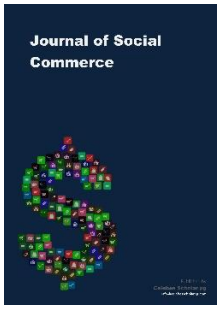

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Revolutionizing Profitability and Liquidity Analysis in India's Auto Two and Three-Wheeler Industry: A Comprehensive Study of Hero Motocorp, Bajaj Auto and Tvs Motor

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Abstract

The primary objective of a business organization is to maximize profits and fulfill its short-term financial obligations within a year. The generation of profit is a fundamental aspect of any business organization, and liquidity plays a crucial role in facilitating this process. The attainment of an organization's desired objectives is heavily reliant on its ability to maintain profitability and liquidity. This empirical study aims to identify the profitability and liquidity of companies in the auto two and three wheelers industry that are listed on the stock exchange. The study should encompass the time period from 2011-12 to 2018-19, during which three companies will be randomly selected for the purpose of analysis and findings. The study found that Baja Auto demonstrated a relatively favorable level of profitability, while Hero Motorcorps exhibited a comparatively higher ratio among the selected companies. The comparative liquidity position of Hero Motorcorps and Bajaj Auto appears to be better than that of TVS Motors. Regarding the statistical test of ANOVA, it was found that all selected ratios, except for the Debtors Turnover Ratio, were rejected. This indicates that the selected companies did not exhibit a significant difference in their Debtors Turnover Ratio during the study period.

Introduction

The term "profitability" is comprised of two distinct lexical units, specifically "profit" and "ability." In the realm of business, profit is commonly defined as the surplus of revenue over total expenses. The term "ability" pertains to the capacity of a business to generate profit through its operational endeavors. The earning power or operating performance of a business organization is demonstrated by its ability (Madanhire & Mbohwa, 2016; Saragih et al., 2020). The word “Liquidity” means the debt repaying capacity of the business organisations (Widyasti & Putri, 2021). The statement denotes the capacity of an organization to fulfill its financial obligations to the vendor with regards to the procurement of raw materials, services, and short-term capital (Kahraman & Kazançoğlu, 2019).

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The enduring prosperity of business units is contingent upon short-term actions and plans. Therefore, it can be posited that the long-term creditworthiness of an organization is also reliant upon short-term liquidity conditions. This research aims to analyze companies that manufacture auto two and three wheelers, given that India has emerged as the fourth largest auto market globally. Additionally, automobile exports from India have increased by 14.50% during the financial year 2019. The projected growth rate for the specified period of 2016-2026 is a Compound Annual Growth Rate (CAGR) of 3.05%.

Literature Review

Narayan V. Iyer (2013) The technical assessment of the potential reduction in emissions and fuel consumption from two and three wheelers in India has been analyzed. This paper examines the rapid growth of two and three-wheeled vehicles in India and highlights the need to reduce emissions and fuel consumption from these vehicles (Saxena, 2019). Additionally, it was determined that the implementation of emission standards and emission control technologies designated for passenger vehicles had not been fully integrated into this particular vehicle category. The researcher is contemplating the evaluation of technical alternatives to address forthcoming emissions. The paper's conclusion highlights a diverse range of technological options that have the potential to decrease the fuel consumption of two and three-wheeled vehicles.

Vijayakumar (2012) The study has identified a relationship between assets utilization and firm profitability through empirical evidence gathered from Indian automobile firms. This study examined the appraisal of asset utilization as a multifaceted task that involves the effective utilization of resources. The utilization ratio of assets in any business organization serves as a metric for evaluating the effectiveness of management (Batchimeg, 2017). This research aims to evaluate the profitability of the Indian automobile industry through the utilization of the assets turnover ratio and the identification of the contributing factors. The study's results suggest that the ratios of asset utilization exhibit a fluctuating pattern due to factors such as sales rates, market conditions, pricing policies, government policies, and competition.

Dharmaraj Arumugam (2016) An analysis has been conducted to identify the factors that determine profitability in the Indian automobile industry. According to a study conducted by a researcher, the Indian automobile industry witnessed a growth of 14.89% in exports as compared to the corresponding period of the previous year. In order to achieve global standards in terms of cost and manufacturing, prominent domestic companies have entered into more than 200 technical cooperation agreements with international firms. The objective of this paper is to measure profitability and identify the effects of various factors on profitability in the Indian automobile industry. The study involved the selection of 16 companies and the analysis of 21 variables using multiple correlation and multiple regression techniques. The study's primary discoveries indicate that the Indian automobile industry exhibits a significant reliance on its operating ratio. Dave (2018) An empirical study has been conducted on the liquidity analysis of selected automobile companies in India. The primary focus of this study pertains to the production of automobiles, including cars, two- and three-wheelers, and heavy vehicles. The present study undertook an analysis and interpretation of the growth of the automobile industry. The researcher's focus was on the liquidity of selected car and heavy motors manufacturing units, which were chosen using simple random sampling techniques. The primary discovery of the investigation was that the yearly-based current and quick ratios exhibited conformity with established norms, whereas the unit-based ratio demonstrated nonconformity with established norms throughout the duration of the study.

Research Gap

To fill in the blanks between prior studies and the present one, researchers use research gaps. In this research, the authors (Vijayakumar, 2012) analyzed a technical evaluation of the possibilities for lowering emissions and fuel consumption in India's fleet of two- and three-wheeled vehicles. There is a dearth of research into issues of profitability and liquidity in the two- and three-wheeled auto sector, despite the fact that numerous empirical studies have been conducted on the profitability and liquidity of Indian automobile firms (Dharmaraj Arumugam) and the Indian automobile industry more generally (Dave).

The identification of a research gap is a valuable tool for researchers to discern the disparity between prior investigations and the current study. The present study aims to address the gap in literature regarding the profitability and liquidity of the two and three-wheeler sector of the Indian automobile industry. Prior research conducted by Narayan V. Iyer (2013) analyzed the technical assessment of emission and fuel consumption reduction potential, while Vijayakumar (2012) identified assets utilization and firm profitability in Indian automobile firms. Additionally, Dharmaraj Arumugam (2016) analyzed factors determining profitability in the Indian automobile industry, and Dave (2018) conducted an empirical study of liquidity analysis in selected automobile companies of India. However, there is a dearth of research on the profitability and liquidity of the two and three-wheeler sector, which this study aims to address.

Methods

The purpose of this study is to accomplish the following goals: (1) To evaluate the profitability of Hero Motocorp, Bajaj Auto, and Tvs Motor during the study period; (2) To assess the liquidity of Hero Motocorp, Bajaj Auto, and Tvs Motor during the study period; and (3) To determine which of the selected companies has the highest profitability and liquidity.

Time Spent Conducting Research: The investigation was carried out over a period of five years, beginning in 2011–12 and ending in 2018–19.

The boundaries of the study's focus will be established. Within the realm of automobiles, two-wheelers, and three-wheelers, the purpose of this research is to evaluate the levels of profitability and liquidity enjoyed by a certain set of businesses. This is an example of something that comes under the heading of functional scope.

The geographical reach of a selection of Indian businesses, namely Hero MotoCorp, Bajaj Auto, and TVS Motor, is the subject of the current research project. These businesses all compete in the Indian market. As a result, the geographical requirement for this study inquiry is the whole of the Indian subcontinent.

Hypotheses

There is no statistically significant difference in the profitability ratios of chosen organizations, namely the operating profit margin ratio, the gross profit margin ratio, the net profit margin ratio, and the return on capital employed ratio, according to the null hypothesis, which states that there does not exist such a difference. The assumption behind the null hypothesis is that the Liquidity Ratio, which is comprised of the Current Ratio, Quick Ratio, Inventory Turnover Ratio, and Debtors Turnover Ratio, and a set of selected businesses do not differ from one another in a manner that can be considered statistically significant.

Selection of Samples

The sample was chosen using the random sampling technique, which falls under the category of probability sampling techniques. The lottery method was employed for the selection of the

sample. The process of gathering information or data. The research primarily relies on secondary data sourced from the annual reports of various entities. The process of analyzing and interpreting data. The data that was gathered has been meticulously edited, categorized, and organized into tables that align with the specific objectives and hypotheses of the study. The researcher utilized the Anova test in the present study, deeming it suitable at a significance level of 5%. The present study advocates for the utilization of ratio analysis as an accounting tool and Anova as a statistical tool.

Results and Discussion

Table 1. Various Ratios of Profitability and Liquidity Ratios

PROFITAILITY RATIOS						
	Operating Profit Margin Ratio			Gross Profit Margin Ratio		
Years	Hero Moto	Bajaj Auto	TVS Moto.	Hero Moto	Bajaj Auto	TVS Moto.
2011-12	15.34	19.04	6.58	10.69	18.3	4.93
2012-13	13.81	18.17	5.78	9.01	17.35	3.94
2013-14	14	20.37	6	9.62	19.48	4.35
2014-15	12.84	19.04	5.98	10.88	17.81	4.46
2015-16	15.54	21.17	7.29	14	19.81	5.16
2016-17	16.26	20.31	7.06	14.53	18.9	4.69
2017-18	16.38	19	7.46	14.65	17.75	5.22
2018-19	14.65	16.46	7.87	12.86	15.59	5.67
Average	14.8525	19.195	6.7525	12.03	18.12375	4.8025

	Net Profit Margin Ratio			Return on Capital Employed		
Years	Hero Moto	Bajaj Auto	TVS Moto.	Hero Moto	Bajaj Auto	TVS Moto.
2011-12	10.08	15.38	3.49	54.44	68.19	19.81
2012-13	8.91	15.21	1.64	47.86	53.51	17.08
2013-14	8.34	16.09	3.28	51.41	47.92	19.91
2014-15	8.64	13.01	3.44	53.42	41.01	18.85
2015-16	10.95	17.39	4.4	55.34	41.82	24.94
2016-17	11.84	17.58	4.59	46.13	31.11	21.25
2017-18	11.47	16.16	4.37	44.61	30.25	23.87
2018-19	10.05	15.45	3.68	39.03	29.22	22.04
Average	10.035	15.78375	3.61125	49.03	42.87875	20.96875

LIQUIDITY RATIOS						
	Current Ratio			Quick Ratio		
Years	Hero Moto	Bajaj Auto	TVS Moto.	Hero Moto	Bajaj Auto	TVS Moto.
2011-12	0.49	0.95	0.71	0.31	0.81	0.44
2012-13	0.67	0.88	0.85	0.52	0.74	0.51
2013-14	0.65	0.8	0.87	0.47	0.67	0.57
2014-15	0.94	0.89	0.87	0.72	0.72	0.66
2015-16	0.83	1.27	0.72	0.67	1.05	0.58
2016-17	0.86	1.1	0.71	0.72	0.9	0.54
2017-18	0.85	0.94	0.66	0.69	0.77	0.51
2018-19	1.36	1.14	0.65	1.14	0.97	0.56
Average	0.83125	0.99625	0.755	0.655	0.82875	0.5462

	Inventory Turnover Ratio			Debtors Turnover Ratio		
Years	Hero Moto	Bajaj Auto	TVS Moto.	Hero Moto	Bajaj Auto	TVS Moto.
2011-12	37.35	30.18	12.19	117.05	49.9	28.24
2012-13	40.3	33.2	15.17	50.72	33.6	26.43
2013-14	40.56	33.08	15.78	31.88	25.77	25.09
2014-15	35.93	27.66	13.19	23.88	28.57	24.1

2015-16	45.85	33.21	17.36	21.4	31.48	20.53
2016-17	47.04	31.7	13.64	20.04	26.05	18.64
2017-18	39.91	34.42	16.04	20.92	20.58	17.88
2018-19	31.38	31.46	15.49	15.5	17.93	15.29
Average	39.79	31.86375	14.8575	37.67375	29.235	22.025

Source: Calculated with Annul reports from selected companies

The table presented displays the profitability and liquidity ratios of a number of chosen companies. The selection of appropriate ratios for analysis and interpretation of financial performance is crucial. In the case of profitability, ratios such as operating profit margin, gross profit margin, net profit margin, and return on capital employed are recommended. For liquidity analysis, the current ratio, quick ratio, inventory turnover ratio, and debtor turnover ratio are deemed suitable. Throughout the study period, the selected companies exhibited a fluctuating trend in their operating profit margin ratio. In the fiscal years 2015-16 and 2012-13, Bajaj Auto reported the highest operating profit margin ratio of 21.17%, while TVS Motor reported the lowest ratio of 5.78%.

The study period revealed that Hero Motocorps, Bajaj Auto, and TVS Motor had average ratios of 14.85%, 19.19%, and 6.75%, respectively. The gross profit margin serves as an indicator of the operational efficiency of a business organization. Bajaj Auto and TVS Motor exhibited the highest and lowest ratios, respectively, with a maximum of 19.81% and a minimum of 3.94%. The chosen companies exhibit a fluctuating trend from 2011-12 to 2018-19. The Hero Motocorps, Bajaj Auto, and TVS Motors had average gross profit margin ratios of 12.3%, 18.12%, and 4.81%, respectively. The net profit margin ratio is a crucial metric for evaluating the profitability of a business organization (Cobham & Janský, 2019). The selected companies exhibited an average net profit margin ratio of 10.03%, 15.78%, and 3.61%.

Baja Auto and TVS Motor exhibited the highest and lowest ratios of 17.58% and 1.64%, respectively. The study period revealed that certain companies experienced fluctuations in their net profit margin ratios. Bajaj Auto demonstrated a higher average net profit margin ratio of 15.78%, followed by Hero Motocorp with an average ratio of 10.035%. In contrast, Tvs Motor exhibited a lower average ratio of 3.61% during the study period. The return on capital employed is a metric used by business organizations to measure the profitability generated by their capital employed in the business. This metric is also commonly referred to as return on business investments. The aforementioned companies, namely Hero Motocorps, Bajaj Auto, and TVS Motor, have exhibited varying trends in their performance. Specifically, Hero Motocorps and Bajaj Auto have demonstrated a decline in their respective trends, while TVS Motor has shown an upward trend (Kanagavalli & Devi, 2018). In the fiscal year 2012-13, Bajaj Auto exhibited a higher return on capital employed of 68.19%, while TVS Motors displayed a comparatively lower return on capital employed of 17.08%. The companies Hero Motocorps, Bajaj Auto, and TVS Motor have reported average returns on capital employed of 49.03%, 42.87%, and 20.96%, respectively.

The present study employs liquidity analysis techniques, specifically the current ratio, quick ratio, inventory turnover ratio, and debtor turnover ratio, to evaluate a subset of companies over the period spanning from 2011-12 to 2017-18 (Sreegeetha & Revathi, 2022). The conventional current ratio is 2:1, signifying that current assets should be twice the amount of current liabilities. The selected companies, namely Hero Motocorps, Bajaj Auto, and TVS Motor, exhibited an average current ratio of 0.83:1, 0.99:1, and 0.75:1, respectively, for the period spanning from 2011-12 to 2018-19. In the fiscal year 2018-19 and 2011-12, Hero Motocorps exhibited a higher current ratio of 1.36:1 and a lower ratio of 0.49, respectively. During the study period, Hero Motocorps demonstrated an upward trend, whereas Bajaj Auto and TVS Motor exhibited a fluctuating trend. The customary quick ratio for business entities is 1:1,

denoting the presence of comparable quick assets in relation to quick liabilities. During the study period of 2018-19, Hero Motor's quick ratio was observed to be 1.14:1, indicating a higher value that satisfied the standard ratio. In the fiscal year of 2015-16, Bajaj Auto successfully met the standard ratio with a ratio of 1.05:1. However, during the study period, TVS Motor failed to meet the standard ratio in any given year. The selected companies, namely Hero Motocorps, Bajaj Auto, and TVS Motors, exhibited an average quick ratio of 0.65:1, 0.82:1, and 0.54:1, respectively. The inventory turnover ratio is a metric that denotes the frequency with which inventory is transformed into sales (Radasanu, 2016). The term "stock turnover ratio" is also commonly used. The selected companies exhibited an average inventory turnover ratio of 39.79, 31.86, and 14.85 times for Hero Motocorps, Bajaj Auto, and TVS Motors, respectively. The trend of the inventory turnover ratio was found to be fluctuating for the selected years. The debtor turnover ratio is a metric that reflects the frequency with which debtors are transformed into credit sales (Kozarević et al., 2019). The selected companies, namely Hero Motocorps, Bajaj Auto, and TVS Motors, exhibited debtor turnover ratios of 37.67, 29.23, and 22.05 times, respectively. During the study period, Hero Motocorps and the selected companies exhibited a fluctuating trend, with the higher ratio being 117.05 and the lower ratio being 15.5.

Hypotheses Using One Way Anova

Table 2. Anova Test for Selected Ratios

Sr. No.	Profitability and Liquidity Ratios	*p – value*	Accepted or Rejected H_0
1.	Operating profit margin ratio	7.91E-15	Rejected
2.	Gross profit Margin ratio	4.17E-13	Rejected
3.	Net Profit Margin ratio	3.54E-14	Rejected
4.	Return on capital employed ratio	4.06E-06	Rejected
5.	Current ratio	0.044	Rejected
6.	Quick ratio	0.0086	Rejected
7.	Inventory turnover ratio	4.36E-12	Rejected
8.	Debtors turnover ratio	0.3321	Accepted

Source: Calculated from MS Excel

The table presented above displays the results of a one-way ANOVA analysis conducted on a set of selected ratios. The Anova test was conducted at a significance level of 5%. The results indicate that all hypotheses, except for the Debtors turnover ratio, were rejected, suggesting a significant difference between the selected ratios. However, there was no statistical evidence to support a significant difference in the Debtor turnover ratio. Alternatively, it can be inferred that the null hypothesis was not rejected, indicating that there is no significant difference in the Debtors turnover ratio.

Conclusion

The analysis of the operating and gross profit margin ratios of the selected companies reveals that Bajaj Auto demonstrates superior operating efficiency when compared to Hero Motocorps and TVS Motor. This is evidenced by the fact that the average ratio of Bajaj Auto is higher than that of the other two companies.

It is evident that an increase in operating efficiency results in a corresponding increase in the net profitability of a company. Bajaj Auto demonstrated a superior net profit ratio, while Hero Motocorps possessed the second highest ratio at 10.03%. In contrast, TVS Motor exhibited comparatively lower profitability when compared to the aforementioned companies.

The study period revealed that Hero Motorcorps exhibited a higher average return on capital employed of 49.03% compared to Bajaj Auto's average of 42.87% and TVS Motors' average of 20.96%.

During the study period, it was observed that no single company was able to meet the standard current ratio of 2:1. However, it was noted that Hero Motors was able to satisfy the standard quick ratio of 1:1 in the year 2018-19.

The inventory turnover ratio and debtors' turnover ratio of Hero Motorcorps suggest a favorable position in both metrics. Baja Auto also exhibits a similar performance, while TVS shows a comparatively weaker performance in terms of inventory and debtor turnover ratios.

References

Abdulkareem, A. M., & Nagvadiya, B. R. (2021). An Analytical Study of Profitability and Liquidity Postions of Selected Life Insurance Companies in India. *International Journal of Finance and Banking Research*, *7*(2), 28. 10.11648/j.ijfbr.20210702.14.

Batchimeg, B. (2017). Financial performance determinants of organizations: The case of Mongolian companies. *Journal of competitiveness*, *9*(3), 22-33. 10.7441/joc.2017.03.02

Cobham, A., & Janský, P. (2019). Measuring misalignment: The location of US multinationals' economic activity versus the location of their profits. *Development Policy Review*, *37*(1), 91-110. https://doi.org/10.1111/dpr.12315

Dave, R. C. (2018). An Empirical study of liquidity analysis of selected automobile companies of India . *International Journal of Research and Analytical Reviews* , 276-279.

Dharmaraj Arumugam, A. K. (2016). Factors Determining profitability in Indian automobile industry . *Indian journal of commerce and management studies* , 64-69.

Kahraman, A., & Kazançoğlu, İ. (2019). Understanding consumers' purchase intentions toward natural-claimed products: A qualitative research in personal care products. *Business Strategy and the Environment*, *28*(6), 1218-1233. https://doi.org/10.1002/bse.2312

Kanagavalli, G., & Devi, R. S. (2018). Financial performance of selected automobile companies. *International Journal of Management (IJM)*, *9*(4), 14-23.

Kothari, C. (2004). *Research Methodology* . New Delhi : New Age International (P) Limited .

Kozarević, E., Delić, A., & Omerović, M. (2019). The role of controlling credit sales and receivables in the wood processing companies of Tuzla Canton, Bosnia and Herzegovina. *International Journal of Industrial Engineering and Management*, *10*(1), 93. http://doi.org/10.24867/IJIEM-2019-1-093

Kumar, S. a. (1970). *Financial analysis for business decisions* . New Delhi : Allied Publishers.

Madanhire, I., & Mbohwa, C. (2016). Enterprise resource planning (ERP) in improving operational efficiency: Case study. *Procedia CIRP*, *40*, 225-229. https://doi.org/10.1016/j.procir.2016.01.10

Narayan V. Iyer, F. P. (2013). Technical Assessment of emission and fuel consumption reduction potential from two and three wheelers in India. *SAE International Journal*, 11.

Radasanu, A. C. (2016). Inventory management, service level and safety stock. *Journal of Public Administration, Finance and Law*, (09), 145-153.

Safiud, M. M. (2016). Liquidity and profitability performance analysis of selected telecom companies . *Anveshana's International journal or research in regional studies, law, social science, journalism and management practices* , 365 - 376 .

Saragih, J., Tarigan, A., Silalahi, E. F., Wardati, J., & Pratama, I. (2020). Supply chain operational capability and supply chain operational performance: Does the supply chain management and supply chain integration matters. *Int. J Sup. Chain. Mgt Vol*, *9*(4), 1222-1229.

Saxena, S. N. (2019). Two-and three-wheeler electric vehicles in India—Outlook 2019. *Int. J. Electr. Eng. Technol*, *9*, 13.

Sehgal, A. S. (2007). *Accounting for Management* . New Delhi : Taxmann Publication .

Sreegeetha, M. T., & Revathi, P. (2022). Liquidity And Profitability Analysis Of Select Electrical Machinery Companies In India. *Central European Management Journal*, *30*(4), 2381-2387. https://doi.org/10.57030/23364890.cemj.30.4.253

Vijayakumar, A. (2012). The Assets Utilisation and Firm's profitability: Empiical Evidence from Indian Automobile Firms . *International Journal of Financial Management* , 32-44.

Widyasti, I. G. A. V., & Putri, I. G. A. M. A. D. (2021). The effect of profitability, liquidity, leverage, free cash flow, and good corporate governance on dividend policies (empirical study on manufacturing companies listed in indonesia stock exchange 2017-2019). *American Journal of Humanities and Social Sciences Research (AJHSSR)*, *5*(1), 269-278.