

Summer Training Report
On
**“Financial Modeling and Analysis of 50 Flats Housing Project in
Gurgaon, Haryana IN”.**

Completed In Vardhan Consulting Engineers Pvt. Ltd.
Submitted In Partial Fulfillment of the Requirement

Of Masters of Business Administration

Corporate Mentor:

Name: Mr. Ashish S Kumar
Designation: Lead Consultant and CEO
Organisation: VCE Pvt. Ltd.

Submitted By:

Name of the student: Shweta
Enrollment No: 00961203919
Batch: 2019 - 2021



Submitted To:

**Banarsidas Chandiwalla Institute of Professional Studies,
Dwarka, New Delhi**

*(Affiliated to Guru Gobind Singh Indraprastha University and
approved by AICTE, Ministry of HRD, GOI)*



Certificate ID : VCE/COC7442

Date : 3rd July 2020

Certificate of Completion

This certificate is awarded to **Miss. Shweta** from **Banarsidas Chandiwala Institute of Professional Studies.**, for successfully completing her online internship at M/s Vardhan Consulting Engineers as Management Intern during **20th May 2020 to 3rd July 2020.**

We appreciate her focus towards learning and analyzing about Project Finance – Modelling and Analysis and completing her internship project along with the report submission.

Shweta's internship project title was **“Financial Modeling and Analysis of 50 Flats Housing Project in Gurgaon, Haryana IN”.**

During her tenure as Management Intern, we found her efforts sincere, meticulous and result oriented.

We wish all the best in her future endeavors.

Neha Kumari

Sr. Manager – HR & Internship Coordinator

hr@techvardhan.com, +91 979 111 2715



Certificate URL : <https://certificates.techvardhan.com/COC7442.pdf>



Vardhan Consulting Engineers

Management Office : 55/108, Soi 11 Sukhumvit, Bangkok, Thailand, corporate@techvardhan.com, +66 972 151 276

BONAFIDE CERTIFICATE

This is to certify that as per best of my belief the project entitled “**A Study on Financial Modeling and analysis of 50 Flats Housing project in Gurgaon, Haryana IN.**” is the Bonafied research work carried out by **Shweta** student of MBA, BCIPS, Dwarka, New Delhi during May June 2020, in partial fulfillment of the requirements for the Summer Training Project of the Degree of Master of Business Administration.

He / She has worked under my guidance.

Dr. Shamsher Singh

Project Guide (Internal)

Date: 31 October 2020

Counter signed by

HOD/ Director

Date: 31 October 2020

Declaration

I hereby declare that this Summer Training Project Report titled **A Study on “Financial Modeling and analysis of 50 Flats Housing project in Gurgaon, Haryana IN.”** submitted by me to Banarsidas Chandiwalla Institute of Professional Studies, Dwarka is a Bonafied work undertaken during the period from 20 May 2020 to 3 July 2020 by me and has not been submitted to any other University or Institution for the award of any degree diploma / certificate or published any time before.

(Signature of the Student)
Name: Shweta
Enroll. No.:00961203919

Date: 31/10 / 2020

ACKNOWLEDGEMENT

It is my pleasure to be indebted to various people, who directly or indirectly contributed in the development of this report and who influenced my thinking, behavior, and acts during the course of training.

I express my sincere gratitude to **Dr. Shamsheer Singh** for providing me an opportunity to undergo summer training at **VCE Pvt. Ltd.**

I am thankful to **Mr. Ashish Kumar (Lead Consultant and CEO)** for his support, cooperation and motivation provided to me during the training for constant inspiration, presence and blessings.

I also extend my sincere appreciation to **Dr. Shamsheer Singh (HOD)** Banarsidas Chandiwalla Institute of Professional Studies Dwarka Sector 11, Delhi who provided his valuable suggestions and precious time in completing my report. Lastly, I would like to thank my parents for their moral support and my friends with whom I shared my day to day experience and receive their suggestion which improves my quality of work.

(SHWETA)

Table of Contents

Certificate from the Organization

Bonafide Certificate

Declaration

Acknowledgement

Executive Summary

Chapters	Title	Page No.
1.	Introduction/ Theoretical Background/Research Problem	
2.	Company Profile (with its SWOT Analysis)	
3.	Literature review and /or Review of existing literature	
4.	Objective and Scope of the study	
5.	Research Methodology <ul style="list-style-type: none">• Population• Sampling Method/Technique /Sample size, sampling frame/unit ,• Sources of data• Methods of data collection and data collection tools• Tools and techniques of analysis• Statistical/ Instrument used	
6.	Data Analysis	
7.	Findings, Conclusions, Suggestions	
8.	Limitation of the Study	

Bibliography

Glossary

Annexure

List of Tables

S. No.	Figures	Page No.
1.	Cost incurred in cost of Residential Building (CapEx)	
2.	Cost incurred in cost of Residential Building (OpEx)	
3.	Revenue Sheet	
4.	Assumptions taken while preparing Fin Flows Sheet	
5.	Fin Flows Sheet	
6.	Debt/Loan Repayment Schedule	

Chapter – 1

Introduction/Theoretical

Background/ Research Problem

Introduction

Project Finance are the mirror which reflects the financial position, strength and weakness of the company. Project Finance is managing long term capital for business plan. So, Project Finance is the financing of long term infrastructure (toll bridges, malls, township, pipelines, telecommunication services etc.), industrial projects such as industrial plants, public services (Railway, airport, roads, metro stations, etc.) based upon a non-recourse financial structure, in which project debt and equity used to finance the project are paid back from the cash flow generated by the project, without any claims on the companies that develop these projects.

If we want to manage capital for business plan. We'll have to make foremost plan, what should be the capital structure, how much equity in capital, depth. We'll also have to take care of the cost of capital. Project Finance comes from combination of both equity and debt. The split between equity and debt depends on the individual project and, most importantly , on the risk profile of each project. The higher the risk, the greater the share of equity will be required by the lending banks(debts). The risk of an individual project is also decisive for the level of debt which a project can take on. There are some projects sectors are suitable for project finance such as are that it is generally used in building or making of toll bridges, malls, township, pipelines, telecommunication services, oil and gas extraction , power production, industrial plants, railway, airports, roads, metro stations, auditorium, sports academy, stadiums, etc. So, These are the most appropriate sectors for building or developing this financing technique because the project has an infinite life, or they have low technological risk because some of the risk associated with the project is shifted towards the lenders or creditors. Therefore, sponsors prefer to avail this financing scheme because it helps them to decrease some of the risk. On the other hand lenders or creditors can receive a better credit margin with project financing.

Once the project is completed, the project ownership goes to the concerned entity as determined by the terms of the loan. In other words if the project is unsuccessful in making or construct properly as compared to desired project the risk prefer to avail or handle by who build the project by that they can remake the project also, a reasonably predictable market, and the possibility of selling to a single buyer or a few large buyers based on multi-year contracts. The other reason is it maximizes the leverage of a project, it also ensures that the

credit standings of the sponsor have no negative impact on the project. Due to this reason, the credit risk of the project is often better than the credit standings of the sponsor. According to the terms of the loan in Project Financing, the excess cash flow received by the project should be used to pay off the outstanding debt received by the borrower. As the debt is gradually paid off, this will reduce the risk exposure of financial services companies. Since the borrower does not have ownership of the project until its completion, the lenders do not have to waste time or resources evaluating the assets and credibility of the borrower. Instead, the lender can focus on the feasibility of the project. The financial services company can opt for limited recourse from the sponsors if it deduces that the project might not be able to generate enough cash flow to repay the loan after completion.

In Project Finance, I prepare a financial model and analyze the cost, revenue and debt repayment along with fin flow / cash flow analysis and Calculate equity IRR and DSCR. Techvardhan Infra Pvt. Ltd (Any Company) “CLIENT” has acquired a piece of land near Gurugram HR IN and wants to develop it as a residential building having 50 flats of 900 sq. ft each. They are expecting to sell the flats at a rate of Rs. 4000 / sq.ft. The expected CapEx is Rs. 8 Crore and OpEx is Rs. 50 Lacs / per annum for the whole project. They are seeking a non-recourse debt (project financing) with 70:30 as D/E ratio from leading commercial banks in India as a 12 years term loan.

Chapter – 2
Company Profile with
SWOT Analysis.

Company Profile



Vardhan Consulting Engineers (“VCE”) is a consulting company founded by group of engineers who have strong academic background with decades of management experience while working in companies all across the globe. VCE is a pioneer organization VCE is providing solutions to the complex engineering, management and financial issues of clients and also fulfill the current generation needs of students and companies. They provide engineering and management consultancy services for different energy projects. Primarily, they focused and experts of these services.

Solar PV Project

We offer following services for the developers of **Large Sized Utility Scale Solar PV** Power Project;

- Feasibility Analysis, Detailed Project Report, Financial Analysis (IM).
- Financial Closure through Debt or Private Equity for Project Finance.
- On-site and Off-site Project Management and EPC-Management
- Documentation and Transaction Services for Sale of Project.
- Project Development and Transfer of Rights at NTP.

Waste to Energy

For the developers of Municipal Solid Wastes Management Units for Municipal Corporation

- Techno-Financial Feasibility Analysis of MSW Unit.
- Engineering designing of segregation, separation and sanitary landfill of waste components.
- EPC-Management for compost and fertilizer making unit, RDF and MSWM Unit.

- Commercial Analysis of Waste Management Contract and Tipping Fee with Municipal Corporation.
- Setting up of Pyrolysis Units and Energy Generation Units.

Sustainable Development

For companies and institutions wants to address their carbon foot prints and ready to adopt sustainable development strategy, we offer following services;

- Climate Change and Sustainable Development Educational Tour and Sessions.
- Sustainability Reporting and Documentation.
- Sustainable Development Practices, Ideas and Innovation.
- Reducing carbon foot prints strategy.

M&A and PE

If you are looking for Merger and Acquisition or Private Equity for your business growth, we offer following services;

- Management of complete process (start to finish) of M&A of your company.
- Help in raising funds as debt, private equity or assent management funds for your project
- Business development and management consultancy for revenue and market expansion.
- Valuation and Financial Analysis for different projects with different methods.

Vision and Mission

"Highly customer oriented, humane and system run global organization with a concern for Society". To fulfill the current generation needs of students and companies. We provide engineering and management consultancy services for different energy projects.

We want to provide customers in India with world-class solutions to the complex engineering, management and financial issues of clients.

Business horizons

VCE have different business horizons and revenue sources such as;

1. Engineering and Management Consulting.
2. Importing and Branding Pearl Jewellery.
3. Stock Market and Cross-Currency Trading.
4. Insurance and Investment Advisory.

From past 3 years we saw a good growth in our all business and expecting a good returns to all our stakeholders. Apart from the businesses mentioned above, VCE also believe in give back to the society for building a greater future of our country. The various initiatives on VCE Society Pay Back are;

Vardhan Merit Scholarship

In this initiative, we pay scholarship to poor under-privileged girls and pay their entire educational expense till class 12th. So that, financial burden never be the reason for them to drop out from schools. It also encourages the kids to study with more focus. Currently, we grant **Rs. 50,000 (Fifty Thousand Rupees)** per year for this. We believe, this amount is going to increase in future. (Amount Spent so far, **Rs. 3.00 Lakhs +**).

VCE Internships and Training

In this initiative, we select students from various engineering and management colleges and provide them internship and training. Our internships and training are very unique in nature and its specially for the students of Core Engineering Sector (Electrical, Mechanical, Civil and Energy Engineering) and Finance Management for preparing them to corporate / industry ready. We provide them mentor from the industry. All this is done without taking any fee / favor from the students. Currently, we grant **Rs. 60,000 (Sixty Thousand Rupees)** per year for this. Majority of the amount will be paid as stipend to the best interns as encouragement. (Stipend Paid so far, **Rs. 1.50 Lakhs +**).

VCE believes in Society Pay Back and hence we provide Scholarships, Internships and Training for FREE to deserving students. But, this is NOT just a CSR activity of VCE, there

are other reasons also which gives us the energy to keep continuing this endeavor for the betterment of society and students.

- The manpower requirement of core sector is huge but it required skilled persons ONLY. Hence, by providing this internship VCE wants to enhance the skills of young core engineering graduates.
- The finance sector is highly diversified but also linked to the core knowledge. It creates lots of confusion in young management students to decide which field of finance that they should select for career. Hence this internships will help them to have a clear picture.
- Many students didn't understand that apart from the technical/academic skills, they also needs corporate skills to enter, survive, sustain and grow in an organisation and hence they need corporate skill development training provided by VCE.
- Students needed to face the most difficult phase of their life alone, which is the Job Hunt Phase and that's a very stressful phase. VCE want to help the student in this phase by JHT Program.
- VCE is interested to invest more in education sector. In terms of starting new institutes which is affordable with world class quality education and hence providing internships and training will help in getting experience.

Management Team



Mr. Ashish S Kumar
Sr. Manager HR and Admin

Areas of Expert



Ms. Neha Kumari
Lead Consultant and CEO



1. Grid-Tied Large Sized Solar PV Project.



2. Municipal Solid Waste Management Project.



3) Sustainable Development Reporting and Practices.



4) Merger & Acquisition and Private Equity Financing.

The motto of this program is to provide a platform for finance enthusiast students, core engineering students students (Electrical, Mechanical, Civil and Energy branches)

- To work on real financial modeling analysis of real infrastructure projects for securing non-recourse debt (project finance). They are going to understand the revenue and cost (CapEx and OpEx) breakdown of different sectors
- To get the hands on simulation, engineering designing of Solar PV Plant, Waste Management Unit, Climate Change and Sustainable Development Practices, Green Building and Electric Vehicle. There is a huge demand of core engineers in the market and this internship will provide an edge to the students while facing core companies.

SWOT Analysis

Strength <ul style="list-style-type: none">• Excellent Reputation• High Safety Standards• Quality Work• Strong Compliance	Weakness <ul style="list-style-type: none">• Slow Processes• Communication• Small Client List• Stakeholder Management
Opportunity <ul style="list-style-type: none">• New Technology• Training• Employee Development• Certifications	Threat <ul style="list-style-type: none">• Competitors• Changing Regulations• Supplier bankruptcy• Less demand in certain Industries.

Chapter – 3

Literature Review

Literature review

Finnerty (1996) in his research article on financial project he has pointed that project finance as “the raising of funds to finance an economically separable capital investment project in which the providers of funds look primarily to the cash flow from the project as the source of funds to service their loans and provide the return of and a return on their equity invested in the project”

Kleimeier and Megginson (1998) in his research article explained project finance as the limited or non-recourse financing of a newly to be developed project through the establishment of a vehicle company or a special purpose entity. The vehicle company owns and operates the assets of the project, acquires funds from the lender group, and is exclusively responsible for the repayment of the debt obligations. Once the project is completed, the vehicle company is responsible for operating the project and allocating the cash flows so generated to lenders and equity investors.

E Ballestero (2000) describes project finance as a sound technique which involves performing a set of security arrangements to reduce risk in large infrastructure investments or capital intensive 9 projects such as roads and highways, railways, pipelines, dams, electric power generating facilities, large scale fiber optic networks, mineral processing facilities, and many others in industrial areas and developing countries. These arrangements are made between the project sponsors and the clients or their agencies, a host government, a supplier, a constructor, an operator, a bank or lenders.

Nevitt and Fabozzi (2000) explained in his theory project finance as “a financing of a particular economic unit in which a lender is satisfied to look initially to the cash flow and earnings of that economic unit as the source of funds from which a loan will be repaid and to the assets of the economic unit as collateral for the loan.” Recourse is important to the sponsoring organisations because it directly affects their balance sheet, debt-to-asset ratio, and risk.

Tony Merna (2010) in his research article on Project Finance in Construction he has pointed that this paper outlines finance is perceived by individual stakeholders; why and how a

financial assessment is performed; who should be involved; where and when it should be performed; what data should be used; and how financial assessments should be presented. Current uncertainty in financial markets makes many sponsors of construction project financings carefully consider bank liquidity, the higher cost of finance, and general uncertainty for demand. This has resulted in the postponement of a number of projects in certain industry sectors.

Priyaaks (Mar 2012), in his research article on financial project he has pointed that Financial modeling is the process of examining relationships among financial statement elements and making comparisons with relevant information. It is a tool in decision-making processes related to stocks, bonds, and other financial instruments. From the above literature review, it is evident that, the financial performance depicts the efficiency of organization. Along with that financial statements are very useful for decision making in the company by Board of Directors and management. It also helps to know the prosperity of the company with the profitability.

Fang Hu, D Wang (2015) the paper aims to examine the development of new financing models for Project Finance to attract private investors to finance large Chinese energy infrastructure projects. In particular, the paper investigates uniqueness of the project finance as a rapidly growing field in finance, the financial characteristics of the project bond market as one the vehicles for funding energy projects, and the role of the credit support provided by the government to promote the bond based financing schemes.

Dirk Kayser (2016) in his research article on Project Finance he has pointed that this paper outlines an overview of the current state of research in project finance. Research progress in project finance draws from interdisciplinary perspectives, leading to relevant research insights being spread out over a high number. Thus, this paper identifies four main areas of research interest Contractual arrangements and the legal framework of project finance, Project risk measurement and project selection methods, Globalization of project development and public sector co-operation and Projects under the Kyoto protocol and renewable energy projects.

Suvendu K Pratihari (2019) The study highlights the need for measures to accelerate the pace of the business correspondent (BC) model for financial inclusion in India. The financial

analysis of the existing BCs with the existing products and services in practice shows a very diffusive break-even (more than 7 years). The occurrence of such a long-term break-even point can be a potential threat to the sustainability of new and struggling entrepreneurs like a Customer Service Point (CSP). A CSP agent runs a kiosk of a certain bank in a rural context, functioning like a BC between the bank and the beneficiaries.

Chapter – 4

Objective & Scope of the study

Objective and Scope of the Study.

The scope of study section of your research project work contains the areas to be covered by your work. It delineates the level of the object of study that would be covered by the particular research work so that both the reader and writer have a perspective of what is aimed at and what is to be expected. It is through the content of your scope of study that one can determine whether the aims of the project have been achieved. And owing to the fact that academics is quite boundless, it is very easy for a researcher to delve into the body of knowledge that make up a discipline or even bridge disciplines and get lost in the maze of it all. Objectives are the pre-determined goals that are to be achieved while completing a process. Scope is the limitation that a process faces from the beginning to the end. Objectives are pre-determined and are fixed throughout the process. The scope of a process is also fixed before a process begins, but unexpected accidents can alter the determined scope, and accordingly the process has to be re-arranged. Objectives determine the final output of a process while scope determines the range of applicability of the process. Objectives depend upon scope. If the objective is out of scope, it cannot be implemented using the current resources and time given. Scope doesn't depend upon objectives. It only depends upon external factors such as resources, climate, and time. Objectives are to be planned in the initial phase but the scope can be altered in any phase including the initial one.

Objective of the Study

- To analyze the financial statement of the company so that strategies can be made accordingly.
- To help in understanding the past performance & financial health of the company.
- To calculate various sheets so that key factors can be determined.
- To provide the management important solutions for the problem relating to use of fund.
- To accelerates the specialization of financial modeling.

Scope of the Study

1. The Scope of the study is limited to Financial Modeling in VCE.
2. The Scope of the study is Limited, as the study has been done from the financial information mainly primary in nature from the finance department.
3. The Study comprises of analysis of various years through cost, revenue, debt and fin flows sheet in a specified period of time. In this I consulted the manager & staff of finance and accounts departments as a primary source and I took the last five years balance sheets and income & expenditure statements to get the data analysis with reference to my project
4. The scope of study is restricted only to some parts of GURUGRAM.
5. Owing to their pre occupation some customers might not be able to answer the complete questionnaire.
6. Sample population is being selected in interviewer's judgment so; it may result in selecting a wrong mix of people.

Chapter – 5

Research Methodology

Research Methodology

Research Methodology refers to search of knowledge .one can also define research methodology as a scientific and systematic search for required information on a specific topic. The word research methodology comes from the word “advance learner” dictionary meaning of research as a careful investigation or inquiry especially through research for new facts in my branch of knowledge This work aims to provide an overview of the current state of research in project finance. Research progress in project finance draws from interdisciplinary perspectives, leading to relevant research insights being spread out over a high number. In research, I prepare a financial model and analyze the cost, debt, revenue and fin flows sheet. Project Finance is a statement relating to information regarding the inflow and outflow of cash. Project Finance plays an important role in making decisions and planning by investors, creditors, and management. It helps a company in getting an idea of future cash position. In preparing reports, it presents events and transactions from different angles by which management can take multipurpose decisions. The Finance report prepared by historical information helps in determining the future cash flow of the company.

5.1 Population

Population of study for any research work has been variously defined by different scholars and their definitions pointed toward the same direction. Avwokeni (2006:92) refers to population of study as the “set of all participants that qualify for a study” while Akinade and Owolabi (2009:72) defined population as “the total set of observations from which sample is drawn ; Adeniyi et al (2011:49) see it as the "total number of large habitations of people in one geographical area, the population of a country", besides, Poopla (2011:2) defines population as the "totality of the items or objects under the universe of study. it often connotes all the members of the target of the study as defined by the aims and objectives of the study". We concur with the definitions of the above scholars. But we conceptualize population to mean the whole body of items, objects, materials or people that fall within the geographical location in which a researcher intends to investigate for his study. That is the whole participants of a study. The constituents of population have certain attributes in common; the number may be large or small.

5.2 Sampling Method/ Technique/ Sample Size, Sampling Frame/ Unit.

Sampling Method/ Technique

I used convenience sampling which is a part of non- probability sample method. A convenience sample simply includes the individuals who happen to be most accessible to the researcher. This is an easy and inexpensive way to gather initial data, but there is no way to tell if the sample is representative of the population, so it can't produce generalizable results.

I also used purposive sampling because it is totally based on the intention or the purpose of study. Only those elements are selected from the population which suits the best for the purpose of our study.

Sample size

A sample must be of the required size in order to have the required degree of accuracy in the results as well as to be able to identify any significant difference/association that may be present in the study population.

City – Gurgaon, Haryana

Total no. of flats (in sq. ft.) - 50

Size of each flat – 900.

Sampling frame

A sampling frame is a list or database from which a sample can be used. In market research terms, a sampling frame is a database of potential respondents that can be drawn from to invite to take part in a given research project. A sampling frame generally includes the respondents' names and appropriate contact details (so that they can be contacted to take part in the research), but may also include other significant known information that may be drawn upon in the analysis stage of the research such as age, location or customer segmentation data. This information is often stored in an Excel spreadsheet, or similar document.

5.3 Sources of Data

In the project, Primary data and secondary data (both) sources of data has been used .

1. Primary data collection: In dealing with real life problem it is often found that data at hand are inadequate, and hence, it becomes necessary to collect data that is appropriate. There are several ways of collecting the appropriate data which differ considerably in context of money costs, time and other resources at the disposal of the researcher. Primary data can be collected either through experiment or through survey .For the purpose of data collection copies of the questionnaires were distributed to the customers and various car dealers at random to obtain their views . Further discussions regarding the competitor analysis were held with the manager to have an in-depth knowledge and future plans of of the company for its effective implementation.

2. Secondary sources of data: In research, secondary data is the data collected and possibly processed by people other than the researcher in question Common sources of secondary data are social science surveys and data from government agencies, including the Bureau of the Census, the Bureau of Labour Statistics and various other agencies. The data collected is most often collected via survey research methods. Data from experimental studies may also be used. Sources of secondary data: Sources of secondary data may be classified into qualitative and quantitative. Examples of qualitative sources are biographies, memoirs, newspapers, etc. Quantitative sources include published statistics (e.g., census, survey), data archives, market research, etc. Secondary data was gathered from academic texts and company profile from company's website, through online market research on competitors etc. For collecting secondary data for the study various sources are used. This includes Companies websites and reports, journals, Magzines, newspapers etc.

5.4 Methods of Data Collection & Data Collection Tools Analysis

Interview

I have conducted Face And Online interviews of the respondent by visiting their home or their mail box in the form of structured questionnaire. I have used this method because I have chosen

a technique of quantitative research and for completing the survey within a budget and on time; face to face interviews are more suitable for the finding.

Observation

It is something as understand in its natural way. This method is more subjective, as it requires to add judgment to the data. But in some circumstances, the risk of bias is minimal.

Focus Group

I have selected the mix of people. As I have focused both of the Nuclear and Joint Family of different age groups shown below. Sample size 50 with the mix of both Nuclear and Joint Family of the following age groups.

Family Groups/ Age Groups	Under 30	30-40	41-50	51-60	61-70	Above 70	Total
Nuclear Family	0	8	6	4	1	0	19
Joint Family	1	11	4	7	7	1	31
Total	1	19	10	11	8	1	50

Questionnaires and surveys

I have used Questionnaires and surveys to ask questions that have closed-ended answers. Data gathered from questionnaires and surveys can be analyzed in many different ways so that I can assign numerical values to the data to speed up the analysis. This can be useful if you're collecting a large amount of data from a large population.

5.5 Tools & Techniques of Analysis

- **Cost Sheet Analysis**

This analysis discloses the prevailing relationship among sales, cost and profit. The cost is divided into two. They are fixed cost and variable cost. There is a constant relationship between sales and variable cost. Cost analysis enables the management for better profit planning.

- **Revenue Sheet Analysis**

Revenue is the value of all sales of goods and services recognized by company in a period. Revenue forms the beginning of the company's income and is often considered the "Top Line" of a business. Expenses are deducted from a company's revenue to arrive at its Profit or Net Income.

- **Financial Flow Sheet Analysis**

Financial flow analysis deals with detailed sources and application of funds of the business concern for a specific period. It indicates where funds come from and how they are used during the period under review. It highlights the changes in the financial structure of the company. A debt schedule lays out all of the debt a business has in a schedule based on its maturity. It is typically used by businesses a cash flow analysis.

- **Debt Sheet Analysis**

A debt schedule lays out all of the debt a business has in a schedule based on its maturity. It is typically used by businesses a cash flow analysis.

5.6 Statistical Instruments Used

The data collected through questionnaires Finance Department and Annual report of the company was analyzed and interpreted using the MS-EXCEL.

Chapter – 6

Data Analysis

Data Analysis

For Data Analysis, I have used Questionnaires and surveys to ask questions that have closed-ended answers. Data gathered from questionnaires and surveys can be analyzed in many different ways so that I can assign numerical values to the data to speed up the analysis. This can be useful if you're collecting a large amount of data from a large population. I have selected the mix of people. As I have focused both of the Nuclear and Joint Family of different age groups. Sample size is 50 with the mix of both Nuclear and Joint Family of different age groups. Based on that, I concluded that out of 50 respondents, 37 can afford to buy a flat. They could be from any family type. But out of that only 27 respondents want to purchase flat in Gurgaon. They could be from 30-40 age group and can be salaried or business owner (employment type), who shares responsibilities or count themselves as a financial decision maker, whose household income could be between 4 lakh to 12 lakh. 15 respondents can purchase flat if they find it suitable or can make decision immediately by taking loan from family/ Banks.

Based on that primary data, I prepare a financial model and analyze the cost, revenue and debt repayment along with fin flow / cash flow analysis. Calculate equity IRR and DSCR. The illustration are as follows

Techvardhan Infra Pvt. Ltd (Any Company) "CLIENT" has acquired a piece of land near Gurugram HR and wants to develop it as a residential building having 50 flats of 900 sq. ft each. They are expecting to sell the flats at a rate of Rs. 4000 / sq.ft. The expected CapEx is Rs. 8 Crore and OpEx is Rs. 50 Lacs / per annum for the whole project. They are seeking a non-recourse debt (project financing) with 70:30 as D/E ratio from leading commercial banks in India as a 12 years term loan.

In that firstly I write down the cost which are included in Construction to prepare the cost sheet and my cost sheet are mentioned below –

	Rate		% of Project Cost
Project Cost (CapEx)			
Flat	4,000	36,000,000	45.00%
Constructor (for layout)	1000	9,000,000	11.25%
Raw materials/Plant/Equipment	800	7,200,000	9.00%
Labour	250	2,250,000	2.81%
Furniture	520	4,680,000	5.85%
Fixtures	150	1,350,000	1.69%
Electricity system	700	6,300,000	7.87%
Plumbing system	450	4,050,000	5.06%
Interior Decoration	180	1,620,000	2.02%
Broker Fee	120	1,080,000	1.35%
Stamp Duty	320	2,880,000	3.60%
Fund Rising Fee	70	630,000	0.79%
Transfer of Deed Feed	90	810,000	1.01%
Interest during Moratorium	120	1,080,000	1.35%
Loan and Documentation Fee	72	648,000	0.81%
CSR , HSE, Training	46.9	422,100	0.53%
Total Project Cost		80,000,100	

Figure 1. Cost incurred in construction of Residential Building (CapEx)

O & M Cost (Monthly Breakdown) (OpEx)		
Utilities (electricity + water)	30	270,000
Maintenance and Repairs	50	450,000
Plumber + Electrician +Misc.	26	234,000
Marketing	100	900,000
Salary (maid + Care taker + Accountant)	35	315,000
Sales expenses (commission)	24	216,000
Office Consumables (printing and stationery)	35	315,000
Catering Consumables (milk + tea/coffee)	40	360,000
Activity Membership (sports + gym + interior games)	40	360,000
Parking	30	270,000
Celebration fund for Festival (Lohri+ Holi+Janmashtmi+Dussehra+Diwali)	70.6	635,400
Depreciation of production equipment	35	315,000
Insurance (0.55 %)	40	360,000
Total O & M Cost (per year)		5,000,400

Figure 2. Cost included in construction of Residential Building (OpEx)

Then I take assumptions regarding revenue parameters like size of area, price of each flat, interest on deposit, appreciation in price of flats because in every the price of fixed assets

increases, etc. These assumptions are helpful in making revenue sheet. The revenue sheet which I prepared mentioned below –

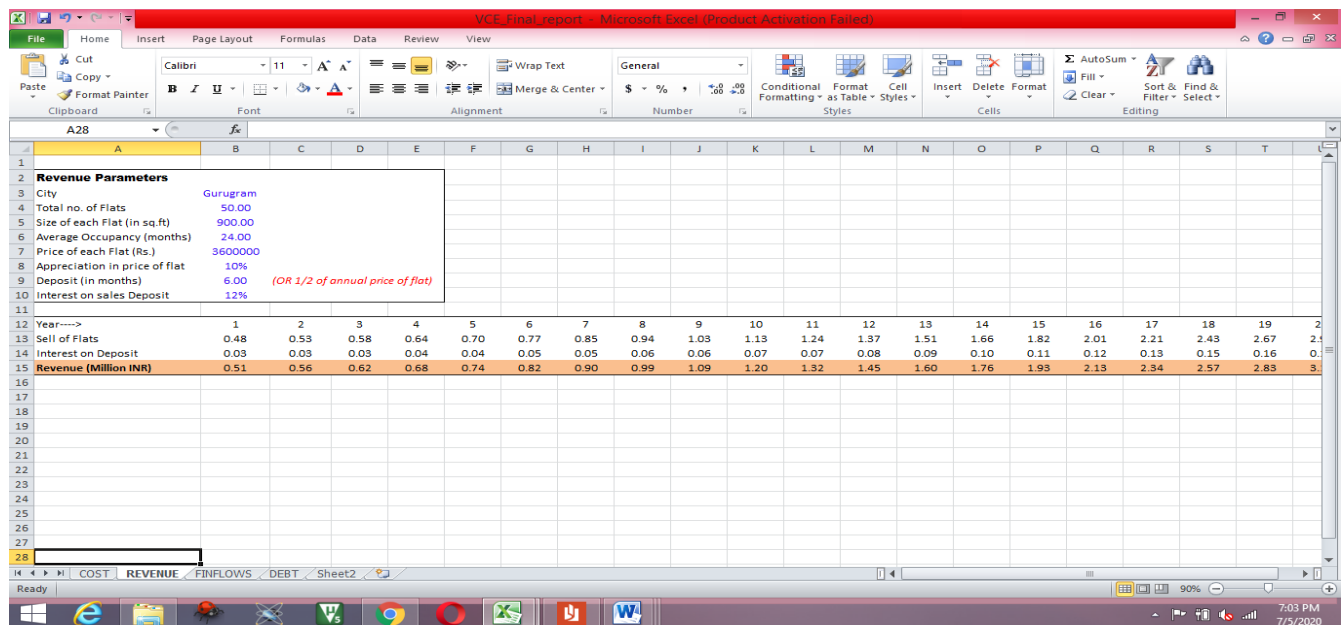


Figure 3. Revenue sheet

After that we should prepare fin flows sheet. I that there are some steps which should follow accordingly are as follows –

- 1.) Find total revenue by adding all revenues such as sell of flats, interest on deposit, other sources. Total revenue nothing but the income earn by company from its normal business activities, usually from the sale of goods or services to the customers.
- 2.) Prepare the Operating Expenses by adding the costs a company incurs that are not related to the production of a product. These expenses include license fees, office expenses, legal fees, insurance, travel and vehicle expenses, salaries and wages, accounting expenses, maintenance and repairs, supplies, advertising, utilities, property taxes and insurance.
- 3.) After that we'll calculate Earnings before Interest, Taxes, Depreciation and Amortization (EBITDA) by subtracting Total Revenues to Total Operating Expenses. It tells that how much cash was received from the daily operations of the business and used as an alternative to simple earnings or net income in some circumstances.

4.) The other step is to calculate non-operating expenses by adding depreciation, amortization of intangible assets, loss on the sale of fixed assets, loss on the sale of long term investments, provision of tax and dividend paid. After that subtracting all these to profit on sale of fixed assets, profit on sale of long term investments. Non - operating expenses is all about gains or losses from sources not related to the typical activities of the business or organization.

6.) After that we'll calculate Net Income by deducting tax from income before tax (got value by adding EBITDA to total non-operating expenses).

7.) Then we have to calculate Cash Flow, in that some items are given in the question and some we already calculated in other expenses. Now we add equity, net income and add back depreciation then deduct to the principal payment and CSR. By that we reach to the final project cash flow (equity).

8.) And the last step is to calculate Final Project Cash Flow by deducting final project cash flow (equity) to interest payment and principal payment. DSCR is a measurement of the cash flow available to pay current debt obligations and also play role in calculating Final project cash flows. The Fin Flows is completed now.

For calculating fin flows sheet we take some assumptions. The resulted assumptions are mentioned below –

Project Details			Assumptions						Results	
Size (in sq.ft.)	9000	22.22	Inflation	6.00%	Debt Rate	12.00%	DDT	0.00%	Equity IRR	3.41%
Equity	30%	6.67	Depreciation	10.00%	Moratorium	0.5 years	USD/INR	70.00	Min DSCR	0.59
Debt	70%	15.56	Tax Holiday	0 yrs	Debt Tenure	12.0yrs	Discount	10.00%	Avg DSR	19.83
Debt Service Reserve (DSR)			Tax Rate	20.00%	Construction Time	2.0	MAT			

Year-->	Today	COD	1	2	3	4	5	6	7	8
Date-->	1-Jul-20	1-Jul-22	31-Jul-2023	31-Jul-2024	31-Jul-2025	31-Jul-2026	31-Jul-2027	31-Jul-2028	31-Jul-2029	31-Jul-2030
Revenue Collection										
Sell of Flats			0.48	0.53	0.58	0.64	0.70	0.77	0.85	0.94
Interest on Deposit			0.03	0.03	0.03	0.04	0.04	0.05	0.05	0.06
Other Sources			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Revenue (million INR)			0.51	0.56	0.62	0.68	0.74	0.82	0.90	0.99
Operating Expenses										
Utilities (electricity + water)			0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03
Maintenance and Repairs			0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.05
Plumber + Electrician +Misc.			0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Marketing			0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.09
Salary (maid + Care taker + Accountant)			0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03
Sales expenses (commission)			0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Office Consumables (printing and stationery)			0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03

Figure 4. Assumptions taken while preparing fin flows sheet.

Year-->	Today	COD	1	2	3	4	5	6	7	8	9	10
Date-->	1-Jul-20	1-Jul-22	31-Jul-2023	31-Jul-2024	31-Jul-2025	31-Jul-2026	31-Jul-2027	31-Jul-2028	31-Jul-2029	31-Jul-2030	31-Jul-2031	31-Jul-2033
Revenue Collection												
Sell of Flats			0.48	0.53	0.58	0.64	0.70	0.77	0.85	0.94	1.03	1.13
Interest on Deposit			0.03	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07
Other Sources			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Revenue (million INR)			0.51	0.56	0.62	0.68	0.74	0.82	0.90	0.99	1.09	1.20
Operating Expenses												
Utilities (electricity + water)			0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03
Maintenance and Repairs			0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.05	0.05
Plumber + Electrician +Misc.			0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03
Marketing			0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.09	0.10	0.10
Salary (maid + Care taker + Accountant)			0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04
Sales expenses (commission)			0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Office Consumables (printing and stationery)			0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04
Catering Consumables (milk + tea/coffee)			0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04
Activity Membership (sports + gym + interior games)			0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04
Parking			0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03
Celebration fund for Festival (Lohri+ Holi+Janmashtmi+Dussehra+Diwali)			0.04	0.04	0.05	0.05	0.05	0.06	0.06	0.06	0.07	0.07
Depreciation of production equipment			0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04
Insurance (0.55 %)			0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04
Total Operating Expenses			0.33	0.35	0.37	0.40	0.42	0.45	0.47	0.50	0.53	0.56
EBITDA			0.18	0.21	0.24	0.28	0.32	0.37	0.43	0.49	0.56	0.64
Non Operating Expenses												

Figure 5. Fin Flows Sheet

After that the last sheet left. We have to prepare debt/loan repayment sheet. In that, we pay the deposit quarterly to the commercial bank from which we took loan. Also taking some basic parameters for preparing. The debt/loan repayment sheet are mentioned below-

Period No.	Date(EOQ)	Int. Pmt.	Prin. Pmt.	Total Pmt.	Prin. Balance
0	1-Jul-22	0.23	0	0.23	15.555575
1	29-Sep-22	0.23	0.22	0.46	15.33
2	28-Dec-22	0.23	0.23	0.46	15.10
3	28-Mar-23	0.23	0.23	0.46	14.87
4	26-Jun-23	0.22	0.23	0.46	14.64
5	24-Sep-23	0.22	0.24	0.46	14.40
6	23-Dec-23	0.22	0.24	0.46	14.16
7	22-Mar-24	0.21	0.24	0.46	13.92
8	20-Jun-24	0.21	0.25	0.46	13.67
9	18-Sep-24	0.21	0.25	0.46	13.42
10	17-Dec-24	0.20	0.26	0.46	13.16
11	17-Mar-25	0.20	0.26	0.46	12.90
12	15-Jun-25	0.19	0.26	0.46	12.64
13	13-Sep-25	0.19	0.27	0.46	12.37
14	12-Dec-25	0.19	0.27	0.46	12.10
15	12-Mar-26	0.18	0.28	0.46	11.83
16	10-Jun-26	0.18	0.28	0.46	11.55
17	8-Sep-26	0.17	0.28	0.46	11.26
18	7-Dec-26	0.17	0.29	0.46	10.97
19	7-Mar-27	0.16	0.29	0.46	10.68
20	5-Jun-27	0.16	0.30	0.46	10.38
21	3-Sep-27	0.16	0.30	0.46	10.08

Figure 6. Debt/Loan Repayment Schedule.

And the last step is to calculate Final Project Cash Flow by deducting final project cash flow (equity) to interest payment and principal payment. DSCR is a measurement of the cash flow available to pay current debt obligations and also play role in calculating Final project cash flows. Now the cost, revenue, fin flows, debt sheet is completed.

Chapter – 7

Findings, Conclusions, Suggestions

Findings

As a part of this exercise, this report is an endeavor to bring out the findings & issue that will come to light and are a matter of concern for the whole organization. There are a few revealing gaps and deficiencies found in the system, which need to be plugged in immediately for they tend to undermine the controls and efficiency of the organization.

- Debt-Equity ratio of the company is quite good which is showing that solvency position is low. It can pay its long term liabilities easily.
- Gross profit, PBT, PAT are showing increasing trends. Which are proving financially strong unit.
- Net interest payment by the company has been negative during the year.
- Revenue slightly rising during the year
- Principal payment is negative in fin flows Sheet
- Final Project Cash Flow (Equity) are increasing during the years.
- Equity IRR, Average DSCR, Average DSR are 3.41%, 0.59%, 19.83%.

Conclusion

The Project Titled “ **A Study Financial Modeling and Analysis of 50 Flats Housing Project in Gurgaon, Haryana IN**” is an earnest attempt to learn and understand about in which sectors project finance works and how they work. Project Finance is a long-term, non-recourse or limited recourse financing scheme that is used to fund massive projects which can be repaid using the project cash flow obtained after the completion of the project. This scheme offers financial aid off balance sheet, therefore, the credit of the shareholder and Government contracting authority does not get affected. In Project Financing, multiple participants are allowed to handle the project while the ownership of the project is entitled according to the terms of the loan only after the project is completed. This financial scheme offers better credit margin to lenders while shifting some of the risk from the sponsors to the lenders.

As the Indian Government continues to investment on the infrastructure of the country, it is expected that there will be massive developments in future in terms of power, transportation, bridges, dams etc. Most of these projects will be using the Public Private Partnership (PPP)

method indicating a rise in Project Financing during the upcoming years. This entire cycle will further help improve the economic condition of India.

Suggestions

- Company should raise funds through short term sources for short term requirement of funds, which comparatively economical as compare to long term funds. Short term loans are perfect solution for short termed cash urgencies. The most obvious advantage of short-term loans is the fact that they are economical. They can also be arranged with short notice. The amount of interest is also relatively affordable. Most short-term loans do not require a lot of paperwork and it allows quick application that makes the funds available possibly in just a few hours.
- Company should change its sales policy so that stock can be easily converted in to sales.
- To maintain its financial position company should properly utilized its fixed assets.
- Company should provide the primary data.
- Company should provide complete information about them.
- Company should take control on debtor's collection period which is major part of current assets.
- Company has to take control on cash balance because cash is non-earning assets and increasing cost of funds.

Chapter – 8

Limitation of the Study

Limitations of the Study

- Time constraint was a limiting factor in the project. Since time available was less than 6 weeks.
- Company rules and regulations didn't allow me to have in-depth knowledge about company policies.
- The study was only based on only one illustration.

Bibliography

Books

“H.R. Machiraju” (2001) Introduction to Project Finance, Vikas Publishing Uttar Pradesh.

Simon Benninga (2014) Financial Modeling [E-Reader Version]. Retrieved from
https://www.academia.edu/37352998/Simon_Benninga_Financial_Modeling_4th_edition

Internet/Website

Finnerty, An Exploratory Study of the Effects of Project Finance on Project Risk Management <http://umu.diva-portal.org/smash/get/diva2:384652/FULLTEXT01>

Kleimeier and Megginson, Are Project Finance Loans Different From Other Syndicated Credits
https://www.researchgate.net/publication/46431788_Are_Project_Finance_Loans_Different_From_Other_Syndicated_Credits

E. Ballesterio, Project Finance: A Multi-Criteria Approach to Arbitration
<https://www.jstor.org/stable/254259?seq=1>

Nevitt and Fabozzi, A Primer on Project Finance,
<https://www.etipocean.eu/assets/Uploads/ETIP-Ocean-Project-Financing-Primer.pdf>

Tony Merna, Project Finance In Theory And Practice Designing Structuring And Financing Private And Public Projects, <https://tradingvip.top/downloads/project-finance-in-theory-and-practice-designing-structuring-and-financing-private-and-public-projects>

Priyaaks, An Analysis of Financial Statments
[https://www.ijemr.net/DOC/AnAnalysisOfFinancialStatementsOfKarnatakaPowerCorporatioNLimited-Bangalore\(53-57\)3c268baf-ef8c-4992-b88f-14d075d7b7bf.pdf](https://www.ijemr.net/DOC/AnAnalysisOfFinancialStatementsOfKarnatakaPowerCorporatioNLimited-Bangalore(53-57)3c268baf-ef8c-4992-b88f-14d075d7b7bf.pdf)

Fang Hu, D Wang , The Research on the Problems of the Project Finance in the Energy Saving Service Industry of China and Its Countermeasures,
<http://www.cscanada.net/index.php/mse/article/view/7953>

Dirk Kayser, Information Technology and Quantitative Management,
<https://core.ac.uk/download/pdf/82678271.pdf>

Suvendu K Pratihari, Financial Modelling for Business Sustainability: A Study of Business Correspondent Model of Financial Inclusion in India,
<https://journals.sagepub.com/doi/full/10.1177/0256090919898909>

Glossary

- **Trade Finance** – Trade Finance can be defined as import and export of goods and services to transact business through trade. It is used by companies to facilitate international trade and commerce.
- **Recourse Debt** - Recourse debt (loans) allows lenders to collect what is owed for the debt even after they've taken home, credit cards as collateral. Lenders have the right to take the wages or collect money in order to collect what is owed.
- **Non – Recourse Debt** - Non-recourse debt allow lenders(creditor) to keep claim to assets if borrowers default on their obligations and fail to repay their debts. Lenders are allowed to take rights of any assets used as collateral to secure these loans.
- **Limited Recourse** - Limited Recourse debt allows the lender to only collect on assets that are named in the original loan contractual agreement. If the borrower defaults on their payments, the lender can exercise its rights concerning the collateral pledged. The lender's recovery is limited to only that collateral.
- **Off- balance sheet** - Off-balance sheet can be defined as assets or liabilities which is not mention in company's balance sheet because they are not recorded on the balance sheet, but they are still assets and liabilities of the company.
- **Collateral** – In simple words, an asset that a lender accepts as security for a loan is collateral.
- **Interest Rate** – it is the money that a lender takes for the use of assets expressed as a percentage of the principal.
- **Project Financing** – It is a long-term , zero or limited recourse financing solution that is solution that is available to a borrower against the rights, assets and interests related to the concerned project.
- **DCF- Discounted cash flow analysis.** A financial evaluation method that takes the “time value of money” into account.
- **Project development** – It is the process of managerial functions which includes planning, organizing, directing and controlling to fulfill desired objectives.
- **Long- term Infrastructure** – It can be defined as the project which take long time to be done such as 5-8 years.

- Public services – It is the service provides by the government to public with some rules and regulations.
- Cost of Capital – It is the rate of return the company has to pay to various suppliers of funds. It is the rate of discount which is used for calculating the present value of estimated future cash receipts and taking a decision regarding the acceptance or rejection of the project.
- Project Financing - A loan structure that relies for its repayment primarily on the project's cash flow, with the project's assets, rights and interests held as secondary security or collateral
- Equity – Equity is none other than sock. It refers to the amount of capital contributed by the owners or the difference between a company's total assets and its total liabilities.
- Debt – Debt is liability.
- Mezzanine Financing – in mezzanine financing, the lender have the right to convert its loan into equity in case of default.
- Working Capital – It the difference between of company's current assets and current liabilities.
- Lenders - A person or company that has received money from another party with the agreement that the money will be repaid.
- Sponsors – sponsors supports an project of organization, event or an activity through the provision of goods and services.

Questionnaire

As I have used Questionnaires and surveys to ask questions that have closed-ended answers. Data gathered from questionnaires and surveys can be analyzed in many different ways so that I can assign numerical values to the data to speed up the analysis. This can be useful if you're collecting a large amount of data from a large population. I have selected the mix of people. As I have focused both of the Nuclear and Joint Family of different age groups shown below. Sample size 50 with the mix of both Nuclear and Joint Family of the following age groups.

1. EMPLOYMENT TYPE OF RESPONDENTS.

Employment Type	No. of Respondent
Self employed	9
Salaried	22
Business owner	14
Retired Person	5

2. AGE OF RESPONDENTS

Age	No. of Respondent
Under 30	1
30-40	19
41-50	10
51-60	11
61-70	8
Above 70	1

3. FAMILY TYPE OF RESPONDENTS

Family type	No. of Respondent
Nuclear Family	17
Joint Family	33

4. FINANCIAL DECISION MAKER IN HOUSEHOLD.

Financial Decision Maker	No. of Respondent
Primary decision maker	19
Share responsibility	22
Not involved in decisions	9

5. HOUSEHOLD INCOME OF RESPONDENTS IN 2018-19

Household Income	No. of Respondent
Under 400000	3
400000- 800000	14
800000-1200000	11
1200000-1600000	7
1600000-2000000	9
Above 2000000	6

6. WHERE WOULD YOU LIKE THE PROPERTY TO BE BASED?

Area	No. of Respondent
Delhi	9
Gurgaon	27
Noida	10
Other	4

7. IF YOU GET THE RIGHT PROPERTY WILL YOU ABLE TO MAKE A DECISION IMMEDIATELY?

Decision	No. of Respondent
Yes	27
Maybe	14
No	9

8. WHICH TYPE OF PROPERTY DO YOU OWN?

Property	No. of Respondent
Rented house	12
Apartment	9
Townhouse	16
Others	13

9. WHAT IS THE PRICE RANGE OF THE PROPERTY YOU ARE WILLING TO CONSIDER?

Price Range	No. of Respondent
Under 1000000	2
1000000 - 2000000	5
2000000 - 3000000	6
3000000 - 4000000	18
4000000 - 5000000	10
Above 5000000	9

10. HOW DO YOU PLAN TO BUY THE FLAT ?

Source	No. of Respondent
Self-Funded	11
Loan from Family/ Friends	9
Loan from Banks/ Financial Institutions	22
Others	8

11. WHAT KIND OF REAL ESTATE PROPERTY ARE YOU CONSIDERING TO INVEST IN ?

Property	No. of Respondent
Bungalow	6
Flat	22
Land	10
Other	12

12. HAVE YOU SEEN ANY HOMES/ INVESTMENT PROPERTIES THAT YOU ARE INTERESTED IN ?

Any homes/investment properties	No. of Respondent
Yes	32
No	18

13. WHEN YOU THINK ABOUT THE FLAT , DO YOU THINK OF IT AS SOMETHING YOU NEED OR DON'T NEED ?

Need or Don't need	No. of Respondent
Definitely need	12
Probably need	17
Probably don't need	8
Definitely don't need	4
Neutral	9

14. HOW LIKELY ARE YOU TO RECOMMEND US TO FAMILY, FRIENDS OR COLLEAGUES ?

Recommend us	No. of Respondent
Extremely unlikely	8
Somewhat unlikely	14
Neutral	6
Somewhat likely	15
Extremely likely	7

