# AN ECONOMIC ANALYSIS OF PARAGLIDING COMPANIES OF POKHARA 

A Thesis<br>Submitted to the Department of Economics. Faculty of Humanities and Social Sciences of Tribhuvan University in Partial Fulfillment of the requirement for the Degree of MASTER OF ARTS

in
ECONOMICS

Submitted By<br>Dinesh Raj Baral<br>Roll No. 081/071<br>T.U. Registration no.: 5-1-48-2805-2002<br>Department of Economics<br>Prithvi Narayan Campus Pokhara<br>Tribhuvan University

## LETTER OF RECOMMENDATION

This thesis entitled An Economic Analysis of Paragliding Companies of Pokhara is prepared by Dinesh Raj Baral under my supervision. I hereby recommend this thesis for approval by the thesis committee.

Date: 14 Dec. 2021
Prof. Dr. Lekh Nath Bhattarai
Thesis Supervisor

## APPROVAL SHEET

We certify that the thesis entitled An Economic Analysis of Paragliding Companies of Pokhara' submitted by Dinesh Raj Baral to Department of Economics, Prithvi Narayan Campus Pokhara, of Faculty of Humanities and Social Sciences, Tribhuvan University in partial fulfillment of the requirements for the Degree of MASTER OF ARTS in ECONOMICS, has been found satisfactory in scope and quality. Therefore, we accept this thesis as a part of the said degree.

# Thesis Evaluation Committee 

## Prof. Dr. Lekh Nath Bhattarai <br> Head <br> Department of Economics

Prof. Dr. Lekh Nath Bhattarai
Supervisor
Department of Economics

Dr. Hari Prasad Pathak<br>External Examiner

Date: Date: 14 Dec. 2021

## ACKNOWLEDGEMENTS

The research study entitled "An Economic Analysis of Paragliding companies of Pokhara" is prepared for the partial fulfillment of the degree of Master of Arts under the course designed by the Faculty of Humanities and Social Sciences. It is my great pleasure to submit this thesis prepared under the guidance of Prof. Dr. Lekhnath Bhattarai, who inspired me to do research work and provided knowledge of the study area. I am highly grateful and appreciate his invaluable guidance and supervision in this research work.

I would like to express my special thanks to other faculty members of Economics Department, Prithivi Narayan Campus, Pokhara for their constructive and critical encouragement at various stages of my work. I am also equally grateful to Prof. Dr. Lekhnath Bhattarai head, Department of Economics, for supporting me to prepare this thesis.

The words would be insufficient of convey the depth of gratitude to my father Liladhar Baral, mother Mayadevi Baral, brother Ramesh Raj Baral and other family members including brother and friends for invaluable support and their help that became a great source of encouragement and inspiration to me. I would like to express my thanks for Tek Nath Adhikari for thesis edit. I would also like to acknowledge the help I have received from all of the staff of Western Regional Library, P.N. Campus, Pokhara. I would like to thank all those who help me directly and indirectly to bring this thesis in this form.

Finally, I would like to express my thanks to Shrestha Computer Service, Nadipur for computer assistance.

Date: 25 Nov. 2021

Dinesh Raj Baral<br>Campus Roll No.: 81/071

T.U. Registration no.: 5-1-48-2805-2002


#### Abstract

S

This study entitled "An Economic Analysis of the Paragliding Companies of Pokhara" has been carried out for partial fulfillment of the degree of Master of Arts in Economics. There is a lot of potential for adventure tourism and very few articles have been published focusing on the paragliding industry, which is one of the major tourist destinations in Nepal. But economic analysis of this area, this issue has been raised as none of the articles have given major priority to this part. Therefore, this research report has been prepared focusing on the financial and employment creation situation of the paragliding company as well as the trend analysis of the paragliding customer. For this, 60 companies operating in the paragliding industry so far have been divided into two clusters by random sampling method from each cluster to fifteen companies and a total of 30 companies have been selected for research. The microeconomic analysis of the companies has been dome using the descriptive and analytical research design of the selected companies. similarly, the ten years cost benefit ratio of companies has been analyzed and the trend analysis of customers has been done through simple regression method. The study shows its huge potential. If the paragliding business can be promoted as an excellent business, it can be of great help to the tourism industry of Pokhara. The main objective of the best research report is the cost benefit analysis of the paragliding industry in Pokhara. Pokhara's paragliding is world famous. However, the concerned bodies have not been able to play the necessary role for the development and expansion of this sector and the expected progress has not been made in this sector. The paragliding industry, which was operating at a good profit in its early years, has not been able to increase its profits in recent years. The rise of paragliding companies and the recent natural disasters are now affecting the industry from time to time due to internal problems. In the initial year, the benefit-cost ratio reached 1.58. the benefit cost ratio of the industry falls by 1.08 when the earthquake hit Nepal. In the years that followed, the addition of 43 new paragliding companies to this industry created a price war situation. Therefore, Paragliding companies could not increase their profits. The low cost and inability of companies to move forward in providing services has led to high investment and low profits. Even in this case, the benefit cost ratio is at 1.22.


Despite the problems, the benefits of this industry can be understood as an area of great potential. The industry has created about 650 direct and 2000 indirect jobs. The policy support of the state and the umbrella organization of this industry should take initiative to manage the paragliding business. Assessing paragliding clients from the first year to the last year of the study, it appears to have triple by 4 points in a decade. Similarly, revenue collection has also increased 3.5 times. Therefore, the umbrella organization of the industry needs to play an important role in further developing and expanding this industry. which strengthens the internal management as well as helps in the expansion of the industry.

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## ACRONYMS/ABBREVIATIONS

| NTB | Nepal Tourism Board |
| :---: | :---: |
| NAA | Nepal Aero sports Association |
| GDP | Gross Domestic Product |
| CAAN | Cargo Agents Association of Nepal |
| TFC | Total Fixed Cost |
| TVC | Total Variable Cost |
| TC | Total Cost |
| MC | Marginal Cost |
| AVC | Average Variable Cost |
| AFC | Average Fixed Cost |
| CBA | Cost Benefit Analysis |
| ROI | Return of Investment |
| SATC | Short-run Average Total Cost |
| IRR | Internal Rate of Return |
| NPV | Net Present Value |
| VAT | Value Added Tax |

## CHAPTER I

## INTRODUCTION

### 1.1 Background

Paragliding is the recreational and competitive adventure sport of flying paragliders lightweight, free-flying, foot-launched glider aircraft with no rigid primary structure. The pilot sits in a harness suspended below a fabric wing. Wing shape is maintained by the suspension lines, the pressure of air entering vents in the front of the wing, and the aerodynamic forces of the air flowing over the outside.

Nepal is popular in the world for its history, nature, and biodiversity so that many foreigners visit here to get the experience of cultural, natural and territorial benefits. In the last three decades Nepal's tourism industry has expanded despite internal conflicts and natural disasters. But the rate of the growth of the foreign tourists in the last decade has been an encouraging increase. In the last two decades, Nepal is also popular for adventure sports and sports tourism due to the mountainous landscape so that many foreigners are attracted to adventure sports activities. As a result, our adventure sports tourism industry is increased at an encouraging rate. Paragliding is one of the adventure businesses of Nepal. Paragliding is especially popular in Pokhara by its natural beauty with a favorable environment for paragliding. The paragliding history of the world, as well as Nepal, is not long. But Nepal has suffered a lot for two decades in this business. World paragliding business started in the 1960s. After four decades it entered Nepal in 2000. It was commercially started in Pokhara, Nepal. In the beginning phase, the paragliding industry was entirely dependent upon foreign pilots. At that time only a few flights had been made. So, local people hadn't got for the first opportunity to fly and the flight charge was also very expensive. After one year of commercial flight Nepal Aero Sports Association (NAA) is establish with the role of an umbrella organization of paragliding companies. It had worked for the monitoring and promotion of this industry over the national and international forum (NAA, 2020).

Paragliding is one of the popular adventure sports in Nepal. Pokhara is a popular area for paragliding in comparison to other places in the world. The paragliding sports of Pokhara is in the world's top five paragliding sports. So, many foreign tourists and local tourists' priority is paragliding in Pokhara. Thus, many paragliding companies
were established in Pokhara. The trend of tourist flow in Nepal is increasing. The total number of tourists to Nepal in 2019 totaled 1.17 million via air and land routes, a slight decline over the 2018 number of 1.52 million. Likewise, every year, the Himalayan nation received the highest number of tourists from India totaled 209,611, followed by China $(169,543)$. Tourist arrival statistics of the Ministry of Tourism of Gandaki Province show that in the first five months of the current fiscal year which began in mid-July, 144,195 foreign thrill-seekers visited Pokhara. Among them, 58,895 were Indians. "The lake city receives tourists round-the-year," says Bikal Tulachan, chairman of the Hotel Association of Nepal Western Region Chapter. "As per our estimate, one million tourists visited Pokhara in 2018, and among them, 60 percent were Nepalese (Ekantipur.com Feb. 20, 2020).

The total contribution of Nepal's travel and tourism sector to its GDP was NPR 195 billion. According to the Travel and Tourism Economic Impact 2019 report released in April 2019, Nepal's tourism industry is expected to create more than 1.35 million jobs directly and indirectly by 2029(Nepal Tourism Board, May 31, 2019).

The paragliding business of Pokhara has been commercially started since 2000. After two decades 60 companies have arrived in the paragliding industry. The rate of growth of paragliding companies from 2000 to 2010 is slow because of internal conflict and lack of expert manpower. In 2058/08/08, NAA was established to manage the paragliding of Pokhara. In that period only a few companies and pilots were registered in this industry. In that period many foreign pilots provided services for the customers. But after that, the rate of foreign pilots decreased and finally, only $5 \%$ of the foreign pilots are in paragliding flight. They are commercial pilots. They have been providing services for a few years. In the last five years, the employment rate was gradually increasing. Now the pilots' supply rate is increasing rapidly, but the growth of customers rate is slow. The rate of paragliding charges is also decreasing rapidly so that many companies' economies are worse. Next year 300 new pilots will enter the paragliding industry (NAA, 2020).

NAA is the leading organization of paragliding company of Pokhara. It has worked in paragliding activities since 2001. NAA has organized 19th international paragliding championships in Pokhara. Many foreign pilots are involved in these championships. Due to this championship, many other adventure sports activities are increased in the territory of Pokhara and its surrounding. Many adventure sports
activities are increased in Pokhara with the help of the Paragliding craze in national and international tourists.

In the last few years, the craze of Chinese tourists in paragliding had increased rapidly. Due to the craze of paragliding of Pokhara other adventure sports like cannoning, zip flying, sky diving, bungee jump, ultra-light, and rock climbing are also promoted in Pokhara and its surrounding. These all desires of the tourists is fulfilled by paragliding companies and travel agencies of Pokhara. The parent organization of paragliding companies is NAA. The growth of paragliding companies of Pokhara is increasing as well as day day-by-day likewise the growth of paragliders. Altogether 43 companies arrived in the paragliding industry in 2015. This increased employment growth in the paragliding industry. Now more than 700 people are directly involved in the paragliding industry. The paragliding pilot's growth is also high. So, the commission of pilots is in decreasing order. I have gathered all this information in this report. When there was an increase in paragliding activity, it has direct support on other tourism business. So, it has a multiplier effect on the economy (NTB, 2020).

The paragliding industry is one of the major pillars of the tourism industry of Pokhara. Few research reports were published about the tourism industry. So, there is a necessity to study the present condition of the paragliding industry. In 2015 forty-five paragliding companies had entered this industry. After 2015 there had been a strong competition in this industry. Before 2015 the paragliding charge was a bit higher than the present charge. After 2015 all of these companies followed an attractive marketing policy. Due to high competition, the paragliding companies had induced on price war. Now, paragliding companies suffer on low price as well as the commission for pilots is also decreased from Rs. 5000 to Rs. 3000 per flight. But the growth of paragliding passengers is increasing day by day. the earthquake of 2072 by $10 \%$ every year after (NAA, 2020).

### 1.2 Statement of Problem

Geographically small country Nepal has rich in diversity. The natural beauty, cultural diversity, and biodiversity of this place have been successful in captivating the tourists once visiting Nepal. From all over the world, the number of tourists visiting Nepal is increasing day by day. Lumbini and the Mt. Everest have identified Nepal in the world. Likewise, the paragliding of Pokhara has also introduced Nepal in the world.

It was necessary to conduct research in the past decade. But the ratio of publishing research articles is less than that of the growth of paragliding business activities in Pokhara. This study attempts to find out the answers of these questions. How is paragliding operated as an integral part of Pokhara tourism in the world? What are the benefits? What are the problems? What is its financial aspect? What is the employment status? It has been found that there is insufficient research article published to address these entire questions. Only a few related types of research in this area have been published that have not been able to address the above-mentioned questions. But the benefits of paragliding were not found in the cost analysis.

For any business to be successful, it is necessary to evaluate the positive and negative aspects of that business. It is helpful for anyone interested in this business. Today, research into the areas that support the country's economy is essential. Although the paragliding sector is supporting the country's economy, it has become a field that has not been meticulously studied. Therefore, this issue has been raised to highlight the reality of the economic situation of its important sector. Therefore, this study has focused on investigating the following research question,
a. What is the cost function and profitability status of paragliding companies?
b. What is the cost and benefits status of paragliding companies of Pokhara?
c. What is the trend and structure of paragliding industry?

### 1.3 Objectives of the Study

The general objective of the study is to explore the cost and benefit situation of paragliding industry of Pokhara. However, the specific objectives are as follows.
i. to determine the cost function and profitability of a paragliding companies.
ii. to examine the cost benefit status of the paragliding companies.
iii. to analyze the trend and structures of paragliding industry.

### 1.4 Significance of the Study

Pokhara is famous for adventure sports tourism. The environment and nature of the surroundings make it easy for sports. For adventure tourism, paragliding is one of the main tourism activities. Pokhara is famous in the world for these sports.

One can even know the amount of income the state has made through this business. This shows a great contribution in the field of tourism economy. Because of this, this study is a big help for new entrepreneurs who want to come to this area. What cooperation should be made for the territory of the state? What are the economic aspects of this area? This response will be helpful to answer any of the following questions. This recommendation will facilitate the agencies concerned in conducting reform programs if they are in crisis. If progress is in the path, it can be motivated to move forward more effectively. This study will be especially relevant for the concerned government authorities of Nepal and for those who are working in this area and wish to come to this area. For anyone who wants to recommend paragliding as a topic of interest to me, then this recommendation will be helpful.

### 1.5 Limitations of the Study

Due to various reasons, this study has the following limitations.
a. The cost function and cost and benefit analysis of paragliding is conducted in Pokhara, Kaski which is one main commercial paragliding sport of Nepal.
b. The researcher has not been able to increase the sample size by including a sufficient number of respondents due to budget and time constraints.
c. The history of the paragliding business in Nepal is short so that there is a limitation to the collection of the longer period of data.

### 1.6 Organization of the Study

This study has been organized into five chapters. The first chapter is an introductory part of the study. It contains the background of the study, statement of the problem. Similarly, objectives, significance, limitations, and organization of the study are also included in this chapter. The second chapter contains the literature review of related materials. In the third chapter, the research methodology has been discussed with the conceptual framework, universe and sampling procedure, method of data collection including primary and secondary data processing, and data analysis procedure. The fourth chapter focuses on the presentation and data analysis. The last chapter is a conclusion part of the study. It contains the summary, findings, and suggestions. The bibliography, appendices, and questionnaires are given at the end of this dissertation.

## CHAPTER - II

## LITERATURE REVIEW

This chapter presents the literature review for the study. It contains three subheadings: theoretical review, empirical review, and research gap. The review of literature is essential to get information about the variables selected late in the methodology section.

In the field of paragliding business, national as well as international authors have written many articles and journals. Similarly, a few cost and benefit analysisrelated research reports are also submitted for the partial fulfillment of the master's degree, and several articles in the local, national and international newspapers are published.

### 2.1 Conceptual and Theoretical Review

A cost and benefit analysis proceeds to determine how to do well, or how poorly a planned action will turn out. Although, cost and benefit analysis can be used for almost anything it is widely used on financial questions. Since the cost-benefit analysis relies on the addition of positive factors and the subtraction of negative ones to determine a net result. It is also known as running the numbers. A cost-benefit analysis finds, quantities, and adds all positive factors. These are the benefits. Then it identifies and subtracts all the negative factors: the costs. The difference between the two indicates whether the planned action is advisable. The real trick to doing a cost-benefit analysis well is making sure you include all the costs and all the benefits and properly quantify them (Layard and Stephen, 1994).

In appraising projects from the national viewpoint, the most appropriate and popular method is the cost-benefit analysis. The analysis is the most scientific and necessary criterion for project evaluation. It helps the planning authority make correct investment decisions to achieve optimum resource allocation by maximizing the difference between the present values of benefit and costs of a project. It involves the enumeration, comparison, and evaluation of benefits and costs. It implies weighing the return against the costs involved in a project. Thus, the cost and benefit analysis purports to describe and quantify the social advantages and disadvantages of a policy
in terms of a simple monetary unit. Its objective function is the establishment of net social benefit. This objective function can be expressed as benefit and costs, where benefits and costs are measured in terms of 'shadow' or 'accounting' prices of inputs and outputs instead.

When managing a project, one is required to make a lot of correct decisions. There is always something that needs executing, and often that something is critical to the success of the venture. Because of the high stakes, good managers don't just make decisions based on gut instinct. They prefer to minimize risk to the best of their ability and act only when there is more certainty than uncertainty.

To accomplish myriad variables and constantly shifting economics one need to consult tuff data collected with reporting tools, charts, and spreadsheets. You can then use that data to evaluate your decisions with a process called cost and benefit analysis (CBA). Intelligent use of cost and benefit analysis will help you minimize risks and maximize gains for your project and your organization.

### 2.1.1 Meaning of Cost-Benefit Analysis

Cost and benefit analysis in project management is one more tool in your toolbox. This one has been devised to evaluate the cost versus the benefits of your project proposal. It begins with a list, as so many processes do. There's a list of every project expense and what the benefits will be after successfully executing the project. From that, you can calculate the return on investment (ROI), internal rate of return (IRR), net present value (NPV), and the payback period. The difference between the cost and the benefit will determine whether action is warranted or not. In most cases, if the cost is 50 percent of the benefit and the payback period is not more than a year, then the action is worth taking. (Layard and Stephen, 1994).

### 2.1.2. Concept of Cost

Real cost: It covers both direct and indirect expenses including efforts made to produce and output i.e. It covers monetary cost and the efforts made by the producers and the laborers.

Opportunity cost: The opportunity cost (alternatives cost of any good) is the next best alternative good that is sacrificed.

Explicit cost: It is the cost paid by a producer for borrowing all the factors of production to produce an output. For example, the interest of capital, wages of labor, and other overhead costs.

Implicit cost: It is a cost of a factor of production which the producer himself owes. Thus, total cost comprises total explicit cost-plus total implicit cost.

Variable cost: It is the cost of those factors of production which can be varied in the short-run i.e. fixed. For example, machinery, plant, buildings of a firm, entrepreneurship, salaries, and administrative expenses come under variable cost.

Operating money cost: It is a cost spent by a firm covering all its expenses to produce an output which covers the cost of labor, the interest of capital, insurance charge, cost of raw materials, and all others required to produce an output. In general, cost means operating money cost.

Theory of cost: The relationship between cost and output is called the cost function. Thus, the cost function is derived function from the production function. There have two cost functions.
I) Short-run cost function
II) Long-run cost function

Short-run cost distinguishes to fixed cost and variable cost. Short-run cost is the cost over a period output. In the long run, costs are the costs over a period long enough to permit the change of all factors of production. Input-output relations, in the production function, are those of return in scale.

The short-run and the long-run are not definite periods of calendar time. Strictly speaking, they are sets of conditions, not periods at all. Still, it is almost impossible to keep the idea of time out of the analysis of the short run and the long run. So, both in the short and the long run, the cost of production (total cost) is influenced by various factors: that is to say, the total cost is a multivariate function (Watson and Getz, 1986). $\mathrm{C}=\mathrm{f}(\mathrm{Q} . \mathrm{T}, \mathrm{P} . . . . . . .$.$) ) and \mathrm{C}=\mathrm{f}(\mathrm{Q} .1, \mathrm{Pe}, \mathrm{k} .$. ) are the long-run and the short-run cost functions respectively.

Where,
C $=$ Total Cost
Q = Output
T = State of Technology
Pf $=$ Prices of Factors of Production
$\mathrm{K}=$ Fixed Factors. A cost curve is a curve that describes the changes in cost as output changes. There are four main cost curves in economic theory. They are average cost (AC), marginal cost (MC), average variable cost (AVC), and average fixed cost (AFC). These curves are of great significance, especially in explaining the pricing and equilibrium of a firm. Graphically, costs could be represented in two-dimensional diagrams. Other things are being held constant, such curves imply that cost is a function of output. These inputs ( $\mathrm{Q}, \mathrm{T}, \mathrm{Pf}$ ) are called the determinant of the cost function. Sometimes, they are called shift factors because they change their effect. That could be shown in the graph by the shifting of the cost curve.

### 2.1.3 The Traditional Theory of Cost

According to the sets of conditions, the traditional theory of cost could be distinguished in the short run and the long run. In the short run, some inputs are fixed. A firm can expand and contract its output only by varying the number of other inputs. Usually, fixed inputs are capital equipment and entrepreneurship. In the long run, all inputs are variable in amount. A firm's output can range from zero to an indefinitely large quantity.

## I. The traditional theory of cost under short-run

In the short run traditional theory of cost, the total cost has been divided into two components. They are total fixed costs and total variable costs
$\mathrm{TC}=\mathrm{TFC}+\mathrm{TVC}$

- Capital equipment interests on investment in plants and equipment.
- Most kinds of insurance.
- Property taxes.
- Depreciations and maintenances.
- Salaries of administrative staff, etc.
- Wages of labor.
- Payments for raw materials and other goods bought
- Payments for fuel
- Interests on short term loans
- Excise taxes, if any, and so on.

Diagrammatically, the total fixed cost is represented by a straight line parallel to the output x -axis. Whereas, the total variable cost takes the shape of inverse 'S' due to the application of the law of variable proportions.

The law of variable proportions is related to the short run. The law comprises three stages of production. At the initial stage, the total production to a point increases at an increasing rate. That is more the variable factors employed, its productivity increases and the average variable cost (AVC) falls. This process continues till the optimal combination of fixed and variable factors is reached. Beyond this point, the total product continues to increases at a diminishing rate. At this stage, both marginal and average product of variable factor is diminishing but positive. Simultaneously, the average variable cost rises. This stage is crucial because a firm will seek to produce in its range. This stage is known as a diminishing return as both the average and marginal products of the variable factor continuously fall. After this, comes the stage of negative return. Since the marginal product of a variable factor is negative i.e. below the x -axis. Since total cost (TC) is the sum of total fixed cost (TFC) and the total variable cost (TVC), average cost curves could be obtained from the total cost. Thus, average total cost (ATC), average fixed cost (AFC) average variable cost (AVC) Are found out by dividing the corresponding total costs by the level of output(Q).

Diagrammatically, the shape of both average total cost (ATC) and average variable cost (AVC) are shared due to law of variable proportion. And the shape of marginal cost (MC) is a rectangular hyperbola showing all its points of the same magnitude. i.e. the level of TFC. The concept of marginal cost (MC) occupies an important place in economic theory. Marginal cost is an addition to the total cost caused by producing one more unit of output. It is the change in total cost (TC) that results from a unit value change in output. Graphically, marginal cost (MC) can be measure by the slope of the total cost (TC) curve corresponding to that output by drawing a tangent to it. At total cost (TC) is of inverse 'S' shape, the marginal cost (MC) will be of 'U' shaped.

Algebraically,
$\mathrm{MC}=\mathrm{d}(\mathrm{TC}) / \mathrm{d}(\mathrm{Q})$
Where, $\mathrm{n}=$ number of outputs.
In calculus, MC is the first derivative of the TC function
Where $\mathrm{C}=$ total cost and $\mathrm{Q}=$ output
MC has no relationship with the fixed cost. It relates only to the variable costs.

## II. Relationship between average cost (AC) and marginal cost (MC)

- When AC is minimum then $\mathrm{AC}<\mathrm{MC}$
- When the AC curve is falling, the MC curve falls at a point and then rises.
- When AC is rising, MC may rise or fall
- When AC cut MC from below, at that point $\mathrm{AC}=\mathrm{MC}$.
- If both the C and MC are straight lines, then if AC moves upward,

MC will move two times to AC. Similarly, AC moves downward, MC will move two lines to AC.

Consequently, due to the use of the law of variable proportions, the short-run cost curves (AC, AVC, and MC) are of ' U ' shape. And with the fixed plant, there is a phase of increasing productivity and falling per-unit costs. Similarly, there is a phase of decreasing productivity and rising per-unit costs. Between these two phases, there will be a single point at which per-unit cost is minimal. This point is the short-run average total cost (SATC) and the price is an optimal combination of fixed and variable factors.

### 2.1.4 Modern View of the Cost

It is found quite conflicting about the conventional and modern view regarding the shapes of cost curves. The conventional view clarifies that the shapes of cost curves (AC, AVC, MC) whether in the short run or the long run are of ' U ' shape. It is due to the application of the law of variable proportions and the laws of returns to scale.

The conventional 'U' shape of cost curves has been questioned by some economists like George Stigler and Koutsyiannis, both on theoretical and empirical grounds. Back in 1939, G. Stigler wrote that the short-run AVC was flat over a considerable range of output; firms build plants that permit some variations in output without change in the cost. Further, greater attention has been given to the shape of the long-run cost curves in the economic literature, due to its implacability and applicability in the economics of large-scale production. Nevertheless, Koutsyiannis argued that "the managerial diseconomies can be avoided by the improved methods of modern science. "And any increase because of managerial diseconomies can be more than compensated
by fall in costs because of technical economics. Therefore, the long-run average cost curve is not 'U' Shaped, it is 'L shaped (Layard and Stephen, 1994).

### 2.2 Empirical Review

Vanshdeep (2016) has made a study about solar energy versus grid electricity in Norway. In the research report, there is a study about cost and benefit analysis of electricity over solar.

According to this research report of "Benefit-Cost Analysis of Solar Power Over in Grid Electricity," it had to find the cost and benefit over solar versus electricity. This report has said solar energy will grow in the future. His perception of this report is clear. In the past two decades, alternative energy has emerged in a more sustainable way to resolve the scarcity issue of natural energy resources. The project owner's general perception believes that a one-time high installation cost hampers the adoption of an alternative energy system like solar power. This study investigates the effectiveness of the solar-powered photovoltaic system over the conventional and hybrid systems through a benefit-cost analysis. Benefit and cost components were quantified from the economic and environmental perspectives. An economic sensitivity analysis was then followed with three measurements such benefit-cost ratios, net present values, and profitability indices. The case studies demonstrate the applicability of the proposed analysis framework in real-world projects. Benefit-cost ratios, net present values, and profitability indices have been used for the analysis. The results of this study will promote wider adoption of solar power towards green and increase investments from small and medium-scale investors.

A decision of this research report is the cost and benefit model for solar systems over on-grid conventional energy has proved that photovoltaic energy is certainly effective in residential systems. The statistical analysis used in the model to quantify the cost and benefits components were dependent on the system parameters. The benefits of solar-powered systems rely heavily on the location of the installed system and many special factors such as weather, average solar peak hours, manpower cost, utility's energy prices, and government incentives. It is shown that end customers fail to understand the economics behind installing residential solar systems. Therefore, this study has provided effective guidelines to outline unproblematic financial models for
the adoption of solar systems. This research study has compared the net project benefits and total investment costs for twenty years through economic sensitivity analysis.

Strange and Fjallstrom (2014), in their research on the topic "A critical study on Kennedys Cost-Benefit Analysis 'New nuclear power generation in the UK" they had to compared cost-benefit of the nuclear plant in future. The world population is growing day by day so that there is huge scarcity of fuel in future. At that time which is better for energy? This question is arising in the mind of the researcher. They conduct this issue through research about the nuclear plant is better or not in the future. At the final of their research report, nuclear energy is the costliest as well as non-beneficiary in the future. Nuclear power is non-renewable so that it will affect our environment as well as public health. This research report provides a decision that renewable energy is far better than nuclear power in the future in Britain.

Paudel (2012) in his study "Cost Analysis of Cow Milk Production" studies the total cost of per liter milk and per liter price of milk in the market. He aims to find the cost of milk production from the cow, and how to earn farmers from this business. His study targets to learn the depth of this business. A case study of Lekhanath Municipality, has been carried out in partial fulfillment for the degree of Master of Arts in Economics. The main purpose of the study is to evaluate the various kinds of costs of cow milk production. The special objectives of his study are to estimate and analyze the production and cost function of milk production, to find the optimum level production with human labor as labor input and all kinds of feeding materials, tools, and equipment, etc. as capital input and milk product taken as output.

In his research report to estimate the production and cost function, Lekhanath Municipality has been taken as the study area. In his study, he had selected 80 respondents out of 150 respondents selected randomly. His study was mainly based upon primary data which were collected through the direct personal interview taken by the researcher himself with help of a questionnaire visiting them at their home.

According to his research shows that there is a positive linear relationship between input and output. Keeping a greater number of cows is comparatively more beneficial. This is due to efficiency in fixed cost, feed, and labor cost for the larger stall. Total fixed cost comprised of the depreciation on cow and maintenance and depreciation on the shed. Total variable cost comprises all kinds of feeding materials, tools, and equipment. His study shows that feed cost constituted the most significant component. The researcher analyzes that the cost of one-liter milk and the price have a
positive difference. He concluded that cow farming is profitable in that research area. In his research report, he concludes that if the farmer reduced his cost by decreasing the quantity of straw and increase green grass it increasing the production of milk and reduced the cost of milk production.

Dhakal (2010), in his study of the thesis of cost-benefit analysis of orange production in Syangja district, explores the economic status of the farmer of Adhikhola -1 Phaperthum, Syangja. He aims to study to find the cost and benefit of orange cultivation over other traditional agriculture production. He is originated to compare which profession is best for uplifting farmers' economic status so that he concentrates to find which field is best for growth of household economic status. In his study finding, orange cultivation is more profitable than other traditional agriculture products.

His study is entitled Cost-Benefit Analysis of Orange Production in Rural Area, A Case Study of Syangja. The objectives of the study are to analyze orange cultivation and its role in the social-economic status of western hilly people, particularly of Phaperthum VDC. However, the specific objectives are: To analyze the main determinants of orange cultivation, to describe the orange farm size, their distribution, and production trend, to compare the socioeconomic status of orange growers with nonorange growers, to highlight the problems and prospects of orange cultivation.

He provides suggestions for policy making to the concerned authorities. This study is based on both primary and secondary data. The secondary data have used in the background of the study to know the production and marketing situation at the district and national level. The primary data were collected from Phaparthum V.D.C. of Syangja district by applying a simple random sampling method in the year 2065. In his research, he had selected 51 samples out of 636 . His research finds the cost-benefit ratio of orange cultivation over traditional agriculture as 1:1.35. It indicates that orange cultivation is more profitable than traditional agriculture to uplifting their socioeconomic status in their life.

### 2.3 Research Gap

The history of paragliding is not long in the world. Likewise, Nepal is also a beginner in the paragliding industry. So, there showed be necessary improvements to establish professional paragliding business. Few research articles are published related to the paragliding industry. Sapkota (2018) published a research report about tourist's
behavior and satisfaction. Likewise, Acharya (2018) published a research report about the structure and trend of tourist's arrival in Nepal. Many other research articles have been reviewed related to the cost and benefit analysis. These reports are focused on the tourism activities analysis of their reports. But the cost, benefits, and economic analysis part has been missed. To study the entire economic status of this industry this topic has been chosen.

Paragliding of Pokhara is popular in the world, so that many investors want to open paragliding companies in Pokhara. But the investors haven't got the knowledge of the growth rate of paragliding companies in this industry. They need to know the interests of customers in the paragliding business. The growth rate of pilot is another important thing. This report can be applicable for gathering information about the paragliding business of Pokhara. This research can be useful for these investors who want to invest in this industry.

## CHAPTER III

## RESEARCH METHODOLOGY

This chapter deals with the framework on which this research has been carried out. It is essential for to describing, explaining, and predicting a basic framework on which this study is based. Several aspects like research plan and design, data collection procedures, nature, and source of data, descriptive and statistical analysis of data are used to achieve the objective of the study.

### 3.1 The Study Area

Pokhara is the tourist capital of Nepal. Lately, Pokhara has become a place of recreational and adventure tourism activities all over the world. Paragliding is one of them. Sarangkot of Pokhara Metropolitan city ward number 18 is a suitable place for paragliding. Currently, Pokhara and paragliding have become synonymous. Pokhara's Sarangkot is one of the top five paragliding destinations not only in Nepal but also in the world. The tourism sector plays a major role in Pokhara's economy. Also, paragliding has made a significant contribution to the tourism sector of Pokhara. The researcher is one of the citizens of this metropolitan city, there is less chance of facing problems and difficulties for finding detailed information in various aspects of the study area. Due to the familiarity with the location, the researchers reduced the cost and time to collect data on the one hand; on the other hand, he has been able to collect reliable data.

### 3.2 Research Design

This study adopted a combination of analytical and descriptive research design to collect and analyze data. In this research work, most of the data and information were collected from a secondary source and some are primary. The data of paragliding procedure cost, collected revenue, employment, problems, and specification of the model were tabulated and analyzed descriptively. Similarly, cost and benefit analysis, customers trend, and others are also analyzed descriptively.

### 3.3 Nature and Source of Data

Generally, two types of data were found to be used for research purposes. They are primary and secondary data. It is a fact that the primary data has proximity with realism. Thus, to fulfill the objectives of the present analysis higher emphasis has been laid on primary data. The primary data have been collected by personal interviews and the field survey at Pokhara metropolitan city. However, to some extent, some of the secondary data (available from governmental and semi-governmental organizations) are also used to supplement the analysis, wherever necessary.

### 3.4 Population and Sampling

The present analysis concentrates both on the primary and secondary data. The paragliding companies in this study area constitute the population of the study. There are 60 companies in paragliding industry. 30 companies have been selected out of 60 with the method of cluster sampling. These selected 30 companies represent the sample of the presence. Out of 30 companies, there are 15 pioneer paragliding companies, established before in 2014 A.D and rest of them are new paragliding companies, established after 2014 A.D. The history of these new companies has only five years. But pioneer companies' history has more than ten years. It has divided the whole population of companies into two parts. One is the pioneer and the other is new. In the cluster sampling 15 companies selected out of 21 paragliding companies and new 15 entry companies are selected out of forty-two.

### 3.5 Method of Data Collection

In this research process, there are two different groups of companies. These are old companies and new companies. There are 20 old companies around 40 companies. They are selected by using a random sampling method. 30 companies out of 60 have been randomly selected, which are 15 from each cluster. It has selected these 30 companies' owner or their staff as the respondents in this research process. Primary data are collected from the respondents who are owners or staff of paragliding business firms.

### 3.6 Method of Data Analysis

The collected data have been analyzed qualitatively and quantitatively. The data have been analyzed through ratio and percent. The tables, charts, graphs have been prepared to analyze and present data.

## i. Trend Analysis

The trend analysis of the total employment generation in this industry and growth of new companies. Similarly, the trend of paragliding customers in the different years and the trend of revenue generated in the different years have been calculated by using the simple linear function by the least square method. The established equation is given below:
$Y=a+b X$
Where,
$\mathrm{Y}=$ number of paragliding customers
$\mathrm{X}=$ time variable in year
$\mathrm{a}=$ regression constant
$\mathrm{b}=$ slope of the regression line

## ii. Regression Analysis

The simple regression is the equation with one independent (Explanatory) variable. Let us take a simple regression equation with dependent variable Y and independent variable $\mathrm{X}_{1}$. Then the regression equation or line of Y on $\mathrm{X}_{1}$ is:
$\mathrm{Y}=\mathrm{a}+\mathrm{b}_{1} \mathrm{X}_{1}$
From simple regression, we can knowhow to find out the relationship between the dependent variable and independent variable. Once a simple regression equation has been constructed, one can check how good it is (in terms of predictive ability) by examining the coefficient of determination $\left(R^{2}\right) . R^{2}$ always lies between 0 and 1 .

## iii. Cost and Benefit Analysis

The main theme of the present analysis is to see the relationship between the cost and output of the paragliding business, hence the relationship between the total cost of paragliding flight and total output from paragliding flight was taken as the model of the study area. This is particular linear, quadratic and cubic cost functions have been applied in the following terms:
$\mathrm{C}=\mathrm{a}+\mathrm{bQ}$ (linear cost function)
$\mathrm{C}=\mathrm{a}+\mathrm{bQ}+\mathrm{cQ}^{2}$ (quadratic cost function)
$C=a+b Q+c Q^{2}+d Q^{3}$ (cubic cost function)
Where
C = total cost
$\mathrm{Q}=$ output
$\mathrm{a}=$ Constant (fixed cost)
The specific model above establishes a relationship in the total cost of paragliding flights and the quantity of flights. The necessary variables are defined as follows:

1) Total cost of paragliding flight (C)

The total cost comprises fixed cost and variable cost. Fixed cost includes establishment cost, annual tax for the government, staff salary, office rent, vehicle, takeoff and landing, land rented. Variable cost includes VAT, pilots commission marketing, advertising, etc.
2) Quantity of output (Q)

The quantity of paragliding flights is taken as an average per day and its total charge of the flight. The test of significance of coefficients, standard errors, and statistics are utilized to interpret the statistical significance of data.

For cost-benefit analysis benefit-cost ratio is defined as the percent work of benefit divided by the percent of cost: $\mathrm{B} / \mathrm{C}$ ratio can also be evaluated by the incremental cost and incremental benefit. This is done by using the following methods. $\mathrm{D}=\frac{1}{(1+i)^{t}}$

Where,
$\mathrm{D}=$ discount factors
$\mathrm{i}=$ rate of which future benefits and cost are discounted.
$\mathrm{t}=$ time period
Thus,
$\mathrm{NPV}=\frac{B_{1}}{1+i}+\frac{B_{2}}{(1+i)^{2}}+\cdots+\frac{B_{n}}{(1+i)^{n}}-\frac{C_{1}}{1+i}-\frac{C_{2}}{(1+i)^{2}}-\cdots-\frac{C_{n}}{(1+i)^{n}}$
Where, $\mathrm{B}_{1}, \mathrm{~B}_{2},---------\mathrm{B}_{\mathrm{n}}=$ Benefits of years $1,2,3,-----------$, n
C1, C2, ---------------, Cn - Cost of years 1, 2, ---------------, n
Therefore, paragliding business will be profitable under the following two conditions.
1 the percentage value of the benefit exceeds the present value of cost. It can be expressed symbolically.

$$
\frac{B_{1}}{1+i}+\frac{B_{2}}{(1+i)^{2}}+--+\frac{B_{n}}{(1+i)^{n}}>\frac{C_{1}}{1+i}+\frac{C_{2}}{(1+i)^{2}} \pm----+\frac{C_{n}}{(1+i)^{n}}
$$

2 similarly, the paragliding business is profitable where the ratio of the present value of benefits to the present value of costs is greater than one i.e.
or, $\frac{\frac{B_{1}}{1+i}+\frac{B_{2}}{(1+i)^{2}}+--------+\frac{B_{n}}{(1+i)^{n}}}{\frac{C_{1}}{1+i}+\frac{C_{2}}{(1+i)^{2}}+--------+\frac{C_{n}}{(1+i)^{n}}}>1$

## CHAPTER IV

## DATA PRESENTATION AND ANALYSIS

This chapter is sub-divided into three parts according to the pre-determined objective of the study. Firstly, the analysis of the cost of the paragliding firms, and the second part is the cost and benefit analysis of the paragliding. The third part, is about trend structure of paragliding business firm. All these three parts have analyzed all the determinants of paragliding.

### 4.1 Costs Analysis of Paragliding Company

### 4.1.1 Current Situation of Paragliding Company

The current situation of paragliding made by paragliding companies and they make flight patterns have given in table 4.1.

From Table 4.1 it is known that in the study area, there are two categories of paragliding companies. The study area has old and new paragliding companies. The old paragliding companies have flights per day ranges from 4 to 10 and that of new paragliding companies have flights per day ranges from 2 to 6 .

Table 4.1
Present Scenario of Paragliding Flights

| Particulars | Minimum flight <br> per day | Maximum flight <br> per day | Average flight <br> per day |
| :--- | :--- | :--- | :--- |
| Old companies |  |  |  |
| Flight made per day | 4 | 10 | 7 |
| Flight charge per <br> flight (in Rs.) | 7000 | 8000 | 7500 |
| New companies | Flight made per day 2 6 5750 <br> Flight charge per <br> flight (in Rs.) 5600 6000  |  |  |

Source: field survey 2020.

### 4.1.2. Cost of Different Number of Flights

In the paragliding industry, the existing 60 companies are divided into two sets of groups: old and new. The old paragliding companies have huge infrastructure, wide market quite better reputation and financially strong. Similarly, the new paragliding companies are struggling in the market because of limited market, high managerial costs, and strong competition in the market. So, they cannot grab the market due to lack of experience.

In the paragliding industry, different firms have different costs. Generally, old companies have a stronger economic status than newer ones. In table 4.2, there are explanation of different types of costs in different no of flights.
Table: 4.2
Cost by Different Number of Flights

|  | Number of Filghts |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Types of Flt. |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|  | TVC | 5881 | 9962 | 14143 | 19524 | 24405 | 26286 | 38167 | 46048 | 55929 | 65810 |
|  | TFC | 5207 | 5207 | 5207 | 5207 | 5207 | 5207 | 5207 | 5207 | 5207 | 5207 |
|  | TC | 11088 | 15169 | 19350 | 24731 | 29612 | 31493 | 43374 | 51255 | 61136 | 71017 |
|  | TVC | 4667 | 7834 | 13335 | 17918 | 20245 | 22302 | 30669 | 41336 | 52003 | 64670 |
|  | TFC | 3989 | 3989 | 3989 | 3989 | 3989 | 3989 | 3989 | 3989 | 3989 | 3989 |
|  | TC | 8656 | 11823 | 17324 | 21907 | 23134 | 26291 | 34658 | 45325 | 55992 | 68659 |

Source: field survey 2020.

In Table 4.2, the total fixed and variable cost for paragliding flight procedure is different for different no of flight. There is a negative return for a low number of flights and a positive return for a high no of flights. For old companies, they bear more fixed cost with respect to new. If any old company made one flight per day, they should bear Rs. 5207 for per flight. Similarly, if the companies made more than one flight it has in decreasing order.

Likewise, if any new companies made one flight per day, they should bear Rs. 3989 for per flight. Similarly, if the new companies made more than one flight has in decreasing order. For variable cost, there is no vast difference in variable costs for paragliding flight procedure from single to the six flights per day. If a paragliding company has to fly more than six flights a day, it will have to hire a new pilot and the necessary parachute equipment. As a result, the rate of return per flight is declining in
the event of more than 6 daily flights. If the company makes more flights there are few fixed costs imposed but if the company is unable to make more flights there is the more fixed cost is imposed. Thus, the profit of companies is directly proportional to the number of flights and price of flight charge.

### 4.1.3 Various Components of Cost

The paragliding business firm bears many direct and indirect expenses in its paragliding procedure. These are separated into two well-known classes of fixed cost and variable cost. The total fixed cost has been taken to comprise two of the component name depreciation on office setup and vehicle maintenance. These costs, however, indirectly count toward the investment as well. Either being purchased through loans or by raising on his own business, anyway the company setup undergoes depreciation in its value year by year due to decaying structure and finished office contract. Most of the companies have vehicles, whose costs were estimated at Rs. 6300000 to Rs. 7100000 based on the company's size and customers pressure. Some were found to be the low price of vehicles depend on the size of companies and customers pressure, whose cost was estimated from 3500000 to 4000 . Depreciation and maintenance costs were calculated based upon present market price, remaining expected lifetime, vulnerability to maintenance requirements. The averaging method was also used. As observed in the table, fixed cost decreased with an increase in no of flights.

Table 4.3
Fixed Cost for Paragliding Procedure

| Com | Depr. | Depr. <br> Pany <br> On <br> Office <br> setup | Prelim. <br> vehicle | Annua <br> s right <br> up | Takeof <br> l gov. <br> tax <br> $\mathbf{f}$ | Rent <br> of <br> landing <br> cosfice | Labor <br> cost | Other <br> expense <br> s | Total <br> fixed <br> cost |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Old <br> compan <br> $\mathbf{y}$ | 233 | 941 | 34 | 451 | 218 | 1171 | 1878 | 279 | 5207 |
| New <br> compan <br> $\mathbf{y}$ | 208 | 668 | 34 | 451 | 1920 | 890 | 1267 | 279 | 3989 |

Source: field survey 2020.

According to Table 4.3, there are different fixed costs among new and old paragliding companies. Old companies have big resources and also have a big market size. So, they spend a huge amount on administration. New companies have limited resources and a small market size and they cannot be able to invest the amount in comparison to pioneer companies. Pioneer companies have spent Rs. 5207 per day for fixed cost and new companies have just spent Rs. 3988.71 per day. This amount has included all fixed costs like the depreciation of office setup, depreciation of vehicle, preliminary expenses right up, annual government tax, take up, and landing charge, labor, office rent, and other expenses, which include stationary, phone, email and internet, etc.

Table: 4.4
Variable Cost for Paragliding Procedure

| Companies | Value-added tax | Pilots commission | Fuel cost | Permit of NAA |
| :---: | :---: | :---: | :---: | :---: |
| Old companies | $13 \%$ of flight charge | 60 percent of flight charge | $\begin{aligned} & \text { Rs. } 1000 \text { per } \\ & \text { trip } \end{aligned}$ | $\begin{aligned} & \hline \text { Rs } 100 \text { per } \\ & \text { flight } \end{aligned}$ |
| New companies | $13 \%$ of flight charge | 50 percent of flight charge | Rs. 1000 per trip | Rs 100 per flight |

Source: field survey 2020.
According to Table 4.4 there is the same variable cost between tax permission of NAA. But there is a different variable cost in pilot.com Pioneer companies have more resources as well as goodwill so, there are qualified and experienced pilots due to which they can provide excellence for their customer. But the new companies have new pilots who can work at low labor costs. In the above table, 4.4, the government imposes vat $13 \%$ of service charge which is the same for all companies. But the pilot commission is different for pioneer companies and new companies. New companies pay Rs. 3000 per flight. But pioneer companies pay 52 to 60 percentages of flight charge as commissions for pilots.

New and old paragliding companies have spent the same amount (Rs. 800) in fuel cost of one trip for paragliding flight procedure. In one trip there are 6 paragliding pilots and their customers are included. If they make more than 6 flights per day, they should spend another trip of fuel for the flight procedure. They pay the same amount
for NAA permission for the flight, which is Rs 100 per flight. NAA is an umbrella organization of paragliding firms.

### 4.1.4 Estimated Total Cost Function of Old Paragliding Company

In this study, paragliding companies have been divided into two categories. One is old and the other is new company. The old paragliding companies have high operating costs compared to the new paragliding companies. In table 4.5 , the economic values are shown. TFC is constant for the paragliding procedure. TVC is the total variable cost of a paragliding company. TC of the company is starting from 11088 for a single flight to 52317 for 10 flights per day.

Estimated cost function of old companies as follows
$\mathrm{C}=5207+5881 \mathrm{Q}$
Equation (i) represents the estimated cost function of old companies. According to the function, the estimated fixed cost of the old companies is 5207 . Similarly, Q represents the total number of flight or output. The coefficient of Q indicates the total variable cost. There is direct proportional relationship between the total cost (C) and the number of flight or output $(\mathrm{Q})$. If the number of flights increases then the total cost increases.

Table: 4.5
Estimated Total Cost of Old Companies

| No. of flt | Total Variable Cost | Total Fixed Cost | Total cost |
| :---: | :---: | :---: | :---: |
| $\mathbf{0}$ | 0 | 5207 | 5207 |
| $\mathbf{1}$ | 5881 | 5207 | 11088 |
| $\mathbf{2}$ | 9962 | 5207 | 15169 |
| $\mathbf{3}$ | 14143 | 5207 | 19350 |
| $\mathbf{4}$ | 19524 | 5207 | 24731 |
| $\mathbf{5}$ | 24405 | 5207 | 29612 |
| $\mathbf{6}$ | 26286 | 5207 | 31493 |
| $\mathbf{7}$ | 38167 | 5207 | 43374 |
| $\mathbf{8}$ | 56048 | 5207 | 51255 |
| $\mathbf{9}$ | 65810 | 5207 | 61136 |
| $\mathbf{1 0}$ | 5207 | 71017 |  |

Source: field survey 2020.

The Table 4.5 explores the cost function of old paragliding companies. There are data researched from zero to 10 flights, where TVC, TFC, and TC are measured. In the figure 4.1 these data are plotted in the graph. In the graph, there is plotted TFC, TVC, and TC vs no of flight. TFC is a straight line due to the fixed cost. TVC and TC are the variables and the total cost curve is $U$ shaped.

Figure - 4.1


### 4.1.5 Estimated Total Cost Function of New Paragliding Company

The Table 4.6 explore the cost function of new paragliding companies. There are data researched from zero to 10 flights, where TVC, TFC, and TC are measured. In the figure 4.2, these data are plotted in the graph. In this figure, there is plotted TFC, TVC, and TC vs no of flight. TFC is a straight line due to the fixed cost. TVC and TC are the variables and the total cost curve is $U$ shaped.

Estimated cost function of new companies as follows.
C $=3989+4667 \mathrm{Q}$
Equation (ii) represents the estimated cost function of new companies. According to the function, the estimated fixed cost of the new companies is 3989. Similarly, Q represents the total number of flight or output. The coefficient of Q indicates the total variable cost. There is direct proportional relationship between the total cost $(\mathrm{C})$ and the number of flight or output $(\mathrm{Q})$. If the number of flights increases then the total cost increases.

Table 4.6
Estimated Total Costs of New companies

| N. of flt | Total Variable cost | Total Fixed Cost | Total Cost |
| :---: | :---: | :---: | :---: |
| 0 | 0 | 3989 | 3989 |
| 1 | 4667 | 3989 | 8656 |
| 2 | 8834 | 3989 | 12823 |
| 3 | 13335 | 3989 | 17324 |
| 4 | 17918 | 3989 | 21907 |
| 5 | 19145 | 3989 | 23134 |
| 6 | 27002 | 3989 | 30991 |
| 7 | 35669 | 3989 | 39658 |
| 8 | 44336 | 3989 | 48325 |
| 9 | 52003 | 3989 | 55992 |
| 10 | 61670 | 3989 | 65659 |

Source: field survey 2020.
New paragliding companies have weak economic status compared to new paragliding companies. They have a low per-unit flight cost, with a low per-unit flight charge. So that they are collect low revenue with comparing to old companies. This is shown in Table 4.6 and figure 4.2.

Figure - 4.2


### 4.1.6 Unit Flight Costs

The Table 4.7, compares the per unit flight cost for one to 10 number of flights of old and new companies. The old companies spent Rs. 11088 to Rs. 5248.8 from minimum to maximum no of per unit flight cost.

Similarly, the new companies spent Rs. 8656 to Rs. 4381.8 from minimum to the maximum number of per unit flight cost. The table indicates that there is low cost with the high number of flights and high cost with the low number of flights. There is an inverse relationship between per-unit cost with no of flight. As observed in table 4.7, net cost for paragliding flights decreases, with an increase in the number of flights.

Table 4.7
Unit Cost of Companies

| No. of flight | Old company | New company |
| :--- | :---: | :---: |
|  | Net cost per flight | Net cost per flight |
| $\mathbf{1}$ | 11088 | 8656.0 |
| $\mathbf{2}$ | 7584.5 | 5911.5 |
| $\mathbf{3}$ | 6450 | 5774.7 |
| $\mathbf{4}$ | 6182.7 | 5476.8 |
| $\mathbf{5}$ | 5922.4 | 4846.8 |
| $\mathbf{6}$ | 5248.8 | 4381.8 |
| $\mathbf{7}$ | 6196.2 | 4951.1 |
| $\mathbf{8}$ | 6406.8 | 5665.6 |
| $\mathbf{9}$ | 6792 | 6221.3 |
| $\mathbf{1 0}$ | 7101.7 | 6865.9 |

Source: field survey 2020.

### 4.1.7 Estimated Cost of New and Old Company

In the paragliding industry, there are two categories. Old companies have a big administrative structure. But new companies have a small structure. In the appendix, it is shown that there is different cost for different companies. In the paragliding industry, there exist small to large companies. They have different fixed and variable costs.

Pioneer companies have a high fixed cost and new companies have less fixed cost compared to the pioneer companies. Besides some pioneer companies have fewer operating costs than the new paragliding companies. Some new companies have huge infrastructure and some pioneer companies have poor infrastructure. So, there is a different level of costs in the paragliding industry.

According to the figure 4.3, there are two categories of companies in the paragliding industry. They are old and new paragliding companies. There is high paragliding operating cost in comparison to the new paragliding companies. The cost of new and old paragliding companies is nearly equal in low no of flight. But when a flight is increased, then their cost variation also increases uniformly. This can be seen in figure 4.3.

Figure - 4.3


In Table 4.8 there is an estimated cost of old and new paragliding costs. There is a low per-unit cost for 10 flights per day and a high operating cost for zero flights. Here we can see that old paragliding companies are operating over higher flying costs than new paragliding companies.

Table 4.8
Total Estimated Costs

| NO of <br> flight | Estimated (TC) old company | Estimated (TC) New company |
| :---: | :---: | :---: |
| $\mathbf{0}$ | 5742.664 | 3782.161 |
| $\mathbf{1}$ | 10510.38 | 8911.79 |
| $\mathbf{2}$ | 14965.74 | 12935.32 |
| $\mathbf{3}$ | 19380.19 | 16387.69 |
| $\mathbf{4}$ | 24025.17 | 19803.84 |
| $\mathbf{5}$ | 29172.14 | 23718.72 |
| $\mathbf{6}$ | 35092.53 | 28667.28 |
| $\mathbf{7}$ | 42057.8 | 35184.45 |
| $\mathbf{8}$ | 50339.38 | 43805.19 |
| $\mathbf{9}$ | 60208.73 | 55064.43 |
| $\mathbf{1 0}$ | 71937.28 | 69497.13 |

Source: field survey 2020.

### 4.1.8 Total Cost and Revenue

Table 4.9 shows the comparative picture of the cost of paragliding flight and its output in per day income. According to table 4.9, the income from paragliding flight procedure is negative return from less than 3 flight per day because, there is high fixed costs load on less no of flight but when no of flight is the increase in per day there is an increase in profit of the company. From the table below there are two categories of companies: old companies and new companies. The old companies are making more flights per day by their reputation in the market. But they have more fixed cost by the size of the company. Likewise, the new companies they have a low fixed cost in comparison to old companies but they have small market size. So, they cannot make large no of flights and then they cannot be able to collect more revenue and income from paragliding business.

Table: 4.9
Comparison of Cost and Revenue

| No of <br> flight | Total cost <br> (Rs) | Revenue <br> from <br> flight (Rs) | Net <br> income <br> (Rs) | Total cost <br> (Rs) | Revenue <br> from <br> flight (Rs) | Net <br> income <br> (Rs) |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 11088 | 6550 | -4538 | 8656.0 | 5900 | -2756.0 |
| 2 | 7584.5 | 6550 | -1034.5 | 5911.5 | 5900 | -11.5 |
| 3 | 6450 | 6550 | 100 | 5774.7 | 5900 | 125.3 |
| 4 | 6182.75 | 6550 | 367.25 | 5476.8 | 5900 | 423.3 |
| 5 | 5922.4 | 6550 | 627.6 | 4846.8 | 5900 | 1053.2 |
| 6 | 5248.833 | 6550 | 1301.17 | 4381.8 | 5900 | 1518.2 |
| 7 | 6196.286 | 6550 | 353.714 | 4951.1 | 5900 | 948.9 |
| 8 | 6406.875 | 6550 | 143.125 | 5665.6 | 5900 | 234.4 |
| 9 | 6792.889 | 6550 | -242.89 | 6221.3 | 5900 | -321.3 |
| 10 | 7101.7 | 6550 | -551.7 | 6865.9 | 5900 | -965.9 |

Source: field survey 2020.

According to Table 4.9, there is net income Rs. -4528 to Rs. 1301.17 for minimum number of flights to six no of flight of old companies. Similarly, Rs. -2756 to Rs. 1518.2 for minimum number of flights to six no of flight of new companies.

### 4.1.9 Per Day Average Profit

In the paragliding industry, altogether 30 companies are selected out of 60 for this research. The average number of flights, total cost, and average profit is shown in the Table 4.10 below.

Table 4.10
Per Day Average Profit

| Name of company | Average flights (per day) | Rate in Rs | TR | TC | Profit |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Pokhara paragliding | 4.27 | 6250 | 26687.5 | 17474.31704 | 9213.183 |
| Annapurna paragliding | 4.68 | 6250 | 29250 | 19037.95014 | 10212.05 |
| Frontiers paragliding | 6.08 | 6250 | 38000 | 24685.0614 | 13314.94 |
| Panorama paragliding | 6.08 | 6250 | 38000 | 24712.47368 | 13287.53 |
| Fly nirvana paragliding | 6.24 | 5750 | 35880 | 23388.65641 | 12491.34 |
| Fly Nepal paragliding | 8.21 | 6000 | 49260 | 31956.30223 | 17303.7 |
| Avia club | 5.09 | 8000 | 40720 | 26457.29548 | 14262.7 |
| Blue sky paragliding | 6.57 | 7000 | 45990 | 29884.37834 | 16105.62 |
| Sunrise paragliding | 5.42 | 8000 | 43360 | 28043.30185 | 15316.7 |
| Team five paragliding | 3.45 | 6250 | 21562.5 | 14170.92089 | 7391.579 |
| Sarangkot paragliding | 3.61 | 5500 | 19855 | 13100.49026 | 6754.51 |
| Fishtail paragliding | 5.91 | 6500 | 38415 | 24933.45395 | 13481.55 |
| Pheynex paragliding | 6.16 | 7500 | 46200 | 29884.33766 | 16315.66 |
| Everest paragliding | 5.09 | 6250 | 31812.5 | 20747.33865 | 11065.16 |
| Mountain flyer | 4.6 | 6500 | 29900 | 19478.15942 | 10421.84 |
| Namaste Paragliding | 3.61 | 6250 | 22562.5 | 14401.13331 | 8161.367 |
| Green wall paragliding | 3.69 | 6000 | 22140 | 14588.20271 | 7551.797 |
| Cloud base paragliding | 3.53 | 5500 | 19415 | 13750.23612 | 5664.764 |
| Sky bird paragliding | 3.37 | 6500 | 21905 | 13541.92992 | 8363.07 |
| Lake valley paragliding | 3.45 | 6250 | 21562.5 | 13691.36171 | 7871.138 |
| Flying buddha paragliding | 4.6 | 6250 | 28750 | 18142.42754 | 10607.57 |
| Buddha paragliding | 3.94 | 6000 | 23640 | 15583.30829 | 8056.692 |
| Lakeside paragliding | 4.44 | 6000 | 26640 | 17452.42523 | 9187.575 |
| Advance paragliding | 3.53 | 5500 | 19415 | 13750.23612 | 5664.764 |
| Mountain over view | 5.09 | 5500 | 27995 | 19582.06971 | 8412.93 |
| Hanuman paragliding | 3.78 | 5500 | 20790 | 14685.25026 | 6104.75 |
| Happy fly paragliding | 3.94 | 5750 | 22655 | 15370.65592 | 7284.344 |
| Open sky paragliding | 3.94 | 5750 | 22655 | 15328.35474 | 7326.645 |
| Evergreen paragliding | 3.53 | 5750 | 20297.5 | 13864.96112 | 6432.539 |
| Agni paragliding | 3.94 | 6000 | 23640 | 15541.00711 | 8098.993 |

Source: field survey 2020.
In Table 4.10 there are 30 companies' current average flights, TR, TC, and profit. Pioneer paragliding companies are making more flights than new paragliding companies. They are suffering from profit in the range of Rs. 6754.51 to Rs. 17303.7 per day due to their average daily flight. New paragliding companies' profit range is from Rs. 5664.764 to Rs. 10607.57. It shows that paragliding companies are suffering nominal to high income by their size of the market.

The total cost of Sky bird paragliding is low and sunrise paragliding has a high cost for paragliding procedure. According to table 4.10, there is the different economic status of paragliding companies. It has different economic status. Sunrise and Avia club charged a high rate for paragliding and around 10 companies are charged low paragliding prices. From above table 4.10 Fly Nepal paragliding makes high no of paragliding flights and Sky bird paragliding makes low no of flights. From this table Flying Nepal collect high revenue and advance, cloud based paragliding companies collect the low amount of revenue.

### 4.1.10 Cost and Revenue of Firm

The cost and revenue of paragliding business firms are different. In different no. of flights, there are different costs and revenue. This is explained in table 4.11.
Table 4.11
Comparison of Cost and revenue by Number of flights

| No of Flight | Total Revenue | Total Cost |
| :---: | :---: | :---: |
| $\mathbf{0}$ | 0 | 4598 |
| $\mathbf{1}$ | 6225 | 10072 |
| $\mathbf{2}$ | 12450 | 14496 |
| $\mathbf{3}$ | 18675 | 18337 |
| $\mathbf{4}$ | 24900 | 21319 |
| $\mathbf{5}$ | 31125 | 23923 |
| $\mathbf{6}$ | 37350 | 26892 |
| $\mathbf{7}$ | 43575 | 35016 |
| $\mathbf{8}$ | 49800 | 48290 |
| $\mathbf{9}$ | 56025 | 58564 |
| $\mathbf{1 0}$ | 62250 | 69838 |

Source: field survey 2020.
The Table 4.11, there is explore the total cost and total revenue of paragliding. It shows different no of flights have different revenue and different total cost. Likewise, it shows different costs and revenue. Revenue is increased constantly is 6225 . The total cost of per unit paragliding is decreasing with increasing no of flights.

### 4.1.11 Average Cost and Revenue

In general theory, profit is the positive difference between TR and TC. In Table 4.12 there are $\mathrm{MR}=\mathrm{MC}=\mathrm{P}$. There are two-line MR and MC . They show the equilibrium point. There are two conditions for equilibrium. These are $\mathrm{MR}=\mathrm{MC}$ and slope of MC>slope of MR.

Table 4.12
Average Cost and Revenue at Different Number of Flights

| No. of <br> flt | Average <br> cost | Marginal <br> cost | Average <br> Revenue | Marginal <br> Revenue |
| :---: | :---: | :---: | :---: | :---: |
| 0 | 5207 | 0 | 6225 | 0 |
| 1 | 10908.76 | 3760.393 | 6225 | 6225 |
| 2 | 7033.083 | 3157.406 | 6225 | 6225 |
| 3 | 5689.623 | 3002.705 | 6225 | 6225 |
| 4 | 5091.29 | 3296.291 | 6225 | 6225 |
| 5 | 4880.665 | 4038.164 | 6225 | 6225 |
| 6 | 4938.608 | 5228.324 | 6225 | 6225 |
| 7 | 5214.06 | 6866.77 | 6225 | 6225 |
| 8 | 5681.49 | 8953.503 | 6225 | 6225 |
| 9 | 6326.716 | 11488.52 | 6225 | 6225 |
| 10 | 7141.228 | 14471.83 | 6225 | 6225 |

Source: field survey 2020.
In the graph, both conditions are verified. So, the point 'e' is the equilibrium point. According to figure -4 and Table 4.12, paragliding firms are producing at point 'e' to earn profit ABQE . When $\mathrm{MC}<\mathrm{MR}$, at that time profit is not maximum. At that time production should be necessary to increase. But when business firms provide service from 'e', the business firms can optimize their profit.

In Table 4.12, average cost, marginal cost, average revenue, and marginal revenue are obtained. The average cost is high at one flight. Then, more than one flight the average cost is decreased and finally meets the lowest point of an average cost Rs. 4880.665 then it increases up to Rs. 7141.228. Similarly, MC is also high at first. After
one flight, it decreases up to Rs. 5228 and increases up to Rs. 14471 which is a negative profit for the paragliding business.

Figure - 4.4


In figure 4.4 there is discretion of paragliding business firm's present economic status. According to figure 4.4, the industry is in equilibrium at point e . But the price line is greater than the point of equilibrium e. So, the industry is operated with profit $A B Q R$. In figure $2, A R=M R=P$ indicates that average revenue marginal revenue and price are in the same line. According to this graph, the paragliding industry is operated with maximum profit so that new companies can enter this industry.

### 4.1.12 Estimated Profitability

The table 4.13 shows the different amount of profit made in the different number of flights by paragliding companies. There is negative profit in a single flight of both old and new paragliding companies. Similarly, there is high amount of profit gained by paragliding companies they made 6 flights per day due to their installed capacity.

Table: 4.13
Estimated Profit of Paragliding

| No. of flight | Old company | New company |
| :--- | :---: | :---: |
|  | Net profit/flight | Net profit/flight |
| $\mathbf{1}$ | -2533.85 | -768.53 |
| $\mathbf{2}$ | -1030.74 | -187.39 |
| $\mathbf{3}$ | -20.89 | 318.96 |
| $\mathbf{4}$ | 569.15 | 715.98 |
| $\mathbf{5}$ | 783.41 | 969.11 |
| $\mathbf{6}$ | 812.77 | 1043.80 |
| $\mathbf{7}$ | 554.48 | 905.51 |
| $\mathbf{8}$ | 199.41 | 519.68 |
| $\mathbf{9}$ | -208.39 | -148.25 |
| $\mathbf{1 0}$ | -595.50 | -1132.81 |

Source: field survey 2020.
The Table 4.13 indicates that there is a negative profit of single flight made by old paragliding companies is Rs. 2533.85 in per flight and high amount of profit gained by making 6 flight per day is 812.77 per flight. Likewise, new paragliding companies have the same negative profit per flight Rs. 768.53, when they made one flight a day. similarly, they gain high profit per flight Rs. 1043.80, when they made 6 flights a day

Figure: 4.5


In Table 4. 13 shows the per day total cost per unit flight and total cost and total income, and profit for various no of paragliding flights in a day. It is observed that one flight of one paragliding has the lowest net profit. This is due to high fixed costs and operation costs. It is noticed that the highest profit Rs. 812.77 can be earned by pioneer companies and Rs. 1043.80 of new companies in 6 flights per day. Paragliding business firm loses high amount (Rs. 2533.85 and 768.53 by old and new paragliding companies) to make one flight per day.

We can see that they should make a minimum of 3 flights per day to maintain their operating cost. Below 3 flights the companies are operating in loss and more than 3 flights they are maximizing their profit with their increasing flight numbers up to 6 . After that the resources of companies are limited to make more flights. So, they cannot maximize their profit above 6 flights. They suffer from minimum profit to negative profit while making 10 flights per day by the lack of infrastructure of the company.

### 4.1.13 Company Equilibrium

Cost and revenue curves are drawn in figure -4.6. In this graph, the paragliding company is in neutral at point 'e'. Here 'e' indicates a break-even point where paragliding business firm are neutralized their cost. At the breakeven point, there is intersection of two curves TR and TC. There should be around 3 flights necessary to overcome the cost of paragliding. This graph PI indicates a high-profit zone. When the paragliding companies make 6 flights per day, they earn high profit by optimum utilizing their resources. When paragliding companies made more than 6 flights, their profit remains decreases by the diseconomies of scale and finally these two curves intersect at point 'Q' where they neither earn nor lose at 8 flights per day. When paragliding companies make more than six flights, they have high operating costs due to lack of structural and manpower resources. Then, they are operating in the low profit.

Figure- 4.6


The graph above shows the revenue and total cost curve. In the figure point A indicates a breakeven point, where paragliding companies are operating on equilibrium. This means that there is never profit and never loss. If companies are making more flights above breakeven point (BEP) companies are suffer in profit. At the breakeven point, there are intersect two curves TR and TC. There should be around 3 flights necessarily made to overcome the cost of paragliding. This graph ' $\pi$ ' indicates a highprofit zone. When the paragliding companies make more than 6 flights per day, profit of per flight remain decreasing order. finally, when paragliding companies made more than eight flight a day, the companies move towards loss. Which is shown in figure 4.6.

### 4.2 Cost-Benefit Analysis

### 4.2.1 Costs of Paragliding.

In the beginning part of this research, the cost of paragliding is upsetting. In this period cost of paragliding is different to compare the cost of now. 10 years ago, the rent of land, labor charge, and other parts like local government tax are not applied. But at that time there is a large amount of cost spent by paragliding companies for takeoff and landing areas rent. According to pioneer pilot, Rajesh Bamjan each paragliding company spent more than Rs 2 lakhs for per year takeoff and landing but now it is reduced to Rs 85000 only. Now the local government imposes a tax for paragliding companies and the government has strictly applied VAT. So, the paragliding companies
should pay VAT for every flight for 2 years. But before 2 years paragliding companies avoided government rule of VAT and they only payed nominal tax for the government. The pilots of the paragliding industry in 2009 was $95 \%$ foreigners and only 5\% Nepali. So, paragliding companies had paid $60 \%$ commission for pilots. But after 10 years the composition of foreigners and Nepali pilots is interchanged. And a commission of pilots is also reduced to $40-50$ percent. There is fluctuation of cost because of increasing number of paragliding companies and increasing number of pilots.

### 4.2.2 Determinants of Paragliding Operation

Many factors affect paragliding operation, company registration, takeoff and landing space management, pilot's management, parachute management, vehicle management, and many more. Ministry office registration and CAAN registration are the preliminary cost of paragliding. Many factors directly affect in paragliding industry. First of all, there is no any tourism familiar environment, which is made by the government policy. There is another internal factor that is also the main factor that affects the paragliding industry known as internal revolution. Due to the internal revolution, the tourism business is distracted and it affects in paragliding industry. In 2015, Nepal is suffering from an earthquake. So, many tourists didn't feel safe in Nepal. This case directly affects paragliding industry. There are many steps to register a paragliding company.

There are many titles of cost is for paragliding. Generally, it takes one or two years to complete all the entire procedure to open a paragliding company. The preliminary cost of paragliding is huge in amount and lengthy in procedure. So, there is a lot of cost spent for administrative process. First of all, paragliding company is to be registered in the DCSI office. The company should keep Rs 10000000 capital for the registration of company. After this process, the company should be registered in the Ministry of tourism. It takes a lengthy process and a huge amount is spent on transportation, communication and should deposit Rs 500000 till one-year paragliding operation in the field. After that paragliding company should be registered in the CAAN office with Rs 200000 deposit for company registration. This deposit is returned when the company is closed. It means it is lifetime deposit.

There are three types of cost: preliminary cost, fixed cost and variable cost. The process company registration and administration are included in preliminary cost. Another is a fixed cost. It includes company setup, vehicle management, staff
management, local government tax annually and federal government annual tax and many more titles of cost. The operating cost or gearing cost are variable cost.

### 4.2.3 Preliminary Expenses

In the paragliding industry, the preliminary cost means the company establishment cost. In this part, we include the entire cost to start company administration procedure cost. This is described in table 4.14.

The table 4.14 shows that vehicle purchase cost is found to be the highest one in the establishment of paragliding company. It is accounted 80.22 percent of the total establishment cost. Similarly, office setup cost is accounted for 16.7 percent of the total cost; CAAN registration is accounted for 0.22 percent of the total cost, registration on Ministry office is 0.7 percent of the total cost and transportation cost is 0.34 percent because this registration process carries long time, so it is costly. The documentation cost is 0.28 percent of the total cost.

Table: 4.14

## Preliminary Expenses

| S. No. | Particulars | Estimated cost <br> In Rs | Percent |
| :--- | :--- | :---: | :---: |
| 1 | Company Registration | 16500 | 0.22 |
| 2 | CAAN Registration | 84750 | 1.17 |
| 3 | Ministry office registration | 50000 | 0.7 |
| 4 | Documentation | 20000 | 0.28 |
| 5 | Interest of Deposit | 7000 | 0.09 |
| 6 | Vehicle | 5768750 | 80.22 |
| 7 | Transportation | 25000 | 0.34 |
| 8 | Company setup | 1200000 | 16.7 |
| 9 | Other | 20000 | 0.28 |
| Total |  | 7192000 | 100 |

source: field survey 2020
Likewise, other expense like meeting conversation, public connection for the administration process is 0.22 percent of the total cost, and the interest of the deposit is 0.09 percent of the total cost.

The initial cost is found the highest and the growing stage cost increases with respect collection to its operation and collect revenue.

In the operating stage, the constant fixed cost imposed and variable cost are imposed. Because all infrastructure is ready in this stage and only a little variable cost may gear the company smoothly.

### 4.2.4 Fixed cost

Fixed cost is one of the major parts for establishment of the company. The fixed cost consists of salary, annual tax, local organization renewal, communication, insurance, and many more. To operate a paragliding business these all fixed costs are necessary, which are described in Table 4.15.

Table: 4.15
Fixed cost

| S.No. | Particulars | Total cost <br> (in Rs.) | Percentage |
| :--- | :--- | ---: | ---: |
| 1 | Staff salary | 635280 | 42.28 |
| 2 | Office rent | 440100 | 29.29 |
| 3 | Communication devices | 102000 | 6.79 |
| 4 | Annual tax for government | 186000 | 12.38 |
| 5 | Annual tax for parent org. | 5000 | 0.33 |
| 6 | Insurance | 19121 | 1.27 |
| 7 | Takeoff and Landing space rent | 115000 | 7.66 |
|  | Total | 1502501 | 100 |

Source: Field survey 2020
Table 4.15 shows that staff salary is found to be the highest cost of fixed cost for a paragliding company. It is found to be 42.28 percent of the total cost. Similarly, office rent is 29.29 percent of the total cost. The annual tax of the government consists of local government tax as Rs. 85000, the annual tax of CAAN as Rs. 84750 and 16250 for the company tax office. All are included in the annual tax of the government which is 12.38 percent of the total cost. The communication devices cost is one of the major fixed costs which is 6.79 percent of the total cost. Annual tax for parent organization is
another cost in which their parent organization means their monitoring organization which is called NAA, where is 0.33 percent cost is spent out of total cost. Insurance is accounted to be 1.27 percent of the total cost, and takeoff and landing spot rent is accounted to be 7.66 percent of the total cost. These all are the fixed cost of a paragliding company annually.

### 4.2.5 Variable Cost

The cost which is spent by paragliding company on the operation process is called variable cost. In this part, vehicle, fuel, and maintenance permit of NAA, marketing, VAT, promotion events, and many other advertisings related title of costs are included. Variable cost is depending upon the number of paragliding made. According to observation and survey per flight commission paid by the paragliding companies to the pilots depends upon paragliding company. Generally, there is a 45 to 60 percent commission paid by the company to the pilots. The paragliding company pays Rs. 100 for NAA to take permission per flight. Similarly, Rs. 25000 per month is spent by in fuel, and $13 \%$ VAT is paid for the government. The variable cost depends upon the number of flights. So, if there are more flights, the variable cost is higher. And if there are few flights there is low variable cost. Thus, the variable cost depends upon the number of paragliding flights. We can say that variable cost is directly proportional to the number of flights.

### 4.2.6 Cost-Benefit Ratio of Companies

In this section, the cost-benefit analysis of the paragliding business is presented from 2009 to 2019. The cost-benefit analysis is used for project evaluation and it helps the planning authority in making a correct investment decision to achieve optimum resource allocation by maximizing the difference between the present value of benefit and cost of a project. It involves the enumeration, comparison, and evaluation of benefit and cost (M.L. Jhingan. 2000, 537). The cost-benefit concerned includes not only direct pecuniary cost and benefit but also externalities, meaning that external effects are not traded in markets. These include external costs and benefits and it also consists of total social cost and social benefits. But this study aims to evaluate the profitability of paragliding business in the study area. Hence, the study has not included other
paragliding related social cost and total benefits as well as external costs and benefits but included only the internal cost which is accounted above.

The paragliding industry is multidimensional industry that supports the whole tourism sector of Pokhara. So, we can say that it has a multidimensional effect on the economy of Pokhara. Paragliding business is a long-term business project. So, it is necessary to evaluate the profitability of paragliding based on the net present value (NPV) criterion. Therefore, the appraisal rules for project evaluation require discounting of future benefits and costs because society prefers the present to the future (M.L. Jhingon, 2000, 538). To apply the net value criterion; it needs to discount future benefits and costs of paragliding business. The discount factor is expressed as.
$\mathrm{D}=\frac{1}{(1+i)^{t}}$
Here, $\mathrm{i}=5 \%$

$$
t=1,2, \ldots \ldots \ldots .10
$$

Thus,

$$
\begin{aligned}
& \text { NPV }=\frac{B_{1}}{1+i}+\frac{B_{2}}{(1+i)^{2}}+\cdots+\frac{B_{n}}{(1+i)^{n}}-\frac{C_{1}}{1+i}-\frac{C_{2}}{(1+i)^{2}}-\cdots-\frac{C_{n}}{(1+i)^{n}} \\
& =[13624648.68+\ldots \ldots+7071261.17]-[15880727.13+\ldots \ldots .+5705225] \\
& =94297666.36-72351048.85 \\
& =21946817.39
\end{aligned}
$$

This shows that the NPV is positive. It means that the project is viable in the study area. Also, this emphasizes that the paragliding business is profitable in the study area.

$$
\begin{aligned}
& \frac{\frac{B_{1}}{1+i}+\frac{B_{2}}{(1+i)^{2}}+--------+\frac{B_{n}}{(1+i)^{n}}}{\frac{C_{1}}{1+i}+\frac{C_{2}}{(1+i)^{2}}+--------+\frac{C_{n}}{(1+i)^{n}}} \\
& \frac{94297666.36}{72351048.85} \\
& 1.3033>1
\end{aligned}
$$

This shows that the benefit-cost ratio is greater than 1 . So, the paragliding business in the study area is admissible.
'The NPV criterion is considered as the most appropriate rule for project evaluation' (M.L. Jhingan, 2000, 538). Thus, based on the above-mentioned values and the annual costs and benefits on paragliding business, from 2010 to 2019 (calculation over 10 years of the segment) has been calculated. Here, the cost-benefit analysis is shown below at a 5 percent discounted rate.

It is found that the present value of benefit and costs are 94297666.36 and 72351048.85 respectively. Thus, our first condition is fulfilled because here, the NPV of benefits is greater than the NPV of costs at an $8 \%$ discount rate in total. Similarly, the second condition is also fulfilled as the ratio of NPV of benefit to the NPV of costs is 1.3033 , which is greater than 1 . Thus, the paragliding business in the study area is viable.

Table: 4.16
Cost-Benefit Analysis of Paragliding Business

| S.N. | Year | Total <br> Benefit in <br> Rs. | Total <br> Cost in <br> Rs. | Net <br> Benefit in <br> Rs | *Total <br> Benefit in Rs | $* T o t a l ~ C o s t ~$ <br> in Rs | Net Benefit <br> in Rs | B/C <br> Ratio <br> in (\%) |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 2010 | 14305595 | 16674430 | -2368835 | 13624648.68 | 15880727.13 | -2256078.4 | 0.859 |
| 2 | 2011 | 15089656 | 9904360 | 5185296 | 13686318 | 8983254.52 | 4703063.48 | 1.523 |
| 3 | 2012 | 15633000 | 10025459 | 5607541 | 13503785.4 | 8659991.48 | 4843793.92 | 1.559 |
| 4 | 2013 | 17153735 | 11028715 | 6125020 | 14112377.78 | 9073323.83 | 5039053.95 | 1.555 |
| 5 | 2014 | 4464625 | 4088013 | 376612 | 3498033.69 | 3202958.18 | 295275.5 | 1.092 |
| 6 | 2015 | 8010352 | 6173613 | 1836739 | 5977324.66 | 4606750 | 1370574.66 | 1.297 |
| 7 | 2016 | 11481382 | 8072636 | 3408746 | 8159818.18 | 5737222.4 | 2422595.78 | 1.422 |
| 8 | 2017 | 11347000 | 8011478 | 3335522 | 7679649.6 | 5422168.31 | 2257481.3 | 1.416 |
| 9 | 2018 | 10835323 | 7879969 | 2955354 | 6984449.20 | 5079428 | 1905021.2 | 1.375 |
| 10 | 2019 | 11518588 | 9293411 | 2225177 | 7071261.17 | 5705225 | 1366036 | 1.239 |
|  | Total | $\mathbf{1 1 9 8 3 9 2 5 6}$ | $\mathbf{9 1 1 5 2 0 8 4}$ | $\mathbf{2 8 6 8 7 1 7 2}$ | $\mathbf{9 4 2 9 7 6 6 6 . 3 6}$ | $\mathbf{7 2 3 5 1 0 4 8 . 8 5}$ | $\mathbf{2 1 9 4 6 8 1 7 . 3 9}$ |  |

Source: field survey 2020
*Discounted at $10 \%$ discount rate.
The table below also shows that the benefit of paragliding business, up to the one year is negative, then it is slightly increased. The amount of benefit is the highest in 2013. It means, it is popular in the world. It is at top rank. Then, it is decreasing due
to the earthquake in Nepal. After 2015, 40 paragliding companies had arrived in the paragliding industry
Then profit of the paragliding business is decreasing till now. The market of paragliding business is increasing but the growth of paragliding customers is decreasing in comparison to the growth of paragliding companies. So, the profit of the paragliding companies is decreasing day by day.

The benefit-cost ratio of this study was high in 2012 and low in the establishment year 2010. The highest benefit ratio in 2012 was 0.859 which is less than one. It shows that in the establishment year generally, every projects ratio is less than one. Similarly, the benefit-cost ratio was high at 2012. It is 1.559 which is the maximum ratio of this study period. The average benefit-cost ratio of this research report has calculated is 1.303 which is greater than one and it shows that the project is admissible.

Table - 4.17

## Cost-Benefit Ratio of Paragliding Companies

| S.N. | Year | Total <br> Benefit in <br> Rs. | Total <br> Cost in <br> Rs. | Net <br> Benefit <br> in Rs | Benefit in <br> Rs | *Total Cost <br> in Rs | Net Benefit <br> in Rs | B/C <br> Ratio <br> in <br> $(\%)$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | 2010 | 14305595 | 16674430 | -2368835 | 13005216.41 | 15158724.31 | -2153507.9 | 0.859 |
| 2 | 2011 | 15089656 | 9904360 | 5185296 | 12470091.72 | 8184963.104 | 4285128.61 | 1.523 |
| 3 | 2012 | 15633000 | 10025459 | 5607541 | 11745072.9 | 7532127.347 | 4212945.55 | 1.559 |
| 4 | 2013 | 17153735 | 11028715 | 6125020 | 11716001.01 | 7532612.345 | 4183388.66 | 1.555 |
| 5 | 2014 | 4464625 | 4088013 | 376612 | 2772085.663 | 2538247.272 | 233838.3908 | 1.092 |
| 6 | 2015 | 8010352 | 6173613 | 1836739 | 4521843.704 | 3485004.539 | 1036839.166 | 1.297 |
| 7 | 2016 | 11481382 | 8072636 | 3408746 | 5892245.242 | 4142876.795 | 1749368.447 | 1.422 |
| 8 | 2017 | 11347000 | 8011478 | 3335522 | 5293375.5 | 3737354.487 | 1556021.013 | 1.416 |
| 9 | 2018 | 10835323 | 7879969 | 2955354 | 4595260.484 | 3341894.853 | 1253365.631 | 1.375 |
| 10 | 2019 | 11518588 | 9293411 | 2225177 | 4440415.674 | 3582609.941 | 857805.7335 | 1.239 |
|  | Total | $\mathbf{1 1 9 8 3 9 2 5 6}$ | $\mathbf{9 1 1 5 2 0 8 4}$ | $\mathbf{2 8 6 8 7 1 7 2}$ | $\mathbf{7 6 4 5 1 6 0 8 . 3 1}$ | $\mathbf{5 9 2 3 6 4 1 4 . 9 9}$ | $\mathbf{1 7 2 1 5 1 9 3 . 3 2}$ |  |

Source: field survey 2020
*Discounted at $10 \%$ discount rate.
The above table shows the cost-benefit analysis of paragliding companies at 10 percent of the discount rate. According to this table, the cost-benefit ratio is in decreasing order beside the data of 2014 due to the earthquake of Nepal. It can be clearly understood by the graph below which shows the trend of the benefit-cost ratio of 10 years.

### 4.3 Trend Analysis and Features of Paragliding Industry.

### 4.3.1 Trend of the Benefit-Cost Ratio of Companies

The trend of the benefit-cost ratio of paragliding business in details is described in figure 4.7, which shows the scenario of 10 years of benefit and cost condition of paragliding companies of Pokhara.

Figure - 4.7

## Trend of Benefit-Cost Ratio



Source: field survey 2020
According to the above figure 4.7 the benefit-cost ratio is negative in the establishment year. After that, the growth rate was in positive order. In 2014 the ratio of benefit-cost was slightly positive due to the earthquake. After 2014 in the paragliding industry 40 more companies had entered. The ratio of benefit-cost after 2014 was growing in positive order but after 2016 benefit-cost ratio is decreasing in order. The graph shows the trend of the benefit-cost ratio of paragliding business is in decreasing order.

### 4.3.2 Trend of paragliding customer

The rate of paragliding customers is increasing day by day. once upon a time there was no opportunity to fly for Nepali in paragliding. It means there was no opportunity for Nepali people because there were only a few pilots and few paragliding companies in Pokhara. In 2000 A.D., there was only one paragliding company established for commercial paragliding. It was sunrise paragliding company. At that time, no local pilots were found in Nepal. If anybody wanted to open a paragliding company, they should manage the pilots for their own paragliding company. After few years of commercial paragliding practice, Sunrise paragliding company started pilots tanning for the local youths. Due to this, there started the production of pilots. Then, these pilots are involved in other paragliding companies.

This process of production of the pilots is given continuity by Babu Adventure Paragliding School. Now two paragliding schools are producing paragliding pilots. At present, more than 300 pilots are directly involved in the paragliding industry. They have replaced foreign pilots. Due to this replacement of the pilots and increase in the paragliding companies, many foreigners and local people easily enjoy paragliding and survive all these paragliding companies. Here is calculated the 10 years of the trend of customer flow in the paragliding industry, which is clear from the figure below.

According to figure 4.8, the trend of foreign and Nepali paragliding customers is upset at different times. At the beginning year of this research report, $95 \%$ customers were foreigner's whereas only $5 \%$ were Nepali customers. According to the graph, the foreign paragliding customers were higher than Nepali paragliding customers. The growth of paragliding customers decreased in 2014 due to earthquake in Nepal.

Figure -4.8
Trends of Paragliding Customers


Source: field survey 2020

The earthquake of 2014 affected the whole tourism industry of Nepal. After 2015, the Chinese paragliding customers were increasing rapidly because Chinese movie, had filmed paragliding events of Pokhara. Due to its effect on movies, Chinese tourists grew rapidly in Nepal. At that time the percentage of Nepali paragliding customers was also increasing due to decreasing in paragliding flight charges in Pokhara. Moreover, 40 paragliding companies had entered that year in Pokhara. After 2015, the growth of Nepali and foreign paragliding customers is encouraging.

The current situation Nepali customers is encouraging in comparison to the foreigners. Once at the beginning period of this research, 95 percent of paragliding customers was occupied by foreigners. We can decide from the graph that Nepali customers are induced in paragliding. But foreigners are also increasing day by day.

### 4.3.3 Trend by Age Group

Paragliding customers are categorized in three steps, as shown in the graph. There are three categories: below 20, 20 to 60, and above 60. In the beginning year of the research, youngsters were interested in the paragliding industry. After a few years,
paragliding is popular for all ages and gender. In the case of gender, young males and females are equally induced in paragliding, which is described figure below.
Figure - 4.9

## Trend Analysis by Age Group



Source: field survey 2020
The figure 4.9 has detail describes the age group of customer's involvement in paragliding. Generally, it is an adventure as well as a terrible game. So that there is major induced age group is teenagers. Now the percentage of youngsters in paragliding is decreasing because of the attration of other aged people in this field. In the graph, the percentage of paragliding customers of teenage is decreasing and percentage of 20 to 60 and above 60 age group customers are increasing.

### 4.3.4 Trend of Employment

Paragliding is major and popular adventure tourism business. There are many types of employment created in the paragliding industry. Pilots, office staff, vehicle staff, marketing, and many more types of jobs are found in the paragliding industry. At present, 58 paragliding companies are registered. Only 55 companies are commercially working in the paragliding industry. According to NAA, there are 350 registered, pilots and 200 more new pilots in the paragliding industry. So, the supply of labor is
increasing day by day. I have analyzed the trend of employment created by the paragliding companies. This is described in the figure below.
Figure - 4.10
Trend of Employment


Source: field survey 2020
In figure 4.10, the trend of employment generated by paragliding business is shown. In this figure from 2010 to 2015 the rate employment opportunities were increasing slowly. In 2015, there were 43 paragliding companies in paragliding industry. The growth of paragliding companies created a huge amount of employment. After 2015, there were very few employments created in the paragliding industry.

This growth of paragliding companies has high competition on paragliding companies. Due to which they have changed their business strategy to induce customers. They reduced the price of the paragliding charge. During the field observation, there are more than 630 people directly involved in the paragliding industry. There are lots of people who are indirectly involved in this industry. In paragliding takeoff and landing place there are many coffee shops, cafes, and restaurants. So, there is a huge amount of employment generated by the paragliding business of Pokhara.

### 4.6.5 Revenue Collection Trend

The trend of the paragliding business of Pokhara is upsetting due to national disaster and conflict. Paragliding business is a tourism-related business. So, there are effects of many national and international issues. The paragliding business suffers from many obstacles. In table 4.18 we can see the size of revenue collection is increasing from 2010 to now, except in 2014 due to the earthquake of Nepal. After that the rate of increase in an upward direction. On other hand, the rate of paragliding flight is decreasing day by day from 2010 to now. But the paragliding flights made by the paragliding companies are increased.
Table: 4.18
Revenue Collection Trend

| Paragliding Customers | Total Customer | Rate | Revenue Collection <br> (Rs in ten thousand) |
| :---: | :---: | :---: | :---: |
| 2010 | 22241 | 9000 | 20016.9 |
| 2011 | 24712 | 9000 | 22240.8 |
| 2012 | 27458 | 8000 | 21966.4 |
| 2013 | 30510 | 7500 | 22882.5 |
| 2014 | 19758 | 7000 | 13830.6 |
| 2015 | 58115 | 7000 | 40680.5 |
| 2016 | 86013 | 6500 | 55908.45 |
| 2017 | 88795 | 6500 | 57716.75 |
| 2018 | 91733 | 6500 | 59626.45 |
| 2019 | 95829 | 6250 | 59893.125 |

Source: field survey 2020
In 2015 paragliding business size is increased rapidly because 40 paragliding companies entered in paragliding industry. Due to their entry in paragliding industry, the price of fare is decreased. The decrease in the price of fare increases the paragliding customers.

## Figure - 4.11

## Revenue Collection Trend



Source: field survey 2020

### 4.7 Major Findings

I. The paragliding business firm has been divided into two categories. They are old and new companies.
II. In the paragliding industry, the cost of the companies is different. The average fixed cost of old and new companies is Rs 5207 and Rs 3989. Similarly, that of variable costs are Rs 5881 and Rs 4667.
III. In the paragliding industry average flights made by old and new companies is 5.47 and 3.89 per day.
IV. The old and new paragliding companies earn an average profit of Rs. 12650 and 7890 per day respectively.
V. The paragliding industry is found to be in equilibrium when the paragliding companies made an average of 2.32 flights per day. Similarly, profit maximization is when it makes an average of six flights per day.
VI. This study shows that the paragliding industry is profitable because the price line is greater than that of the point of equilibrium.
VII. Comparatively, the new paragliding companies have low per unit flight cost and the profit is high in comparison to the old companies. But the average per day flight of old companies is more ( $35 \%$ more flight) that of new paragliding companies.
VIII. There is high operating cost if there is only one flight or more than 6 flights per day, which is different for different companies. Such as per-unit cost of old companies and new companies is Rs 11088 and Rs 8656 respectively. Similarly, the low per-unit cost of both companies is Rs 5248.8 and Rs 4381.8 at six flights per day.
IX. The cost function of old companies has $Q=5207+4667 \mathrm{X}$ and that of new companies has $\mathrm{Q}=3989+4667 \mathrm{X}$.
X. The cost-benefit ratio is found 1:1.30. The ratio of cost and benefit is $1: 1.559$ in 2012 (maximum) and that of 1:1.09 in 2014 (minimum).
XI. The trend of paragliding customers had been found in increasing from 2010 to 2013 in equal proportion. But in 2014 the growth of customers had decreased rapidly due to national disasters. After 2014 the growth of paragliding customers increases double in number.
XII. The employment created by the paragliding industry is found in increasing order. From 2010 to 2013 the growth of employment was $10 \%$ per year. But after 2014, forty over paragliding companies entered this industry. Due to this, the increase of companies creates huge opportunities for pilots and administrator to operate these companies.
XIII. The total revenue collected by this paragliding industry at the beginning (2010) year of the study was found to be Rs 20016900 . After one decade this industry can collected Rs 598931250 revenue, which is around three times the growth of revenue.

## CHAPTER V

## SUMMARY, CONCLUSION, AND IMPLICATION

This study attempts to address the existing paragliding companies and wants to enter in paragliding industry for the enhancement of income. This study is based on primary data obtained through the method of probability sampling i.e. simple random sampling without replacement method. All data derived in the study represent the response of the business owner. This chapter deals with the summary and conclusion of the study and also provides the recommendations for further study.

### 5.1 Summary

The paragliding business has been operating in the sky of Pokhara for the past 20 years. Today, more than 60 companies are providing services in the business that started from limited resources. Excellent and safe paragliding flight in a limited size and limited time is a challenging task. But paragliding in the skies of Pokhara has been on the rise for the past 10 years. The best time for paragliding is from 10 a.m. to $2 \mathrm{p} . \mathrm{m}$. So, the structure of the companies doesn't seem safe to fly much with limited pilot and limited resources. This makes it an excellent choice when it comes to blowing tourists in the limited skies. Looking at which, it is seen that the cost will be recovered by flying three flights and the profit will be maximized by flying six flights daily. According to the current situation, the old companies fly six flights a day on average. Their average per flight fee is Rs. 6550. New companies fly an average of 4 flights per day. The new companies have fixed an average of Rs 5,900 per flight. However, due to the low cost of new companies, new companies can make a profit even if they do a little flight. Due to the high cost, even the old companies have not been able to earn encouraging profits while flying a lot. As the factors of the existing companies are in equilibrium in the short term, new paragliding companies or existing paragliding companies will need to increase their infrastructure to balance in the long run. After that, this industry will reach a balance in the long run.

The paragliding business has become one of the most popular and alternative tourism businesses of Pokhara, where nearly 9.5 percent of tourists fly in paragliding out of one million tourists who visited Pokhara in 2019. The main objectives of this
research are to do a cost-benefit analysis of the paragliding of Pokhara, trend of employment generation, trend of growth of paragliding customers, etc.

For this study, the data were collected from a structured questionnaire, unstructured interview, and observation. The research design in this study is exploratory as well as descriptive. Both primary and secondary data were used in the study. 60 paragliding companies are existing in Pokhara, ward no. 6 and 18. Out of these 60 paragliding companies, 50 percent paragliding companies have been taken according to the random sampling. The sampled size in the study area is 30 . Also, the total population of sampled companies is 60 . The selected sample population of paragliding companies include 15 pioneering companies and 15 newly established companies. The commercial paragliding business started in Pokhara in 2000. They started to get the return from their business in the decades of sixty; cost and benefit are important parameters for any kind of project. So paragliding business is not an exception. To show the cost for the paragliding procedure and return from its output is the challenge of this research work. The researcher has used cost-benefit analysis with a 10 percent discount rate. On the side of labor cost, there are sampling cost, the cost for paragliding tools and another side of benefit is paragliding charge collected from the customers. This occupation of benefit-cost ratio is greater than unity. According to this research, NPV is positive and the $\mathrm{B} / \mathrm{C}$ ratio is 1.30 which is greater than one. So, the Paragliding business is in the study area is admissible.

One of the aspects of this research is to highlight the trend of growth of paragliding business. According to the field survey 2020, the average flight made by paragliding companies per year in 2019 per company was 1725 and the collected average revenue per company was Rs 11518588.

In the paragliding industry, a huge number of people are involved directly or indirectly. According to this research report in the paragliding industry, 650 plus people are directly involved. The rest of the restaurants and others shop in landing and takeoff area have been benefited by paragliding industry. Lots of travel agencies who can book the paragliding flights and hotels, restaurants and other tourism activities have also been benefited by the paragliding business. So, we concluded that there is a huge number of people involved directly and indirectly in the paragliding industry. The trend of employment is also increasing day by day because the trend of paragliding customers is increasing in order. Due to this, more paragliding companies can enter this
paragliding industry. The trend of employment is in increasing order. However, after 2017 the rate of growth of employment is a nominal positive rate.

Another main objective of this research is that the trend of growth of paragliding customers in the last decade is in positive order except in 2014. According to this research at the beginning period in, the 2010 total paragliding customers were 22241 and after one decade in 2019, the total paragliding customers were 95830. According to this figure, the growth of paragliding customers in the paragliding industry is 4.3 times in positive rate. But in 2014 there was a big crisis of paragliding customers because of the earthquake. At that time 80 percent of the customers of the paragliding industry was reduced. At that time local customers held the paragliding industry.

There are so many prospects of paragliding business but committed problems exist in the study area. There is no organized management system of data restoration. So, they cannot get the actual financial status of their own paragliding company. There is a direct effect of government tax policy.

### 5.2 Conclusion

This research focuses on the economic condition of the paragliding industry in Pokhara. Most of the economic indicators of this industry, which have moved forward in the face of various adverse conditions, have been positive. The industry needs to fly at least three times a day to cover its operating costs and six times a day to maximize profits from connected infrastructure. The old and new companies in the industry have been divided into two groups and analyzed. According to the study, the old companies have higher operating costs and lower flight profits, but the number of daily flights is higher than the new ones. So, they look financially strong. The average daily flights of new and old companies are 3.89 and 5.47 respectively. At present, the old and new companies in the industry are net profit earning an average of Rs 12690 and Rs 7890 per day respectively. As the service charges provided by this industry are above the equilibrium point of the industry, the profit in this industry seems to be higher. Due to which new companies are likely to be attracted to this industry. The competition created by the arrival of new companies or the competition of companies within the industry in the bid to make more profit is in balance in the long run.

With a history of 20 years, the industry currently employs 650 people directly and more than three thousand indirectly. The profit cost ratio is found by evaluating the

10-year statistics of this industry. Accordingly, the benefit-cost ratio is staggering ( $1: 1.559$ ) in the early years of the study and appears to be gradually declining (1:1.239) in later years. The decline in the ratio shown above indicates competition among companies in the industry. The industry, which managed to collect revenue Rs 20016900 per annum in the initial year of the study, seems to have managed to collect Rs 598931250 per annum a year later. According to the figures, the industry has managed to raise more than three times the revenue in 10 years. Due to the unnatural calamities created in the country within 10 years, this region seems to be affected like other regions, which has a direct impact on the economic growth rate of the paragliding industry. Three times more economic growth in 10 years is not a weak position, but the study shows that if no adverse conditions are created, the economy can grow at a better rate than it is now.

According to this research at the beginning period in 2010, the total paragliding customers were 22241 and after one decade in 2019, the total paragliding customers were 95830. The ratio of paragliding customers in 2010 seems that $95 \%$ are foreigners and only $5 \%$ local. But the scenario of the paragliding customers has been changed into $70 \%$ and $30 \%$. This indicates that the craze of local customers in paragliding has gradually increased.

### 5.3 Implication

The study has concluded that the paragliding companies in the study area have many opportunities, potentialities, and markets. However, the paragliding industry suffer from various problems. Thus, the following facts and suggestions are recommended.
I. Assessing the economic condition of the paragliding industry in Pokhara, the economic indicators of this industry looked good. If the industry can expand its services and quality, it can still attract more customers. Therefore, this industry seems to be even stronger in the future.
II. The study found that paragliding firms need to fly an average of two flights a day just to cover their operating costs. Similarly, a maximum of six daily flights increases the profit of the industry. At present, according to the connected capacity of the industry, it has to fly 6 times a day, but the cost per flight has
gone up and the profit per flight has gone down. If the connection capacity can be expanded to solve the problem of extreme passenger pressure during the best weather for paragliding and the limited capacity of the company at that time. It is seen that the company's profit will increase, many passengers will have comfortable service and industry revenue will also increase.
III. In the early stages of the paragliding industry, the cost-benefit rate was very high. Due to which the industry was operating at a huge profit. The number of companies entering the industry is increasing from 20 paragliding companies 10 years ago to 60 now and the profit cost rate has also come down from 1:1.55 to $1: 1.23$. The main reason for this is the decline in per-flight fees and between companies. There is competition in price. If the firms provide quality, safe service and plan to increase the flight duration to satisfy the customer, the benefit-cost ratio may stabilize, otherwise, the price war of the companies in the industry will lead to the financial collapse of the companies.
IV. The paragliding industry's current revenue collection is Rs 590 million. It was Rs 200 million 10 years ago. The natural disasters in the country over 10 years have caused a lot of damage in the region. If we can operate two or more categories of flights with customers from all regions in mind, we can offer shorter flights and fewer facilities, as well as pricing those who want to take more time but more convenience. The collection can be increased.
V. Currently, the paragliding company's umbrella organization provides one flight per pilot per day. Similarly, a company has made a provision to have a maximum of 6 pilots. This is affecting the service flow at a time when passenger pressure is increasing. If the NAA can ease the control of companies by improving the management of the paragliding sector and the traffic management sector, the infrastructure capacity of many companies can be expanded, new jobs can be created and more customers can be served. This can further support the economic condition of the industry.
VI. This research report focuses on studying the economic condition of a paragliding business firm. That is why it is important to do more research on the writing that comes from investments in the paragliding industry. Therefore, further study in this area is required by this report which could not be covered in this research report. Similarly, in the trend analysis of paragliding customers, 50 percent were men, 50 percent were women, about 60 percent were foreigners,
and 40 percent were Nepalis. But this rate has been increasing exponentially over the last 10 years. If the detailed trend of paragliding is studied about the customer then it will be helpful to run the business based on the target group. This makes it more effective to plan a business based on the area where gender is predominant.

Appendix A
Economic Parameters of Paragliding Business Firms:

| S.N | Company Name | TFC | TVC | TC/fligh t | $\begin{gathered} \text { AV } \\ \text { flight } \end{gathered}$ | AP/fligh <br> t | TR | Foreigner customer | Local Custome r | Employe <br> e |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Pokhara Paragliding | $\begin{array}{r} \hline 4314.38 \\ 4 \end{array}$ | 5037.5 | 9351.884 | 1236.7 | 6250 | 7729375 | 927.525 | 432.845 | 3 |
| 2 | Annapurna Paragliding | $\begin{array}{r} 4635.84 \\ 5 \end{array}$ | $\begin{array}{r} 4704.16 \\ 7 \end{array}$ | 9340.011 | 1317.3 | 6250 | 8233125 | 1053.84 | 263.46 | 3 |
| 3 | Frontiers Paragliding | $\begin{array}{r} 5300.68 \\ 5 \end{array}$ | $\begin{array}{r} 4870.83 \\ 3 \end{array}$ | 10171.52 | 1710 | 6250 | $\begin{array}{r} 1068750 \\ 0 \end{array}$ | 1197 | 513 | 4 |
| 4 | Panorama Paragliding | $4902.51$ <br> 1 | 5037.5 | 9940.011 | 1708.6 | 6250 | $\begin{array}{r} 1067875 \\ 0 \end{array}$ | 1366.88 | 341.72 | 3 |
| 5 | Fly Nirvana Paragliding | $\begin{array}{r} 6750.68 \\ 5 \end{array}$ | 4722.5 | 11473.18 | 1697.2 | 5750 | 9758900 | 1018.32 | 678.88 | 5 |
| 6 | Fly Nepal Paragliding | $\begin{array}{r} 5534.01 \\ 8 \end{array}$ | $\begin{array}{r} 4713.33 \\ 3 \end{array}$ | 10247.35 | 2245.1 | 6000 | $\begin{array}{r} 1347060 \\ 0 \end{array}$ | 2132.845 | 112.255 | 4 |
| 7 | Avia Club | $\begin{array}{r} 5172.83 \\ 1 \end{array}$ | 6640 | 11812.83 | 1666.8 | 8000 | $\begin{array}{r} 1333440 \\ 0 \end{array}$ | 1166.76 | 500.04 | 3 |
| 8 | Blue Sky Paragliding | $\begin{array}{r} 7705.25 \\ 1 \end{array}$ | $\begin{array}{r} 6176.66 \\ 7 \end{array}$ | 13881.92 | 1867.9 | 7000 | $\begin{array}{r} 1307530 \\ 0 \end{array}$ | 1587.715 | 280.185 | 4 |


| S.N | Company Name | TFC | TVC | $\underset{\mathbf{t}}{\text { TC/fligh }}$ | $\begin{gathered} \text { AV } \\ \text { flight } \end{gathered}$ | AP/fligh <br> t | TR | Foreigner customer | Local <br> Custome <br> r | Employe <br> e |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 9 | Sunrise Paragliding | $\begin{array}{r} 7846.80 \\ 4 \end{array}$ | 6140 | 13986.8 | 1641.1 | 8000 | $\begin{array}{r} 1312880 \\ 0 \end{array}$ | 1476.99 | 164.11 | 6 |
| 10 | Team Five Paragliding | $\begin{array}{r} 4165.52 \\ 5 \end{array}$ | $\begin{array}{r} 4870.83 \\ 3 \end{array}$ | 9036.358 | 1110.8 | 6250 | 6942500 | 777.56 | 333.24 | 2 |
| 11 | Sarangkot Paragliding | $\begin{array}{r} 4667.35 \\ 2 \end{array}$ | $\begin{array}{r} 4398.33 \\ 3 \end{array}$ | 9065.685 | 1018.2 | 5500 | 5600100 | 712.74 | 305.46 | 3 |
| 12 | Fishtail Paragliding | $\begin{array}{r} 4565.52 \\ 5 \end{array}$ | $\begin{array}{r} 5028.33 \\ 3 \end{array}$ | 9593.858 | 1677.4 | 6500 | $\begin{array}{r} 1090310 \\ 0 \end{array}$ | 1006.44 | 670.96 | 3 |
| 13 | Phynex Paragliding | $\begin{array}{r} 4538.12 \\ 8 \end{array}$ | 5825 | 10363.13 | 1733.6 | 7500 | $\begin{array}{r} 1300200 \\ 0 \end{array}$ | 866.8 | 866.8 | 4 |
| 14 | Everest Paragliding | $\begin{array}{r} 4755.47 \\ 9 \end{array}$ | 5037.5 | 9792.979 | 1448.8 | 6250 | 9055000 | 1159.04 | 289.76 | 3 |
| 15 | Mountain Flyer | $\begin{array}{r} 4236.30 \\ 1 \end{array}$ | $\begin{array}{r} 5028.33 \\ 3 \end{array}$ | 9264.635 | 1285.4 | 6500 | 8355100 | 899.78 | 385.62 | 3 |
| 16 | Namaste Paragliding | $\begin{array}{r} 4012.55 \\ 7 \end{array}$ | 4912.5 | 8925.057 | 1016.9 | 6250 | 6355625 | 711.83 | 305.07 | 2 |
| 17 | Green Wall Paragliding | $\begin{array}{r} 3562.32 \\ 9 \end{array}$ | 4880 | 8442.329 | 1464.2 | 6000 | 8785200 | 1098.15 | 366.05 | 2 |


| S.N | Company Name | TFC | TVC | TC/fligh <br> t | $\begin{gathered} \text { AV } \\ \text { flight } \end{gathered}$ | AP/fligh <br> t | TR | Foreigner customer | Local <br> Custome <br> r | Employe <br> e |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 18 | Cloud Base Paragliding | $\begin{array}{r} 3528.99 \\ 5 \end{array}$ | 4815 | 8343.995 | 994.1 | 5500 | 5467550 | 745.575 | 248.525 | 2 |
| 19 | Sky Bird Paragliding | $\begin{array}{r} 3362.32 \\ 9 \end{array}$ | $\begin{array}{r} 4778.33 \\ 3 \end{array}$ | 8140.662 | 962.8 | 6500 | 6258200 | 673.96 | 288.84 | 2 |
| 20 | Lake Valley Paragliding | $\begin{array}{r} 4075.11 \\ 4 \end{array}$ | $\begin{array}{r} 4579.16 \\ 7 \end{array}$ | 8654.281 | 1149 | 6250 | 7181250 | 689.4 | 459.6 | 2 |
| 21 | Flying Buddha Paragliding | $\begin{array}{r} 5171.46 \\ 1 \end{array}$ | $\begin{array}{r} 4579.16 \\ 7 \end{array}$ | 9750.628 | 1294.6 | 6250 | 8091250 | 1035.68 | 258.92 | 5 |
| 22 | Buddha Paragliding | $\begin{array}{r} 4209.36 \\ 1 \end{array}$ | $\begin{array}{r} 5046.66 \\ 7 \end{array}$ | 9256.027 | 1232.1 | 6000 | 7392600 | 924.075 | 308.025 | 3 |
| 23 | Lakeside Paragliding | $\begin{array}{r} 4008.44 \\ 7 \end{array}$ | 4880 | 8888.447 | 1320.9 | 6000 | 7925400 | 858.585 | 462.315 | 2 |
| 24 | Advance Paragliding | $\begin{array}{r} 4078.99 \\ 5 \end{array}$ | 4815 | 8893.995 | 994.4 | 5500 | 5469200 | 696.08 | 298.32 | 3 |
| 25 | Mountain Over View | $\begin{array}{r} 5028.99 \\ 5 \end{array}$ | $\begin{array}{r} 4648.33 \\ 3 \end{array}$ | 9677.329 | 1449.5 | 5500 | 7972250 | 869.7 | 579.8 | 4 |
| 26 | Hanuman Paragliding | $\begin{array}{r} 3771.46 \\ 1 \end{array}$ | 4815 | 8586.461 | 1066.8 | 5500 | 5867400 | 853.44 | 213.36 | 2 |


| S.N . | Company Name | TFC | TVC | TC/fligh t | $\begin{gathered} \text { AV } \\ \text { flight } \end{gathered}$ | AP/fligh <br> t | TR | Foreigner customer | Local Custome r | Employe <br> e |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 27 | Happy Fly Paragliding | $\begin{array}{r} 3839.95 \\ 4 \end{array}$ | $4680.83$ $3$ | 8520.788 | 1107.6 | 5750 | 6368700 | 719.94 | 387.66 | 2 |
| 28 | Open Sky Paragliding | $\begin{array}{r} 3060.50 \\ 2 \end{array}$ | $4514.16$ | 7574.669 | 1109.3 | 5750 | 6378475 | 831.975 | 221.86 | 2 |
| 29 | Evergreen Paragliding | $\begin{array}{r} 3612.32 \\ 9 \end{array}$ | 4847.5 | 8459.829 | 993.6 | 5750 | 5713200 | 794.88 | 198.72 | 2 |
| 30 | Agni Paragliding | $\begin{array}{r} 4508.44 \\ 7 \end{array}$ | 4880 | 9388.447 | 1108.8 | 6000 | 6652800 | 831.6 | 277.2 | 2 |

## Appendix B

## Estimated Value of Regression Curve

| Regression Statistics |  |
| :---: | :---: |
| Multiple R | 0.998028115 |
| R Square | 0.996060119 |
| Adjusted R Square | 0.994371598 |
| Standard Error | 1560.471606 |
| Observations | 11 |
| $\mathbf{R}^{2}=\mathbf{0 . 9 9 6 0}$ |  |


| ANOVA Table |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $D f$ | SS | MS | $F$ | Significance $F$ |  |  |
| Regression | 3 | $4.31 \mathrm{E}+09$ | $1.44 \mathrm{E}+09$ | 589.9011 | $8.92373 \mathrm{E}-09$ |  |  |
| Residual | 7 | 17045501 | 2435072 |  |  |  |  |
| Total | 10 | $4.33 \mathrm{E}+09$ |  |  |  |  |  |


|  | Coeffici ents | Standar <br> d Error | $t$ <br> Stat | Pvalue | Lower 95\% | Upper 95\% | Lower 95.0\% | $\begin{aligned} & \text { Upper } \\ & 95.0 \% \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Interc ept | $\begin{aligned} & 5117.3 \\ & 63407 \end{aligned}$ | $\begin{gathered} 1349.21 \\ 1501 \end{gathered}$ | $\begin{aligned} & 3.79 \\ & 2855 \end{aligned}$ | $\begin{aligned} & 0.00 \\ & 6778 \end{aligned}$ | $\begin{aligned} & 1926.9 \\ & 85172 \end{aligned}$ | $\begin{aligned} & 8307.7 \\ & 41642 \end{aligned}$ | $\begin{aligned} & 1926.9 \\ & 85172 \end{aligned}$ | $\begin{aligned} & 8307.7 \\ & 41642 \end{aligned}$ |
| X <br> Variab le 1 | $\begin{aligned} & 4441.7 \\ & 49824 \end{aligned}$ | $\begin{gathered} 1039.53 \\ 6307 \end{gathered}$ | $\begin{aligned} & 4.27 \\ & 2818 \end{aligned}$ | $\begin{aligned} & 0.00 \\ & 3688 \end{aligned}$ | $\begin{aligned} & 1983.6 \\ & 37063 \end{aligned}$ | $\begin{aligned} & 6899.8 \\ & 62586 \end{aligned}$ | $\begin{aligned} & 1983.6 \\ & 37063 \end{aligned}$ | $\begin{aligned} & 6899.8 \\ & 62588 \end{aligned}$ |
| X <br> Variab le 2 | $\begin{aligned} & 105.69 \\ & 09559 \end{aligned}$ | $\begin{gathered} 180.340 \\ 1261 \end{gathered}$ | $\begin{aligned} & 0.58 \\ & 606 \end{aligned}$ | $\begin{aligned} & 0.57 \\ & 6233 \end{aligned}$ | $\begin{aligned} & 532.12 \\ & 75915 \end{aligned}$ | $\begin{aligned} & 320.74 \\ & 56797 \end{aligned}$ | $\begin{aligned} & 532.12 \\ & 75915 \end{aligned}$ | $\begin{aligned} & 320.74 \\ & 56797 \end{aligned}$ |
| X <br> Variab le 3 | $\begin{aligned} & 3.1855 \\ & 20081 \end{aligned}$ | $\begin{gathered} 0.98452 \\ 4868 \end{gathered}$ | $\begin{gathered} 3.23 \\ 5591 \end{gathered}$ | $\begin{aligned} & 0.01 \\ & 434 \end{aligned}$ | $\begin{aligned} & 0.8574 \\ & 88701 \end{aligned}$ | $\begin{aligned} & 5.5135 \\ & 51461 \end{aligned}$ | $\begin{aligned} & 0.8574 \\ & 88701 \end{aligned}$ | $\begin{gathered} 5.5135 \\ 51461 \end{gathered}$ |

$\mathrm{TC}=\mathrm{TFC}+\mathrm{TVC}$
$\mathrm{AC}=\mathrm{TC} /$ no of flight
$\mathrm{MC}=\frac{d T C}{d x}=\frac{d}{d x}($ TFC +TVC$)=\frac{d}{d x}(\mathrm{TFC})+\frac{d}{d x}($ TVC $)=0+\frac{d}{d x}(\mathrm{TVC})=\frac{d}{d x}(\mathrm{TVC})$
$(\because \mathrm{TFC}=$ constant $)$

## Appendix C

## Quadratic Regression Equation

$$
\begin{aligned}
& \mathrm{Q}=\mathrm{a}+\mathrm{bx}+\mathrm{cx}^{2}+\mathrm{dx}^{3} \\
& \text { where } \mathrm{X}=\text { No of flight, } \mathrm{Q}=\text { output } \\
& \mathrm{a}=5117.363407 \\
& \mathrm{~b}=4441.749824 \\
& \mathrm{c}=-105.6909559 \\
& \mathrm{~d}=3.185520081 \\
& \frac{d T C}{d x}=\frac{d}{d x}\left(5117.363407+4441.749824 \mathrm{x}-105.6909559 \mathrm{x}^{2}+3.185520081 \mathrm{x}^{3}\right) \\
& \mathrm{MC} \quad=4441.749824-211.3819 \mathrm{x}+9.5565 \mathrm{x}^{2}
\end{aligned}
$$

## Appendix D

Costs of Paragliding Companies.

| S. N | Name of company | TFC | TVC | TC |
| :---: | :---: | :---: | :---: | :---: |
| 1 | Pokhara Paragliding | 4314.38356 | 5037.5 | 9351.884 |
| 2 | Annapurna Paragliding | 4635.84475 | 4704.167 | 9340.011 |
| 3 | Frontiers Paragliding | 5300.68493 | 4870.833 | 10171.52 |
| 4 | Panorama Paragliding | 4902.51142 | 5037.5 | 9940.011 |
| 5 | Fly Nirvana Paragliding | 6750.68493 | 4722.5 | 11473.18 |
| 6 | Fly Nepal Paragliding | 5534.01826 | 4713.333 | 10247.35 |
| 7 | Avia Club | 5172.83105 | 6640 | 11812.83 |
| 8 | Blue Sky Paragliding | 7705.25114 | 6176.667 | 13881.92 |
| 9 | Sunrise Paragliding | 7846.80365 | 6140 | 13986.8 |
| 10 | Team Five Paragliding | 4165.52511 | 4870.833 | 9036.358 |
| 11 | Sarangkot Paragliding | 4667.3516 | 4398.333 | 9065.685 |
| 12 | Fishtail Paragliding | 4565.52511 | 5028.333 | 9593.858 |
| 13 | Phynex Paragliding | 4538.12785 | 5825 | 10363.13 |
| 14 | Everest Paragliding | 4755.47945 | 5037.5 | 9792.979 |
| 15 | Mountain Flyer | 4236.30137 | 5028.333 | 9264.635 |
| 16 | Namaste Paragliding | 4012.55708 | 4912.5 | 8925.057 |
| 17 | Green Wall Paragliding | 3562.32877 | 4880 | 8442.329 |
| 18 | Cloud Base Paragliding | 3528.99543 | 4815 | 8343.995 |
| 19 | Sky Bird Paragliding | 3362.32877 | 4778.333 | 8140.662 |
| 20 | Lake Valley Paragliding | 4075.11416 | 4579.167 | 8654.281 |
| 21 | Flying Buddha Paragliding | 5171.46119 | 4579.167 | 9750.628 |
| 22 | Buddha Paragliding | 4209.36073 | 5046.667 | 9256.027 |
| 23 | Lakeside Paragliding | 4008.44749 | 4880 | 8888.447 |
| 24 | Advance Paragliding | 4078.99543 | 4815 | 8893.995 |
| 25 | Mountain Over View | 5028.99543 | 4648.333 | 9677.329 |
| 26 | Hanuman Paragliding | 3771.46119 | 4815 | 8586.461 |
| 27 | Happy Fly Paragliding | 3839.95434 | 4680.833 | 8520.788 |
| 28 | Open Sky Paragliding | 3060.50228 | 4514.167 | 7574.669 |
| 29 | Evergreen Paragliding | 3612.32877 | 4847.5 | 8459.829 |
| 30 | Agni Paragliding | 4508.44749 | 4880 | 9388.447 |

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## QUESTIONNAIRE

Company no $\qquad$ .established

## Condition of employment

No. Of Full Time Employer$\qquad$ No of Part timeEmployer.
$\qquad$

## Paragliding Operating Cost

## Managerial Cost

Full time staff salary. $\qquad$ Part time staff salary

Even the land where the office is. $\square$ Company $\square$ rent If in rent, rent per month (Rs.)
company has vehicles? Yes $\square \quad$ No $\square$
If yes, How many ...........Jeep........Car.......
$\qquad$
Motorcycle
Market Price of vehicles Fuel cost (per month)

If No. Rent of vehicles (per month) Office setup cost.
Establishment government registration cost Annul registration cost Local government annul tax
Takeoff and landing area rent $\qquad$ Communication and stationary charge (per month). Vat (per flight)

Best time of paragliding $\qquad$ .promission for paragliding pilot (per day)
$\qquad$ How many days company open $\qquad$ .? average life of parachutes
$\qquad$

## Income side

Best month for paragliding A. Per dayflight.Flight chargePer flight
Average month for paragliding A. Per day
flight.
$\qquad$
Flight charge Per flight
Weak month for paragliding Per day
flight.
$\qquad$Flight chargePer flight
Good business years. Per monthflight
$\qquad$Flight charge
$\qquad$Average business yearsper month
flightFlight ChargeWeak business years ........................... Per month flight.Flight charge
$\qquad$
Trend2010
Clients for paragliding .\% foreigners ..... \% Nepali
2014
Clients for paragliding \% foreigners \% Nepali
2019
Clients for paragliding

$\qquad$
\% foreigners \% Nepali2010
$\qquad$Clients for Paragliding\% below 2020.
$\qquad$

$$
\% 20-60
$$

.......................... \% above 60
2014
Clients for Paragliding

$\qquad$
\% below 20

$\qquad$ ..... $\% 20-60$

$\qquad$
\% above 60
2019
Clients for Paragliding \% below 20

$\qquad$ ..... $\% 20-60$
......................... \% above 60
Trend of Paragliding clients in age group from 2010 to 2019 $\qquad$
No of Pilots in (2010) ....... Maximum flight promission per pilots in per day $\qquad$No of Pilots in (2014) ...... Maximum flight promission per pilots in per day
$\qquad$
No of Pilots in (2019) $\qquad$ Maximum flight promission per pilots in Per day $\qquad$Extra Charge for paragliding clients
$\qquad$

