Financial Analysis and Decision-Making

Comprehensive Understanding of Financial Functions in Excel

Introduction

This project presents a detailed financial analysis using data from the provided Excel file. This analysis covers various financial scenarios such as Annuities, Loans, Investment decisions and Project Comparisons. The purpose is to understand how different financial tools and metrics can help in making informed financial decisions. Which helps anyone to get easy and right decision before planning his future financial plan.

Key Findings

A) Annuity Calculations:

- With a price of ₹32,000, an interest rate of 13%, and 8 payments of ₹6,000, the present value (PV) is ₹28,793 when payments are not at the end of the period, and ₹32,536 when payments are at the end of the period

B) Loan and EMI Details:

- A ₹5,000,000 loan at 12% annual interest over 25 years results in an EMI of ₹52,140.
- A ₹100,000 loan at 16% annual interest over 8 years results in an EMI of ₹13,262.

C) Amortization Table:

- For a ₹100,000 loan over 8 months, the amortization table shows how each EMI is split between interest and principal. By the end, the loan balance is zero which is good.

D) Investment Decisions:

- Investment 1 (Cash flows: -₹10,000, ₹25,000, -₹7,000) and Investment 2 (Cash flows: -₹5,000, ₹20,000, -₹8,000) both have positive total cash flows and positive NPV at a 20% discount rate.

E) NPV and IRR Calculations:

- For a cash flow series (₹10,000, -₹5,000, -₹8,500, ₹2,000), the IRR is about 10.53%.

F) Project Comparison:

- Project A: IRR = 17.32%, NPV = ₹815.89
- Project B: IRR = 20.49%, NPV = ₹552.40
- Project A has a higher NPV, but Project B has a higher IRR

Actionable Recommendations

A) Investment Choice:

- If you want higher absolute returns, choose investments or projects with higher NPV.
- If you want more efficient use of capital, choose those with higher IRR.

B) Loan Selection:

- For large loans, consider the long-term EMI and your repayment capacity.
- For smaller loans, check the EMI and ensure it fits your budget.

C) Annuity Decisions:

- The timing of annuity payments affects the present value. Payments at the end of the period give a higher present value.

D) Use Amortization Tables:

- Regularly check amortization tables to understand how much of your payment goes to principal and interest.

Methodologies

A) Present Value (PV):

- ➢ Calculates the current value of future cash flows.

B) EMI Calculation:

- ➢ Uses loan amount, interest rate, and term to determine monthly payments.

C) Amortization Table:

- ➢ Shows the breakdown of each EMI into interest and principal.

D) Net Present Value (NPV):

- ➢ Discounts all future cash flows at a given rate to determine value today.

E) Internal Rate of Return (IRR):

- The discount rate that makes NPV zero.

F) Project Comparison:

- Uses NPV and IRR to compare different projects or investments.

Approaches

A) Scenario Analysis:

- Compare different loan and investment scenarios to see how changes in interest rates or terms affect outcomes.

B) Data Visualization:

- Use charts and tables to make data easier to understand.

C) Sensitivity Analysis:

- Test how changes in inputs (like interest rates or cash flows) affect results.

D) Decision Criteria:

- Use NPV and IRR as main criteria for making investment or loan decisions.

Insights

A) Payment Timing Matters:

- The timing of annuity payments has a big impact on present value.

B) Loan Affordability:

- Larger loans have higher EMIs, but longer terms can make them more manageable.

C) Investment Efficiency:

- Higher IRR means more efficient use of capital, while higher NPV means more absolute returns.

D) Cash Flow Management:

- Understanding cash flow timing and amounts is crucial for good financial decisions.

Conclusions

A) Use Data for Decisions:

- Always use financial tools like NPV and IRR to evaluate options.

B) Choose Based on Goals:

- Pick investments or projects based on whether you want higher returns (NPV) or efficiency (IRR).

C) Understand Loan Terms:

- Review loan terms, EMIs, and amortization tables before deciding.

D) Regular Review:

- Regularly review your financial plans to adapt to changes.