required to maintain and operate a system of airports. Privatization of airports worldwide was only a theory till early eighties. In 1987, Prime Minister of United Kingdom, Margaret Thatcher made history by selling the British Airports Authority for US\$ 1.9 billion. That sparked the initial wave of interest worldwide and a number of airports were privatized. In Latin America

and Caribbean region, more than sixty airports have been privatized and about thirty awaits privatization. In Europe, more than twenty airports have been privatized and many are in pipeline.

In the Asia-Pacific region, Australia tops the list with about 19 privatized airports, and Thailand has six. Indonesia, Pakistan and Philippines are considering privatizing some of their airports. India has a publicly held Cochin International Airport; Delhi and Mumbai airports have already been privatized and more than four airports are under the process of privatization. Many countries have created separate body in the form of autonomous airport entities/ authorities, to operate and manage airports efficiently.

Marketing is a societal process by which individuals or groups obtain what they need and want through creating, offering and freely exchanging products and services of value with each other. In another words, marketing is the management process responsible for identifying, anticipating, and satisfying customer requirements profitably through exchange process. Marketing is not simply selling. Selling is merely the final phase of marketing. The earlier phases consist of analyzing the wants and needs of customers. This allows the production of goods/ services in such a way that customers are satisfied and firm's corporate objectives are met.

Unlike marketing of commodities the function of airport marketing is aimed at promoting the airports to airlines and the general public as well as potential users of airport services. This involves identifying the typical features of the airport's customers and their requirement, public and media relations, operating guided tours, dealing with complaints, preparing brochures describing the airport for the public. The products of the airport are the facilities like runways, terminals, roads, utilities, lights, equipments; services like aircraft parking, passenger handling, ground handling, transport; and amenities like food, drink, shops, lodging. Thus, airport marketing involves the provision and maintenance of infrastructures, facilities and services; pricing and promoting them to attract customers and to maximize benefits.

1.1.6 Autonomous Airport Authority

An autonomous airport entity is essentially an independent body established for the purpose of operating and managing one or more airports, one objective of which is to permit local and user needs to be met better. In some instances, the scope of such autonomous airport entities has extended to the operation and management of navigation services as well.

Experience has shown that establishing autonomous airport entities for the management and operation of airports may translate into the following advantages:

- Empowers service providers through financial and operational autonomy;
- Encourage the growth of a business culture;
- Lower expenses per traffic unit relative to other airports of comparable size;
- Recycle various aviation user charges into aviation;
- Reduce the financial burden on governments;
- Generally improve the quality of services; and
- Establish a clear distinction between the regulator and the provider of services.

1.1.7 Civil Aviation Authority of Nepal (CAAN)

The then HMG/N on 31st December 1998, established Civil Aviation Authority of Nepal (CAAN) to operate airports and regulate civil aviation in the country to make air services safe, standard, regular and effective. The objective of CAAN is to operate airports efficiently and to make air services safe and effective tool for the economic development of the nation. CAAN is not for profit seeking organization but it has to work with business motive in order to generate sufficient resources, which can be reinvested for upgrading infrastructures and facilitation in airports.

1.2 Statement of the Problem

The then HMG/N with the establishment of CAAN, transferred all the airports and their properties owned by DCA to CAAN in the form of cumulative redeemable shares of the government. CAAN is bind to pay the investments of government and foreign loan in certain periods with their interests. Thus, CAAN holds the authority to operate all the airports in Nepal, though many of them are already closed and most are social sector airports generating huge loss in operating them. Thus, financial position of CAAN is very weak since its establishment.

Being an autonomous entity CAAN is independent to play its roles in regulating and promoting air services within the country and abroad. Its motive is to operate airports profitably so as to generate sufficient resources that can be used to facilitate the airports properly. But government and political interferences as well as management culture affects CAAN activities directly or indirectly. As a result CAAN is unable to make better use of available resources till now and incurs huge loss in operating many of the social sector airports. Likewise, the facilities and resources available in Janakpur airport are not properly exploited to maximize economic benefit and hence remaining idle.

In the light of above scenario problems considered in the study can be stated as follows:

- (i) How airports can be marketed in order to maximize economic benefit and make air services affordable and accessible in remote sectors?
- (ii) In what way Janakpur airport will play pivotal role for regional imbalances and sustainable development in the country?
- (iii) How civil aviation can be taken as an economic driver and multiplier?

1.3 Objectives of the study

The main objective of the study is to analyze the revenue pattern of Janakpur airport and its contribution in socio economic development and tourism promotion in the country. But specific objectives of the study can be pointed out as follows:

- (a) To find out the sources of revenues in Janakpur airport and its contribution in total revenues of CAAN, and to suggest possible ways to utilize resources remaining idle.
- (b) To present the status of air traffic flow in Nepal with Asia-Pacific region and global scenarios.
- (c) To find out experts opinion regarding the role of CAAN and commercialization of airports in Nepal.
- (d) To recommend valuable suggestions to policy makers to market airports in order to make air services in the remote areas affordable and convenient.
- (d) To add a research work as an asset in the field of civil aviation and tourism.

1.4 Scope of the study

Aviation field is highly technical, professional, dynamic and highly capital-intensive industry. This industry is an effective economic driver and has multiplier effect on socio economic development globally. Many research studies are carried on around the world to make civil aviation safe, reliable and affordable so that it can play significant role in promoting service sector to make large contribution in real GDP. The scope of the study covers activities and roles played by Civil Aviation Authority of Nepal, Ministry of Culture, Tourism and Civil Aviation and Janakpur airport for the development of civil aviation industry. It also focuses the operating status of social sector airports in the country. Finally, it emphasizes contribution of Janakpur airport in promoting tourism, enhancing business and economic activities in remote sector in the western region and hence, boosting overall socio economic development of the country.

1.5 Importance of the Study

The importance of civil aviation as a means for connecting people worldwide as well as an effective economic driver is growing regularly. Civil aviation being the safest, fastest and reliable means of transport is rapidly growing worldwide with the increasing demand as a service industry. The increasing growth has also added many challenges to maintain the level of safety and reliability in the industry. This causes modernization and adoption of much sophisticated technologies regularly. The technological advancement in civil aviation causes many research studies to be carried on annually worldwide in order to result in efficiency in the industry. However, very few research studies have been carried on in this field in our country. This study makes effort to analyze the contribution of civil aviation and airports in the socio economic development of the country. This study also aims to encourage scholars and academicians to conduct further researches for the promotion of civil aviation and tourism industry.

1.6 Variables and Measures

Performance evaluation of airports is done on the basis of revenues generated by the airport and aircrafts, passengers and freight movement take place. There are many dependent and independent variables to be considered while measuring the efficiency of an airport. The dependent variables are airport revenues, investments, flight movements, passenger movements etc. Similarly, the independent variables are infrastructure, level of consumer disposable income, attitude, flight safety and reliability, weather conditions, service level, level of manufactured export, etc.

The total investments and revenues of an airport are measured in terms of monetary unit such as rupees. Total revenues consist of aeronautical revenues and non-aeronautical revenues. The aeronautical revenues include charges collected directly from airlines for the movement of aircrafts, passengers and cargos. Whereas non-aeronautical revenues include concessions and benefits from commercial activities in an airport conducted by the operator itself or by authorized entities. Aircraft and passenger movements are measured in numbers whereas freight movement is measured in tonnes.

1.7 Limitations of the study

The limitations of the study can be pointed out as follows:

- (a) The study is conducted with primary objective of fulfilling academic requirement;
- (b) The analysis will be based on data published by CAAN and other relevant authorities;
- (c) Data collection and critical analysis of the study will be based on Janakpur airport due to limited time and budget.
- (d) Reduction in flights due to various reasons may contradict the assumptions; and
- (e) Unavailability of data and unwillingness of respondent also limit the study area.

1.8 Organisation of the Study

The study comprises of total five chapters. The first chapter is the introductory chapter and contains general background, statement of the problem, objectives, scope, importance of the study, and variables and measures used. In the second chapter review of related literatures is made and includes theoretical review, summary of previous studies and relevant literatures and conceptual framework.

The third chapter contains the methodologies applied and tools used for data collection and analysis. In the fourth chapter analysis and interpretation of data is made. The last chapter is the concluding chapter, which includes the summary of findings, conclusions and recommendations made for users of the study. And finally appendices to the research report and references are also included.

CHAPTER- II

REVIEW OF LITERATURE

Literature review is basically a 'stock taking' of available literature in one's field of research. The purpose of literature review is thus to find out what research studies have been conducted in one's chosen field of study, and what remain to be done. It provides the foundation for developing a comprehensive theoretical framework from which hypothesis can be developed for testing.

This chapter consists of three sections viz. general background, summary of previous studies and conceptual framework. In the first section an attempt is made to define the specific terms regarding airport infrastructure, assets, services and charges that are frequently used in the research report and. Summary of previous studies contains review of Acts and laws designed for the regulation and operation of civil aviation in the country, policies and summary of journals, articles and studies relevant to the study.

2.1 General

Civil aviation industry, being highly technical and professional requires a sound combination of various disciplines to result in safe conduct of air services and airport operations. The core functions in civil aviation includes air traffic management; flight operations, radio-communication, electronics, electrical, civil and aeronautical engineering. Similarly, the allied functions include marketing, finance, general administration, rescue and fire fighting, etc. Research study in this field requires the knowledge of some specific technical and managerial activities. Some terms from economics often used in this study such as concession, commercialization, multiplier effect etc. are defined as below:

Concession:

The right to operate a certain commercial activity at the airport, commonly on an exclusive basis and usually at a specified location.

Commercialization:

An approach to management of facilities and services in which business principles are applied or emphasis is placed on development of commercial activities.

Multiplier Effect:

Normally expressed as a factor showing how much the direct economic impact of the airport is increased by indirect and induced economic effects of airport activities.

Some specific terms often used in this study to represent assets, services and charges of airports are described in the following three sub-sections.

2.1.1 Airport Infrastructures and Assets

An asset is a resource from which future economic benefits are expected to flow to the entity that owns or control it. Civil aviation industry being a high capital-intensive field possesses many specific assets, which are as follows.

Airport/Aerodrome:

A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

Aircraft:

Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth surface.

Passenger Terminal:

The building constructed on the airport for the purpose of passenger processing having facilities like check-in counters, security measures, sterilized areas, customs, immigrations, restaurants, duty-free shops, etc.

Cargo Terminal:

Buildings within the airport constructed for the purpose of cargo and freight handling equipped with security measures and cooling process.

Runway:

A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.

Taxiway:

A defined path on a land aerodrome established for the taxiing of aircraft and intended to connect one part of the aerodrome to another.

Apron:

A defined area on a land aerodrome, intended to accommodate aircraft for the purpose of loading or unloading passenger, mail or cargo, fuelling, parking or maintenance.

Hangar:

A building or shade on a land aerodrome, intended to be used for the maintenance or housing of aircraft.

Communication and Navigation Aid:

Equipments installed on the airport or en-route for the purpose of establishing communication between aircraft and air traffic control unit, and to locate path of flights.

Airport Lighting:

Lighting systems installed on an airport for the safe conduct of flights especially in night such as airport beacon, runway light, taxiway light, approach light etc.

Rescue and Fire Fighting Facilities:

A combination of equipments and vehicle used for extinguishing fire burnt in aircraft on the airport and to rescue its occupants.

Security Measures:

The Combination of equipments and security personnel designed for safeguarding civil aviation from illegal interferences.

2.1.2 Airport Services

Civil aviation is a service industry, and is expanding rapidly due to the increasing demand of air services and transport. Besides passenger services, airports provide some specific services, which are considered as the heart of civil aviation such as

Air Traffic Control Service:

A service provided for the purpose of preventing collision between aircraft, between aircraft and obstructions on the maneuvering area, and expediting and maintaining an orderly flow of air traffic.

Communication and Navigation Service:

A service provided between air traffic control unit and aircraft for the exchange of messages relating to aircraft position, weather information, collision avoidance and route guidance.

Rescue and Fire Fighting Service:

A service provided to evacuate and rescue persons onboard an aircraft in emergency and extinguish fire to safeguard property.

Passenger Service:

Services provided for the comfort of passengers waiting on the airport such as sitting, security, flight information, drinking water, electricity, refreshment, entertainment, etc.

2.1.3 Revenues/Charges

Charge is a levy that is designed and applied specifically to recover the costs of providing facilities and services for civil aviation. Total revenue of an airport is composed of aeronautical and non-aeronautical revenues.

2.1.3.1 Aeronautical Revenues

The revenues generated by flight operation in an airport collected directly from the aircraft operator such as:

a. Landing charges:

The charges and fees collected for the use of runways, taxiways and apron areas, including associated lighting.

b. Parking and Housing charges:

Charges collected from aircraft operators for the parking of aircraft and their housing in airport owned hangars, including any revenue from the leasing of such hangars to aircraft operators.

c. Passenger Service charge:

The charges and fees collected from passengers for the use of the passenger terminal and other passenger-processing facilities.

d. Cargo charge:

The charges and fees collected in respect of cargo for the use of the airport's freight processing facilities and areas.

e. Security charge:

The charges and fees collected by the airport for the provision of security services for the protection of passengers and other persons at the airport, aircraft and other property.

f. Noise-related charges:

The charges collected related to the noise alleviation and prevention measures.

g. Communication and Navigation charge:

The charges collected for the communication service and navigation equipments installed by airports for the safe conduct of flights.

2.1.3.2 Non-Aeronautical Revenues

The revenue generated from sources other than flight operation in an airport such as:

a. Rentals: This refers to rentals payable by commercial enterprises and other entities including aircraft operators for the use of airport-owned building space, land or equipment other than those used for aircraft operation.

b. Duty-free Shops: The fees and charges payable by a commercial enterprise or any other entity for the right to operate duty-free shops at the airport, and for off-airport duty-free shops to deliver goods sold at the airport.

c. Restaurants, Bars, Cafeterias and Catering Services: The fees and charges payable by commercial enterprises or other entities for the right to operate restaurants, bars, cafeterias and catering services at the airport including aircraft catering.

d. Aviation Fuel and Oil Concession: This refers to the concession fees including any throughput charges collected from the supplier of aviation fuel and lubricants at the airport.

e. Automobile Parking: This includes fees and charges payable by a commercial enterprise for the right to operate automobile parking facilities at the airport.

f. Other Concessions and Commercial Activities Operated by the Airport: All other concession fees and charges payable by commercial or other entities for the right to sell goods and services at the airport, as well as any public admission fees charged for entry to areas of special interest or for guided tours at the airport.

2.2 Summary of Previous Studies

There are many national and international publications in the form of manuals, journals, magazines, articles etc in the field of civil aviation and air transportation. Many case studies have also been carried out for organisations involved in civil aviation and tourism industry. In our country, institutions and consultants have conducted studies regarding the operational status and

institutional strengthening of CAAN. But there is lack of research studies in civil aviation and airport marketing by professionals as well as academicians. In the course of the study various publications like Acts, Laws, Government policies, ICAO Journals, Manuals, Civil Aviation Reports, Souvenirs, case study reports, relevant magazines, articles and unpublished theses are consulted. The relevant literatures in the field are summarized as follows:

2.2.1 Summary of Acts, Laws, Policies and Manuals

Airport Economics Manual, International Civil Aviation Organization (ICAO)

The ‘Airport Economics Manual’ explains the need for establishment, development and areas of responsibility of an autonomous airport authority as: ‘The establishment of an autonomous airport entity would not necessarily result in an unprofitable airport become profitable. But experience gained worldwide from these developments indicates that where airports have been operated by autonomous entities their overall financial situation has generally tended to improve. The areas of responsibility or services concerned normally include most or all of the following aircraft movement areas, passenger terminal facilities, cargo handling facilities, aircraft parking areas, hangar facilities, air traffic control including communications and sometimes meteorological services.’

The manual further explains the financial independence of autonomous airport authorities as ‘A main objective of establishing an autonomous airport entity is to improve the efficiency and finances of the airport(s) concerned. This means turning losses into profit or at least reducing the level of losses. It should be noted in this context, however, that profitable operations may not be achievable for reasons beyond the control of the entity or state concerned, such as low traffic volumes.’

Assigning the operation of one or more airports to an autonomous entity may not, in certain circumstances, be a good approach to improving airport-operating efficiency. The responsibility of regulatory and service providing

entity, for example CAAN, causes increased burden and hence, reduced efficiency. In such case separating the responsibility of regulator and service provider will enhance efficiency. The reduced responsibilities of the civil aviation administration would normally include aviation safety and various licensing, monitoring, policy and regulatory functions.

Civil Aviation Authority of Nepal Act, 2053

Civil Aviation Authority of Nepal Act 2053 is promulgated by the then HMG/N in order to establish an autonomous entity to regulate civil aviation and operate airports in the country. The Act states that CAAN is established for the development and expansion of civil aviation and for the safe, regular, standard and efficient conduct of air traffic, aeronautical communication, air navigation and air transportation services.

The vision of CAAN assumed by the Act is making both domestic and international air services safer, more reliable and affordable. The Act states in Article 5 that CAAN shall allow using and utilizing equipments, services and facilities available in airports to maximize economic benefits. Following major provisions are made in the Act to raise funds for CAAN :

- Charging fees for aircraft landing, parking, housing, ground handling, and vehicle parking on the airports owned by CAAN
- Collecting passenger service charges for providing standard passenger services and facilities.
- Collecting fixed charges from business and advertisements on the airport.
- Collecting fixed charges for providing electricity, drinking water, telephone, telex, fax, etc.

Similarly, the Act states, in article 18, that CAAN board shall follow business principle while conducting its duties giving the most priority for the safety of air services and passengers' comfort and security.

Civil Aviation Policy 2063, Government of Nepal

The government of Nepal has revised the Civil Aviation Policy in 2063 B.S. in order to ensure its activities to cope with the growing demand of air services within the country and abroad. The goal of this policy is to develop air transport system by making civil aviation safe, reliable, standard, affordable, sustainable and effective through increasing participation of private sector according to liberal sky policy. This policy has recognized the need of private participation in the construction and operation of airports in order to generate maximum benefits.

In order to fulfill its goal, civil aviation policy has its major objective to establish national aviation industry in comparison to global aviation industry, maintaining higher level of flight safety and aviation security. To make civil aviation fair and competitive by attracting and encouraging national and foreign private investors to conduct air services; construction, operation and management of airports, and facilities related to air transport. Develop civil aviation in the form of reliable service industry and recreational aviation activities. The policy also initiates to make bilateral and multilateral air service agreements, on the principle of equity and mutuality, with countries having feasibility of sufficient tourism promotion in order to benefit Nepal.

The Para 4.14 of the policy states the provision of private sector participation in airports. Private sectors will be encouraged to participate in the development and operation of air transport and related infrastructures such as airports, roads, railway link, terminal building, communication, air navigation, etc through BOT, BOOT, OT and other suitable modalities. The policy has made provision for maximum foreign investment in aviation related businesses up to following limits:

International Airline-	up to	80 percent of total investment
Domestic Airline-	up to	49 percent
Training institute-	up to	95 percent
Maintenance firm-	up to	95 percent

This policy further states the working policy for air transport infrastructure developments which includes the expansion and upgrading of Tribhuvan International Airport, according to its long term plan by the combined investments of government of Nepal, CAAN and private sector. To enhance economic opportunities in the country by the promotion of tourism and civil aviation a second international airport will be built with modern facilities to cope with the increasing demand worldwide.

The policy also makes provision for public and private participation to build and develop airports, having importance in the promotion of air transport and maintaining regional balances. The required investments will be made by the government of Nepal (including foreign aid) up to 70 percent, CAAN 15 percent and private sector (including local agencies) 15 percent. The policy also mentions that CAAN may handover operation and management of airports to local authorities and institutions fulfilling government laid standards.

Airport Tariff Rules (4th Amendment) 2061, Nepal Gadget 2061/08/28

The Airport Tariff Rules is the only legal document mentioning the charges and fees to be collected from various activities in airports within the country. The Rules made provision for collecting various aeronautical and non-aeronautical charges. It states that the airport entity will collect 'landing charge' for each landing made by an aircraft on the basis of its weight. 'Parking charge' will be collected on the basis of time an aircraft remains on the airport. 'Housing charge' will be collected for the number of housings provided to an aircraft. Ground handling charge will be collected from the airlines as per prior agreement. Likewise, communication and navigation charge will be collected as certain percentage of landing charge for each landing.

Similarly, the Rules state that airport entity will collect charges on the sales of fuel, cargo handling, automobile parking, airport entry pass, film shooting and advertising and other commercial activities. The airport will also collect rentals for land and buildings on the basis of square meters of area occupied by the

user. The Rules have also made provision to collect miscellaneous charges such as passenger service from the persons going to fly, security, rescue and fire fighting charges from the airlines on the basis of the services taken. And charges will be collected for airport catering, passenger transport, electricity, telephone and other recreation activities etc. Thus, there is well provision for collecting revenues in the form of aeronautical and non-aeronautical charges.

2.2.2 Summary of Relevant Articles

Meen Raj Upadhyay, ‘Airport: Emerging issues and challenges’

In his article ‘Airport: Emerging issues and challenges,’ M. R. Upadhyay highlights the contribution of airports in global economic development. He explains that airports are a place of global air transportation network, inter modal transfer point, and serve as an engine of economic development.

It drives economic progress by -

-) Transporting billions of passengers worldwide,
-) Transporting a third of the value of world’s manufactured exports,
-) Allowing cheaper and more efficient air transportation as driving global force,
-) Creating business expansion and attraction worldwide,
-) Enhancing international tourism and consequently serving the government, local community and satisfying customer’s need in a sustainable way.

He further explains that airport operators should recognize the need to maximize the use of existing capacity by improving and expanding physical airside and landside, ground access enhancements and traffic flow management. As well as new runway, terminal buildings, and new airports need to be built to meet growing traffic demands. According to him airports in the modern era must cope with :

-) Ensuring that customers are satisfied with cost-effective and performance based quality service
-) Crucial capital investment requirements
-) New technologies with greater costs
-) Acquisition of new business expertise

Thus airports need to improve capacity for handling passengers and freight and to adopt the changing role of service provider to increase benefits from airports.

Rajan Pokhrel, ‘Commercialization of Airports and users Charges- An analysis,’

In his article ‘Commercialization of airports and users charges,’ R. Pokhrel explains that that air transport industry is becoming more and more competitive day by day. A competitive market and considerable growth in air traffic demand has undertaken a significant transformation of the airports and related facilities. In order to meet the competitive market airports are either being run on an autonomous, quasi-commercial basis, or sold, or installations such as terminals are being turned over to the private sector through operating concession or long term leases.

He explains the status of airport marketing and financing of airports. Nepal has paved its way towards the commercialization of airports by running them through an autonomous civil aviation entity. A country where civil aviation is also a social obligation, privatization of airports is still far from the ground reality. Airport facilities used to be financed by the charges paid by airlines using them and in many cases complemented by public aid.

He further explains that non-aeronautical revenues earned from the commercial activities are subsidizing the aeronautical charges in many commercial airports. Non-aeronautical revenues share almost 50 percent of the total income in most of the international airports in the world. Where as, in TIA, the share of non-aeronautical revenue in average is only 17 percent of the total revenue

generation. But, during short span of time after the establishment of CAAN, non- aeronautical revenue trend is quite encouraging.

Thus, the article emphasizes that commercial use of airports is essential to maximize non-aeronautical revenues that helps to lower aeronautical charges and, in turn, cost of air services.

Kamal Kumar KC, *'Little Fast Forward'*

This article highlights the necessity of commercially viable airports in a land locked and under developed country like Nepal to facilitate sustainable economic activities. Airports being economically important place of national significance should be attractive enough for all kinds of clients using the airport. Airport can become attractive only when it maintains a highest degree of international standards, which can be achieved through three fundamental requirements: budget, infrastructure and human resources. The proper utilization of adequate budget for the standard infrastructure and well-trained human resources can produce a world-class airport, which in turn will generate safe, regular, secure and efficient air transport.

The article mentions ahead that confronting to the ICAO standards and recommended practices can assure the quality of the airport not only to the commuter but the airport users in general. The assurance of the quality will boost confidence and bring in more users. More users will result in more business and ultimately augment the economy of the country at large. To build up this cycle of standard, confidence of the users and added advantage to the national economy, a sound management system, along with a transparent and effective fees and charges and an efficient revenue collection system should be in place.

The article explains that in the Nepalese scenario air transport development is resisted by the budgetary limitation as well as the lack of skill and professionalism. Therefore, it is difficult to demonstrate that the local airports conform to the set of standards and recommended practices. The adoption of liberal sky policy and private sector participation stands as the first success story in civil aviation field in the country. The article suggests that CAAN

should adopt airport marketing policy with a total ‘management contract’ of at least the landside facilities of TIA. After the successful start of facilitation in TIA CAAN should fully concentrate on the ‘regulatory’ part and delegate the responsibility of ‘service provider’ to the major airport operators.

Nisha Young, *‘The Land of opportunities for Air Logistic Industry.’*

This article states aviation as an integral part of the growth process in the emerging economies of the world. The growing demand for air cargo in the South Asian region has added challenges to airport authorities for upgrading infrastructures and facilities in airports. As a result many smaller airports are being upgraded with special focus on improving air cargo handling facilities, such as modern security systems, cold storage services, etc. Nepal, a country that goes almost unnoticed, is also experiencing growth in the air cargo industry.

The author adds that airfreight industry worldwide has been growing at a steady pace over the years and is likely to experience exponential growth in South Asia. The air cargo industry in India is going through dynamic changes. The market is developing with new products being exported out of and imported in the country. This has resulted in new demands from customers, and India has responded well to decongest the traditional airports like Mumbai, Delhi, Chennai and Bangalore by developing many new airports like Ahmedabad, Kochin and Thiruvananthapuram.

The article further explains that airlines based in India, Pakistan, Bangladesh, Nepal and Sri Lanka have been mounting additional capacities regularly to take advantage of the spurt in the exports to the region. The skies will be congested with more carriers joining the race. Mergers and acquisitions will strengthen the market, and increased competition will encourage best services. Privatization of airports and other facilities will increase efficiency. In the next few years, the infrastructure available at the airports will be world class in the region, and South Asia will move towards offering the best services and grabbing bigger and better share of the global airfreight industry.

Ruwantissa Abeyratne, *'Economic benefits in civil aviation justify substantial investment in industry.'*

This article explains the purpose of investment and need of investment in air transport sector. It is essential to analyze that whether investment in aviation field provides the investor with worthwhile returns to justify the investment, whether the investor is a State or a private entity. So that, it is necessary to look at the climate for global investment and investment in air transport, as well as, the economic benefit brought about by civil aviation. A good investment climate should foster productive private investment as the engine of growth and poverty reduction. Transportation plays a multi-faceted role in the pursuit of development objectives of a nation, as well as the need to maintain international communication networks. By enabling the transfer of goods and passengers between and within production and consumption centers, air transport fills the vital role that fully justifies ongoing investment.

The article shows that passenger and freight movement worldwide and impact of aviation over world economy. In 2007 the world's airlines carried some 1,890 million passengers and over 37 million tonnes of freight, a year in which world GDP grew by approximately 5.1 percent in real terms, over one percentage higher than in the previous year. These direct economic activities have 'multiplier effect' on industries providing either aviation specific and other inputs or consumer products. In simple terms every \$100 of output produced and every 100 jobs created by air transport trigger additional demand of \$325 and, in turn 610 jobs in other industries. The total economic contribution of air transport, consisting of the direct economic activities and multiplier effects, is estimated at \$1,360 billion output and 27.7 millions jobs worldwide in 1998.

The article further explains that in addition to its total output and employment impacts, civil aviation has a broader influence on overall economic growth, driving from non-quantifiable benefits for the users of air transport, business and individuals alike. Air transport acts as facilitator for the developments of markets and the trading of goods as well as services. In 2005, for example,

approximately 45 percent of some 714 million international tourists and some 40 percent of the world's manufactured exports (by value) were transported by air.

This article concludes that a wider or narrow spread of these multipliers will depend on the circumstances, notably the size of the industries associated with civil aviation. For example, countries with significant aerospace manufacturing will show a wide spread, while those with limited air transport services may have relatively narrow spread. Non-aviation travel and tourism business such as hotels and restaurants, travel agencies, tour operators and retailers, greatly benefit from trip related expenses of airline passengers. Thus it is essential to invest in civil aviation industry and broaden its scope to cause multi faceted impact on the economy.

Martin Menachery, *'Airports in GCC States- Promising good return on investments.'*

This article discusses the development of infrastructures and growth of civil aviation in the Gulf Consortium Countries (GCC). Airport infrastructure in GCC States- Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE- has undergone dramatic development during the last two decades. It is one of the regions in the world where maximum investments are happening in the construction of new airports and expansion and modernization of existing ones. Billions of dollars are already spent and many more billions will be spent in the airport projects in these States.

The article mentions that development of modern aviation infrastructure is having and will continue to have a very positive impact on the lifestyle of people in the GCC States as well as on its economy. Currently, these countries are competing among themselves to create world-class airport infrastructure. The world's highest rate of growth in passenger traffic, freight and aircraft movements witnessed in the region stands as a testimony to the importance of the GCC States in the worldwide civil aviation infrastructure map. The region is fast emerging as one of the most desired destinations for investment in the civil aviation infrastructure.

The article concludes that civil aviation infrastructure in these States is developing rapidly and qualitatively, considering the expansion and modernization programmes going on in various airports in the region and addition of new services and facilities every year. The main factors behind this development are the dramatic rise in the passenger throughput, a remarkable jump in the number of flights and the appreciable increase in the size of aircraft used. This is complemented with economical and constructional development, and adoption of new income sources as a diversification strategy.

Nisha Young, *'Airport Retailing- Growth Strategies for the Emerging Markets.'*

The article by Nisha Young explains the concept of airport marketing as a vibrant and profitable business. Airport retailing has become one of the major avenues of profit generation for airport authorities worldwide. Progressive airports in the emerging market economies are investing millions of dollars in creating new and inspiring retail facilities within the airports. These facilities offer enticing shopping packages and the widest range of brands from every part of the world. The growing numbers of travellers in the past years and the time spent at the airport have stimulated the development of facilities such as restaurants, hotels, business centres, shops, etc. Nowadays, people are not just moving from one place to another via the airport; they expect to experience something 'special' when travelling. They want to be entertained.

It further explains the need of airport retailing with the changing scenario in aviation. Traditionally, airport served as transition area between land and air transportation as well as a transit point between destinations. The airport environment was efficient and formal. But life in the airport is changing now. For time-strapped travellers, who are forced to spend long hours inside airport terminals due to heightened security and increase in air travelers, retail outlets come as a relief. Hence, airports worldwide are now turning the idle spaces at airports into revenue generating centres, exciting environments that reduce stress, encourage social interaction and promote the culture of the region.

2.2.3 Summary of Action Plans and Studies

Civil Aviation in the Tenth Year Plan, CAAN

The long-term perspectives of Civil Aviation Authority of Nepal include its vision, objectives, strategies, working policies and future programs. The vision of CAAN is to make international and domestic air service affordable, comfortable, safe, reliable and well managed. Its major objectives are to facilitate tourists' movement for the development of tourism industry supportive to national economy, and to contribute to poverty alleviation by increasing income generations and employment opportunities for the nationals. The strategies of CAAN are to ensure in place airports and air services with necessary infrastructure intact for domestic and international accessibility, and to involve private sectors in the construction and operation of airports as well as in long haul flights.

The working policies of CAAN include the establishment, development and expansion of the satellite-based communication and navigation systems for affordable and safe air transport; development and expansion of essential infrastructure at international and domestic airports; making air service regular and reliable through development and standardization of airports in remote areas; encourage international charter or schedule flights and to ensure optimum utilization of air routes in the Nepalese sky. The major future programs of CAAN include safe and reliable air operations; commencement of international flights from increased number of domestic hub airports; construction of a second international airport and availing around 1.2 million air seats on international flights.

Infrastructure Development Undertakings, Civil Aviation Report 2008, CAAN

The report explains the development and expansion activities in aviation field being carried out in Nepal. CAAN Board has approved NRS. 100 million budgets for FY 2062/65 to initiate land acquisition for the expansion of Tribhuvan International Airport (TIA) as decided by the cabinet in 2055. This

will allow the acquisition of 432 ropani land to the south and east of TIA. CAAN has also taken initiative to develop and expand Dhangadhi airport with the involvement of Govt. of Nepal, local users and CAAN. In the first phase an estimated NRs. 80million will be invested for blacktopping runway, taxiway and apron shared by the government (Rs. 40 million), CAAN (Rs.20 million) and local level (Rs.20 million). Though the far western Dhangadhi airport is being operated with a very low yield due to declining traffic and CAAN is incurring a huge operating loss. But, to mitigate regional imbalance and serve remote areas of the region, CAAN is obliged to develop this airport.

The report further explains that CAAN is geared to upgrade other domestic airports in remote and city areas including hub aerodromes to ensure reliable, regular and safe air transport in the country. Accordingly it has set programs to shipshape them in the FY 2064/665, while several others are undergoing improvement works. CAAN has allocated budget to upgrade Surkhet airport as a cargo hub. It has planned to construct a cargo building and blacktop the existing runway, taxiway and apron so that the airport will be able to transport essential goods to all the remote part of Karnali region all the year round.

The report concludes that conducted CAAN has also started the overlay and extension of the existing 900m runways to 1200m, of the religio-cultural standpoint Janakpur airport. Far eastern gateway airport in Chandragadhi will also be upgraded with a plan to overlay its runway. In accordance with the goal to develop Bhairahwa based Gautam Buddha airport into a regional international airport, CAAN has completed acquisition of 62 bigha land. Likewise, land acquisition has also been completed for a project to construct a new regional international airport in Pokhara. Other airports under infrastructure development in this fiscal year are Simara, Rara (Mugu), Kangel Danda, Masinechaur (Dolpa), Nepalgunj, Doti, Chaurjahari, etc.

In the context of Nepal very few studies are carried on in the related field in the form case studies, working papers etc. But no previous study in this field of study was found in T.U. Central Library as well as CAAN and MoCTCA libraries. Though not relevant to this study, a case study carried on by Nepal Engineering Consultancy Services Centre Ltd. (NEPECON) for CAAN in the related field was found.

NEPECON, *Institutional Strengthening of CAAN: Study Report.*
Kathmandu

Nepal Engineering Consultancy Services Centre Ltd. conducted a study on the institutional strengthening of CAAN and submitted the final report in August 2004. The main objective of the study was to improve the overall institutional capacity of CAAN on the basis of the modern systematic management tools and practices. The Board has also mandated the management to implement the recommendations within the preview of prevailing Act, rules and regulations. Some of the major findings of the report are summarized below:

Traffic- The domestic traffic trend at TIA and some domestic airports is increasing. Janakpur, Biratnagar, and Gautam Buddha airports have registered significant increase in air traffic movement and revenue turnover particularly after the introduction of jet aircraft in the domestic sector.

Profit/Loss trends- Out of 47 airports, only 10 airports (TIA and 9 domestic airports- Lukla, Chandragadhi, Rumjatar, Biratnagar, Simara, Pokhara, Jomsom, Janakpur and Surkhet) are in operating profit. Chandragadhi and Simara have shown growing profit trend.

Management skills- Enhancement of management skills and capacity, business orientation, corporate planning, external relationships and incentive plans for maximization of revenue should be duly addressed.

Commercialization- CAAN is yet to be fully commercialized and the investments in commercially non-viable airports should not be encouraged.

Training- The expensive foreign training programs require proper analysis of the needs and planning for appropriate placement.

Preferential Share- The capital structure of CAAN amounts to NRS. 1,330 million in the form of redeemable preferential shares, which is to be paid back to Govt. of Nepal within 10 years starting from the fourth year of its existence.

It is difficult for CAAN to payback the redeemable share of the capital amount within the given time frame due to financial constraints.

Interest rate- The interest rate of 10.25% for the capital loan to be paid to the Govt. is very high. It should be revised on the basis of actual currency inflation exchange rate of Nepal Rastra Bank.

Tax exemption- CAAN has paid a substantial amount to the Govt. of Nepal as TDS payments. On the other hand, it is subsidizing many remote and social sector airports with negative cash flow as well. Considering CAAN's contribution on social sector, tax exemption on CAAN earning is sought.

Asset Valuation- Out of total assets value transferred from DCA to CAAN, 50% is land value. The calculation of land value on the basis of commercial values is very high compared to the costs by the accounting principle of cost price or market price whichever is lower.

Business plan and financial viability- A long term business plan, financial plan or a strategic plan should be prepared.

The study carried out by NEPECON also emphasize that CAAN should take initiatives to fully commercialize the financially viable airports and maximize the benefits. It further recommends that CAAN should develop professionalism in its human resource and build a sound management culture for its institutional strengthening.

Sah, S.K., *Airport Marketing in Nepal: An Analytical Study of Nepalganj Airport.* (Thesis submitted to T.U.), Nepalganj, 2008

In the Nepalese scenario airport entities have not focused on commercial and other non-aeronautical activities to raise non-aeronautical revenues. The concept of airport marketing is in its earliest stage and airports are still operating as government offices and the tariffs are set accordingly. In some cases the airport tariffs are too high while in other cases too low. Thus, it is evident that CAAN is still far a way to promote commercial activities and retail airports in the country. So that, various agencies and users of the airports

should be encouraged to use the facilities available by reducing their charges and rentals.

The concerned agencies in civil aviation field need to develop their skills and abilities to provide standard services in order to promote the industry and maximize benefits. Aviation industry in the Asia-Pacific region has been experiencing significant growth in the couple of years and, hence, benefiting the emerging economies in this region. To make use of the opportunities in civil aviation industry in the region and around the world infrastructure development is required. In the Nepalese context, construction of second international airport and upgrading of major hub airports into regional status are urgently required. In the growing scenario of privatization of airports around the world terminal management as well as operation of airports need to be handed over to private sectors. Likewise, private sector participation is required in the construction, operation and maintenance of airports in the country.

CAAN is unable to perform well due to lack of professionalism and unstable political situation as well as undue political interferences. Management culture in CAAN is not desired and needs improvement through skill development and hiring new professionals. A team of highly qualified and skilled professionals should lead the CAAN Board in order to enhance efficiency. Government policies are inadequate and need periodical review to make relevant and supportive for the promotion of civil aviation industry. The dual role of CAAN as the regulator of civil aviation and service provider needs to be separated in order to provide standard services and operate airports efficiently. Efficiency in airport operations helps to upgrade and standardize services, maintain desired safety level that will attract more users and finally boost up revenues. Thus, it is urgently needed to focus on the provision of commercial services and recreation activities to market the airports and generate sufficient revenues to recycle for improvement.

The present state of art in civil aviation industry shows that aviation field is growing tremendously causing fast development of infrastructures and

technologies to fulfill the growing demand globally. Airport authorities, worldwide, are focusing on marketing airports to provide standard services and attract more users. But in our country the concept of airport marketing is newly emerging and yet to be implemented. Though the major objective of establishing CAAN was also to facilitate air services and operate airports with business motive. But the operation of airports does not seem to be freed yet from government control and political influences. However, GoN and CAAN are seen to planning for the commercialization of airports and various services in the civil aviation field. The newly formulated Civil Aviation Policy 2065 also makes provision for commercialization of airports and related services.

To cope with the growth scenarios in aviation industry around the world it is urgently needed to construct a second international airport in Nijgadh area, Bara district. Similarly, major hub airports in the country like Pokhara, Bhairahwa and Janakpur should be upgraded as regional level airports to facilitate air traffic movement from neighboring Indian cities and mitigate regional imbalance. For the construction and development of airports including international airport fund raising should be done by public and private participation including foreign direct and indirect investments. According to the experts' view the better options to commercialize financially viable airports are either to privatize terminal management or through management contract.

There are more than a dozen airports serving social sector and operated on behalf of the government to provide necessary services to the public. Experts in the field support that these airports should be operated by the local agencies in the technical support of CAAN or subsidized by the government to reduce financial burden of CAAN. Airports not in operation since long should be leased for commercial use. Findings of the experts' opinion show that performance of CAAN is only satisfactory in the past eight years of its establishment. Lack of professionalism and management skills among the top-level executives along with the unstable political scenario has influenced the activities of CAAN. Thus, CAAN requires at the urgent developing professionalism to establish a sound management culture in the organization for efficiency in service delivery and to fulfill the organizational objective.

2.3 Conceptual Framework of Revenue Variables

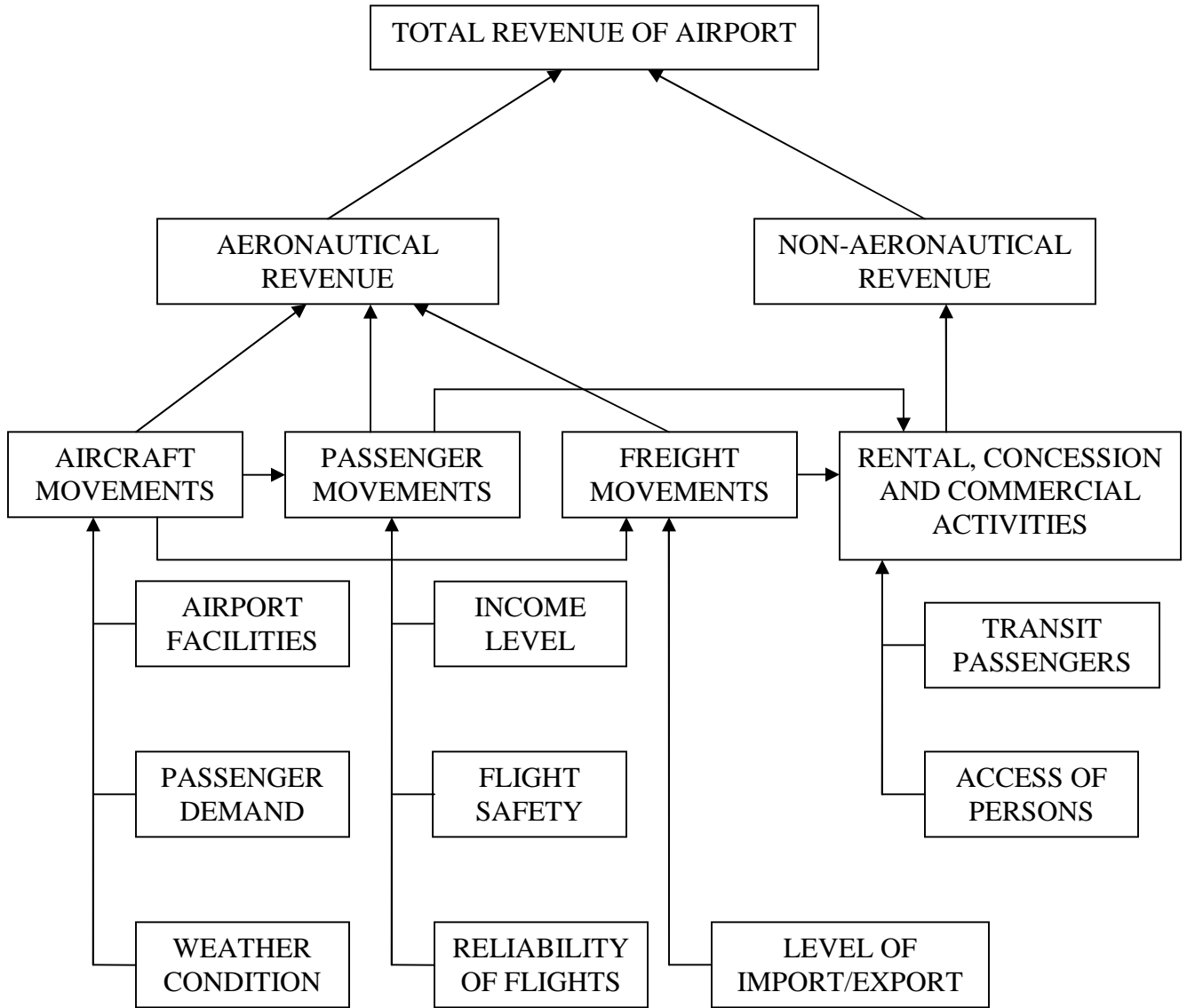


Fig.II.1

CHAPTER – III

REASERCH METHODOLOGY

The report should describe the methodology used in studying and formulating the problem to enable a reader to know the facts viz. how the study carried out, etc. For instance, if a sample survey has been undertaken, the report should indicate the type of sample design, size of sample and procedure adopted to draw the sample, the numbers of workers employed, supervisions, the extent of precision achieved and the method applied for handling any special problems during the course of study. Here, it will be better to specify the method suitable for other techniques as well.

3.1 Research Design

This study is an exploratory cum descriptive research in nature. Both primary as well as secondary data are used in the study to fulfill the objectives of the study. Secondary data are used to analyze the revenue patterns and air traffic flow while; primary data are used to find out the roles, activities and policies of CAAN to promote civil aviation and develop Janakpur airport. To make the study reliable five years data regarding sources of revenues, aircraft movement, passenger and cargo flows are used.

3.2 Sources of Data

Primary and secondary data required to make the study significant has been collected from relevant sources. Primary data in the form of experts' opinion are collected from experts in the field of civil aviation by survey method. Secondary data regarding air traffic movement, passengers and cargo (freight) flows and revenues of Janakpur airports are collected. Similarly, data of air traffic movement in TIA and total revenues of CAAN are also collected from secondary sources. Other data regarding activities taking place in the aviation field around the world required for comparative analysis are gathered from ICAO journals and other relevant international publications.

3.3 The Sampling Procedure

For the purpose of primary data collection a survey of experts' opinion was carried. Total 20 respondents were selected from among the experts in the civil aviation field in our country by judgmental sampling procedure. The respondents consisted of 30 percent from current and ex-executives of CAAN, 25 percent from executives of domestic and international airlines including senior captains, 25 percent from economists and development leaders from Janakpur and 20 percent each from executives of Ministry of Tourism and Civil Aviation and Ministry of Local Development. Attempt was made also to contact some more experts from the field of economic and infrastructure development sector. Many of the respondents gave their response to and tourism promotion and local development aspects included in the questionnaire prepared for primary data collection.

3.4 Data Gathering Procedure

The primary data was gathered by survey method by using mail questionnaire from respondents of selected sample. Secondary data related to movements of aircrafts, passengers and freight and revenues of Janakpur airport were collected from Janakpur Civil Aviation Office through field visit. Similarly, total revenue of CAAN and air traffic movements of TIA were collected from published reports of CAAN. Other required data were gathered from secondary sources like journals, magazines special reports, previous studies, etc by field visit of Library in the CAAN Head Office and Tribhuvan University Central Library in Kathmandu.

3.5 Data Processing Procedure

The primary and secondary data gathered from various sources are interpreted and tabulated systematically. The individual data are converted to suitable form and summed as well as average and percentages are determined and analyzed separately. The data are systematically presented in tables, graphs, pie charts and bar diagrams to make it easy to understand and to make the research report attractiv

3.5.1 Tools of Data Analysis

For the purpose of analyzing and interpreting the data various mathematical tools are applied. The major mathematical tools applied were average, percentage, ratios, etc. The growth trends of revenue and air traffic movements were analyzed by presenting the data in tables, graphs, bar diagrams and pie charts. Contributions in the total revenues were analyzed in terms of ratios and proportions. Since the study does not assume any hypothesis statistical tests were not carried out. However, interpretations of findings of the study were expressed in terms of correlation.

Average:

The measure of central tendency is an average or central value which represents all of the scores made by the group as a whole. It enables the researcher to compare two or more group in terms of typical performance. The most popular measures of central tendency are mean, median, and mode. The mean (arithmetic) is the sum of scores divided by the number of scores. The median is the midmost point in the series where scores are arranged in order of size. Mode is that single score which occurs most frequency in the series.

Percentages:

The general purpose of percentages is to serve as a relative measures to indicate the relative size of two or more numbers. The percentages statistic has universal understanding and applicability that has made it the most popular descriptive tool. However, percentages should be carefully calculated and interpreted so that the finding are presented objectively.

Ratios:

The relation which one number or quantity bears to another number or quantity of the same kind and same unit is known as the ratio.

Tables and Graphs :

Tables of different dimensions (one-way , two-way, and cross-tabulations) can effectively present the general category to which a number (frequency)

lies. Tables provide the basic structure on which further statistical analysis can be performed. Graphs (bar-chart, pie-chart etc.) can be a visual tool for analyzing and presenting the general characteristics and movement of the data.

3.5.2 Test of Significance

(A) Test of Significance for a single mean

To test the significance of model as well as variables as we use t-test for a single mean. It is applied for hypothesis testing first to test whether there is any significant difference between average mean for commercial bank with market portfolio on net. If the test is "test of significance for a single mean," the test statistical (t) is given by,

Symbolically,

$$t = \frac{\bar{x} - \bar{m}}{\frac{S}{\sqrt{n}}}$$

Where,

t = Student's t-test statistics

\bar{x} = Arithmetic mean of sample statistics

\bar{m} = Arithmetic mean of population statistics

s = Standard deviation of population parameter

Test result; if t-calculated value < t-tabulated value, accept the null hypothesis or vice-versa.

(B) ANOVA in one-way classification

In one way classification, the effect of anyone factor is taken into consideration. There are so many methods to compute f-test, short cut method of computing F-ratio is desirable to use and steps are as follows:

- a. Find the sum of the values of all the items of all the samples and denotes it by T.

- b. Calculated the correlation factor i.e. T^2/N
Where,
 N = total number of items of all the sample
- c. Find the square of all the items of all the samples and then add them together.
- d. Find out the total sum of squares (SST) by subtracting T^2/N from the sum of squares of all the items of the samples.
- e. Find out the sum of squares between the samples (SSC) by subtracting T^2/N from the sum of the squares of the total dividend by the number of items in each sample.
- f. Find the sum of square within samples (SSE) by using $SSE = SST - SSC$
- g. Prepare ANOVA table to compute F

ANOVA- Table

Source of variable	Sum of square	Degree of freedom	Mean sum of squares	f-ratio
Between sample	SSC	C-1	$MSC \times \frac{SSC}{C \cdot Z1}$	$F \times \frac{MSC}{MSE}$
Within samples	SSE	$N-C = (N-1)(N-C)$	$MSE \times \frac{SSE}{D.F.(N \cdot ZC)}$	
Total	$SST = SSC + SSE$	N-1		

- h. Make decision. If the computed value of F is less than its critical value, H_0 is accepted otherwise H_1 is accepted.

3.5.3 Pilot Study and Pre-testing

A preliminary study which is done prior to principal study in small scale survey is called a pilot study. This is conducted on a limited scale before the actual studies are carried out in order to gain some primary informations, on the basis of which

the main project would be planned and formulated. Such type of studies need not have hypothesis, though a provisional hypothesis can be temporally tested.

Pre-test, on the other hand tests the effectiveness of tools viz. schedules, questionnaires or any instruments in order to make some ameliprations, as appropriate. Pre-testing of a tool, say of a questionnaire implies that it is tried out on a few respondents and their reactions to the questionnaire with its propriety are observed. In complex type of study, it helps the researcher in deciding whether any changes would be made in the question content or in the wording of questions so that the response rate could be increased. Summarily, in the light of pre-test, the modifications or improvements, if any are effected in the questionnatr, sampling strata, population, hypothesis or even in the research objectives are done, if necessary.

3.6 Presentation and Analysis of data

This is the mirror part of any research report. Here, after the data being classified, it is better to present it in tabular form to make it effective. For attractive communication of the intricacies of the statistical data, the proccessed data can also be presented in graphic and diagrammatic form. That means the table, graphs and diagrams are of extensive use for the presentation. These are effective tools in the hands of managerial analysis as well.

CHAPTER- IV

PRESENTATION AND ANALYSIS OF DATA

4.1 General

The findings of the study in terms of revenues, traffic movement and growth in traffic around the world and experts opinion regarding the status of civil aviation industry in Nepal are presented in this chapter. An attempt has been made to highlight the focus of the study to find out the present situation of airports in the country and activities of related agencies. Secondary data are collected through field visits to find out sources of revenues in Janakpur airport and total revenues of CAAN.

Similarly, published data of CAAN and other agencies are gathered to determine the current scenario of air traffic movement in Nepal and around the world. For the collection of primary data regarding the role of CAAN in the development of aviation industry and marketing airports in the country, survey of experts' opinion has been applied. The data are presented systematically and interpreted accordingly to give a clear picture of present scenario of aviation industry and the need of airport marketing in our country.

Secondary data highlighting the sources of revenues in Janakpur airport and its average contribution in the total revenue of CAAN are presented. Similarly, attempt has been made to present the air traffic movement in Janakpur airport and Tribhuvan Int'l airport. As well as the scenario of growth trend in the topper airports of the world are also included in this section. Finally, experts' opinion regarding the policies and activities of concerned agencies for the development of aviation industry in the country are interpreted. The relevant data gathered in the course of the study are presented in tables, graphs, bar diagrams and pie charts in the following three sections. Besides the presentation of data an attempt is also made to analyze them to give a clear picture of the findings.

4.2 Sources of Revenues in Janakpur Airport

In this section five years data of revenues of Janakpur airport and CAAN are presented. Data of revenues taken for analysis in the study ranges from fiscal year 2060/61 to 2064/65. These data includes sources of revenues in Janakpur airport and its contribution in the total revenue of CAAN. The proportions of aeronautical and non-aeronautical revenues in the total revenue of CAAN are also presented. After presenting the data in tables attempt is made to analyze them consequently in the succeeding paragraphs.

Table-IV.1 Sources of Revenues in Janakpur Airport
(Rs. In thousands)

Sources of Revenue	Years				
	2060/61	2061/62	2062/63	2063/64	2064/65
A. Aeronautical Revenues:					
Landing Charge	1,711.14	1,355.24	2,127.93	2,910.23	3,363.11
Parking Charge	17.51	4.21	0.97	-	617.84
Housing Charge	1,848.75	2,665.57	3,078.75	2,980.98	2,790.30
Comm. & Nav. Charge	499.78	534.48	807.82	969.01	1,042.46
Passenger Service Charge	7,865.85	6,746.70	8,474.55	10,501.35	11,213.25
Cargo Charge	237.01	479.89	661.91	845.23	1,307.63
Total Aeronautical Revenue	12,180.04	11,786.09	15,151.93	18,206.80	20,334.59
Percentage	75.24	82.50	83.54	83.11	81.33
B. Non-Aeronautical Revenues:					
Terminal Rental	1,836.44	1,270.58	1,137.55	1,088.90	1,470.44
House and land Rental	92.09	322.28	265.59	286.93	288.10
Entry Fees	77.79	23.75	62.25	33.25	98.75
Advertising Fees	72.10	32.11	54.00	88.65	81.77

Security Charge	171.11	146.84	212.79	291.02	336.31
Fuel Sales Charge	285.73	248.26	287.02	463.42	603.00
Electricity Charge	85.05	66.53	112.03	131.33	109.82
Telephone Charge	-	-	-	-	144.14
Automobile Parking Charge	-	-	-	16.20	49.04
Other Charges with no VAT	36.86	-	224.45	557.91	741.89
Miscellaneous Income	79.27	209.41	134.18	93.88	585.85
Late Fine	1,272.31	180.36	496.43	648.81	158.00
Total Non- Aeronautical	4,008.75	2,500.12	2,986.29	3,700.30	4,667.11
Percentage	24.76	17.50	16.46	16.89	18.67
Grand Total Revenue	16,188.79	14,286.21	18,138.22	21,907.10	25,001.70
Increase Percent	-	(11.75)	26.96	20.78	14.13

Average Aeronautical Revenues- 81.14 percent

Average Non- Aeronautical Revenues- 18.86 percent

Average Growth in Total Revenue 12.50 percent

In the above table IV.1 various sources of revenues in Janakpur airport from fiscal year 2060/61 to 2064/65 are presented. There are basically two types of revenues viz. aeronautical and non-aeronautical revenues. The major sources of aeronautical revenues are landing charge, parking charge, housing charge, communication and navigation charge, passenger service charge and cargo

charge. Similarly, the non-aeronautical revenues include terminal rental, house and land rental, entry fees, advertising fees, security charge, fuel sales charge, automobile parking charge and miscellaneous chares.

Table IV.1 shows that total revenue of Janakpur airport was NRs.16.189 millions in FY 2060/61. The total revenue was reduced by 11.75 percent in FY 2061/62 over the previous year. And the revenue totaled Rs.18.138 million in FY 2062/63 with an increase of nearly 27 percent over the previous year. There is an increasing trend in the total revenue from FY 2062/63 to FY 2064/65. The average total revenue of Janakpur airport is nearly 20 million rupees annually and is growing with an average rate of 12.50 percent. The average proportions of aeronautical and non-aeronautical revenues in Janakpur airport are 81.14 and 18.86 percent respectively. The share of non-aeronautical revenue is 24.75 percent in FY 2060/61 while it is only 16.46 percent in FY 2062/63 and 18.67 percent of the total revenue in FY 2064/65. Similarly, the share of aeronautical revenues is 75.24 percent of the total revenue in FY 2060/61 while it is 83.54 percent in FY 2062/63 and 81.33 in FY 2064/65.

Table-IV.2 Contribution of Janakpur Airport in Total Revenue of CAAN

(Rs. In millions)

Fiscal Year	Total Revenue of CAAN		Contribution of Janakpur		
	Amount	Increase %	Amount	Increase %	Percentage
2060/61	1,174.26	-	16.19	-	1.38
2061/62	1,164.84	(0.8)	14.30	(11.75)	1.23
2062/63	1,253.47	7.61	18.14	26.96	1.45
2063/64	1,368.46	9.17	21.91	20.78	1.60
2064/65	1,561.55	14.11	25.00	14.13	1.60
Average	1,305.32	7.52	19.11	12.50	1.46

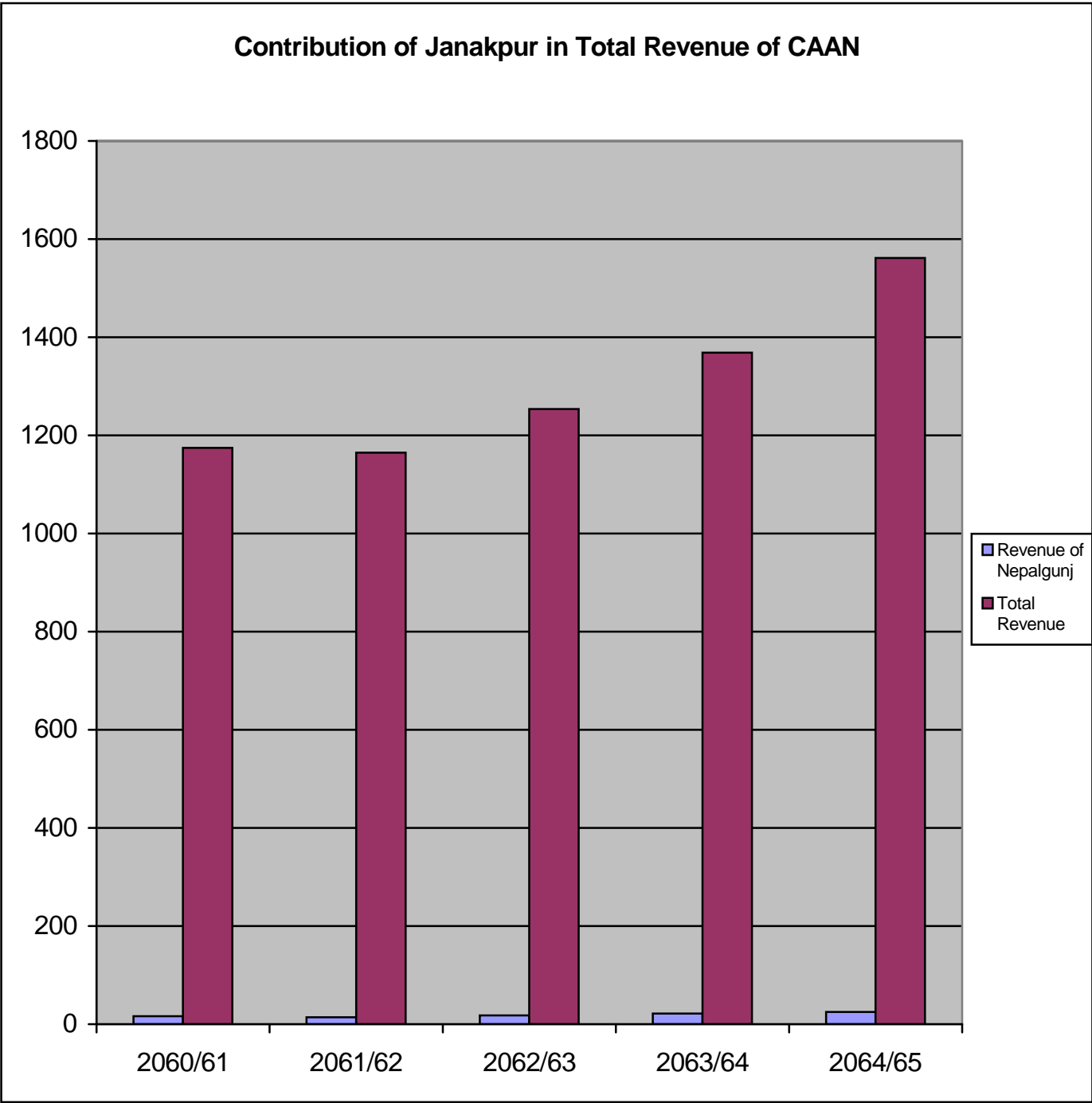


Fig. IV.1

Table IV.2 gives the picture of the total revenues of CAAN from FY 2060/61 to FY 2064/65 and the net contribution of Janakpur airport. The total revenue of CAAN is 1,174.26 million rupees in FY 2060/61 which is reduced by 0.8 percent in FY 2061/62. CAAN was able to generate 1.56 billion rupees as its total revenue in FY 2064/65 and remained at third position among PEs in the

country by earning net profit of 200 million rupees. However, the total revenue shows increasing trend from FY 2062/63. The data show that CAAN is able to generate average total revenue nearly 1.3 billion rupees annually with average growth rate of 7.5 percent. The contribution of Janakpur airport in the total revenue of CAAN is 16.19 million rupees in FY 2060/61 whereas; it has reached 25 million rupees in FY 2064/65 with an increase of 14.11 percent over the previous year. The average contribution of Janakpur airport is only 20 million rupees which is only 1.46 percent of the total revenue of CAAN. The above bar diagram in figure IV.1 also presents the scenario of total revenue of CAAN and contribution of Janakpur airport.

Table- IV.3 Aeronautical and Non-Aeronautical Revenues of CAAN
(Rs. In millions)

Year	Aeronautical Revenues		Non-aeronautical Revenues		Total Revenue
	Amount	Percentage	Amount	Percentage	
2060/61	1,103.81	94.0	70.45	6.0	1,174.26
2061/62	1,030.10	88.43	134.74	11.57	1,164.84
2062/63	980.80	78.25	272.60	21.75	1,253.47
2063/64	1,065.26	77.84	303.20	22.16	1,368.46
2064/65	1,227.41	78.60	334.14	21.40	1,561.55
Average Proportion		83.42	-	16.58	100

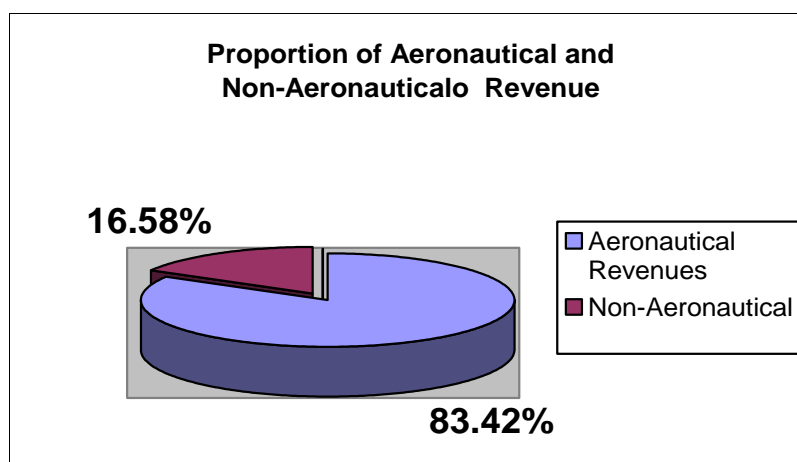


Fig. IV.2

The proportions of aeronautical and non-aeronautical revenues in the total revenue of CAAN are presented in the above table IV.3. The data show that in FY 2060/61 share of aeronautical revenues is 1,103.81 millions rupees which is 94 percent of the total revenue but, the share of non-aeronautical revenues is 70.45 millions rupees which is only 6 percent of the total revenue. Similarly, in FY 2064/65 aeronautical revenues contribute 1,227.41 millions rupees which is 78.60 percent and non-aeronautical revenues is able to contribute 334.14 millions rupees i.e. 21.40 percent of the total revenue. The proportion of non-aeronautical revenue has reached to 22.16 percent of the total revenue in FY 2063/64. However, the share of non-aeronautical revenues in average is only 16.58 percent of the total revenue whereas the share of aeronautical revenues is 83.42 percent. The pie-chart in figure IV.2 also shows the shares of aeronautical and non-aeronautical revenues in the total revenue of CAAN.

4.3 Aircraft, Passenger and Cargo Flows

In this section five years data related to air traffic flow from the year 2005 to 2009 are presented. Aircraft, passenger and cargo movement data of Janakpur airport as well as Tribhuvan International Airport (TIA) are presented to analyze the status of civil aviation industry in the country. A list of top fifteen international airports among the 100 leading airports of the world which got two digit growths in passenger flow in the year 2009 is also presented. This section is concluded with the comparative analysis of growth in civil aviation industry in our country and around the world.

4.3.1 Air Traffic Flows in Janakpur Airpo

Table- IV.4 Aircraft Movement in Janakpur Airport

z	Total Movement	Increase over previous year	Percentage Increase
2005	9,980	-	-
2006	12,609	2,629	26.34
2007	13,888	1,279	10.14
2008	14,027	139	1.00
2009	13,394	(633)	(4.51)

Aircraft Movement in Janakpur Airport

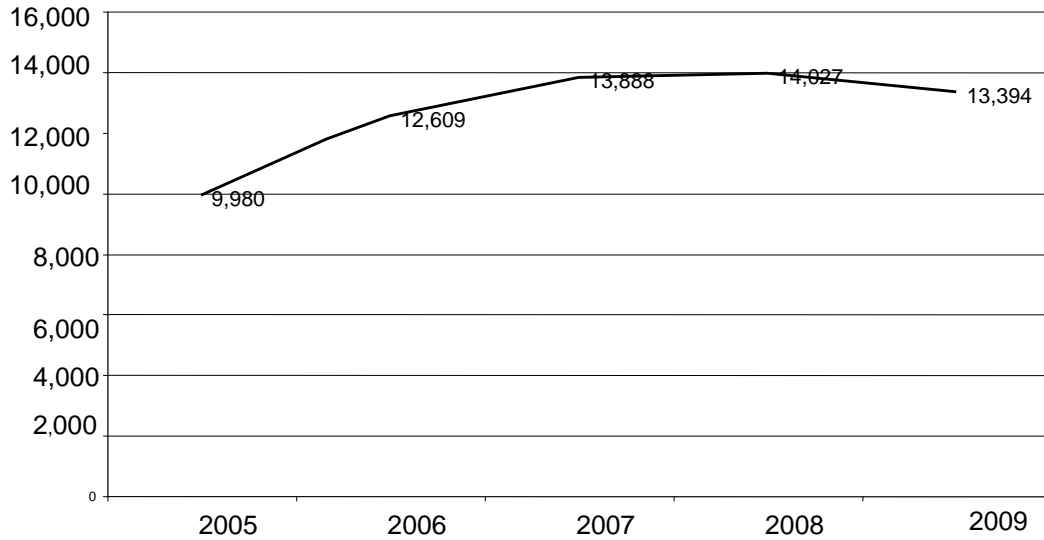


Fig. IV.3

The above table IV.4 presents the number of aircraft movements in Janakpur airport during the study period. The data show that total aircraft movement in the year 2005 was 9,980 and 13,394 in 2009. In the year 2006 aircraft movement was surged to 12,609, which was increased remarkably by 26.34 percent over the previous year. But, the total aircraft movement is reducing from 2007 and finally decreased in 2009 by 4.51 percent over the previous year. The total aircraft movement in Janakpur airport is, however, increased by average growth rate of 8.24 percent annually. The graph in above figure IV.3 also presents the trend of growth in aircraft movement in Janakpur airport.

Table- IV.5 Passenger Flow in Janakpur Airport

Year	Passenger Inflow	Passenger Outflow	Total	Increase	Percentage Increase
2005	43,298	46,925	90,223	-	-
2006	50,319	52,425	102,744	12,521	13.88
2007	48,837	64,799	113,636	10,892	9.58
2008	63,395	81,320	144,715	31,079	27.35
2009	53,389	67,711	121,100	(23,615)	(16.32)

Passenger Flow in Janakpur

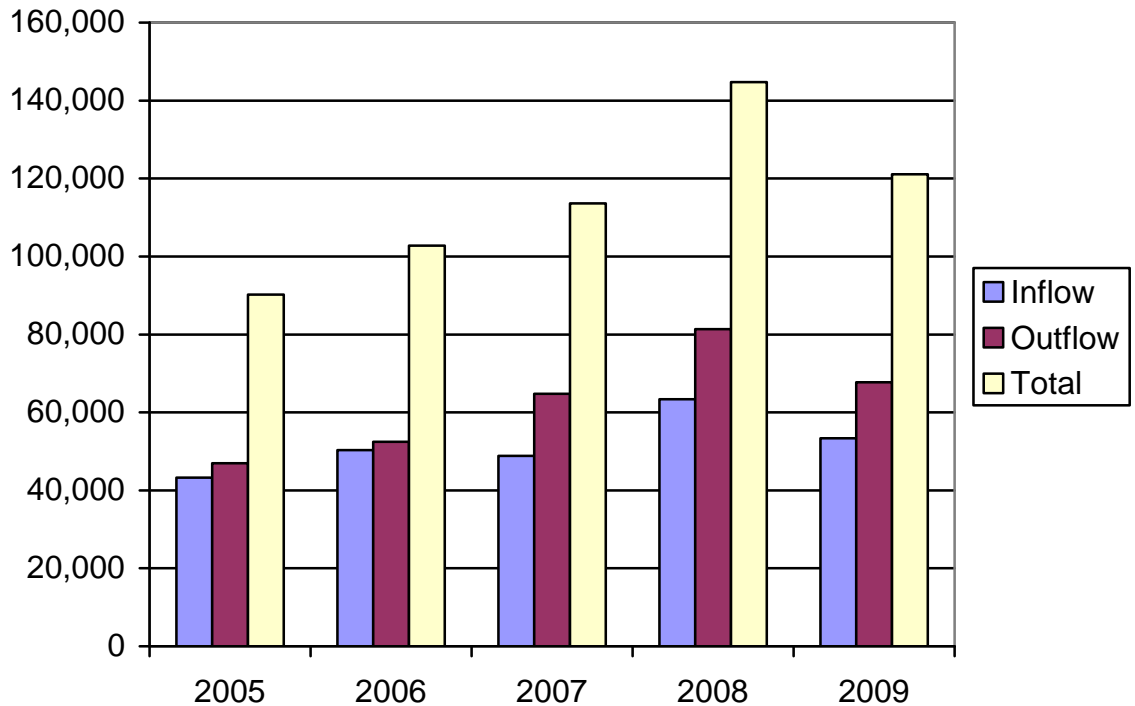


Fig. IV.4

In the above table IV.5, data of passenger inflow, outflow and total passenger flow in Janakpur airport from the year 2005 to 2009 are presented. The data show total passenger flow in Janakpur airport is 90,223 in the year 2005 and 121,100 in 2009. The total passenger movement is reached to 144,715 in the year 2008 with a remarkable increase of 27.35 percent over previous the year. The passenger movement has increasing trend from 2006 to 2008 but, it is decreased in 2009 by 16.32 percent over the previous year. However, the total passenger flow in Janakpur airport is growing annually with an average rate of 8.62 percent. The bar diagrams in the above IV.4 also shows the status of passenger in Janakpur airport.

Table- IV.6 Cargo Flow in Janakpur Airport

Year	Cargo Inflow (tons)	Cargo Outflow (tons)	Total (tons)	Increase	Percentage Increase
2005	247.63	1,152.22	1,399.85	-	-
2006	203.71	1,229.82	1,433.53	33.68	2.41
2007	182.85	2,741.99	2,924.84	1,491.31	104.03
2008	76.25	2,565.44	2,641.69	(293.15)	(10.02)
2009	85.71	3,065.38	3,151.09	509.4	19.28

The above table IV.6 shows the data of cargo (freight) inflow, outflow and total movement in Janakpur airport from the year 2005 to 2009. The data of total cargo flow in Janakpur airport is 1399.85 tons in the year 2005 and it is 3,151.09 tons in 2009. There is a significant increase in the cargo flow in the year 2007 by 104 percent over the previous year. But, it is decreased by 10.02 percent in the year 2008 over the previous year. However, total cargo flow is growing with an average rate of nearly 29 percent.

4.3.2 Air Traffic Flows in Tribhuvan International Airport (TIA)

Table- IV.7 Aircraft Movement in (TIA)

Year	Departure	Arrival	Total	Increase	Percentage Increase
2005	27,415	27,410	54,825	-	-
2006	30,324	30,324	60,648	5,823	10.62
2007	37,900	37,633	75,533	14,885	24.54
2008	40,159	40,634	80,793	5,260	6.96
2009	36,165	36,172	72,337	(8,456)	(10.47)

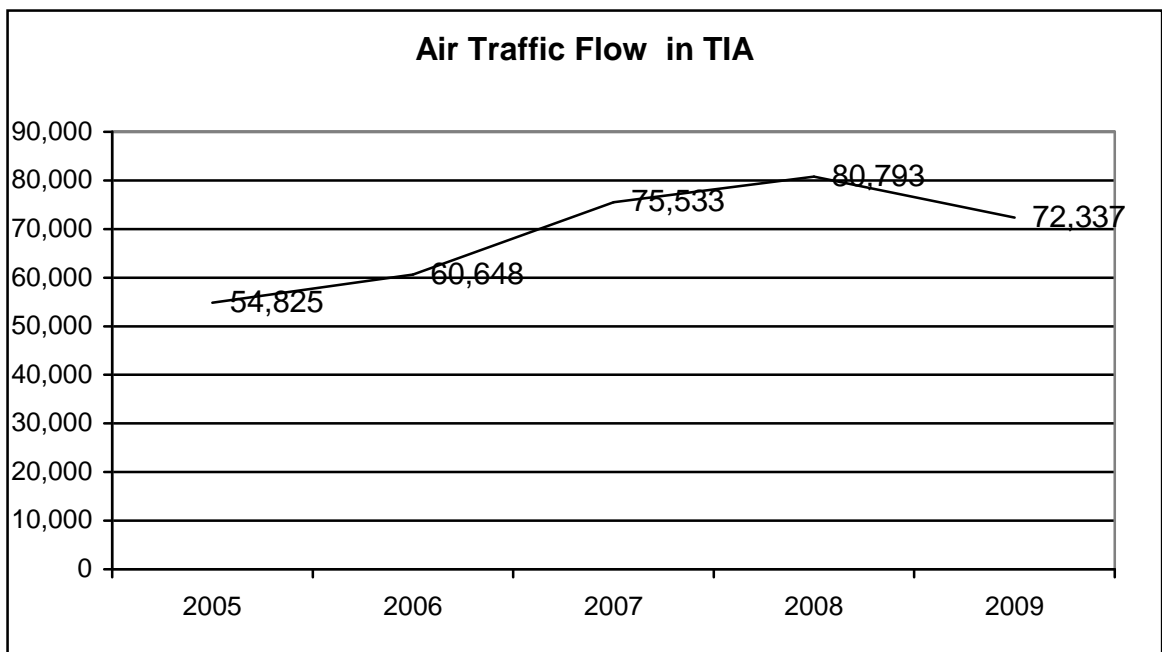


Fig. IV.5

In the above table IV.7 number of arrivals, departures and total movement of aircrafts in the domestic as well as international sector in TIA are presented. The data show that total aircraft movement in TIA is 54,825 in the year 2005 and 72,337 in 2009. Total aircraft flow is increased till 2008 and decreased in 2009. The total air traffic flow is reached 80,793 in the year 2008 with a significant increase by 24.54 percent over the previous year. But, it is totaled to 72,337 in the year 2009 and resulted in a decrease by 10.47 percent over the previous year. However, the total aircraft movement in TIA is growing with an average rate of 7.91 percent. The graph shown in figure IV.5 also represents the picture of total aircraft movement in the domestic as well as international sector of TIA.

Table- IV.8 Passenger Flow in TIA

Year	Passenger Inflow	Passenger Outflow	Total	Increase	Percentage Increase
2005	752,153	848,156	1,600,309	-	-
2006	828,298	919,784	1,784,082	183,773	11.48
2007	992,641	1,024,209	2,016,850	232,768	13.05
2008	1,095,940	1,268,684	2,364,624	347,774	17.24
2009	1,057,743	1,207,960	2,265,703	998,9210	(4.18)

Table IV.8 and bar diagram in figure IV.6 presents the passenger inflows, outflows and total flows took place in the domestic as well as international sector in TIA. The data show that passenger inflow was 752,153 in the year 2005 and 1,057,743 in 2009. The passenger inflow registered maximum to be 1,095,940 in the year 2008. Similarly, passenger outflow was 848,156 in 2005 and 1,207,960 in 2009 and registered the maximum to be 1,268,684 in the year 2008. The passenger outflow is slightly more than the passenger inflow. The total passenger flow in TIA was 1,600,309 in 2002 and 2,265,703 in 2009 and recorded the maximum in 2008 to be 2,364,624. Total passenger flow is increased till 2008 while it is decreased in the year 2009 by 4.5 percent over the previous year. However, the average growth in total passenger flow is around 9.4 percent annually.

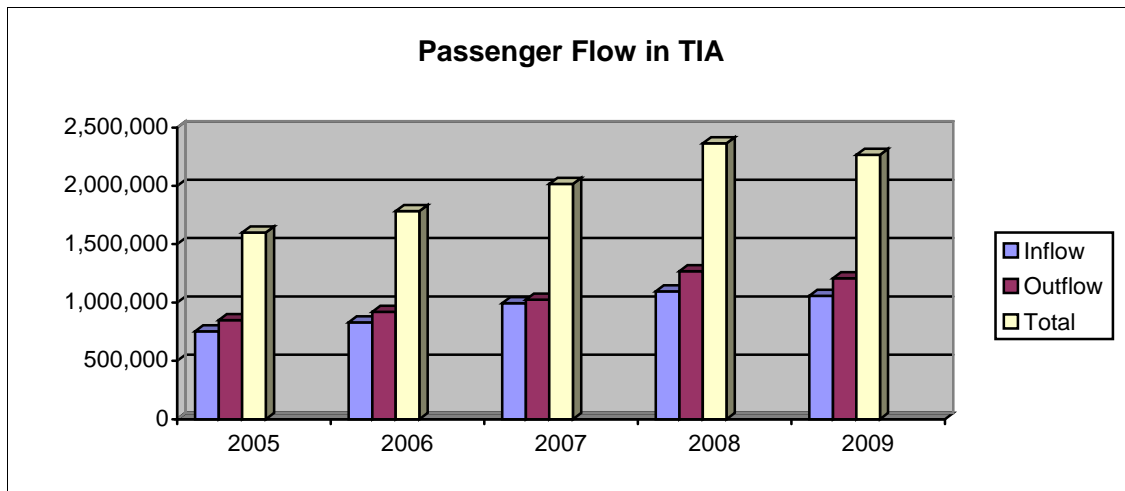


Fig.IV.6

Table- IV.9 Cargo Movement in TIA

Year	Cargo Inflow (tons)	Cargo Outflow (tons)	Total (tons)	Increase (tons)	Percentage Increase
2005	4,829.58	10,569.20	15,398.78	-	-
2006	5,564.84	13,142.10	18,706.94	3,308.16	21.48
2007	6,332.36	8,994.76	15,327.12	(3,379.82)	(18.10)
2008	5,517.34	10,192.23	15,709.57	382.45	2.50
2009	5,320.32	11,093.60	16,413.92	704.35	4.48

The above table IV.9 presents data of tons of cargo (freight) inflows, outflows and total flows from TIA. The data show that cargo outflow is nearly double of cargo inflows. The total cargo movement is 15,398.78 tons in the year 2005 and 16,413.92 in 2009. Total cargo movement was recorded to be 18,706.94 tons in 2006 with an increase of 21.48 percent over the previous year. But, it was reduced to 15,327.12 tons in the year 2007 with a decrease by 18.10 percent over the previous year. However, the average growth in total cargo flows in TIA is only 2.6 percent.

Table- IV.10 International Air Traffic Flow in TIA

Year	Aircraft Flow		Passenger Flow		Cargo Flow (tons)	
	Total Flow	Increase %	Total Flow	Increase %	Total Flow	Increase %
2005	6,884	-	851,918	-	12,685.48	-
2006	7,508	9.10	1,000,101	17.39	15,585.12	22.86
2007	9,062	20.70	1,140,660	14.05	13,010.05	(16.52)
2008	11,536	27.30	1,252,266	9.78	12,739.20	(2.08)
2009	11,058	(4.14)	1,383,041	10.44	13,110.82	2.92
Average	-	13.24	-	12.92	-	1.80

Table IV.10 above presents the total aircraft, passenger and cargo flow in the international sector in TIA. These data show the status of international air traffic flow in the country and the growth in aircraft, passenger and cargo movement taking place compared to the global scenarios. Total aircraft flow was rushed till 2008 with increasing rate, but it was decreased by 4.14 percent in 2009. The growth rate in aircraft flow is remained to 13.24 percent in

average. Passenger flow in the international sector is also growing over the years. The growth rate in total passenger flow is 12.92 percent in average. The cargo flow in the international sector was decreased till 2007 and slightly increased in 2009. The average growth in cargo flow is only 1.80 percent.

4.3.3 International Scenarios

In the international scenarios air traffic flows are found to with growing trend. The growth trends of passenger and aircraft movements in the Asia-Pacific region are quite encouraging. A list of 15 international airports, out of 100 top airports of the world, which experienced passenger growth by more than 10 percent in the year 2009, is presented in the table below.

Table IV.11 Passenger Growth among Top 100- Leaders 2008

Rank	City	Airport	Country	Percentage Change
1	Delhi	Indira Gandhi Int'l	India	28.4
2	Mumbai	Chhatrapati Shivaji Int'l	India	22.8
3	Kunming	Wujiaba	China	22.2
4	Beijing	Capital	China	18.3
5	Chengdu	Shuangliu Int'l	China	17.1
6	Dubai	International	UAE	16.2
7	Dublin	International	Ireland	14.9
8	Shanghai	Pudong	China	12.9
9	Hamburg	Fuhlsbuettel	Germany	12.0
10	Shenzhen	Baoan Int'l	China	11.9
11	Guangzhou	Baiyun	China	11.3
12	Oslo	Gardermoen	Norway	11.2
13	Milan	Malpensa	Italy	10.9
14	Barcelona	El Prat	Spain	10.6
15	Jakarta	Soekarno-Hatta Int'l	Indonesia	10.4

The above table IV.11 shows that airports in the emerging world economies are growing the fastest over the world with significant growth in air traffic. India's main hubs, Delhi and Mumbai, outpaced every other airport with over 20 percent rises in traffic in 2009. Chinese airports too continue to dominate the list of fast growers. Six Chinese airports were included in the top 15 in 2009 which is one more than in 2008. Few European airports have registered rapid double-digit growth in the past couple of years. In 2009, Dublin, Hamburg, Oslo, Milan and Barcelona remained among the top 15. Other two Asian airports, Jakarta and Dubai were also able to register double-digit growth in 2009.

Civil Aviation Report 2009, published by ICAO, has forecasted, on the basis of current scenario of growth in international traffic that international passenger movement will increase by 6 percent in 2009. This forecast is greater than the ICAO previous forecast of 5.8 percent for the decade 1998- 2008. The worldwide growth in international passenger for the year 2010 and 2011 is forecasted to be 5.8 and 6.3 percent respectively. The growth in passenger movement in the Asia-Pacific region has remained 7.2 percent in 2010 which has increased significantly over the ICAO forecast of 5.7 percent.

In the context of Nepal, in international sector total aircraft movement in TIA was increased by nearly 4.5 percent in 2009. Similarly, total passenger flow was increased by nearly 10.5 percent, whereas, total cargo flow was raised by nearly 3 percent in the year 2009. Thus, the international traffic in Nepal is also growing slowly.

At the global level traffic held up at 5 percent growth in 2009, down slightly from the 6.3 percent of 2008. In 2007 the rise was nearly double this level at 10.9 percent. Asia-Pacific and Middle East airports sustained their strong results in these periods. In 2009 passenger flow increased by 9.4 percent in Asia-Pacific region and by 8.5 percent in Middle East. In its latest Global Traffic Forecast, ACI has predicted that traffic will rise again in 2010 by 5.7 percent. By 2011 it has forecasted that traffic will grow at 4.6 percent annually. Over the next 20 years it has forecasted an average 4 percent annual growth in traffic.

4.4 Activities of CAAN and Commercialization of Airports

To find out experts opinion regarding the, role, activities and policies of CAAN and commercialization of airports in the country primary data were collected. A set of 22 questions was prepared for collecting experts' opinion. Total 20 experts were selected from the field of civil aviation by judgmental sampling method. The answers of the respondents are presented in master table in Appendix B-II. The total questions were classified in four groups to analyze and interpret the answers.

In the first group questions related to government policies and activities of CAAN were included. Regarding the policies in civil aviation field 45 percent respondents answered that government policies are inadequate for the promotion of civil aviation and needs proper study and revision. Similarly, 55 percent respondent answered that the activities of government of Nepal and CAAN Board is not directed for development of civil aviation in the country to cope with worldwide growth. Likewise, 75 percent respondents answered that CAAN should not continue investing in the construction of social sector airports. And 85 percent respondents assume that CAAN is unable to perform well due to the lack of professional and skilled executives.

In the second group questions regarding the external impact on civil aviation industry and the need of second international airport in Nepal were included. Most of the experts assume that Nepalese aviation industry will be influenced by the growth taking place in Asia-Pacific region. 70 percent respondents argue that the rush of international airlines to provide services in Nepal will continue for longer period. Similarly, 75 percent respondents see that it is urgently needed to construct a second international airport in the country at a new location. Only 30 percent respondents support to develop Bhairahwa as a second international airport whereas 65 percent are in favor of the construction of international airport at Nijgadh in Bara district. And 40 percent respondents are in favor of developing Janakpur airport as a regional level international airport.

In the third group questions related to the role of CAAN and operation of airports were included. In this group 90 percent respondents answered that dual role of regulator and service provider played by CAAN should be separated in order to enhance efficiency in the operation of airports. Similarly, 65 percent respondents feel that CAAN should operate only financially viable airports in the country. And 80 percent respondents advise that the social sector airports should be operated by local authorities in the technical support of CAAN. The majority of respondents feel that airports not in operation since long should be leased for commercial use or handed over to local authorities since these are burden to CAAN.

In the last group questions related to professionalism development in CAAN and commercialization of airports were included. For the operation of financially viable airports 45 percent experts advise that privatizing terminal management will be the best option while 25 percent advise for management contract. A total 60 percent of the respondents feel that public and private participation will be the best option for raising funds for the construction and maintenance of airports in the country. Similarly, 55 percent experts suggest that professionalism will be developed in CAAN management by hiring professional executives and developing management skills among employees. Finally, 75 percent respondents advised that highly qualified and skilled professional should lead CAAN Board to make it play supportive role for the development of civil aviation.

4.5 Major Findings of the Studies

Major Findings of the Study are highlighted as below:

- 1 CAAN is to operate airports efficiently and make air services safe and effective tool for the economic development.
- 2 The facilities and resources available and Janakpur airport are not properly exploited to maximize economic benefit and hence remaining idle.
- 3 Janakpur airport has in fact, reduced the 12 hours motor drive to the capital city Kathmandu and limited to 25 minutes fly.

- 4 The share of aeronautical revenue in Janakpur airport is 81.14 % and non-aeronautical revenue is 18.86 % of the total revenue of Janakpur airport. The contribution of Janakpur airport in the total revenue of CAAN is nearly 1.5% in average which is quite low compared to the facilities available in this airport.
- 5 The performance of CAAN is not able to perform well during past 8 years of its establishment due to inadequate government policies, lack of professional skills among executives of CAAN and undue political interferences.
- 6 The status of traffic flow in Janakpur airport, it was found that the total aircraft movement was increased gradually, with an average growth of nearly 8 % annually. The average growth in total passenger and cargo inflow is reducing but cargo outflow is increasing. The total cargo flow has average growth rate of nearly 30 %.
- 7 CAAN requires to develop professionalism establish a sound management culture in the organization.
- 8 The revenue generation in Janakpur airport and similar airport are still low due to lack of flights.
- 9 In the context of Nepal, in international sector total aircraft movement in TIA was increased by nearly 4.5 % in 2009. Similarly, total passenger flow was increased by nearly 10.5 %, whereas, total cargo flow was raised by nearly 3 % in the year 2009. Thus, the international traffic in Nepal is also growing slowly.
- 10 The study aims to encourage scholars and researchers for the promotion of civil aviation and tourism industry.
- 11 Service like airport canteens, restaurants, banks, telephone, cyber etc. are limited even in TIA and not perfect available in janakpur airport.

CHAPTER- V

SUMMARY , CONCLUSIONS AND RECOMMENDATI

This chapter summarized the whole study, draws the conclusion and forwards the recommendation to erase the weakness and drawback of Janakpur airport observed on the basis of findings.

5.1 Summary

This first focuses the brief background of the study, statement of the problem, objective of the study, significane of the study and limitatioin of the study. Finally, it also presents the organization of the study.

The Literature review of this study is given in the second chapter. It includes General and the review of previous studies in the area. The General consists of concept of specific technical and managerial activities.

Research methodology deals with the research design, nature and sources of data, The sampling procedure , Data processing procedure and tools of data analysis. The tools are like Average, Percentage, Ratios, Tables and Graphs, T-test and ANOVA table, Pilot study and pre-testing has also been used as stastical tools.

Data presenting and analysis of this includes the vdata presentation and analysis and major findings of the study. Analysis of revenue pattern, air trafffic flow and performance of CAAN for five years has done.

The objective of the study was to find out sources of revenues in Janakpur airport and its contribution in the total revenue of CAAN. In the course of the study it was found that there are various sources of aeronautical and non-

aeronautical revenues in Janakpur airport. Major sources of aeronautical revenues are landing charge, housing charge, passenger service charge, cargo handling charge, communication and navigation charge, etc. Similarly, major sources of non-aeronautical revenues are terminal rental, fuel sales charge, security charge, house and land rentals, etc.

Many facilities in Janakpur airport are under-utilized as a result contribution of this major hub airport having the widest network in the country, is quite low. An art of state, the well equipped hangar in this airport remains idle all over the year due to higher rentals. The aircraft owners allow their aircraft maintenance in open air despite rain, dust and rust but hesitate to pay the high cost of housing in hangar. Similarly, the large area of land in this airport generate negligible amount of rent due to the lack of technologies. In many airports rooms inside and outside the terminal building remains vacant over the year due to high rentals. The land and other properties of airports not in operation are also not utilized.

The status of civil aviation in Nepal and around the world. Regarding the air traffic flow in Janakpur airport, it was found that the total aircraft movement was increased gradually, with an average growth of nearly 8 percent annually. Similarly, cargo inflow is reducing but cargo outflow is increasing. The total cargo flow has average growth rate of nearly 30 percent.

The experts' opinion regarding the role of CAAN and commercialization of airports in Nepal. It was found that CAAN is the only authorized agency of Government of Nepal to regulate civil aviation and operate airports in the country. The main objective behind the establishment of CAAN is to operate airports as autonomous entities and maximize economic benefits by adopting business principles. But it is functioning dual role of regulator as well as service provider which should be separated at the earliest possible to enhance efficiency in airport operations. CAAN is not able to perform well during past eight years of its establishment due to inadequate government policies, lack of

professional skills among executives of CAAN and undue political interferences.

To cope with the growth scenarios in aviation industry around the world it is urgently needed to construct a second international airport in Nijgadh area, Bara district. Similarly, major hub airports in the country like Pokhara, Bhairahwa and Janakpur should be upgraded as regional level airports to facilitate air traffic movement from neighboring Indian cities and mitigate regional imbalance. For the construction and development of airports including international airport fund raising should be done by public and private participation including foreign direct and indirect investments. According to the experts' view the better options to commercialize financially viable airports are either to privatize terminal management or through management contract.

There are more than a dozen airports serving social sector and operated on behalf of the government to provide necessary services to the public. Experts in the field support that these airports should be operated by the local agencies in the technical support of CAAN or subsidized by the government to reduce financial burden of CAAN. Airports not in operation since long should be leased for commercial use. Findings of the experts' opinion show that performance of CAAN is only satisfactory in the past eight years of its establishment. Lack of professionalism and management skills among top level executives along with the unstable political scenario has influenced the activities of CAAN. Thus, CAAN requires to develop professionalism establish a sound management culture in the organisation.

5.2 Conclusions

Conclusions of the study are drawn in the subsequent paragraphs. Air transport is no more luxury but is a necessity in remote areas and stands as the life-line in various parts of Nepal where road transportation is not accessible. Air service is the only means for transporting people and essential goods including food stuffs, medicines and construction materials. People in various parts of Nepal in the mountainous region are still dependent on air services for their livelihood and economic activities. The difficult topography has compelled the government of Nepal to invest huge amounts in constructing airports in various parts of the country to provide air services.

Till now the total number of airports in Nepal including four under construction has reached fifty-one. Out of the forty-seven airports brought in operation ten are already closed and another few are also not operating since long. There is only one international airport in the country which generates most of the revenues of CAAN. Another one dozen airports including the regional hubs are in operating profit and possess financial viability. The remaining airports are mostly serving social sectors in the remote areas and causing huge loss in their operation. Classification of airports on the basis of financial feasibility is done in appendix A-III.

Civil aviation industry is experiencing significant growth in the couple of years in the Asia-Pacific region and around the world. It is playing crucial role in raising real GDP in the emerging economies as well as around the world. The global scenarios show that civil aviation industry is causing multiplier effect in the economy by creating a chain of employment opportunities. Thus, civil aviation has stood as an economic driver and airports have become significant places for economic activities. Airports are no more port of aircrafts but are being converted into service centres and junctions of commercial activities. To enhance operating efficiency, airports are being privatized all over the world. Airports are being freed from the government control in order to standardize services and make attractive to the users. The emerging economies in Asia and Middle-East region are competing to construct highly standard and well facilitated airports to attract more users. The growing trend in this industry has created opportunities for the countries having potential for tourism and export of manufactured goods.

In order to regulate civil aviation and operate airports in the country, the government of Nepal established CAAN as an autonomous entity in 1998. During the past tens years of its establishments CAAN has been able to rise revenue generation in multifold and contribute significantly to the government in the form of repayment of shares and taxes. In the fiscal year 2064/65 it remained on the third position in the country after Nepal Telecom and Rastriya Banijya Bank to earn profit. In this fiscal year CAAN was able to generate total revenue of 1.56 billion rupees and earned a net profit of 200 million

rupees. This shows that the financial position of CAAN is improving gradually; however, the growth rate in total revenue is only 7.5 percent in average. The total revenue is composed of aeronautical and non-aeronautical revenues. The aeronautical revenues are generated from the activities related directly to the air traffic movement and contribute 83.42 percent of the total revenue of CAAN. Whereas, the non-aeronautical revenues are generated from commercial activities and services provided in the airports and contribute 16.58 percent of the total revenue.

Similarly, the proportions of aeronautical and non-aeronautical revenues in Janakpur airport are nearly 81.14 percent and 18.86 percent respectively. Janakpur airport contributes only 1.5 percent in the total revenue of CAAN. The proportion of non-aeronautical revenues in many countries exceeds the proportion of aeronautical revenues, which help to reduce aeronautical charges. In the Nepalese scenario airport entities have not focused on commercial and other non-aeronautical activities to raise non-aeronautical revenues. The concept of airport marketing is in its earliest stage and airports are still operating as government offices and the tariffs are set accordingly. In some cases the airport tariffs are too high while in other cases too low. Thus, it is evident that CAAN is still far a way to promote commercial activities and retail airports in the country. So that, various agencies and users of the airports should be encouraged to use the facilities available by reducing their charges and rentals.

The concerned agencies in civil aviation field needs to develop their skills and abilities to provide standard services in order to promote the industry and maximize benefits. Aviation industry in the Asia-Pacific region has been experiencing significant growth in the couple of years and, hence, benefiting the emerging economies in this region. To make use of the opportunities in civil aviation industry in the region and around the world infrastructure development is required. In the Nepalese context, construction of second international airport and upgrading of major hub airports into regional status are urgently required. In the growing scenario of privatization of airports around the world terminal management as well as operation of airports need to be handed over to private sectors. Likewise, private sector participation is

required in the construction, operation and maintenance of airports in the country.

CAAN is unable to perform well due to lack of professionalism and unstable political situation as well as undue political interferences. Management culture in CAAN is not desired and needs improvement through skill development and hiring new professionals. A team of highly qualified and skilled professionals should lead the CAAN Board in order to enhance efficiency. Government policies are inadequate and need periodical review to make relevant and supportive for the promotion of civil aviation industry. The dual role of CAAN as the regulator of civil aviation and service provider needs to be separated in order to provide standard services and operate airports efficiently. Efficiency in airport operations helps to upgrade and standardize services, maintain desired safety level which will attract more users and finally boost up revenues. Thus, it is urgently needed to focus on the provision of services and commercial activities to market the airports.

The present state of art in civil aviation industry shows that aviation field is growing tremendously causing fast development of infrastructures and technologies to fulfill the growing demand globally. Airport authorities, worldwide, are focusing on marketing airports to provide standard services and attract more users. But in our country the concept of airport marketing is newly emerging and yet to be implemented. Though the major objective of establishing CAAN was also to facilitate air services and operate airports with business motive. But the operation of airports does not seem to be freed yet from government control and political influences. However, GoN and CAAN are seen to planning for the commercialization of airports and various services in the civil aviation field. The newly formulated Civil Aviation Policy 2065 also makes provision for commercialization of airports and related services.

5.3 Recommendations

On the basis of findings of the study following recommendations suggestions can be made which are equally important for scholars to conduct further studies in the related field:

- The dual role of regulator and service provider being played by CAAN should be separated in order to develop professionalism in airport management and enhance operating efficiency. Autonomous airport entities, by adopting business principles, can provide more standard services and increase benefits.
- Government should adopt liberal policies for the development and promotion of aviation industries and always attempt to correlate civil aviation with tourism. The national civil aviation policy should be updated and revised periodically to cope with the global scenarios.
- CAAN should attempt to develop professionalism to establish sound management culture for the betterment of the organization and standardization of services. This will be done by hiring qualified professionals as well as developing skills among CAAN employees.
- Highly qualified professionals need to be included in the CAAN Board to make it play supportive and monitoring role to enhance efficiency in the management.
- Airports having financial and tourism potential should be operated on management contract to upgrade services and develop infrastructures through public and private sector participation.
- Airports serving the remote social sectors should be operated by local agencies in technical support of CAAN in order to reduce financial burden.
- The properties of airports not in operation since long should be handed over to local agencies for commercial use by deducting their values from government share capital.
- The trend of constructing airports under political influence must be stopped. Construction of new airport should be done only after conducting sufficient study for feasibility and its environmental impact.

- Public and private participation (PPP); build, own, operate and transfer (BOOT); build operate and transfer (BOT); operate and transfer (OT) and other modalities should be adopted for constructing new airports.
- Most demanded second international airport should be constructed in the Terai region near Nijgadh in Bara district at the earliest possible. Likewise, Pokhara, Bhairahwa, Biratnagar and Janakpur airports should be upgraded in regional level airports to facilitate flights from various Indian cities.
- Out of the total property of CAAN the value of land is nearly 50 percent, so that, emphasis should be given to utilize the idle lands in more scientific way to generate more revenues.
- The tariff rates should be scientifically determined in order to attract more users and to make use of land, buildings, hangars, and other assets.
- Classification of airports should be made on the basis of their financial viability and development works should be done on priority basis.
- The revenue generation in Janakpur and similar airports are still low due to lack of flights so that air service operators should be encouraged to operate flights between hub airports on transit basis.
- Services like airport canteens, restaurants, banks, telephone, cyber, etc. are limited even in TIA and not available in many domestic airports. So that attempts should be made to facilitate such services in quality as well as quantity.
- Transit hotels and lodging facilities should be made available in airports periphery by the airports as far as practicable.
- CAAN should focus on generating more non-aeronautical revenues in order to compensate aeronautical charges and make air services affordable.

- CAAN and the government of Nepal should actively initiate to establish proposed air routes via Nepalese territory to allow more international flights to fly over the country and make use of air navigation services to increase revenues.

Besides the above recommendations for policy makers and service providers some suggestions are made as follows for scholars to carry out further studies.

- Researches should be carried out to find out the optimum modality through which financially viable and tourism potential airports can be commercialized:
- Research study should also be carried out to find out the models by which social sector airports can be operated.
- Scholars should also focus to find out the suitable ways in which properties of airports being closed should be utilized to maximize benefits.
- Research studies should be conducted to find out the ways in which easy and affordable air services can be provided in the remote sectors.
- Last but not least, studies should also be carried out to determine the feasibility of flight operations between major cities in the country.

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