

ADVANCED FINANCIAL MODELING

Abstract

Advanced financial modelling is a technique and methodology which is used to analyse and predict and forecast the performance of company manageries and also for decision making. This approach integrates financial theories and quantitative method to provide the comprehensive understanding to show the companies financial position in the market key components includes.

- **Discounted cash flow DCF analysis.**

Discounted rate is the rate of return used to discount future cash flow back to the present value. This rate is offed a companies weight average cost of capital w a c c it reflex the risk which are occurs with the cash flow statements of the company.

- **Comparables analysis.**

Comparable and company comparative analysis involves valuing of a company by comparing it with another companies as a same industry in the same sector of field.

- **Precedent transactions.**

Precedent transaction or comparable transaction involves the valuation of company based on the price of the other companies in the same market or the same field of the past transactions.

- **Sensitivity analysis.**

Sensitivity analysis is the technique or the process to use the valuation how the change of assumptions and input or outcomes of financial models are done to understand the robustness of influential variable that can impact result of the models.

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- **Monte Carlo simulation.**

Monte Carlo simulation is an advanced modelling technique that uses statistical samples and tools to forecast financial outcomes by simulating the numerous random inputs providing probability inside to the risk and decision making.

Keywords: Financial Modelling, Decision Making, Trend Analysis, Discounted Cash Flow, Ratio Comparable Analysis, Forecasting, Precedent Transaction Analysis, Sensitivity Analysis, Monte Carlo Simulation.

I. WHAT IS FINANCIAL MODELLING

As we talk about the financial modelling we know that a financial modelling is the process of creating financial representation in virtual time system. this will help us to decisions making, system structure, the system policy implementation, required resources planning and system outcomes which will help the system to be systematically maintained the data given by the sources.

A financial model is a numerical quantitative models that is used to simulate the financial performance of a system overtimes. in this model there are assumptions about systems, such as how it will use, what resources are available and what the environment will be like.

The model is then used to generate the predictions for the future performances of the system. the most common technique include using historical data or pass time data, regression analysis and Monte Carlo simulations.

Historical data or passed data is the most common data used in financial modelling. This data can be used to develop the trends and relationship which will predict the future of financial performance of a system and how it will work in future.

Regression analysis is another common technique to find the relations and to define the relations between the financial variables which will help the system to find the proper systematic data.

Monte Carlo simulations is used to generate the multiple possible outcomes based on the various assumptions and this data is accurate because it is based on different aspects.

II. MODEL BUILDING TECHNIQUES : CREATING AND USING FINANCIAL MODELS

1. Trend Analysis

- Trend analysis involve examination historical or past time financial data of overtime to identify or to find out the pattern or change which are happening and to predict the future performance.
- Purpose to identify or find long term movement change pattern of financial performance and seasonal variations of performance.

Process

- Collect historical data
- Create usual representation like graphs, charts and Trend.
- Analysis this visual data upward and downward and Trend to get a expenses, profit and revenues info.

Application

- **Forecasting:** Using the past trends and past time data to predic the future of financial performance of a company or a system.

- **Decision Making:** Informing decisions based on the observation of the past time data and make a proper decision.
 - **Performance Evaluation:** Assessing whether performance improvement is merely temporarily decreasing.
2. **Ratio:** Ratios are the quantitative data driven from financial statements of previous years that provide insight into different aspects of a company's performance and financial position of the company.

Liquid Ratio

- **Current Ratio:** Current ratio measures the ability to short term liability with short term assets with formula –
$$\text{Current Ratio} = \text{Current assets} / \text{Current liabilities}$$
- **Quick ratio** quick ratio also known as that Acid test ratio it is also measured the cover of short term obligations or liability
$$\text{Quick Ratio} = \text{Current Assets} - \text{Inventory} / \text{current liabilities}$$

Solvency Ratio

- **Debt-to-equity ratio** is the financial Matrix that compare the companies debt to companies equity.
$$\text{Debt-to-Equity Ratio} = \text{Total debts} / \text{Total equity}$$
- **Interest coverage ratio** interest coverage ratio is that ratio which shows the ability of a company to the payment of debt
$$\text{Interest Coverage Ratio} = \text{Earnings Before Interest and Taxes (EBIT)} / \text{Interest Expenses}$$

Profitability Ratios

- **Gross profit margin** gross profit margin is used to calculate the percentage of revenue remain after deducting the cost of goods sold COGS
$$\text{Gross Profit Margin} = \text{Gross Profit} / \text{revenue}$$
 - **Return on Assets (ROA):** Show how effectively assets are used to generate profit.
$$\text{ROA} = \text{Net Income} / \text{total assets}$$
3. **Forecasting:** Forecasting is the process of predicting and estimating the future financial performances based on past and previous data, market trends, assumptions and historical data.

Purpose: To predict the future and to estimate the outcome and make business decisions.

Method

- **Quantitative Method:** Used historical data to define patterns and future results by common technique and regression analysis.

- **Qualitative Method:** Involves expert judgement and market research to predict the performance of the firm in future by trends, economic conditions ,and competitive landscape.

Applications

- **Budgeting:** Create financial plant and allow the budget to predict the revenue and expenses of the firms in the future.
- **Strategy Planning:** Making long term decisions by strategy planning like investment expansions and product development which are very very important for the performance of the company.
- **Risk Management:** We have to do risk management to paste the financial challenges and preparing strategies to his the future risk and two protect the company by anticipating potential financial challenges

4. DuPont Analysis

- **Net Profit Margin:** Net profit margin net profit margin measures the per dollar of sales of the company

$$\text{Net Profit Margin} = \text{Net Income} / \text{sales}$$

- **Asset Turnover:** Assets turnover calculate how a company use its assets to generate sales

$$\text{Asset Turnover} = \text{Sales} / \text{total assets}$$

- **Equity Multiplier:** Equity multiplier is a financial ratio that measures how much of a company's assets are financed through stockholders' equity

$$\text{Equity Multiplier} = \text{Total Assets} / \text{total equity}$$

Formula

$$\text{ROE} = \text{Net Profit Margin} \times \text{Asset Turnover} \times \text{Equity Multiplier}$$

5. **Market Analysis:** Market analysis involves the external environment in which company will run and operates by including market trends, competition, the economic factors and also the performance of the company depends on the market an alysis.

Purpose: Purpose to understand market dynamic and competitive landscape by threats and strategic decision making. it will show the opportunities that a company have.

Components

- **Industry Analysis:** Examine overall industry trends health threads new arrivals and drive and from the industries.
- **Competitive Analysis:** Accesses the strength weakness market positions and strategy of the companies.

- **Market Demand:** Company has to analyse the consumer needs market demand what are the product basis service of the new trends and what are the fluctuating demands of customers.

Importance

- **Conditions:** We have to improve the conditions of working in the companies and also try to enhance the.
- **Improvement Competitive:** Positioning improvement in competitive positioning is the main motto of the company to survive or sustain in the market.
- **Capitalise:** Capitalise on the market opportunities to get growth and sustainable development in the growing sectors.

III. VALUATION MODELS: DISCOUNTED CASH FLOW (DCF), COMPARABLES, PRECEDENT TRANSACTIONS.

Valuation models are important tools for determining the value of assets of company. There are three common valuation models discounted cash flow, comparable and precedent transaction.

1. **Discounted Cash Flow:** Discounted cash flow is the valuation method that determines or predict the value of investment based on its expected future cash flow by the past data which are adjusted for time value of money.

Purpose: To estimate the value of companies assets by calculating the present value of cash flow of the project of a company.

Components

- **Projection of Cash Flow:** To forecast the future by cash flow of the company is expected to generate and to know that in how many years that the company are going to do this.
- **Free Cash Flow (FCF):** FCF is oftenly calculated on the operating cash flow of the capital expenditures which are based on open cash flow.
- **Discounted Rate:** Discount rate is the rate of return used to discount future cash flows back to their present value. This rate is often a company's Weighted Average Cost of Capital (WACC). it reflex the risk which are comes with the cash flows.

Terminal Value: The terminal value is the value of a business, assets or a project beyond the time of forecasted period when future cash flow is prepared.

Applications

- Used to valuing the assets of the company investment and projects of the.
 - Helpful in assessing the value based on financial projections in detailed.
2. **Comparables:** Comparables or comparative analysis involves value of a company by comparing it with another companies of a same industry and a same field.

Purpose: To estimate companies value by comparing of other companies valuations in market.

Components

- **Selection of Comparable Companies:** In this process we have to find a proper suitable company which are similar business models size, growth rate and industrial conditions with our company.

Key Multiply: Use the valuation driven from the comparable companies to estimate the value of the growth of the company and the common multiple includes the price to earn and enterprise value to EBIDTA

Application

- Commonly used in merger and acquisitions investment analysis and ipo's issued by the company.
 - Provide a quick and market valuation by which we can carefully select company comparables.
3. **Precedent Transactions:** Precedent transactions or comparable transactions involves the valuation of a company based on the price of other companies in the same market or the same field in the past transactions.

Purpose: To estimate the company value based on the actual price of the other companies and transaction data from similar deals.

Components

- Identification of precedent transaction find the previous transactions involving company similar to the our target company and the industry are same in size market conditions and terms of industries.

Key Metrics: To analyse the transaction which we are multiple paid to the deals of the identification precedent transactions.

Applications

- Used in the merger and acquisitions to predetermined the value of company based on the buyer which have paid to the similar company in the same field.
- Provide market based transaction data in real grounded views.

IV.SENSITIVITY ANALYSIS: ASSESSING THE IMPACT OF CHANGES IN ASSUMPTIONS

Sensitive analysis is the technique or a process to use the evaluation how the change in assumptions and input or outcome of financial models are done to understand the robustness of the influential variables that can impact result of the model.

1. Overview of Sensitive

Purpose

- **Risk Assessment:** Risk assessment is necessary to understand how sensitive outcomes can change the assumptions.
- **Decision Making:** To take the decisions based on the difference in are used by potential variabilities in outcomes and make the proper decisions.
- **Scenario Planning:** Scenario planning includes to prepare ourself for the various outcomes and different plans accordingly.

2. Components of Sensitive Analysis

Identify Key Variables

- **Inputs:** This will include the variable and assumptions which are adjustable in model common input are sales growth rate, cost of goods sold, capital expenditure and discount rate.
- **Outputs:** The assumptions which we made for inputs and measure the impact on net present value, internal rate of return and profit margins.

Developed the Base Case Models

- This model will serves the reference point for comparing the changes impacted on the assumptions of the companies growth and to create the financial models with the set of base case assumptions.

Change assumptions

- Changes includes only one assumption at a time for specific range for example if we are analysing any project of profitability so you might very the revenue growth and cost estimation only.

Recalculate Outcomes

- Recalculate the outcome of new assumptions and calculate result changing on outcomes this will show the change impact on outcomes and will get updated.

Analyse results

- Compare the new results with base case assumptions to understand the degree of impact. This involves looking at the variations affects key financial matrices and identifying variables of greatest influence.

3. Benefits of Sensitive Analysis

Improve Understanding

- Help understanding the sensitivity outcome to change the assumptions and potential of risk and rewards by which we can improve the understanding for growth.

Enhance Decision Making

- Provide a range of possible outcomes and we can depend on the decision making so it will help us to enhance the decision making by preparing the difference in our use and making a positive choices.

Identifies Critical Variables

- Buy high lighting which assumptions we can get the identify critical variables the most impact on result focusing attentions on areas that requires carefully management and few further analysis for the critical variables.

Support Planning

- How the different scenarios can affect the outcomes to the scenario planning we have to maintain a support planning for every scenario accepted and it will help to strategy planning and risk management.

4. Limitations

Assumption dependents

- The results are fully dependent on assumptions by which if the assumptions are inactivate so we can get mislead result.

Complexity

- In complex model there are many variables so it will difficult to analyse it properly for analysing we have to need advance tools and softwares.

Linear Changes

- Sometimes there would be a scenario that is not in happening in real world so it will change the variables in linear impact.

V. MONTE CARLO SIMULATION: ADVANCED MODELING TECHNIQUES FOR RISK ASSESSMENT

Monty Carlo simulation is the powerful and advance modelling technique and tool which is used for the management and risk assessment and decision making in various fields like finance, engineering and project management it is fully reliable on the statical sampling that data to model analyse the impact of uncertainty for the complex system in the variability of different sectors.

1. Overview of Monte Carlo Simulation

Purpose

- Risk assessment includes to impact the uncertainty and variability of outcomes to which extent it uncertain.

Decision Support

- In decision making there was a support by Monte Carlo simulations which provide the probability stick inside for potential outcomes to make a proper decision it is a support for the decision making.

Complex Modeling

- In the system of many variables and complex interdependency the model are including in complex modelling.

2. Components of Monte Carlo Simulation

Define the Model

- Develop mathematics models or simulations the system or process under considerations for the representations. This model established the relation between the input variables and the outcomes of interest.

Identify Input Variable

- **Uncertainty Variables:** Variable of model has the uncertainty or has the variability. In this we include revenue growth rates project durations cost estimations and industry etc.
- **Probability Distributions:** Probability distributions for the variables are the common distributions including normal, uniform, log normals and triangle distributions and this is depending on the nature of the uncertainty

Generate Random Samples

- Use of random sampling techniques to generate the large number of possible values this is done usually by the computer algorithms because there are so many variable based on the probability distributions.

Run Simulations

- Eat set of a random input values the run model for computing outcomes when we are repeating this process many times we are getting different different outcomes and this will be the more difficult.

Analyse Results

- The result from the simulations of different distributions of the possible outcomes by which we are analysing the distributions of a large range of possibilities and likely good for the outcomes.

Interpret and Record Findings

- It is used as a quantitative data use of statistical measure such as mean mode median and standard deviation percentile to summarised the results visualise the distribution using the histograms distribution functions probability density etc.

3. Benefit of Monte Carlo Simulation

Quantifies Uncertainty

- In this process we are providing appropriate quantitative measures for the uncertainty and risk of modelling for wide range of possible outcomes which are happening here.

Visualise Risk

- Visualises risk this will help to visualizing the probability and impact of various risk factors for the statistical summary and distribution charts.

Improve Decision Making

- Provide a deep understanding regarding decisions and risk management and also strategies preparations for more effective way.

Flexible and Comprehensive

- Flexible and comprehensive method are applied for the wide range of a problems and models for the independency of nonlinear relationships and complex.

4. Limitations

Computational Intensity

- The one of the main limitations is that it requires the time bonding and especially models with the many variables and high iterations to computational intensity of resources.

Complexity

- Developing and validating the models and selecting the proper distribution of probability are the complex part of it.

Data Dependence

- The accuracy of result is also dependent on the accuracy of the input data and probability distribution if it is incorrect and invalid so our decision is also be gone to invalid.

REFERENCES

- [1] Kaakandikar, D. R. (2020). Financial statement analysis of Janaseva Bank. Zenodo. <https://doi.org/10.5281/zenodo.13675324>
- [2] Kaakandikar, D. R. (2020). Study of performance appraisal of employee. Zenodo. <https://doi.org/10.5281/zenodo.13681608>
- [3] Kaakandikar, D. R. (2020). A study of budgetary control. Zenodo. <https://doi.org/10.5281/zenodo.13682208>
- [4] Kaakandikar, D. R. (2020). A study of capital budgeting of Fountainhead Info Solutions Pvt. Ltd. Zenodo. <https://doi.org/10.5281/zenodo.13682832>
- [5] Kaakandikar, D. R. (2020). Analyzing consumer buying behaviour and preferences in the ice cream industry: Meridian Ice Cream. Zenodo. <https://doi.org/10.5281/zenodo.13683490>
- [6] Kaakandikar, D. R. (2020). Analyzing customer satisfaction and loyalty in the online eyewear retail industry: A focus on Lenskart. Zenodo. <https://doi.org/10.5281/zenodo.13683509>
- [7] Analyzing consumer preferences and market trends in the two-wheeler industry. (2020). XXVII(5). ISSN: 0975-802X.
- [8] Analyzing customer satisfaction and loyalty in the context of Wow Momo: A study of fast food preferences and experiences. (2020). XXVII(5). ISSN: 0975-802X.
- [9] Kaakandikar, D. R. (2020). Consumer preferences and market dynamics in the snack food industry: A study of Haldiram products. Zenodo. <https://doi.org/10.5281/zenodo.13683657>
- [10] Kaakandikar, D. R. (2020). Performance evaluation with the help of ratio analysis. Zenodo. <https://doi.org/10.5281/zenodo.13683692>
- [11] Kaakandikar, D. R. (2020). Impact of artificial intelligence on our society. Zenodo. <https://doi.org/10.5281/zenodo.13683725>
- [12] Kaakandikar, D. R. (2024). Non-performing assets: A comparative study of SBI & HDFC Bank. Zenodo. <https://doi.org/10.5281/zenodo.13683746>
- [13] Kaakandikar, D. R. (2020). Role of insurance in personal financial planning. Zenodo. <https://doi.org/10.5281/zenodo.13683760>
- [14] Kaakandikar, D. R. (2020). Study of product branding with digital marketing. Zenodo. <https://doi.org/10.5281/zenodo.13683782>
- [15] Kaakandikar, D. R. (2020). The study on investor's attitude towards mutual fund. Zenodo. <https://doi.org/10.5281/zenodo.13683791>
- [16] Kaakandikar, D. R. (2020). To study the involvement of MNCs in international business. Zenodo. <https://doi.org/10.5281/zenodo.13683814>
- [17] Kaakandikar, D. R. (2020). Working capital management at Suzlon Energy Ltd. Pune. Zenodo. <https://doi.org/10.5281/zenodo.13683847>
- [18] Kaakandikar, D. R. (2020). A comprehensive analysis of Goods and Services Tax (GST) in India. Zenodo. <https://doi.org/10.5281/zenodo.13683861>
- [19] Kaakandikar, D. R. (2020). A project report on activity-based costing as a measure of improving the cost structure in Jay Laxmi Food Processing Pvt. Ltd. Zenodo. <https://doi.org/10.5281/zenodo.13683872>
- [20] Kaakandikar, D. R. (2020). A study of instrument used in trade finance at Suzlon Energy Ltd. Pune. Zenodo. <https://doi.org/10.5281/zenodo.13683889>
- [21] Kaakandikar, D. R. (2020). A study on credit risk management. Zenodo. <https://doi.org/10.5281/zenodo.13683981>
- [22] Kaakandikar, D. R. (2020). A study on financial analysis of Maruti Suzuki India Limited Company. Zenodo. <https://doi.org/10.5281/zenodo.13684029>
- [23] Kaakandikar, D. R. (2020). A study on job satisfaction of employees in an organization. Zenodo. <https://doi.org/10.5281/zenodo.13684074>
- [24] Kaakandikar, D. R. (2020). A study on working capital management with ratio analysis of Span Pump Pvt. Ltd. Zenodo. <https://doi.org/10.5281/zenodo.13684096>

- [25] Kaakandikar, D. R. (2020). Credit appraisal of home loan finance. Zenodo. <https://doi.org/10.5281/zenodo.13684121>
- [26] Kaakandikar, D. R. (2020). Financial health analysis with the help of different metrics. Zenodo. <https://doi.org/10.5281/zenodo.13684144>
- [27] Kaakandikar, D. R. (2020). Importance of training staff in the modern workplace era. Zenodo. <https://doi.org/10.5281/zenodo.13684198>
- [28] Kaakandikar, D. R. (2020). Study of news website for mortgage industries. Zenodo. <https://doi.org/10.5281/zenodo.13684217>
- [29] Kaakandikar, D. R. (2020). Study of performance appraisal system at IinfoSoft, Pune. Zenodo. <https://doi.org/10.5281/zenodo.13684245>
- [30] Kaakandikar, D. R. (2020). Study of tax planning of individual assessee and HUF. Zenodo. <https://doi.org/10.5281/zenodo.13684264>
- [31] Kaakandikar, D. R. (2020). The study of SEO for organic branding of SMEs. Zenodo. <https://doi.org/10.5281/zenodo.13684275>
- [32] Kaakandikar, D. R. (2020). To study the challenges and opportunities of India's increased participation in the global economy. Zenodo. <https://doi.org/10.5281/zenodo.13684308>
- [33] Kaakandikar, D. R. (2020). To study the financial position of Maruti Suzuki India Ltd. using ratio analysis. Zenodo. <https://doi.org/10.5281/zenodo.13684331>
- [34] Kaakandikar, D. R. (2020). To study the import–export procedure and documentation with reference to Thermax Limited. Zenodo. <https://doi.org/10.5281/zenodo.13684360>
- [35] Kaakandikar, D. R. (2020). A comparative study of e-banking: Kotak and ICICI Bank. Zenodo. <https://doi.org/10.5281/zenodo.13684386>
- [36] Espinoza, M. C., Ganatra, V., Prasanth, K., Sinha, R., Montañez, C. E. O., Sunil, K. M., & Kaakandikar, R. (2021). Consumer behavior analysis on online and offline shopping during pandemic situation. *International Journal of Accounting & Finance in Asia Pacific*, 4(3), 75–87. <https://doi.org/10.32535/ijafap.v4i3.1208>
- [37] Sinha, R., Nair, R. K., Naik, V., Ganatra, V., Singri, P., Singh, P., Kamble, A. R., Kaakandikar, R., KJ, S., & Modawal, I. (2020). New norm in consumer buying pattern: Online shopping swing amid the Coronavirus pandemic.
- [38] Espinoza, M. C., Nair, R. K., Mulani, R., Kaakandikar, R., Quispe, A., & Riva, F. (2021). The effects of COVID-19 pandemic on tourism sector. *International Journal of Tourism and Hospitality in Asia Pacific*, 4(3), 115–121. <https://doi.org/10.32535/ijthap.v4i3.1213>
- [39] Ganatra, V., Kaakandikar, R., Izzuddin, M., Kee, D. M. H., Zainuddin, N. B., Bukhari, M. A. Z., Nurhakim, M. A., & Panwar, V. (2021). The impact of food delivery apps on customer perceived value among university students. *Journal of the Community Development in Asia*, 4(3), 68–78. <https://doi.org/10.32535/jcda.v4i3.1182>
- [40] G. L. S. (2017). A performance analysis of select public and private mutual funds. [Doctoral dissertation, SRTMUN]. <http://hdl.handle.net/10603/194579>
- [41] A study on the customer level of satisfaction towards Café Coffee Day product and service in Pune City. (2023, March 14). https://journals.kozminski.com-j.org/index.php/pl_cemj/article/view/617
- [42] Shamout, M. D., Sivaprasad, R., Ramya, N., Pande, S., Kaakandikar, R., & Fahlevi, M. (2022). Optical flow-based tracking of vehicles using adaptive particle filter target tracking algorithm for accident prevention. In 2022 International Conference on Automation, Computing and Renewable Systems (ICACRS) (pp. 1-5). IEEE. <https://doi.org/10.1109/icacrs55517.2022.10029204>
- [43] Kaakandikar, R., & Rangade, A. (2019, November 9). A study on job satisfaction of employees in an organization. *Think India Journal - Vichar Nyas Foundation*. <https://thinkindiaquarterly.org/index.php/think-india/article/view/10355>
- [44] Kaakandikar, D. R. (2024). Beyond reach: micro-influencers vs. celebrities - A comparative analysis of engagement and brand sentiment in influencer marketing. In *Beyond reach: micro-influencers vs. celebrities - A comparative analysis of engagement and brand sentiment in influencer marketing* (Vol. 21, No. 6). Zenodo. <https://doi.org/10.5281/zenodo.13705742>
- [45] Kaakandikar, R. (2022, November 1). A study of awareness and behavior towards equity and derivative market. *Social Science Research Network (SSRN)*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4912797
- [46] Pérez-Restrepo, C., López, C. A., Singh, P., Ochoa, A. M. R., Ceballos, D. V., Tilekar, G. D., & Kaakandikar, R. (2021). Improving online customer satisfaction: A study on Biba. *International Journal of Accounting & Finance in Asia Pacific*, 4(3), 88–99

- [47] Poman, A., & Kaakandikar, R. (2022, August 11). Study & calculation of Goods and Service Tax (GST). *Journal of Positive School Psychology*. <https://mail.journalppw.com/index.php/jpsp/article/view/10373>
- [48] Kaakandikar, D. R. (2024). Embracing phygital transformation for sustainability: IKEA's journey. (Vol. 21, No. 6). Zenodo. <https://doi.org/10.5281/zenodo.13705463>
- [49] Kaakandikar, D. R. (2024). Cultural intelligence pedagogy in management education: Nurturing diversity-responsive leaders. In *Cultural Intelligence Pedagogy in Management Education: Nurturing Diversity-Responsive Leaders* (Vol. 44, No. 6). Zenodo. <https://doi.org/10.5281/zenodo.13705855>
- [50] Tiwari, P., Kaakandikar, R., Bhosale, S. S., Nirmala, K., & Kasar, B. (2024). A critical study of behavioural factors affecting mutual funds investors with special reference to Pune District. *ES*, 20(2), 47–61. <https://doi.org/10.69889/667gf640>
- [51] Kaakandikar, R., Lembhe, Y., & Jiby, B. J. (2024). Unlocking spending trends: The behavioural impact of digital wallets on modern consumers. *ES*, 20(1), 127–143. <https://doi.org/10.69889/sqj3vb23>