ORIGINAL RESEARCH PAPER

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THE EMPIRICAL STUDY OF FINANCIAL PERFORMANCE OF AUTOMOBILE INDUSTRY IN INDIA"

KEY WORDS: Automobile, financial performance, liquidity, Activity ratio

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ABSTRACT

The automobile industry is an indicator of economic development of country. It is also a technological intensive sector because it demands high performance and quality parts in India; also the automobile sector occupies a prominent place due to its deep forward and backward linkages with many key segments of the economy. This sector has a strong multiplier effect and is capable of being the driver of economic growth. The financial performance of the automobile sector can be correlated to the health of the Indian economy.The prime objective of this paper is to analyses the financial performance measures with liquidity and activity ratios of selected automobile company in India.

INTRODUCTION

A well-developed transportation system plays a key role in the development of an economy, and India is no exception to it. Automobile is one of the largest industries in the global market. The Indian automobile sector has emerged as a 'sunrise sector' in the India. India is emerging as one of the world's fastest growing passenger car markets. Second, largest two-wheeler manufacturer. It is also home for the largest motorcycle manufacturer and fifth largest commercial vehicle manufacturer. India is the largest base to export compact cars to Europe. Moreover, hybrid and electronic vehicles are new developments on the automobile canvas and India is one of the key markets for them. It has been recognized as one of the drivers of economic growth and the domestic automobile industry is believed to be the barometer of the economy.

REVIEW OF LITERATURE

Ray (2012), this study tries to evaluate the performance of Indian automobile industry in terms of various financial indicators, sales trend, production trend, export trend etc. for the period of 2003-04 to2009-10.The result suggests that the automobile industry has been passing through turbulent phases characterized by enhanced debt burden, low utilization of assets, and above all, huge liquidity crunch . The key to success in the industry is to improve labour productivity, labour flexibility, and capital efficiency.

Dr. Lalitkumar R. Chauhan (2014) "A Comparative Study of Financial Performance of Selected Companies of Automobile Industry of India" In this study profile of the selected companies of automobile industries in India, Analysis of Profitability, Capital Structure, Working Capital and Activity of the Automobile industry in India.

OBJECTIVES OF THE STUDY

- To understand the concept of Financial performance
- To evaluate the liquidity Ratio of the selected Automobile sector in India during the period of study.
- To evaluate the Activity Ratio of the selected Automobile sector in India during the period of study.
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PERIOD OF THE STUDY

The present study is covered for a period of the 5 (Five) accounting years ending to 31-3-2017. (From 2012-13 to 2016-17

SOURCE OF DATA

The researcher uses secondary data collection for his convenience. Researcher gives more emphases on secondary data because the researcher undertakes research in Financial Performance practices for which researcher needs all Annual reports and records from the selected companies, which are in nature of secondary data.

Selected Automobile Companies For Research Work

Sr. No.	Selected Automobile Companies for Research Work	Production	Date of in Corporation
1.	ASHOKLEYAND LIMITED	LCVs, MCVs, HCVs	1948
2.	TATA MOTORS LIMITED	LCVs, MCVs, HCVs	1945
3.	SWARAJ MAZDA LIMITED	LCVs, MCVs, HCVs	1983
4.	FORCE MOTORS LIMITED	LCVs, MCVs, HCVs	1958
5.	MAHINDRA & MAHINDRA LTD	LCVs, MCVs, HCVs	1945

HYPOTHESIS OF THE STUDY

Following hypothesis have been developed for fulfill objective of to examine Working Capital Ratios (Liquidity) & Activity ratios of the selected Automobile industry in India during the period of study.

- **NULL HYPOTHESIS (H0):**

1. H0: There is no significant difference in current ratio of selected Automobile companies during the study period.
2. H0: There is no significant difference in quick ratio of selected Automobile companies during the study period.
3. H0: There is no significant difference in investment turnover ratio of selected Automobile companies during the period of study.
4. H0: There is no significant difference in fixed assets turnover ratio of selected Automobile companies during the period of study.
5. H0: There is no significant difference in total assets turnover ratio of selected Automobile companies during the period of study.
6. H0: There is no significant difference in Assets turnover ratio of selected Automobile companies during the period of study.

ALTERNATIVE HYPOTHESIS (H1):

1. H1: There is significant difference in current ratio of selected Automobile companies during the period of study.
2. H1: There is significant difference in quick ratio of selected Automobile companies during the period of study.
3. H1: There is significant difference in investment turnover ratio of selected Automobile companies during the period of study.
4. H1: There is significant difference in fixed assets turnover ratio of selected Automobile companies during the period of study.
5. H1: There is significant difference in total assets turnover ratio of selected Automobile companies during the period of study.
6. H0: There is significant difference in Assets turnover ratio of selected Automobile companies during the period of study.

RESEARCH METHODOLOGY

For this study researcher is using secondary data as a source of information for thus research e.g. the Annual Reports, websites and other publications. The following tool & techniques have been classification in the study.

(A) Accounting Techniques (B) Statistical Techniques

ACCOUNTING TECHNIQUES:

- Ratio Analysis

STATISTICAL TECHNIQUES:

The statistical techniques, which are used for the analysis, are as under:

- Arithmetic Mean
- The Standard Deviation
- Co-Efficient of Variation:
- One-way Analysis of Variance Test (ANOVA)

1. CURRENT RATIO

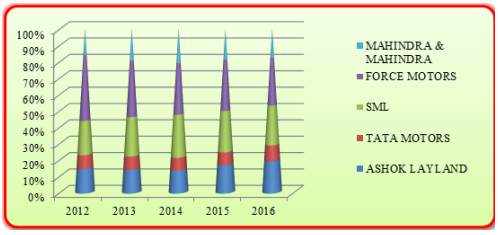
$$\text{Current ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Table -1 Current Ratio (%)

YEAR	COMPANY NAME				
	ALL	TML	SML	FML	MML
2012-2013	0.91	0.5	1.25	2.43	0.99
2013-2014	0.73	0.42	1.22	1.75	1.02
2014-2015	0.78	0.43	1.45	1.75	1.19
2015-2016	0.94	0.42	1.36	1.7	1.05
2016-2017	1.08	0.53	1.33	1.6	1.01
AVERAGE	0.888	0.46	1.322	1.846	1.052
S.D.	0.13846	0.05148	0.09149	0.33216	0.08012
C.V.	15.5919	11.1909	6.9204	17.9935	7.61644
MIN	0.73	0.42	1.22	1.6	0.99
MAX	1.08	0.53	1.45	2.43	1.19

(Sources: Annual Reports and Accounts from 2012-2013 to 2016-2017)

Graph No-1 Current Ratio



- **Level of Significance: 5%**

Table No-1.1 Current Ratio (%) One Way Anova Test

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	5.308616	4	1.327154	45.15972506	9.68918E-10	2.866081
Within Groups	0.58776	20	0.029388			
Total	5.896376	24				

- Degree of freedom = 25-1=24
- Table Value of 'F' =2.86
- vCalculate Value of 'F' = 45.15

Fcal > Ftab
45.15 > 2.86
Fcal > Ftab

Table 1.1 indicates the calculate value of 'F' is 45.15972506 and the table value of 'F' at 5% levels of significance is 2.86. So, the calculate value 'F' which is more than the table value. It indicates that the Null Hypothesis is rejected and Alternate Hypothesis is accepted. So, it indicates that there is significant difference in Current Ratio of selected automobile sector under study for the period.

2. QUICK RATIO:

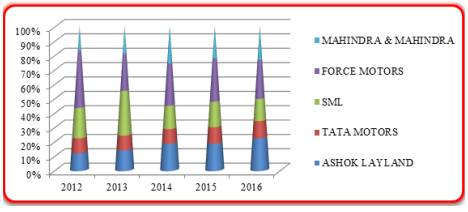
$$\text{QUICK RATIO} = \frac{\text{Quick Assets}}{\text{Quick Liabilities}}$$

Table No-2 Current Ratio (%)

YEAR	COMPANY NAME				
	ALL	TML	SML	FML	MML
2012-2013	0.51	0.43	0.87	1.64	0.72
2013-2014	0.56	0.4	1.2	1	0.77
2014-2015	0.67	0.36	0.57	1.04	0.93
2015-2016	0.69	0.42	0.64	1.09	0.84
2016-2017	0.78	0.41	0.53	0.92	0.83
AVERAGE	0.642	0.404	0.762	1.138	0.818
S.D.	0.10756	0.02702	0.27797	0.28744	0.07918
C.V.	16.7545	6.68775	36.4796	25.2581	9.68011
MIN	0.51	0.36	0.53	0.92	0.72
MAX	0.78	0.43	1.2	1.64	0.93

(Sources: Annual Reports and Accounts from 2012-2013 to 2016-2017)

Graph No-2 Quick Ratio



- **Level of Significance: 5%**

Table No 2.1 Quick Ratio (%) One Way Anova Test

ANOVA						
Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	1.433264	4	0.358316	10.03911	0.000127	2.866081
Within Groups	0.71384	20	0.035692			
Total	2.147104	24				

- Degree of freedom = 25-1=24
- Table Value of 'F' =2.86
- Calculate Value of 'F' = 10.03

Fcal > Ftab
10.03 > 2.86
Fcal > Ftab

Table No-2.1 indicates the calculate value of 'F' is 10.03911 and the table value of 'F' at 5% levels of significance is 2.86. So, the calculate value 'F' which is more than the table value. It indicates that the Null Hypothesis is rejected and Alternate Hypothesis is accepted. So, it indicates that there is significant difference in Quick Ratio of selected automobile sector under study for the period.

3. Investment Turnover Ratio

$$\text{Investment Turnover Ratio} = \frac{\text{Net sales}}{\text{Shareholders' equity + Debt outstanding}}$$

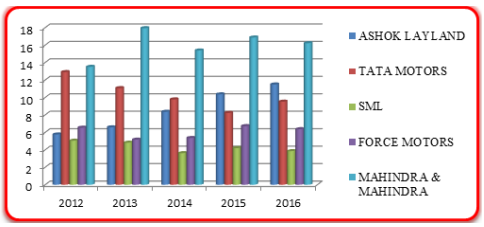
Table- 3 Investment Turnover Ratios

YEAR	COMPANY NAME				
	ALL	TML	SML	FML	MML

2012-2013	5.76	12.91	5.05	6.54	13.51
2013-2014	6.58	11.07	4.82	5.17	17.94
2014-2015	8.36	9.78	3.62	5.36	15.38
2015-2016	10.36	8.23	4.2	6.72	16.87
2016-2017	11.49	9.52	3.85	6.37	16.22
AVERAGE	8.51	10.302	4.308	6.032	15.984
S.D.	2.42965	1.77262	0.6139	0.71419	1.66974
C.V.	28.5505	17.2065	14.2502	11.8401	10.4463
MIN	5.76	8.23	3.62	5.17	13.51
MAX	11.49	12.91	5.05	6.72	17.94

(Sources: Annual Reports and Accounts from 2012-2013 to 2016-2017

Graph No-3 Investments Turnover Ratio



The above mentioned Table No-3 and Graph No-3 the indicated a fluctuating trends of the Investment Turnover Ratio of all selected companies of Automobile sector in India for the five years from 2012-2013 to 2016.-2017.

- **Level of Significance: 5%**

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	407.6587	4	101.914686	40.05973347	2.7991E-09	2.866081402
Within Groups	50.88136	20	2.544068			
Total	458.5401	24				

- Degree of freedom = 25-1=24
- Table Value of 'F' =2.86
- Calculate Value of 'F' = 40.05

Fcal > Ftab
40.05 > 2.86
Fcal > Ftab

Table 3.1 indicates the calculate value of 'F' is 40.05973347 and the table value of 'F' at 5% levels of significance is 2.86. So, the calculate value 'F' which is more than the table value. It indicates that the Null Hypothesis is rejected and Alternate Hypothesis is accepted. So, it indicates that there is significant difference in Investment Turnover Ratio of selected automobile sector under study for the period.

4. Fixed Assets Turnover Ratio:

$$\text{Fixed assets turnover ratio} = \frac{\text{Net sales}}{\text{Average fixed assets}}$$

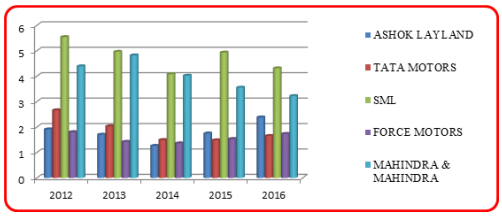
The Fixed Assets Turnover ratio of selected companies of Automobile sector in India is given in the Table No-4 as follows:

Table No-4 Fixed Assets Turnover Ratio

YEAR	COMPANY NAME				
	ALL	**TML**	**SML**	**FML**	**MML**
2012-2013	1.91	2.66	5.54	1.8	4.39
2013-2014	1.7	2.03	4.96	1.42	4.82
2014-2015	1.26	1.49	4.08	1.36	4.02
2015-2016	1.75	1.48	4.93	1.53	3.55
2016-2017	2.38	1.65	4.31	1.73	3.22
AVERAGE	1.8	1.862	4.764	1.568	4
S.D.	0.40392	0.49857	0.57925	0.19149	0.63949
C.V.	22.4399	26.7759	12.1589	12.2126	15.9873
MIN	1.26	1.48	4.08	1.36	3.22
MAX	2.38	2.66	5.54	1.8	4.82

(Sources: Annual Reports and Accounts from 2012-2013 to 2016-2017)

Graph No-4 Fixed Asset Turnover Ratio



The above mentioned Table No-4 and Graph No-4 the indicated a fluctuating trends of the Fixed Assets Turnover Ratio of all selected companies of Automobile sector in India for the five years from 2012-2013 to 2016.-2017.

- **Level of Significance: 5%**

Table No-4.1 Fixed Assets Turnover Ratio (%) One Way Anova Test

ANOVA						
Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	43.47478	4	10.868696	45.55691735	8.96133E-10	2.8660814
Within Groups	4.77148	20	0.238574			
Total	48.24626	24				

- Degree of freedom = 25-1=24
- Table Value of 'F' =2.86
- Calculate Value of 'F' = 45.55

Fcal > Ftab
45.55 > 2.86
Fcal > Ftab

Table 4.1 indicates the calculate value of 'F' is 45.55691735 and the table value of 'F' at 5% levels of significance is 2.86. So, the calculate value 'F' which is more than the table value. It indicates that the Null Hypothesis is rejected and Alternate Hypothesis is accepted. So, it indicates that there is significant difference in Fixed Assets Turnover Ratio of selected automobile sector under study for the period.

5. Total Asset Turnover Ratio:
Formula: Total asset turnover = Net sales ÷ Total assets

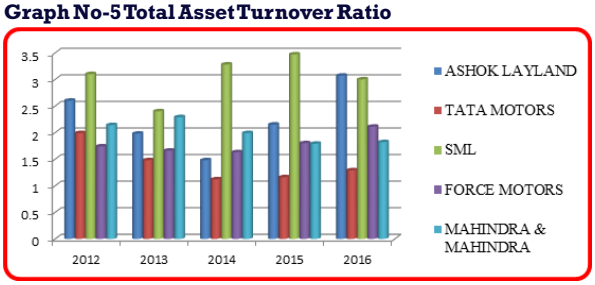
The Total Asset Turnover Ratio of selected companies of Automobile sector in India is given in the Table No-5 as follows:

Table No-5 Total Assets Turnover Ratio

YEAR	COMPANY NAME				
	ALL	**TML**	**SML**	**FML**	**MML**
2012-2013	2.6	1.99	3.1	1.74	2.14
2013-2014	1.98	1.48	2.4	1.66	2.29
2014-2015	1.48	1.12	3.28	1.63	1.99
2015-2016	2.15	1.16	3.47	1.8	1.79
2016-2017	3.07	1.29	3	2.11	1.82
AVERAGE	2.256	1.408	3.05	1.788	2.006
S.D.	0.60632	0.35436	0.40522	0.19202	0.2122
C.V.	26.8761	25.1675	13.2858	10.7391	10.5784
MIN	1.48	1.12	2.4	1.63	1.79
MAX	3.07	1.99	3.47	2.11	2.29

(Sources: Annual Reports and Accounts from 2012-2013 to 2016-2017)

Graph No-5 Total Asset Turnover Ratio



The above mentioned Table 5 and Graph 5 the indicated a fluctuating trends of the Total Assets Turnover Ratio of all selected companies of Automobile sector in India for the five years from 2012-2013 to 2016.-2017.

- **Level of Significance: 5%**

Table No-5.1 Total Assets Turnover Ratio (%) One Way Anova Test

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	7.559336	4	1.889834	12.781 23901	2.5308 1E-05	2.8660 81
Within Groups	2.9572	20	0.14786			
Total	10.51654	24				

- Degree of freedom = 25-1=24
- Table Value of 'F' =2.86
- Calculate Value of 'F' = 12.78

Fcal > Ftab
12.78 > 2.86
Fcal > Ftab

Table 5.1 indicates the calculate value of 'F' is 12.78123901 and the table value of 'F' at 5% levels of significance is 2.86. So, the calculate value 'F' which is more than the table value. It indicates that the Null Hypothesis is rejected and Alternate Hypothesis is accepted. So, it indicates that there is significant difference in Total Assets Turnover Ratio of selected automobile sector under study for the period.

6. Asset Turnover Ratio:
Formula:

$$\text{Asset Turnover Ratio} = \frac{\text{Net Sales}}{\text{Average Total Assets}}$$

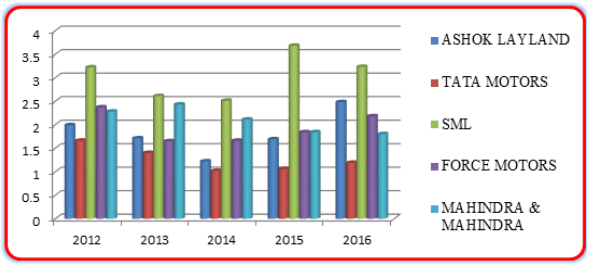
The Asset Turnover Ratio of selected companies of Automobile sector in India is given in the Table No-6 as follows:

Table No-6 Asset Turnover Ratio

YEAR	COMPANY NAME				
	ALL	TML	SML	FML	MML
2012-2013	1.99	1.66	3.22	2.37	2.28
2013-2014	1.71	1.4	2.61	1.65	2.43
2014-2015	1.22	1.02	2.51	1.66	2.11
2015-2016	1.69	1.06	3.68	1.84	1.84
2016-2017	2.48	1.19	3.23	2.18	1.8
AVERAGE	1.818	1.266	3.05	1.94	2.092
S.D.	0.46192	0.26548	0.48564	0.3221	0.27326
C.V.	25.4081	20.97	15.9228	16.6032	13.0621
MIN	1.22	1.02	2.51	1.65	1.8
MAX	2.48	1.66	3.68	2.37	2.43

(Sources: Annual Reports and Accounts from 2012-2013 to 2016-2017)

Graph No-6 Asset Turnover Ratio



The above mentioned Table No-6and Graph No-6 the indicated a fluctuating trends of the Asset Turnover Ratio of all selected companies of Automobile sector in India for the five years from 2012-2013 to 2016.-2017.

- **Level of Significance: 5%**

Table No-6.1 Asset Turnover Ratio (%) One Way Anova Test

ANOVA						
Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	8.404664	4	2.101166	15.0487452	7.9169 E-06	2.8660 814
Within Groups	2.79248	20	0.139624			
Total	11.19714	24				

- Degree of freedom = 25-1=24
- Table Value of 'F' =2.86
- Calculate Value of 'F' = 15.04

Fcal > Ftab
15.04 > 2.86
Fcal > Ftab

Table No 6.1 indicates the calculate value of 'F' is 15.0487452 and the table value of 'F' at 5% levels of significance is 2.86. So, the calculate value 'F' which is more than the table value. It indicates that the Null Hypothesis is rejected and Alternate Hypothesis is accepted. So, it indicates that there is significant difference in Asset Turnover Ratio of selected automobile sector under study for the period.

CONCLUSION

"Analysis and Evaluation of Working Capital and Activity Ratios", describe that it's one of the important measurement of the financial efficiency of the business organization the performance of liquidity can be judged by investment in working capital, short-term creditors, and efficiency in working capital. While Activity and operational efficiency analysis is concerned with measuring the efficiency in assets management. Therefore, these analyses are also called analysis of assets utilization. In the present study there were six types of ratios was calculated i.e. Which are current ratio, quick ratio, and investment turnover ratio, fixed assets turnover ratio, total assets turnover ratio, Asset Turnover Ratio. All these ratios are used for measuring the performance of liquidity and activity operational efficiency of automobile companies.

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