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# **COST CONTROL SYSTEM ANALYSIS OF HERO AND BAJAJ TWO-WHEELER AUTOMOBILE COMPANIES IN INDIA – A COMPARATIVE STUDY**

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## **ABSTRACT**

*The article provides a comparative analysis of the cost control systems employed by Hero MotoCorp and Bajaj Auto, two leading companies in the Indian two-wheeler market. It highlights the importance of strategic cost management for maintaining competitiveness, optimizing profitability, and achieving operational efficiency. This study used a convenience sample of the top two Indian automobile companies listed on the BSE, and secondary data from the financial statements of the years 2015 to 2024 was used. The t-test, ANOVA analysis, and correlation were used to analyze the data. ANOVA results confirm that the variations in cost component categories are not random but reflect significant differences. This analysis provides a valuable understanding into their cost management strategies, providing lessons for other companies in the automotive sector aiming to improve their financial performance and operational effectiveness.*

*Keywords: Profitability, Cost control system, Cost structure, Operational efficiency, Market share, etc.*

## **1. INTRODUCTION**

In the highly competitive Indian two-wheeler market, where fuel efficiency, cost-effectiveness, and technological innovation are paramount, companies like Hero MotoCorp and Bajaj Auto have established themselves as industry leaders. The strategic management of costs is crucial for these companies to maintain their competitive edge, optimize profitability, and respond to market dynamics. Understanding and analyzing the cost control systems employed by these two giants provides valuable insights into how they achieve operational efficiency and financial stability in a challenging business environment.

Hero MotoCorp and Bajaj Auto are prominent players in the Indian two-wheeler sector, each with its own distinct approach to cost control and management. Hero MotoCorp, known for its extensive range of scooters and motorcycles, has a significant market share and a strong brand presence. The company's cost control strategies focus on leveraging

economies of scale, optimizing production processes, and employing advanced technologies to enhance efficiency. Hero MotoCorp's approach includes stringent budgeting practices, standard costing, and activity-based costing (ABC) to monitor and control costs effectively. The company's financial discipline and robust variance analysis mechanisms allow it to adjust operations dynamically in response to market fluctuations and maintain profitability.

On the other hand, Bajaj Auto, a key player renowned for its innovative products and strategic market positioning, also employs a range of sophisticated cost control systems. Bajaj's cost management techniques include a strong emphasis on lean management practices, which aim to eliminate waste and enhance process efficiency. The company utilizes advanced inventory management systems and process costing to control production costs and streamline operations. Bajaj Auto's focus on cost-effective analysis and benchmarking allows it to compare its performance with industry standards, identify areas for improvement, and ensure it remains competitive in a rapidly evolving market.

A comparative analysis of the cost control systems used by Hero MotoCorp and Bajaj Auto reveals differences in their strategic approaches and operational focuses. Hero MotoCorp's emphasis on standard costing and budgeting helps in maintaining cost predictability and controlling expenses across its large-scale operations. The company's use of activity-based costing provides detailed insights into cost drivers, enabling precise cost management and resource allocation.

Conversely, Bajaj Auto's lean management practices and advanced inventory systems highlight a more dynamic approach to cost control. The company's focus on reducing waste through lean principles and employing cost-effective analysis techniques underscores its commitment to operational efficiency and innovation. Bajaj's use of benchmarking against industry standards reflects a proactive strategy to stay ahead of competitors by continuously improving cost management practices.

Gaining insight into the subtleties of these cost-control strategies can help you better understand how Hero MotoCorp and Bajaj Auto handle the intricacies of the two-wheeler industry. It demonstrates how well they each manage manufacturing costs, improve operational effectiveness, and adjust to shifting market conditions. Other automotive businesses looking to maximize their cost management techniques and attain sustainable growth can learn a lot from this comparison analysis, which also clarifies the efficacy of their cost control measures.

Lastly, the comparative analysis of cost control systems employed by Hero MotoCorp and Bajaj Auto reveals key insights into their operational efficiencies and strategic management.

By examining their approaches, one can appreciate the critical role of cost control in maintaining competitiveness and profitability in the fast-paced two-wheeler industry.

## **2. PROFILE OF THE COMPANY**

**2.1. Hero** Hero MotoCorp Limited is a multinational Indian motorcycle and scooter manufacturer with its headquarters in Delhi. It is one of the largest two-wheeler manufacturers worldwide, holding a roughly 46% market share in the Indian two-wheeler industry. As of May 15, 2024, the company's market worth was ₹101,500 crore (US\$12 billion). In 1984, Honda of Japan and Hero Cycles of India established Hero Honda as a joint venture. In June 2012, Hero MotoCorp approved a plan to merge the manufacturer with Hero Investment Pvt. Ltd., the parent company's investment subsidiary. gets divorced from Hero Honda 18 months before this choice.

The Munjal brothers sell Hero Cycles Ltd. under the "Hero" brand.

**2.2. Bajaj** Established in Mumbai in 1926 by Jamnalal Bajaj, the Bajaj Group is a worldwide company of Indian origin. 40 businesses make up the group, with Bajaj Auto, the main company, being the fourth-largest two- and three-wheeler manufacturer in the world. The group works with a variety of industries, such as two- and three-wheeler cars, household appliances, lights, steel and iron, insurance, tourism, and finance. Because of their ties to the ruling dynasty, the Bajaj

Greatly benefit the licensing, Raj. The company's market value was ₹ 2,69,781 Cr as on 31-Jul-2024.

In order to educate India's youth, Jamnalal Bajaj founded Shiksha Mandal Wardha in 1914. Several national leaders, including Mohandas Karamchand Gandhi, supported this Mandal, which was a part of the national movement. It was also the first educational institution in India to create textbooks and administer tests in Hindi.

## **3. REVIEW OF LITERATURE**

**Manoj Anand, B.S. Sahay (2005):** made a study on “activity-based cost management practices in India.” An empirical study This study investigates the use of ABCM in Indian firms through a nationwide survey, focusing on large corporations. Findings indicate widespread ABC adoption, with firms gaining accurate cost and profit insights for value chain analysis. Despite challenges like developing activity dictionaries, ABC adoption impacts various management decisions and sourcing. The study suggests uniform motivation for ABC adoption across sectors and stages of implementation.

**Ellarm (2006):** identifies target costing as a crucial cost accounting strategy that helps producers sustain cost competition while meeting consumer expectations. Fridh & Borgernas (2003) claimed that target costing is an approach of product development. This makes it easier to establish product costs based on target prices and then keep up. with the backward labour of product design and manufacturing.

According to **Ansari et al. (2007)**, target costing literature provides numerous potentials for future research. The authors employed a flattened system to organize the literature. The initial measurement was Knowledge development approach based on the life cycle of organizational practices. From birth until adulthood. The use of this guideline shows that the discipline is fair.

**Mahasweta Chattopadhyay (2019):** made a study on “Automobile industry in India”. This study examines domestic sales trend in automobile sector in India. It is concluded that of the top seven automobile markets worldwide, only India saw double digit growth of 11% from Jan to May 2017. India's automobile industry is expected to rank in the top three globally in terms of engineering manufacturing & exporting automobiles & auto parts by 2026.

**N. Narsaiah (2020):** This research examined the application of target costing in the Indian automobile industry, using it as a dependent variable with profitability, Growth, Net tangible assets, Eps, & firm size as the independent variable. The Study analyzes data from the top 10 automobile Companies listed in BSE from 2014-15 to 2018-19 using Statistical techniques Such as Pearson's correlation, simple Regression, & multiple regression analysis. Findings indicate a negative Correlation between TC (target cost) & a Positive correlation with Return on Sales, & Mixed results with other financial performance metrics.

**Madhvi Kush & Sahil (2022):** Investigated the "Financial performance analysis of the automobile industry with special reference to ratios." The goal of this research paper is to analyses the financial performance of the auto industry using a variety of ratios. Maruti Suzuki and Tata Motors have taken this as a sample. According to the researcher, Maruti Suzuki is performing well as compared to Tata Motors, and Tata Motors needs to raise its net earnings, which are deprived when compared to Maruti Suzuki, and also improve all of its important ratios.

The study "Analytical Study on Strategic Cost Management of Selected Automobile Companies in India" was conducted by **Dr. Sadyojathappa S. in 2023**. Five businesses were selected for the study, and a variety of measures, including current liabilities, inventories, current assets, operating profit margin, inventory turnover ratio, and material cost composition, are utilized to analyze the data. Delaying cash withdrawals, optimizing

inventory levels, and implementing cutting-edge strategies like ABC and target costing are some of the ways the study recommended that the sample control or improve cost management.

The study conducted by **Harish V. B. (2024)** aims to determine "the cost effectiveness and profitability of Indian automobile industries." The researcher employed multiple regression analysis to examine secondary data from the five sample units' annual reports as well as data analyzed from DEA Analyses and the E-Views tool. Ultimately, they came to the conclusion that the profit models of a few Indian automakers and their total cost models were positively correlated.

### **3. SIGNIFICANCE OF THE STUDY**

An investigation of Hero and Bajaj's comparative cost control systems is important because it can shed light on how cost management techniques affect the competitiveness of the Indian two-wheeler market. Through a comparative analysis of these top businesses' cost control strategies, the study clarifies how efficient cost management techniques can improve profitability, market positioning, and operational effectiveness. Gaining insight into Hero and Bajaj's cost structures and control methods helps highlight creative ideas and best practices that support their financial performance. This analysis offers larger implications for the sector, advising other firms on optimizing their cost management techniques, in addition to assisting in finding opportunities for improvement inside each organization. Additionally, it offers stakeholders, investors, and industry analysts.

#### **3.1. SCOPE OF THE STUDY**

Two of India's top two-wheeler automakers, Hero and Bajaj, are the subjects of a comparative cost control system analysis that includes a thorough review of each company's cost management procedures in order to assess both operational effectiveness and financial success. The structure of each company's costs, including fixed and variable costs associated with procurement, operations, and manufacturing, will be examined in this study. It will evaluate the particular cost-control strategies used by Bajaj and Hero, including cost-volume-profit analysis, budgeting, and lean manufacturing. Important financial parameters such as the cost of goods sold and profit margins will also be compared in the research to see how cost management methods affect the financial results. The study will also look into how these cost-control techniques impact production processes and overall operational efficiency.

### **3.2. STATEMENT OF THE PROBLEM**

The goal of this comparative cost control system analysis between Hero and Bajaj is to determine how the two companies' various cost management approaches affect their operational and financial performance in the context of the Indian two-wheeler market's intense competition. Even though both businesses are prominent participants in the sector, there may be a large difference between their methods of cost reduction, which could have a different effect on market share and profitability. This investigation aims to close the knowledge gap regarding the impact of each company's cost management systems which include budgeting procedures, efficiency measures, and cost structures on overall business performance. Finding the cost-control strategies that work best for cutting costs and improving operational effectiveness is another aspect of the challenge.

### **3.3. OBJECTIVES OF THE STUDY**

Examine and compare the cost structures of Hero and Bajaj, focusing on fixed and variable costs associated with production, procurement, and operations.

### **3.4. HYPOTHESIS OF THE STUDY**

The study aims to investigate the following hypotheses in order to fulfil the research objectives:

*H<sub>1</sub>: Hero's and Bajaj's cost components don't significantly relate to one another.*

*H<sub>2</sub>: There is no significant difference in the cost structures of Hero and Bajaj, with each company showing varying proportions of fixed and variable costs*

## **4. CONCEPT OF COST CONTROL SYSTEM**

A cost control system is a set of processes and tools used by organizations to manage, monitor, and reduce costs to ensure they align with the company's budget and financial goals. The primary goal of cost control systems is to maintain or improve profitability by effectively managing and controlling expenditures. According to **William J. Bruns Jr** “A cost control system is a framework designed to monitor, analyze, and regulate an organization's costs through a set of procedures and tools” (William J. Bruns, 1963-2018). It involves setting cost standards, tracking actual expenditures, comparing them to budgeted figures, and investigating variances to manage and improve financial performance. The objective of the system is to ensure that resources are used efficiently and that the organization adheres to its financial goals and budgetary constraints.”

*Table 1 Difference Between Modern and Traditional Cost Control Systems*

Aspects	Traditional cost control system	Modern cost control system
Focus	Historical cost tracking and control.	Proactive cost management and strategic planning.
Techniques	Standard costing, budget variance analysis.	Activity-Based Costing (ABC), lean management, zero-based budgeting.
Data handling	Manual data entry, paper-based records, periodic reporting.	Automated data entry, real-time reporting, integrated systems.
Decision-making	Reactive decisions based on past performance reports.	Predictive decisions using advanced analytics and real-time data.
Technology	Limited integration, basic financial software, spreadsheets.	Integrated ERP systems, advanced analytics tools, real-time dashboards.
Flexibility	Static budgets, less adaptable to changes.	Dynamic budgets, highly adaptable to current conditions.
Cost allocation	Predetermined costs, less detailed allocation.	Detailed cost allocation based on activities and processes.
Reporting frequency	Periodic reporting (monthly, quarterly).	Real-time or near-real-time reporting.
Cost management approach	Focus on historical data and variance analysis.	Focus on forecasting, scenario planning, and cost efficiency.

## **4.1. VARIOUS COST CONTROL SYSTEMS**

### **4.1.1. Budgeting**

Budgeting involves creating a financial plan that outlines expected revenues and expenditures over a period. It helps allocate resources effectively and sets financial targets. Variations between budgeted and actual performance are monitored to manage spending and adjust operations as needed. Types include static, flexible, incremental, and zero-based budgeting.

#### **❖ 4.1.1.1. Techniques:**

- **Static Budgeting:** This approach involves creating a budget based on fixed assumptions and projections for a specific period, regardless of actual performance or changes in business conditions. It provides a baseline for financial performance but may not account for variability in sales volumes or operational changes. Static budgeting is useful for planning and control when business conditions are stable but less effective in dynamic environments where flexibility is required.
- **Flexible Budgeting:** Unlike static budgets, flexible budgets adjust according to actual levels of activity or output. They are designed to accommodate changes in variables such as sales volume, production levels, or cost drivers. By comparing actual performance against a flexible budget, businesses can better

analyze variances and understand the impact of changes in activity levels on financial outcomes, facilitating more accurate performance assessment and cost control.

- **Incremental Budgeting:** This method involves using the previous year’s budget as a base and making incremental adjustments for the new period. Adjustments are typically made for expected changes in costs or revenues. While simpler and less time-consuming, incremental budgeting can perpetuate inefficiencies from previous budgets and may not address fundamental changes or strategic shifts, as it assumes that past allocations are still relevant.
- **Zero-Based Budgeting (ZBB):** ZBB requires that every expense be justified for each new period, starting from a “zero base.” Instead of using past budgets as a reference, each budget cycle involves evaluating all expenditures from scratch, ensuring that only necessary and value-adding activities are funded. This method promotes thorough evaluation of costs and resource allocation but can be time-consuming and resource-intensive. It is effective for driving cost savings and aligning expenditures with strategic objectives.

#### **4.1.2. Standard Costing**

Standard costing assigns predetermined costs to materials, labor, and overhead, comparing these with actual costs to identify variances. It simplifies cost tracking and variance analysis, helping to manage performance and control costs by pinpointing areas where deviations occur and addressing them.

##### **4.1.2.1. Techniques:**

- **Setting Standard Costs:** Establishing benchmark costs for materials, labor, and overheads to compare against actual costs. These standards guide budgeting and performance evaluation.
- **Variance Analysis:** Comparing actual costs to standard costs to identify discrepancies. This analysis helps pinpoint the reasons for variances, whether favourable or unfavourable, enabling corrective actions to manage costs effectively.
- **Cost Control Reports:** Regular reports summarizing cost data, variances, and performance metrics. These reports provide insights into cost trends and efficiency, supporting decision-making and highlighting areas for improvement in cost management.



### 4.1.3. Activity-Based Costing (ABC)

ABC allocates costs to products or services based on the activities that drive those costs. It provides a more accurate cost picture by identifying the true cost drivers and assigning overheads based on actual usage. This helps in better cost management and decision-making.

#### 4.1.3.1. Techniques:

- **Cost Allocation:** Assigning costs to specific activities based on their consumption of resources.
- **Activity Analysis:** Identifying and evaluating activities that drive costs.
- **Cost Driver Analysis:** Determining factors that cause changes in activity costs.

### 4.1.4. Variance Analysis

Variance analysis examines differences between budgeted and actual financial performance. It categorizes variances as favourable or unfavourable and investigates their causes. This process helps managers understand why deviations occur and make necessary adjustments to improve financial performance.

#### 4.1.3.1. Techniques:

- **Budget Variance Analysis:** Identifying differences between budgeted and actual expenditures.
- **Flexible Budget Variance Analysis:** Comparing actual costs to costs projected for the actual level of activity.
- **Sales Variance Analysis:** Examining changes in revenue and costs due to changes in sales volume or prices.

### 4.1.4. Cost-Volume-Profit (CVP) Analysis

CVP analysis explores the relationship between costs, sales volume, and profit. It includes break-even analysis to determine sales levels where total revenues equal total costs and assesses how changes in production or pricing impact profitability, aiding in strategic decision-making.

#### 4.1.4.1 Techniques:

- **Break-Even Analysis:** Calculating the sales volume at which total revenues equal total costs.
- **Contribution Margin Analysis:** Assessing the portion of sales revenue that contributes to covering fixed costs.

- **Profitability Forecasting:** Estimating how changes in costs, sales volume, and pricing affect profit.

#### 4.1.5. Cost-Effective Analysis

Cost-effective analysis evaluates different methods or projects to determine the most economical option for achieving a desired outcome. It compares costs and benefits, helping to choose the most efficient approach while ensuring that objectives are met within budget constraints.

##### 4.1.5.1 Techniques:

- **Cost-Benefit Analysis:** Comparing the costs of a decision or project against its expected benefits.
- **Alternative Cost Evaluation:** Assessing different options or methods to determine the most cost-effective solution.

#### 4.1.6. Control Charts

Control charts are used to monitor process performance over time by plotting data points against predefined control limits. They help identify variations, trends, and outliers in production processes, ensuring that operations remain within acceptable quality standards and helping to maintain consistency.

##### 4.1.6.1. Techniques:

- **Shewhart Control Charts:** These charts track process performance by plotting data points over time against control limits. They help identify whether variations are due to common causes (inherent in the process) or special causes (external factors), enabling timely corrective actions to maintain quality and stability.
- **Run Charts:** Display data points in chronological order to reveal trends, shifts, or patterns. They are useful for tracking performance over time and identifying periods of consistent or unstable behaviour, which can highlight areas needing investigation or improvement.
- **Pareto Charts:** Based on the Pareto principle (80/20 rule), visualize the frequency or impact of issues in descending order of significance. By concentrating on the most important elements that contribute to the majority of problems, they aid in problem prioritization and direct focused efforts for efficient cost control and improvement.

#### 4.1.7. Financial Ratios

Financial ratios assess various aspects of financial performance by comparing key metrics. Examples include cost-to-revenue ratios and operating expense ratios, which help evaluate cost efficiency relative to revenue and overall financial health, aiding in financial analysis and decision-making.

#### **4.1.7.1. Techniques:**

- **Cost-to-Revenue Ratio:** Measuring costs as a percentage of revenue to assess cost efficiency.
- **Operating Expense Ratio:** Comparing operating expenses to total revenue to gauge operational efficiency.
- **Gross Margin Analysis:** Evaluating the proportion of revenue remaining after covering the cost of goods sold.

#### **4.1.8. Job Order Costing**

Job order costing tracks costs for specific jobs or orders, often used in custom manufacturing or service industries. It involves recording direct materials, labor, and overhead for each job, enabling detailed cost control and profitability analysis on a per-job basis.

##### **4.1.8.1. Techniques:**

- **Job Cost Sheets:** Tracking costs for each specific job or order.
- **Direct Cost Tracking:** Recording direct materials and labour costs associated with each job.
- **Overhead Allocation:** Distributing indirect costs to jobs based on predetermined rates.

#### **4.1.9. Process Costing**

Process costing accumulates costs by department or process for industries with continuous production. Costs are averaged over all units produced during a period, providing insights into the cost per unit and helping manage expenses in mass production environments.

##### **4.1.9.1. Techniques:**

- **Equivalent Units of Production:** Calculating the number of complete units that could have been produced with the work done.
- **Cost per Unit Calculation:** Dividing total costs by the number of units produced.

- **Process Cost Reports:** Generating reports to analyze costs by process or department.

#### **4.1.10. Systems for Managing Inventory**

Just-in-Time (JIT) and Economic Order Quantity (EOQ) inventory management systems optimize inventory levels to balance holding costs with ordering expenses. By effectively managing stock, they eliminate surplus inventory, lower carrying costs, and enhance cash flow.

##### **4.1.10.1 Techniques:**

- **Just-In-Time (JIT):** Reducing inventory levels by receiving goods only as needed.
- **Economic Order Quantity (EOQ):** Determining the optimal order size to minimize inventory holding and ordering costs.
- **ABC Analysis:** Classifying inventory into categories (A, B, C) based on their importance and cost.

#### **4.1.11. Lean Management**

Lean management focuses on eliminating waste and improving efficiency in processes. Techniques like Value Stream Mapping, 5S, and Kaizen are used to streamline operations, reduce non-value-added activities, and continuously improve processes to lower costs and enhance productivity.

##### **4.1.11.1 Techniques:**

- **Value Stream Mapping:** This technique visualizes and analyzes the flow of materials and information through a production process. By mapping each step in the value stream, it identifies inefficiencies, delays, and bottlenecks, enabling targeted improvements to streamline operations and reduce waste. This holistic view helps in optimizing processes to enhance overall efficiency and cost-effectiveness.
- **5S System:** A workplace organization method consisting of Sort, Set in Order, Shine, Standardize, and Sustain. It aims to create and maintain an organized, clean, and efficient work environment. Sort involves removing unnecessary items; Set in Order organizes the workspace; Shine focuses on cleanliness; Standardize ensures procedures are followed; Sustain maintains the improvements. Implementing 5S can lead to improved productivity, reduced waste, and lower costs.

- **Kaizen:** A continuous improvement methodology that emphasizes incremental, small changes to enhance processes, reduce waste, and increase efficiency. It involves everyone in the organization in identifying areas for improvement and implementing solutions. By fostering a culture of constant, small-scale enhancements, Kaizen helps in maintaining ongoing cost control and operational excellence.

#### **4.1.12. Benchmarking**

Benchmarking involves comparing an organization's performance metrics and processes with industry standards or best practices. It helps identify performance gaps and areas for improvement by learning from leading competitors or industry leaders, aiming to adopt best practices for enhanced efficiency.

##### **4.1.12.1. Techniques:**

- **Competitive Benchmarking:** Comparing performance metrics with competitors.
- **Functional Benchmarking:** Comparing similar functions or processes within different organizations.
- **Best Practice Benchmarking:** Identifying and adopting the best practices from industry leaders.

**4.2. Cost components:** Cost components of two sample units include material cost, employee benefit cost, depreciation and amortization, finance and other specific cost components. The detail cost components of selected units are depicted in the following table 1 and 2.

## **5. METHODOLOGY**

Using secondary data from the yearly financial statements of the two chosen automakers listed on the S&P BSE Auto, the study used a quantitative research design. The study covered a ten-year period, from 2015 to 2024. The study is both descriptive and analytical in nature. To determine the cost-effectiveness of particular Indian automakers, data were gathered from financial accounts.

**Sampling method:** the convenience sampling approach has been used to the sample of businesses.

*Table 2: Cost Components of Hero Company*

YEAR	Cost of Material	Employee Benefit Expenses	Depreciation And Amortisation	Finance	Other Expenses
2015	19783.88	1172.87	539.97	11.09	3116.34
2016	19321.72	1319.56	441.40	2.15	3517.83
2017	18974.11	1396.01	492.73	6.05	3432.36
2018	21857.79	1540.13	555.60	6.25	3575.53
2019	23,346.10	1730.24	602.01	8.60	3672.49
2020	19,867.19	1,841.70	817.96	22.02	3,339.02
2021	21,875.33	1,898.72	676.87	21.84	3,120.33
2022	20,708.07	1,935.44	649.75	25.8	3,114.53
2023	24,019.73	2,189.83	656.96	19.87	3,771.47
2024	24,767.46	2,402.34	711.41	18.5	4,366.90

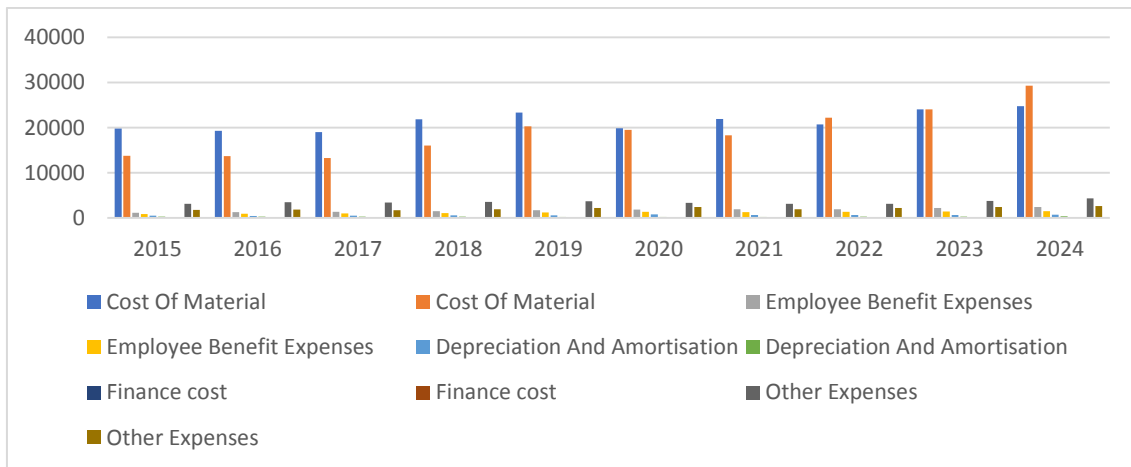
Source: [www.moneycontrol.com](http://www.moneycontrol.com)

*Table 3: Cost Components of Bajaj Company*

YEAR	Cost of Material	Employee Benefit Expenses	Depreciation And Amortisation	Finance cost	Other Expenses
2015	13,752.79	897.3	267.4	6.49	1,808.41
2016	13,717.01	917.12	307.16	1.05	1,847.62
2017	13,285.36	997.07	307.29	1.4	1,745.38
2018	15,999.16	1,069.09	314.8	1.31	1,926.38
2019	20,301.35	1,255.40	265.69	4.48	2,218.33
2020	19,484.62	1,389.21	246.43	3.16	2,454.90
2021	18,308.09	1,285.96	259.28	6.66	1,929.26
2022	22,169.88	1,358.80	269.17	8.66	2,210.76
2023	24,009.01	1,444.90	282.44	39.48	2,406.63
2024	29,268.59	1,537.56	349.84	53.5	2,628.86

Source: [www.moneycontrol.com](http://www.moneycontrol.com)

**Chart 1: Comparison of cost components between Hero and Bajaj companies**



- Over the years, Hero consistently incurs higher material costs compared to Bajaj, with a noticeable increase in 2024. While Bajaj’s material costs also rise, they do so at a slower rate. Hero's higher and more variable expenses suggest a more intensive or costly material usage strategy compared to Bajaj.
- Sample unit of Hero's Employee Benefit Expenses have consistently been higher than Bajaj's over the years, with a more pronounced increase from 2015 to 2024. Hero’s expenses show a significant upward trend, indicating a substantial investment in employee benefits compared to Bajaj's more gradual increase.
- From the two samples Hero's Depreciation and Amortisation expenses are consistently higher than Bajaj's and show a notable upward trend. While Bajaj’s expenses remain relatively stable with a slight increase, Hero's expenses grow significantly each year, reflecting higher investment in depreciable assets or amortizable costs.
- In the two-sample unit Hero’s Finance Costs have varied significantly, peaking in 2020 and 2021, and then declining slightly, but remain higher overall compared to Bajaj. Bajaj's finance costs, while lower in earlier years, surged dramatically in 2023 and 2024, surpassing Hero’s costs, indicating recent financial strain or higher debt.
- From the samples Hero’s Other Expenses consistently exceed Bajaj’s, with a substantial and steady increase over the years. While Bajaj’s expenses also rise, they do so at a slower pace. Hero’s higher and growing costs suggest more extensive or varied operational activities compared to Bajaj’s more moderate increases.

*Table 4: Correlation analysis of Hero Company*

	<i>Cost Of Material</i>	<i>Employee Benefit Expenses</i>	<i>Depreciation And Amortisation</i>	<i>finance</i>	<i>Other Expenses</i>
<i>Cost Of Material</i>	1				
<i>Employee Benefit Expenses</i>	0.789966436	1			
<i>Depreciation And Amortisation</i>	0.414928342	0.739917705	1		
<i>finance</i>	0.314001481	0.718123489	0.838645522	1	
<i>Other Expenses</i>	0.71372317	0.563055125	0.136557189	-0.118334144	1

*Source: Authors' Calculation*

The correlation analysis reveals significant interdependencies among various cost components. The strong positive correlation between the cost of materials and employee benefit expenses (0.79) suggests that as material costs rise, so do employee benefits. This is

complemented by a moderate correlation with depreciation and amortization (0.41), indicating that higher material costs are associated with increased investment in assets. Finance expenses show a strong positive correlation with both depreciation and amortization (0.84) and employee benefits (0.72), suggesting that increased financing is linked to higher costs in these areas. The weak negative correlation between finance expenses and other expenses (-0.12) implies a minimal impact of finance costs on other expense categories. Overall, the analysis highlights that material costs and employee benefits are closely tied, while depreciation and finance expenses show strong relationships with operational costs.

*Table 5: Correlation analysis of Bajaj Company*

	<i>Cost of Material</i>	<i>Employee Benefit Expenses</i>	<i>Depreciation And Amortisation</i>	<i>Finance Cost</i>	<i>Other Expenses</i>
<i>Cost of Material</i>	1				
<i>Employee Benefit Expenses</i>	0.931921022	1			
<i>Depreciation And Amortisation</i>	0.226044393	-0.022740913	1		
<i>finance</i>	0.847307389	0.684208838	0.491737557	1	
<i>Other Expenses</i>	0.918185181	0.914123862	0.071094726	0.722253728	1

*Source: Authors' Calculation*

The correlation analysis highlights key relationships among cost components. There is a very strong positive correlation between the cost of materials and employee benefit expenses (0.93), indicating that as material costs increase, employee benefits also tend to rise. This is further reflected in the strong correlation between material costs and other expenses (0.92), suggesting that higher material costs are associated with increased other operational costs. Finance expenses also show a strong positive correlation with material costs (0.85) and employee benefits (0.68), pointing to a link between financing needs and these expenditures. However, depreciation and amortization have only a weak correlation with other costs, including material costs (0.23) and employee benefits (-0.02), indicating minimal direct impact. Overall, material costs and employee benefits are highly interconnected, while finance expenses and other operational costs are also significantly related.

**H<sub>0</sub>: There is no significant difference in the cost structures of Hero and Bajaj, with each company showing varying proportions of fixed and variable costs.**



Table 6: T -test

<i>Variables</i>	<i>T – Statistics (Two-tailed)</i>	<i>P – Value (Two-tailed)</i>	<i>Ho Accepted/Rejected</i>
<i>Cost Of Material</i>	<i>1.37807064</i>	<i>0.185072572</i>	<i>Accepted</i>
<i>Employee Benefit Expenses</i>	<i>3.684299</i>	<i>0.001697</i>	<i>Rejected</i>
<i>Depreciation And Amortisation</i>	<i>8.938702146</i>	<i>4.87541E-08</i>	<i>Rejected</i>
<i>Finance Cost</i>	<i>0.251087274</i>	<i>0.804590602</i>	<i>Accepted</i>
<i>Other Expenses</i>	<i>8.883062755</i>	<i>5.34865E-08</i>	<i>Rejected</i>

Source: Authors' Calculation

- Cost Of Material p-value is above 0.05, we do not reject the null hypothesis. This suggests that there is no statistically significant difference in the cost of material. In additional words, the difference in means for this variable is not statistically significant.
- Employee Benefit Expenses p-value is less than 0.05, we reject the null hypothesis. This suggests that there is a statistically significant difference in employee benefit expenses. The difference in means for this variable is significant.
- Depreciation And Amortisation p-value is much smaller than 0.05, we strongly reject the null hypothesis. This indicates a very significant difference in depreciation and amortisation expenses. The difference in means for this variable is highly significant.
- Finance Cost p-value is significantly greater than 0.05, we do not reject the null hypothesis. This suggests that there is no statistically significant difference in finance costs. The difference in means for this variable is not significant.
- Other Expenses p-value is much smaller than 0.05, we strongly reject the null hypothesis. This indicates a very significant difference in other expenses. The difference in means for this variable is highly significant.

Table 7: ANOVA Summary of Hero Company

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
<i>Cost Of Material</i>	<i>10</i>	<i>214521.4</i>	<i>21452.138</i>	<i>4226968</i>
<i>Employee Benefit Expenses</i>	<i>10</i>	<i>17426.84</i>	<i>1742.684</i>	<i>152386.6</i>
<i>Depreciation And Amortisation</i>	<i>10</i>	<i>6144.66</i>	<i>614.466</i>	<i>12410.49</i>
<i>Finance</i>	<i>10</i>	<i>142.17</i>	<i>14.217</i>	<i>68.95307</i>
<i>Other Expenses</i>	<i>10</i>	<i>35026.8</i>	<i>3502.68</i>	<i>147926.3</i>

<i>ANOVA</i>						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<i>Between Groups</i>	3.265E+09	4	816334081.8	899.0938	2.72087E-42	2.578739
<i>Within Groups</i>	40857842	45	907952.0542			
<i>Total</i>	3.306E+09	49				

Source: Authors' Calculation

The analysis of variance (ANOVA) results reveals significant differences in the average expense across the five cost components of hero company: Cost of Material, Employee Benefit Expenses, Depreciation and Amortisation, Finance, and Other Expenses. The Cost of Material category stands out with the highest average expense of 21,452.14 and a notably high variance of 4,226,968, indicating substantial variability in this category's expenses. Employee Benefit Expenses and Other Expenses also show relatively high averages and variances, but they are markedly lower than those of Cost of Material. In contrast, Depreciation and Amortisation and Finance categories exhibit much lower averages (614.47 and 14.22, respectively) and variances, reflecting greater consistency and lower financial impact compared to the other categories.

The ANOVA results demonstrate that the between-group variance (Sum of Squares = 3,265,000,000) is significantly larger than the within-group variance (Sum of Squares = 40,857,842), with a high F-statistic of 899.0938 and an extremely small p-value (2.72087E-42). This strong statistical evidence suggests that there are significant differences in the means of the cost components. The calculated F-statistic far exceeds the critical value (F crit = 2.578739), confirming that the observed differences in mean expenses among the categories are statistically significant. In summary, the ANOVA analysis confirms that the variations in expenses are substantial and significant across the different categories, highlighting that they do not share the same mean expense levels.

*Table 8: ANOVA Summary of Bajaj Company*

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
<i>Cost of Material</i>	10	190295.86	19029.59	26676218.07
<i>Employee Benefit Expenses</i>	10	12152.41	1215.241	52560.26954
<i>Depreciation And Amortisation</i>	10	2869.5	286.95	1014.5658
<i>Finance cost</i>	10	126.19	12.619	336.0927433
<i>Other Expenses</i>	10	21176.53	2117.653	95177.12642

ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<i>Between Groups</i>	2654552148	4	6.64E+08	123.6962654	1.14E-23	2.578739184
<i>Within Groups</i>	241427755.1	45	5365061			
<i>Total</i>	2895979903	49				

Source: Authors' Calculation

The study of cost components data reveals considerable disparities in the volume and variability of cost components across categories. The cost of materials is the most expensive, totalling 190,295.86 and averaging 19,029.59. This category also has the biggest variance (26,676,218.07), showing significant swings in material costs. Such broad fluctuation implies that the cost of materials can vary greatly from one occurrence to the next, either due to market prices or procurement processes. In contrast, employee benefit expenses total 12,152.41, with an average of 1,215.24. The variance here is 52,560.27, which, while demonstrating considerable variability, is far less than that of material costs. This implies that employee benefit spending is somewhat more consistent.

The ANOVA results further support these observations. The Between Groups Sum of Squares (SS) is 2,654,552,148, with a Mean Square (MS) of 663,638,037, leading to an F-statistic of 123.70. This high F-value, combined with an extremely low p-value of  $1.14 \times 10^{-23}$  (0.00000000000000000000000000114), specifies that there are significant differences among the means of the expense categories. The Within Groups SS is 241,427,755.1, with a Mean Square of 5,365,061.23. The F-critical value is 2.58, and since the calculated F-value exceeds this threshold, the results confirm that the differences between the expense categories are statistically significant.

In summary, the ANOVA confirms that the variations in cost components categories are not random but reflect significant differences. Cost of Material is the most variable and substantial cost components, while Depreciation and Amortisation and Finance Costs are more stable. Employee Benefit Expenses and Other Expenses exhibit moderate variability, with Other Expenses being more variable than Employee Benefits but less so than Cost of Material.

## **6. CONCLUSION**

A comparative analysis of Hero MotoCorp and Bajaj Auto reveals distinct cost control strategies in the two-wheeler market. Hero MotoCorp focuses on cost predictability through

standard pricing and stringent budgeting, ensuring stable operational efficiency. In contrast, Bajaj Auto employs advanced inventory systems and lean management techniques to enhance process efficiency and minimize waste. This comparison underscores the critical role of effective cost control in maintaining profitability and competitiveness. Other automotive firms can gain valuable insights into optimizing cost-control practices and achieving sustainable growth from these approaches.

Significant disparities in the cost components of both companies are confirmed by the ANOVA results. Hero's p-value of 2.72087E-42 and F-statistic of 899,0938 both show significant variation in the cost components. With a p-value of 1.14E-23 and an F-statistic of 123.70 for Bajaj, there are likewise notable variances. These findings demonstrate the various cost control techniques each business uses.

## **7. LIMITATIONS OF THE STUDY**

- 1) Access to comprehensive and accurate financial data may be limited. Financial statements and cost reports may not be fully detailed or consistent across companies.
- 2) Hero and Bajaj may operate at different scales and have different scopes of operations, such as varying levels of international presence or product lines.
- 3) Cost allocation methods can be subjective and may differ between companies, especially in allocating overheads or indirect costs.

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**ANNEXURE – I**

**Evolution of Cost Control System**

