

A Study of Cost and Sales Trend of Indian Passenger Vehicle Industry as Determinants of Profitability

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Abstract

Indian Passenger vehicle industry has a strong multiplier effect and is competent of being the driver of economic development of the country and hence it occupies a significant position in Indian economy. The passenger vehicle industry, like any other investment, needs to achieve profitability. An attempt to identify the difference between actual cost and expected cost as well as actual sales and expected sales of the selected players and make recommendations for the study sample to improve profitability has been made in the present study. The study found that there is significant difference between actual and trend values of the cost of goods, while there is significant difference between actual and trend values of the sales except M & M.

Keywords: Cost of goods, Profitability, Sales

Introduction

The Indian passenger vehicle market is expected to grow at a compounded annual growth rate of 12% over the next five years, reaching 3.75 million units in 2014 from current sales of 2.89 million units in FY09. While exports are expected to contribute with volumes of 1 million units, the balance of 2.75 million units is estimated from the domestic market. In India, considering the auto industry growth of 17% from FY03-08, one third of the total capacity (i.e. 0.83 million) was added during FY05-08. However, there was no growth (0.13%) in the market during 2009, resulting in excess capacity.

While the demand growth has been volatile on a year on year basis, over a 14 year period till 2008-09, the domestic passenger vehicle market has grown at a healthy CAGR of 12.6% to 1.6 million units. The demand has been driven by buoyant economic activity, growing middle class population, increasing average household income levels and improved availability of financing at competitive lending rates. The low level of passenger vehicle ownership in comparison to other

developing economies and, shortening vehicle ownership cycle, besides increasing penetration in rural markets also has supported growth.

Despite economic slowdown, the Indian automobile sector has shown high growth. Due to the economic sustainability, increasing living standards and purchasing powers of the Indian customers, automobile sector has a bright coming future. The Industry is recording increasing growth rate in sales, but still there are loop holes in the automobiles industry and these needs to be considered by the auto mobile industry to overcome (Shinde & Dubey, 2011). Innovative capability development in firms such as Tata Motors and Mahindra & Mahindra is influenced by managerial vision, collaboration and competing with MNC firms in domestic markets. Analysis also reveals that the nature of demand does shape innovation trajectories, however it also crucially points out that managerial vision and the nature of firm ownership play an equally significant role in harnessing innovation and growth (Kale, 2012).

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This study is organised as follows: the next section following the introduction discusses the literature review. The third section highlights the problem under investigation. Objectives are listed in the fourth section. The fifth section discusses study methodology. The sixth section provides details of the results and analysis of the available data and the final section presents the main findings, suggestions and conclusions.

Literature Review

Profits in the car sector depended on sales, capacity utilisation, product prices and factor prices. Price control had an adverse effect on profit in the car sector. Market share and the lagged investment were found significant at the firm level only but no significance was found at sector level. Significance of the market share and the lagged investment was not found in non-car sector (Agarwal, 1987).

When price controls were removed, no firms have made super normal profits using Tobin's square as a measure of profitability. Profitability was found to be explained by the age of the firms, vertical integration, diversification and industry policy dummy variable. Moreover, diversification, industry policy dummy variables, gross retained profits and expansion of capacities were divulged as significant determinants of the growth (Agarwal, 1999).

There is a strong relationship between brand image and each of the preference measures utilized in the study. Across this category, the brand with the greater market share yielded substantially higher levels of brand acceptability. In turn, the brand with the higher image in the category generated significantly greater preference (Kathiravana et al., 2010).

Consumer Behaviour consists of all human behaviour that goes in making purchase decisions. An understanding of the consumer behaviour enables a marketer to take marketing decisions which are compatible with its consumer needs. There are four major classes of consumer behaviour determinants and expectations, namely, cultural, socio-economic, personal and psychological. The socio-economic determinants of consumer behaviour consist of age, marital status, occupation, education, income, family size etc (Subadra & Murugesan, 2010).

Domestic sales and overseas sales revealed that production and domestic sales of Indian passenger vehicles industry increased as per expectation, while overseas sales thereof rose even better than anticipation. There was significant difference in the mean of Net Profit Margin and Return on Investment among the players as well as within the players during the study period (Mistry, 2011).

Profitability, taxation and earning retention have been found favourable to boost dividend pay-out ratio in Indian passenger vehicle industry; while liquidity and operating activities were two variables which affected dividend payment decision of Indian passenger vehicle industry adversely (Mistry, 2012).

In order to achieve a breakthrough, profit performance in a tight competitive environment and with the shadow of a never ending recession looming over, it is necessary to have a single heuristic approach to fight against the adversities of the market. In order to capitalize on the opportunities, the industry needs to develop or acquire technologies and capabilities to produce vehicles that meet future market needs (Imam et al., 2012).

The growth in the population of India and the increasing number of middle class consumers has attracted the attention of automobile manufacturers and marketers. The manufacturers and marketers who study the behaviour of consumers and cater to their needs will be successful. Consumer behaviour has a greater role to play in the LPG era of economic activities for which a necessary survey and research should be conducted in an efficient manner (Vidyavathi, 2012).

Online consumer behaviour is evolving and that automotive companies need to anticipate this evolution in order to be part of, or even influence the changes in the buying behaviour. Companies need to take a fresh look at their approach towards designing of websites. As they consider the potential market for online sales, they need to use cutting edge technology to maintain the quality of the content of their websites and make the websites user-friendly for ease of navigation which could possibly lead to increased customer satisfaction and enhanced long-term relations (Nataraj & Nagaraja, 2012a).

In the automotive industry, technical necessity, political sensitivities and market variation have kept final vehicle assembly, and by extension much of parts production, close to end markets. Powerful lead firms and industry associations, large-scale employment and relatively high rates of unionization, and the iconic status of motor vehicles in the minds of consumers (and policy-makers) in many countries increase the political clout of the automotive industry (Singh & Gupta, 2012).

The cost of quality places a fundamental role to make the product cost efficient and competitive. In absence of desired quality of the product, the total cost incurred in manufacture convert to scrap cost accounted as loss to the company. Keeping in view, various factors causing poor quality are highlighted in order to take preventive steps as well as control (Shukla & Agrawal, 2012).

Optimised collaboration can be achieved by having comprehensive specifications; clear definitions of tasks, targets and competencies; complete requirements management; risk sharing; and open organisation, IT, processes and communication. There is an urgent need for the OEMs to increase their value by collaboratively balancing all resources and optimizing the flow of goods, services, and information from the source to the end consumer. IT should play a pivotal role in enhancing the value of the automaker's preferred suppliers (Nataraj & Nagaraja, 2012b).

Manufacturers such as Ford, General Motors, Honda, Toyota, Suzuki, Hyundai, Renault, Mitsubishi, Benz, BMW, Volkswagen and Nissan set up their manufacturing units in India in joint venture with their Indian counterpart companies, by making use of the Foreign Direct Investment policy of the Government of India. These manufacturers started capturing the hearts of Indian car customers with their choice of technological and innovative product features, with quality and reliability. With the multiplicity of choices available to the Indian passenger car buyers, it drastically changed the way the car purchase scenario in India and particularly in the State of Kerala (Menon & Jagathy, 2012).

Need gap analysis provides vital information for finalizing the topics, methods and the resources needed for training. In reality, the gap analysis is not conducted in its actual spirit. The reports show that India is marching towards the economic super power status and the vast Indian consumer base with improved purchasing power is attracting the global automobile players to India. To sustain in this highly competitive market, Indian automobile industry should enhance the skills of Indian work force through trainings which is backed by a well-designed gap analysis (Joseph & Vijaylaxmi, 2012).

The kaizen event indicators i.e., Participation in Decision Making, Communication, and Respect for Top Management, Employee Involvement, Training & Education and Perceived Quality Performance that were most strongly related to each Sustainability outcome, were identified (Venkataiah & Sagi, 2012).

From the above literature review, it can be said that no in depth study has ever been done in Indian passenger vehicle industry as far as cost and sales trend as determinants of profitability is concerned. The present study attempts to examine cost and sales trend of Indian passenger vehicle industry as determinants of profitability.

The Problem Investigated

Indian Passenger vehicle industry has a strong multiplier effect

and is competent of being the driver of economic development of the country and hence it occupies a significant position in Indian economy. In the year 2009-10, the Indian automobile industry produced 29, 17,848 passenger and commercial vehicles and 1, 11, 31,982 two and three wheelers. The four wheelers include passenger cars, multi-utility vehicles, sports utility vehicles, light, medium and heavy commercial vehicles, etc. It produces a wide range of passenger cars, light, medium and heavy commercial vehicles, multi-utility vehicles such as jeeps, scooters, motorcycles, mopeds, three wheelers, tractors and what not. Passenger Vehicles segment during April-January 2010 grew at 25.21 percent over same period last year. Passenger Cars grew by 24.75 percent, Utility Vehicles grew by 21.95 percent and Multi Purpose Vehicles grew by 37.05 percent in this period. The passenger vehicle industry, like any other investment, needs to achieve profitability. The questions were:

1. What are the most important management methods being used by Indian Passenger Vehicle Industry in processes of cost and sales?
2. To what extent did an increase in the cost of raw material affect the cost as well as sales of the Indian Passenger Vehicle Industry?
3. Is there any difference between actual cost and expected cost as well as actual sales and expected sales?

Objectives of the Study

The present study has been carried out with the objectives:

1. To identify the actual reality of the extent in which following Indian Passenger Vehicle Players selected on the basis of performance, position, sales and paid up capital use the different management methods in the costs trend, sales trend for the period of 5 years i.e. 2004-05 to 2008-09:
 1. MarutiSuzuki India Limited
 2. Tata Motors Limited and
 3. Mahindra & Mahindra Limited
2. To identify the difference between actual cost and expected cost as well as actual sales and expected sales of the selected players.
3. To make recommendations for the study sample to improve profitability.

Research Methodology

The study is mainly based on secondary data collected from annual reports of companies. The number of the selected entities should not be considered as a limitation of the study because the sample accounts for 65% share in passenger car segment and 66% of share in utility vehicle segment of India's total turnover in 2008-09. The study period of 5 years i.e. 2004-

05 to 2008-09 should also not be considered as limitation because it was the time during which additional production capacity has been added by the players.

For the analysis of data, the technique of chi-square was used. The following hypotheses were tested:

H0 : There is no significant difference in the original and trend values of cost of goods sold in the selected passenger vehicle players in India.

H1 : There is significant difference in the original and trend values of cost of goods sold in the selected passenger vehicle players in India.

H0 : There is no significant difference in the original and trend values of Sales in the selected passenger vehicle players in India.

H1 : There is significant difference in the original and trend values of Sales in the selected passenger vehicle players in India.

Result and Analysis

Table 1: Computation of Trend Value of Cost of Goods Sold (Rs. In Crore)

| M & M | | | | | |
|---------|------------------------|--------|----------------------|----------------|---------------------------|
| Years | Cost of Goods Sold (Y) | X | X ² | XY | Trend Value (Yc = a + bx) |
| 2004-05 | 4755.89 | -2 | 4 | -9511.78 | 4716.24 |
| 2005-06 | 5893.91 | -1 | 1 | -5893.91 | 5971.42 |
| 2006-07 | 7064.76 | 0 | 0 | 0 | 7226.6 |
| 2007-08 | 8879.39 | 1 | 1 | 8879.39 | 8481.78 |
| 2008-09 | 9539.05 | 2 | 4 | 19078.1 | 9736.96 |
| N=5 | 6Y=36133 | 6X = 0 | 6X ² = 10 | 6XY = 12551.8 | |
| Maruti | | | | | |
| Years | Cost of Goods Sold (Y) | X | X ² | XY | Trend Value (Yc = a + bx) |
| 2004-05 | 8782.3 | -2 | 4 | -17564.6 | 7963.46 |
| 2005-06 | 9583.3 | -1 | 1 | -9583.3 | 10127.83 |
| 2006-07 | 11553.5 | 0 | 0 | 0 | 12292.2 |
| 2007-08 | 14292.6 | 1 | 1 | 14292.6 | 14456.57 |
| 2008-09 | 17249.5 | 2 | 4 | 34499 | 16620.94 |
| N=5 | 6Y=61461.2 | 6X = 0 | 6X ² = 10 | 6XY = 21643.7 | |
| Tata | | | | | |
| Years | Cost of Goods Sold (Y) | X | X ² | XY | Trend Value (Yc = a + bx) |
| 2004-05 | 12931.73 | -2 | 4 | -25863.5 | 13985.28 |
| 2005-06 | 15305.93 | -1 | 1 | -15305.9 | 16126.74 |
| 2006-07 | 20730.24 | 0 | 0 | 0 | 18268.2 |
| 2007-08 | 22161.95 | 1 | 1 | 22161.95 | 20409.66 |
| 2008-09 | 20211 | 2 | 4 | 40422 | 22551.12 |
| N=5 | 6Y=91340.85 | 6X = 0 | 6X ² = 10 | 6XY = 21414.56 | |

Source: Computed from the Annual Reports

Table 1 reveals actual values of cost of goods sold and the trend values of the cost of goods sold of the companies under the study.

As far as M & M is concerned, it was found that cost of goods sold was under control of the management except in first and fourth year of the study period. Higher trend values of cost of goods sold than the actual amount of cost of goods sold in Maruti in the years 2004-05 and 2008-09 denoted that the

management failed to control the cost whereas in the remaining years the actual cost of goods sold was less than the trend values of cost indicating efficient control over the cost of goods sold. Cost of goods sold of Tata was also found to be under the control except in the third and fourth of the study period.

Due to increase in the sales of the companies under the study, the cost of goods sold increased proportionately and became

almost double during the study period. Analysis of the above table shows that the management of the companies under the

study had an effective control over the cost of production despite an increasing trend in the cost of goods sold.

Table 2: Computation of F^2 Value of Cost of Goods Sold (Rs. In Crore)

| M & M | | | | |
|--|------------------------|---------------------------------------|-----------|-------------|
| Years | Cost of Goods Sold (O) | Trend Value of Cost of Goods Sold (E) | $(O-E)^2$ | $(O-E)^2/E$ |
| 2004-05 | 4755.89 | 4716.24 | 1572.123 | 0.333342 |
| 2005-06 | 5893.91 | 5971.42 | 6007.8 | 1.006092 |
| 2006-07 | 7064.76 | 7226.6 | 26192.19 | 3.624413 |
| 2007-08 | 8879.39 | 8481.78 | 158093.7 | 18.63921 |
| 2008-09 | 9539.05 | 9736.96 | 39168.37 | 4.022649 |
| | | | $F^2 =$ | 27.62571* |
| Maruti | | | | |
| Years | Cost of Goods Sold (O) | Trend Value of Cost of Goods Sold (E) | $(O-E)^2$ | $(O-E)^2/E$ |
| 2004-05 | 8782.3 | 7963.46 | 670498.9 | 84.19694 |
| 2005-06 | 9583.3 | 10127.83 | 296512.9 | 29.27704 |
| 2006-07 | 11553.5 | 12292.2 | 545677.7 | 44.39219 |
| 2007-08 | 14292.6 | 14456.57 | 26886.16 | 1.859788 |
| 2008-09 | 17249.5 | 16620.94 | 395087.7 | 23.77048 |
| | | | $F^2 =$ | 183.4964* |
| Tata | | | | |
| Years | Cost of Goods Sold (O) | Trend Value of Cost of Goods Sold (E) | $(O-E)^2$ | $(O-E)^2/E$ |
| 2004-05 | 12931.73 | 13985.28 | 1109968 | 79.36685 |
| 2005-06 | 15305.93 | 16126.74 | 673729.1 | 41.77714 |
| 2006-07 | 20730.24 | 18268.2 | 6061641 | 331.8138 |
| 2007-08 | 22161.95 | 20409.66 | 3070520 | 150.4445 |
| 2008-09 | 20211 | 22551.12 | 5476162 | 242.8332 |
| | | | $F^2 =$ | 846.2355* |
| Degree of Freedom (v) = (n - 1) = (5 - 1) = 4 | | | | |
| Table value of F^2 at 5% level of significance = 9.488 | | | | |
| *significant difference between actual and trend values | | | | |

Table 2 reveals computation of F^2 value of cost of goods sold of the companies under the study. As the Table value of F^2 at 5% level of significance (9.488) is less than the computed value of F^2 of the companies (27.62571, 183.4964 and 846.2355 for M &

M, Maruti and Tata respectively) under the study, there is significant difference between actual and trend values of the cost of goods sold and hence null hypothesis is rejected and alternate hypothesis is accepted.

Table 3: Computation of Trend Value of Sales (Rs. In Crore)

| M & M | | | | | |
|--|--------------|--------|----------------------|----------------|---------------------------|
| Years | Sales (Y) | X | X ² | XY | Trend Value (Yc = a + bx) |
| 2004-05 | 6594.69 | -2 | 4 | -13189.4 | 6570.522 |
| 2005-06 | 8136.59 | -1 | 1 | -8136.59 | 8194.158 |
| 2006-07 | 9921.34 | 0 | 0 | 0 | 9817.794 |
| 2007-08 | 11310.37 | 1 | 1 | 11310.37 | 11441.43 |
| 2008-09 | 13125.98 | 2 | 4 | 26251.96 | 13065.07 |
| N=5 | 6Y= 49088.97 | 6X = 0 | 6X ² = 10 | 6XY = 16236.36 | |
| Maruti | | | | | |
| Years | Sales (Y) | X | X ² | XY | Trend Value (Yc = a + bx) |
| 2004-05 | 11046.3 | -2 | 4 | -22092.6 | 10322.34 |
| 2005-06 | 12197.9 | -1 | 1 | -12197.9 | 12845.85 |
| 2006-07 | 14806.4 | 0 | 0 | 0 | 15369.36 |
| 2007-08 | 18066.8 | 1 | 1 | 18066.8 | 17892.87 |
| 2008-09 | 20729.4 | 2 | 4 | 41458.8 | 20416.38 |
| N=5 | 6Y= 76846.8 | 6X = 0 | 6X ² = 10 | 6XY = 25235.1 | |
| Tata | | | | | |
| Years | Sales (Y) | X | X ² | XY | Trend Value (Yc = a + bx) |
| 2004-05 | 17199.17 | -2 | 4 | -34398.3 | 18646.67 |
| 2005-06 | 20088.63 | -1 | 1 | -20088.6 | 21206.9 |
| 2006-07 | 26664.25 | 0 | 0 | 0 | 23767.13 |
| 2007-08 | 28767.91 | 1 | 1 | 28767.91 | 26327.36 |
| 2008-09 | 25660.67 | 2 | 4 | 51321.34 | 28887.59 |
| N=5 | 6Y= 118380.6 | 6X = 0 | 6X ² = 10 | 6XY = 25602.28 | |
| Source: Computed from the Annual Reports | | | | | |

Table 3 shows actual sales and trend values of the sales of the selected companies during the study period. It can be seen that all the companies under the study registered an increasing trend throughout the study period except Tata in the year 2008-09.

Sales of M & M showed consistent increase and became double during the study period. Maruti also had steady rise in its sales during the study period and crossed the mark of Rs. 20,000 crores in the year 2008-09. Tata observed rising trend in its sales during the study period except in the year 2008-09. Sales almost became 1.5 times in the year 2006-07 that of in the year 2004-05 and reached up to Rs. 28767 crores in the year 2007-08 however it reduced to Rs. 25660.67 crores in the 2008-09.

Actual sales of M & M were more than the trend values thereof during the study period except in second and fourth year of the study due to increase in cost of goods sold in the year. Maruti observed decrease in sales during 2005-06 and 2006-07 despite low cost of goods sold which denoted unfavourable position for the company and ineffective sales management. Except in 2006-07 and 2007-08, actual sales of Tata were lower than the trend values of sales during the study period revealing adverse position for the company and ineffective sales management due to increasing competition from the foreign players.

Table 4: Computation of X^2 Values of Sales (Rs. In Crore)

| M & M | | | | |
|--|-----------|--------------------------|--------------------|-----------------------|
| Years | Sales (O) | Trend Value of Sales (E) | (O-E) ² | (O-E) ² /E |
| 2004-05 | 6594.69 | 6570.522 | 584.0922 | 0.088896 |
| 2005-06 | 8136.59 | 8194.158 | 3314.075 | 0.404444 |
| 2006-07 | 9921.34 | 9817.794 | 10721.77 | 1.092076 |
| 2007-08 | 11310.37 | 11441.43 | 17176.72 | 1.501274 |
| 2008-09 | 13125.98 | 13065.07 | 3710.028 | 0.283965 |
| | | | $F^2 =$ | 3.370655 |
| Maruti | | | | |
| Years | Sales (O) | Trend Value of Sales (E) | (O-E) ² | (O-E) ² /E |
| 2004-05 | 11046.3 | 10322.34 | 524118.1 | 50.77512 |
| 2005-06 | 12197.9 | 12845.85 | 419839.2 | 32.68287 |
| 2006-07 | 14806.4 | 15369.36 | 316924 | 20.6205 |
| 2007-08 | 18066.8 | 17892.87 | 30251.64 | 1.690709 |
| 2008-09 | 20729.4 | 20416.38 | 97981.52 | 4.799162 |
| | | | $F^2 =$ | 110.5684* |
| Tata | | | | |
| Years | Sales (O) | Trend Value of Sales (E) | (O-E) ² | (O-E) ² /E |
| 2004-05 | 17199.17 | 18646.67 | 2095256 | 112.3662 |
| 2005-06 | 20088.63 | 21206.9 | 1250528 | 58.96797 |
| 2006-07 | 26664.25 | 23767.13 | 8393304 | 353.1476 |
| 2007-08 | 28767.91 | 26327.36 | 5956284 | 226.2393 |
| 2008-09 | 25660.67 | 28887.59 | 10413013 | 360.4666 |
| | | | $F^2 =$ | 1111.188* |
| Degree of Freedom (v) = (n - 1) = (5 - 1) = 4 | | | | |
| Table value of F^2 at 5% level of significance = 9.488 | | | | |
| *significant difference between actual and trend values | | | | |

Table 4 reveals computation of X^2 values of sales of the companies under the study. As the table value of X^2 at 5% level of significance (9.488) is less than the computed value of X^2 of Maruti (110.5684) and Tata (1111.188), there is significant difference between actual and trend values of the sales and hence null hypothesis is rejected and alternate hypothesis is accepted. However, the table value of X^2 at 5% level of significance (9.488) is more than the computed value of X^2 of M & M (3.370655). It shows that there is insignificant difference between actual and trend values of the sales and hence null hypothesis is accepted and the alternate hypothesis is rejected.

Findings, Suggestions and Conclusion

Findings

It was found that cost of goods sold of M & M was under the control of the management except in first and fourth year of the study period. Higher actual values of cost of goods sold than the

trend amount of cost of goods sold in Maruti in the years 2004-05 and 2008-09 denoted failure to control the cost whereas in the remaining years the actual cost of goods sold was less than the trend values of cost indicating efficient control over the cost of goods sold. Cost of goods sold of Tata was also found to be under the control except in the third and fourth of the study period. It was found that there is significant difference between actual and trend values of the cost of goods sold of all the players under the study and hence null hypothesis is rejected and alternate hypothesis is accepted. The study found increasing trend in cost of goods sold of the selected automobiles players during the period of the study. The increase in the sales resulted into proportionate increase in cost of goods sold. As cost of goods sold was found out of control for couple of years only in all the three players, an effective control over the cost of production despite an increasing trend in the cost of goods sold was observed from the study. The study divulged overall increase in sales of all the players during the

study period. Actual sales of M & M were more than the trend values thereof during the study period except in second and fourth year of the study due to increase in cost of goods sold in the year. Maruti observed decrease in sales during 2005-06 and 2006-07 despite low cost of goods sold which denoted unfavourable position for the company and ineffective sales management. Except in 2006-07 and 2007-08, actual sales of Tata were lower than the trend values of sales during the study period revealing adverse position for the company and ineffective sales management due to increasing competition from the foreign players. Sales of M & M became double during the study period. Maruti also observed rising trend in sales. Sales of Tata observed rise of 1.5 times but declined towards the end of the study. As far as actual and trend values of the sales are concerned, significant difference was found in Maruti and Tata but it was insignificant in M & M. Lower actual sales than the trend values of sales for couple of years only during the study period denoted favourable position of the players under the study, effective sales management and favourable impact on sales and profit of the players as well.

Suggestions

Non-control over cost of goods sold for couple of years only in all the three players indicated an effective control over the cost of production and it is therefore, suggested that the management of the company should try to maintain the existing control system. It is also suggested that the management should try to adopt the techniques of cost reduction and cost control to increase profitability of the company. The management of the players under the study maintained the increasing level of sales but reduction in sales in Tata towards the end of the study period did not reflect good indication which should be controlled by the management. It is suggested that the management of the company should try to increase the sales through effective sales management and control the decrease in the sales. The management of the company should try to maintain the sales. It is also suggested to control over-capacities with a view to increase profitability so as not to allow foreign players to play on price. Suggestion to curb unfavourable product mix by overcoming limited flexibility between models would also help in improving profitability of the players under the study. It is also suggested to concentrate on sales of the small car segment to increase the profitability because the excise duty on small car is lower at 8 per cent as against 20 per cent on big cars. The factors like traffic chaos and parking constraints in metro, poor infrastructures in smaller towns, opting for small cars for female or young members and for smaller trips by the rich households would also play an important role in increase in sales of the small car which would ultimately result into increase in profitability. With a view to increase the profitability, it is suggested to concentrate on vehicle financing as a significant facilitator of demand.

Conclusion

It can be concluded that there is significant difference between actual and trend values of the cost of goods sold and hence null hypothesis is rejected and alternate hypothesis is accepted. It can also be concluded that there is significant difference between actual and trend values of the sales and hence null hypothesis is rejected and alternate hypothesis is accepted. However, at .05% level of significance M & M observed insignificant difference between actual and trend values of the sales and hence null hypothesis is accepted and the alternate hypothesis is rejected.

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