Chapter 7 – Business Model: Value Perception of Transporters and Value Delivery by Manufacturers

(This chapter deals with Value Expectations and Value Delivery aspects of the Indian multi-axle heavy truck market)

7.1 Introduction

Strategic intent and business models are inherent aspects of any large organization’s workings. The large organizations that operate in the Indian truck manufacturing industry are no exceptions to this norm. The deliberations in the previous chapter clearly points out the need to understand the differences in perceptions/preference for value and the willingness to pay for that value between various customers (transporters). Also, from the observations of section 2.4, we find that the academicians and professionals have focused upon the importance, relevance and peculiarities of business models, we found it motivating to delve into this aspect of the trucking business and the truck manufacturing industry.

So, while considering the value aspects of the long distance on-road applications of the Indian trucking industry the driving query in the minds of the researchers was: Does the brand/product perceptions of the end customer and their different value requirements justify the assumption of this industry to be a monopolistic competition of differentiated products, where the business models employed would be significantly different from each other?

The extensive survey of relevant literature and further studies conducted by (Schafer, Smith, & Linder, 2005), led them to define business model as “a representation of a firm’s underlying core logic and strategic choices for creating and capturing value within a value network”, this core logic should be exhaustive as possible. Thus, business models can typically consist of strategic choices, value creation, value capturing and maintaining a value network.

The concept of strategic choices can be viewed as a pattern, as a plan, as a position to be held or as a perspective to be developed. After duly identifying the various strategic
options, the choices are made. A business model is a representation of the underlying strategic choices, but a business model is not a strategy.

7.2 The Hypotheses

Is it true that the values sought by the truckers are different? Are manufacturers really trying to deliver unique and varying levels of value through their significantly different value propositions shaped by their different business models? Are different products catering to different value requirements of various customer groups?

To understand these aspects the researchers tried to investigate the null hypotheses:

\[ H_{4A}^0: \text{Customer value perceptions are not significantly different across the major truck brands of India.} \]

\[ H_{4B}^0: \text{Business Models of the top three Multi Axle Truck Manufacturers in India are not different from each other.} \]

7.3 Data and Methodology

The study presented here focuses upon the MHCV truck segment in general and particularly on multi axle heavy trucks of 25 tonnes GVW and above; which is seeing new product introductions, influx of established global OEMs and rising product refinement, productivity and complexity.

Secondary data in the form of: Annual report of market leading manufacturers of heavy trucks in India, market survey reports and research papers dealing with truck brands.

Besides these secondary data, primary data has also been collected from 171 respondents (unorganized road transporters) from 11 cities across India. The cities covered in North Zone were New Delhi and Ghaziabad; in the East Zone the cities covered were Bhubaneshwar, Cuttack, Guwahati and Kolkata; in the South Zone the cities covered were: Bengaluru, Chennai and Hyderabad and in the west zone Ahmedabad & Mumbai.

Sample: Stratified Random Sampling was used to collect primary data from transporters (unorganized) and drivers from each of the cities. Only certain relevant responses for transporters are discussed in section 7.5.
Furthermore, primary data collection (from road transporters) was done to understand the importance of personal attributes & preferences and the effect of certain business aspects of operating truck/s on brand purchase decisions. The authors have tried to understand the perceptual difference of the two leading brands in the MHCV truck market, namely Tata and Ashok Leyland.

7.4 Overview of Value Perception Matrix and Vertical Product Differentiation

7.4.1 Value Perception Matrix

The value perception matrix puts on display the three distinct categories of truck owners and their different value (in terms of quality & price) perceptions about 25T and 31T trucks from the two leading brands of the Indian truck market.

![Value Perception Matrix](image)

**Figure 19: Value Perception Matrix**

7.4.2 Vertical Product Differentiation

The vertical product differentiation model conveys the perceptual distance that a customer or given group of customers (transporters) have from the price point offered by either of the sellers to their own preferred price point, usually a given category of customer would make a purchase where he has to cover the least distance from his preferred price point to the nearest price point available to that customer or customer group.
The above phenomenon is described through the three equations for each of the three group of customers.

\[ P_T + B \cdot T < P_{AL} + B \cdot AL \]  
\[ P_{AL} + C \cdot AL < P_T + C \cdot T \]  
\[ P_T + D \cdot T < P_{AL} + D \cdot AL \]

...7.1

... 7.2

...7.3

7.5 Results and Discussion

7.5.1 Value in terms Price & Quality

Researchers have extensively worked on understanding the meaning and implication of ‘customer value’, and what it stands for, (Bradley & Wood, 1994) has observed that customer value is the quality that is perceived by the market and that is further adjusted by the price of a given product; others like (Monroe, 1979) stated that a buyer’s perception value characterize a trade-off between the perceived value derived in relation to the price that is payed. The perception aspect in value determination is important to be noted, as pointed by (Woodruff, 1997) customer value is actually the perceived preference and evaluation of relevant product attributes, their performances and the resultant fulfilment of certain expectations from a given product. Another extensive study on customer value by (Ziethmal, 1988) dealing with two components –
price, and quality; states that ‘Value’ may be: a) low price, b) whatever a customer wants in a product, c) the quality a customer gets for the price he/she pays, and d) what a customer gets for what he/she gives.

These perspectives show that customers understand value in terms of the Product Quality they receive and the ‘Price’ they pay; for some both are (almost) equally important, for others ‘Quality’ is more important and for others still, ‘Price’ is most important. ‘Quality’, as discussed in this chapter is a combination of perceptions of eleven Key Buying Factors (elaborated further under ‘Value Expectation & Perception’ section), where Price has been set as ordinal, $P_T = 0$ (Price for Tata) and $P_{AL} = 1$ (Price for Ashok Leyland).

7.5.2 Value Expectation & Perception of the Customer (Transporter)

The primary data on the responses of eleven ‘Key Buying Factors’ (KBF) namely: Quality, Price, Technology, After Sales Service, Parts Availability, Maintenance Cost, Tyre Life, Resale Value, Turnaround Time, Aesthetics and Mileage were taken into consideration.

To understand the value payoff in cases where a transporter owned both Tata and Ashok Leyland brands in 25 tonnes and 31 tonnes category, an ‘Weighted Average Value Score’ (WAVS) was derived for each of the brands. Since more than 80% of the MHCV Truck market is held by the brands Tata and Ashok Leyland we continue the subsequent discussions on these two brands only.

To derive the WAVS, the brand independent weightage provided for each of the eleven KBF was multiplied to the respective KBF rating for each brand and the resultant summation of these two were divided by hundred.

**Weighted Average Value Score (WAVS) for a Particular brand**

$$WAVS = \frac{\sum_{i=1}^{11} KBF_{A_i} * KBF_{B_i}}{100}$$

Where, $KBF_{A_i} = $ Key Buying Factor Irrespective of Brand (Part A)

$KBF_{B_i} = $ Key Buying Factor for a particular Brand (Part B)
A scatter plot was developed with WAVS (difference of WAVS of Ashok Leyland and Tata) on one axis and proportion of ownership of the Ashok Leyland and Tata brands on the other axis. The scatter plot was further divided into four quadrants, the vertical axis (Y – Axis) was put at the zero point where the value derived from Tata and Ashok Leyland trucks were equal. The horizontal axis (X – Axis) was put up at 0.5 where the proportion of Tata and Ashok Leyland Trucks were equal. The resultant four quadrants were named A, B, C and D. All these quadrants along with their nature and implications are discussed in the subsequent sections.

7.5.3 Defining the Value Perception Quadrants

Figure 19 displays Quadrant A represents a scenario where the proportion of Ashok Leyland Trucks are higher, but the respondent gives a lower rating in terms of perceived overall value rating to the truck manufacturer; no respondents were categorized into this quadrant. The next block, quadrant B represents a situation where the proportion of Tata trucks are higher, and ratings given for perceived overall value for Tata trucks are also higher; six respondents were categorized into this quadrant. Quadrant C represents a situation where the proportion of Ashok Leyland Trucks are higher and the respondent ratings for perceived overall value derived from the trucks of Ashok Leyland brand is also higher; thirteen respondents were categorized into this quadrant. The last of these four sections, quadrant D represents a scenario where the proportion of Tata trucks are higher, but the respondent gives a lower rating in terms of perceived overall value rating to the truck manufacturer; no respondents were categorized into this quadrant.
of Tata trucks are higher, but the ratings given for perceived overall value for Tata trucks are lower; ten respondents were categorized into this quadrant.

Once the scatter plot was prepared, a ‘Truck Buy Value Payoff Matrix’ (provided for in Table 33) was derived from it in terms of two considerations – ‘Primary Buy’ and ‘Value Derived’. In the matrix provided in Table 33, the symbol ↑ represents a sense of higher value derived from the brand that is majorly owned (has higher proportion in the total fleet composition) by that single transporter, whereas the symbol ↓ represents a sense of lower value derived from the brand that is majorly owned (has higher proportion in the total fleet composition). Ordinal notations for the prices of Ashok Leyland (AL) is designated ‘1’ and Tata (T) is designated ‘0’, this has been done to denote a marginal premium Ashok Leyland Trucks carry over their Tata counterparts in 25T & 31T categories. It may be noted here that Quadrant B, C and D in the Payoff Matrix represent equilibrium choices from game theoretic perspective for various types of customers purchasing these differentiated products. Whereas, Quadrant A is a non-equilibrium zone.

### Table 33: Truck Buy Value Payoff Matrix (25T & 31T)

<table>
<thead>
<tr>
<th>Price</th>
<th>Val. Derived</th>
<th>AL &gt; T</th>
<th>AL &lt; T</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL = 1</td>
<td>C (1, ↑)</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Tata = 0</td>
<td>D (0, ↓)</td>
<td>B</td>
<td>10</td>
</tr>
</tbody>
</table>

Each of these groups Quad B, Quad C and Quad D (excluding non – equilibrium Quad A) were further tested to understand their distinctness in comparison to each other. An Analysis of Variance (ANOVA) was conducted on the Weighted Average Value Score (WAVS) of the quadrants B, C and D. As shown in Table 34, the groups (Quad B, C and D) were found to be significantly distinct from each other.
Table 34: ANOVA Table for differences between Ashok Leyland and Tata

ANOVA

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>5.131</td>
<td>2</td>
<td>2.565</td>
<td>7.265</td>
<td>.003</td>
</tr>
<tr>
<td>Within Groups</td>
<td>9.182</td>
<td>26</td>
<td>.353</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>14.312</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

On looking into the contrast coefficients (Table 35), it was found that Quad B (0, ↑) on one hand and Quad C (1, ↑) & D (0, ↓) on the other hand were distinct from each other. Quad C and D are similar since, ‘perceived higher value with primarily buying Ashok Leyland’ (1, ↑) and ‘not perceived higher value with primarily buying Tata’ (0, ↓) represent a similar customer perception platform.

Table 35: Contrast Coefficients of Quad B, C and D

<table>
<thead>
<tr>
<th>Contrast</th>
<th>Group</th>
<th>Quad B</th>
<th>Quad C</th>
<th>Quad D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>-1</td>
<td>-1</td>
<td></td>
</tr>
</tbody>
</table>

This phenomenon is further elaborated in the ANOVA Multiple Comparisons Table (Table 36), which clearly demonstrates that the Tukey HSD comparisons between ‘Quad B’ and ‘Quad C & D’ are significantly different. However, Quad C and Quad D are not significantly different from each other for reasons described in the discussions of previous paragraph. Thus, Tables 34, 35 and 36 clearly point out that the difference of Ashok Leyland WAVS and Tata WAVS are significant across groups.
<table>
<thead>
<tr>
<th>(I) group</th>
<th>(J) group</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tukey Quad B HSD</td>
<td>Quad C</td>
<td>-.81526*</td>
<td>.29329</td>
<td>.026</td>
<td>-1.5441</td>
<td>-.0865</td>
<td></td>
</tr>
<tr>
<td>Quad D</td>
<td></td>
<td>-.16333*</td>
<td>.30687</td>
<td>.002</td>
<td>-1.9259</td>
<td>-.4008</td>
<td></td>
</tr>
<tr>
<td>Quad C</td>
<td>Quad D</td>
<td>.34808</td>
<td>.24996</td>
<td>.359</td>
<td>-.2730</td>
<td>.9692</td>
<td></td>
</tr>
</tbody>
</table>

Furthermore, as discussed by (Shy, A Modified Hotelling Vertical-Differentiation Model, 1998), Figure 20 represents the relative position of the equilibrium choices of customers represented in quadrants B, C, and D on a singular plane as in a ‘Modified Hotelling Vertical Differentiation Model’, in terms of ‘quality’. The term ‘quality’ stands for the relative WAVS as explained in Section 7.5.2; Price of an Ashok Leyland (P_{AL}) is denoted as 1 and price of a Tata (P_{T}) is denoted as 0.

The A quadrant [AL = 1, AL < T] (0, ↓) as provided in Table 33, represents the set of customers in a segment where the transporter has bought a larger proportion of Ashok Leyland trucks in 25T & 31T category and perceives that the Ashok Leyland trucks provide comparatively lower overall value. This zone of non-equilibrium has not been included for discussions for the discussions on figure 20 in the subsequent chapters.
The B quadrant \([T = 0, \ AL < T]\) (0, ↑) in Table 33, represents the customer where the transporter has bought a larger proportion of Tata trucks in 25T & 31T category and perceives that the Tata Trucks provide comparatively higher overall value. This zone can be categorized to represent an optimal choice for ‘price sensitive’ as well as ‘quality sensitive’ customers. The B Quadrant Customer position has also been marked out in Figure 20, to show the shortest distance in terms of ‘value’ the customer in B quadrant covers to point T (at \(P_T = 0\)) instead of travelling to point AL (at \(P_{AL} = 1\)) and be very happy with the perceived higher ‘quality’ that Tata provides at a slightly lesser price.

For the six respondents found within this quadrant value implies price as well as quality. In other words, delivering value through only differentiation (quality) focus (porter’s generic) or cost (price) focus will not be effective, rather the product should provide a perceived value wherein price is within an acceptable range and the quality of the product is perceived to be adequate.

The expression for this category of respondent’s perception (as plotted in Figure 20) in terms of vertical product differentiation is provided in the equation provided below:

\[
P_T + B.T < P_{AL} + B.AL
\]

… 7.1
The C quadrant \([AL = 1, AL > T]\) (1, ↑) in Table 33, represents the customer where the transporter has bought a larger proportion of Ashok Leyland trucks in 25T & 31T category and perceives that the Ashok Leyland trucks provide comparatively higher overall value. This zone can be categorized to represent an optimal choice for ‘quality sensitive’ customers. The C Quadrant Customer position has been marked in Figure 20 as well, to show the shortest distance in terms of ‘value’ the customer in C quadrant covers to point AL (at \(P_{AL} = 1\)) instead of travelling to point T (at \(P_{T} = 0\)) and be contended with the perceived higher ‘quality’ that Ashok Leyland provides at a slightly higher price point, there were thirteen respondents found within this quadrant value implies price as well as quality. In other words, delivering value through only differentiation (Quality) focus (Porter’s Generic) or cost (Price) focus will not be effective, rather a cost leadership would be more suitable. The expression for this category of respondent’s perception in terms of vertical product differentiation (as plotted in Figure 20) in this category is provided in the equation below:

\[
P_{AL} + C.\overline{AL} < P_{T} + C.\overline{T}
\]

The D quadrant \([T = 0, AL > T]\) (0, ↓) in Table 33, represents the customer where the transporter has bought a larger proportion of Tata trucks in 25T & 31T category by initially putting more importance to the relatively lower price point and cost structure of Tata trucks, however in terms of relative perceived quality, these customers felt that Ashok Leyland trucks provided them better value. This zone can be categorized to represent post purchase dissonance – where customers failed to appropriately evaluate the value they looked forward to and the value offering of a particular manufacturer. The D Quadrant Customer position has also been marked in Figure 20, to show comparatively lesser distance from the value customer in C quadrant (as opposed to the B quadrant customer), but D still ends up choosing point T as the distance to point T (at \(P_{T} = 0\)) is less than distance to point AL (at \(P_{AL} = 1\)). In this case, although D does not travel the extra distance to point AL and settles for point T; this category of customer is not satisfied with the value offered at point T.

The expression for this category of respondent’s perception (as plotted in Figure 20) in terms of vertical product differentiation in this category is provided in the equation below:
So, it is proven through the discussion in section 7.5.1 and 7.5.2 that the null hypothesis: 
\[ H_{4a} : \text{Customer value perceptions are not significantly different across the major truck brands of India,} \]
stands rejected. It is furthermore proven through Equation 7.1, 7.2 and 7.3 that using the concept of vertical product differentiation it is established that customer perception is indeed different customers who appreciate the value provided by Tata trucks and Ashok Leyland Trucks.

### 7.5.4 The Value Offerings by Indian Truck Makers

The Indian multi-axle truck market (manufacturer side) is highly consolidated as the top four manufacturers sum up to almost 95% of MHCV trucks. As per (CV NEWS, 2017) the three top manufacturers of MHCV trucks – Tata Motors (51.2%), Ashok Leyland (33.1%) and Volvo Eicher (11.25%) make up for the bulk of the market.

![](Figure 21: Comparative Market-Share (CV NEWS, 2017)

Each of the manufacturer’s basket of offering varies in terms of the automotive products manufactured; Tata Motors makes small automobiles (hatchbacks, MUVs, SUVs etc.) and commercial vehicles of a wide tonnage range. Ashok Leyland manufactures only commercial vehicles and that to primarily focus into the MHCV category whereas VECV a joint venture between Eicher Motors Ltd. and Volvo AB is primarily focused
on making commercial vehicles in the ICV and MHCV categories. Although commercial vehicle manufacturing is the core area of operation for Volvo AB but Eicher Motors has a significant focus on motorcycle manufacturing through its brand ‘Royal Enfield’. So, the manufacturing variety and focus areas of these top three manufacturers are quite different. Even when it comes to manufacturing HCVs it is seen that the basic portfolio of the three-manufacturer’s sales patterns across different GVW category is also different from each other. As on year 2015 (Sharpe, 2015), out of Tata Motors’ total sale of commercial vehicles, 38% (approx.) were trucks with a GVW of 16T or more; on further breaking up this we find that in the weight category of 16T – 25T GVW the proportion was roughly 19% (approx..) of total commercial vehicle sales by Tata motors and in the weight category of greater than 25T GVW 19% (approx..) of total commercial vehicle sales by Tata Motors. On the contrary out of Ashok Leyland’s total sale of commercial vehicles, 42% (approx..) were trucks with a GVW of 16T or more; when further broken to 16T – 25T GVW, the representation of this weight category was 18% (approx..) of total commercial vehicle sales by Ashok Leyland and the category of greater than 25T GVW represented 24% (approx..) of total commercial vehicle sales by Ashok Leyland.

**Figure 22: Tonnage Categorization in Manufacturer Sales Portfolio** (Sharpe, 2015)
The third largest manufacturer, Volvo Eicher Commercial Vehicle (VECV) had only 7% (approx.) of its total commercial vehicle sales in the weight category of 16T or more. On breaking up this figure into weight categories of 16T – 25T GVW and greater than 25T GVW the sales proportion were found to be of 3% (approx..) and 4% (approx..) respectively (Sharpe, 2015). This clearly shows that Tata and Ashok Leyland lead the MHCV truck market and their sales proportion of truck sales in the 16T GVW and above weight category are higher than competition. It can also be observed that Ashok Leyland’s product portfolio is more focused towards the higher tonnage categories especially in the 25T GVW and above (in the multi axle trucks category). As on financial year 2017-18 Tata Motors and Ashok Leyland happen to dominate the over 25T category of products. In the product category of 35.2T – 40.2T (which has experienced a 131% growth over previous year) Ashok Leyland enjoys 94 percent market share (Bajad, 2018).

The industry leader, Tata Motors is a full line provider of commercial trucks and an overall industry leader in the commercial vehicle industry, with a strong market presence in northern India. The company has products from 1 tonne (Ace Zip) to 49 tonnes category. In the ICV and MHCV category, Tata products like 1109, 1616 etc. as well as 2515, 2518, 2523, 3118, 3718 are made available in the formats of cowl, normal cab, Ultra series, Signa series and Prima series cabs cater to various transporter requirements. To meet emission norms of BS- IV Tata Motors have focused its engine developments based on the SCR technology, to power its trucks the company has access to engines developed inhouse, as well as ones sourced from Cummins. Tata Motor’s access to research & development capabilities of Daewoo (Tata Daewoo Commercial Vehicle Co.) also helps it to bring technologically advanced products into the Indian truck market.

The second in the industry, Ashok Leyland is the overall second largest seller in MHCV market and is a strong performer in the southern India. The company traditionally leads in the 12M bus category and is second largest truck maker in MHCV truck segment. Ashok Leyland has products that are strong performers in MHCV segment, it is worthwhile to note that this company has been gaining market share in MHCV trucks segment continuously for the last three financial years (2014-15 to 2016-17) at the cost of Tata Motors as seen in Figure 2. Although, Tata motors managed to sell more than 50% of the MHCV trucks in 2016 but the figure is down from around 64% as it did in
the year 2007 (Teter, Cazzola, & Gul, 2017). Although, Ashok Leyland has a product to cater to the last mile distribution category through its product – ‘Dost’ – (a 2.5T delivery truck to counter the ‘Tata Ace’) it’s product offerings primarily cater from 10T category (like Boss, Guru and Ecomet) onwards, although ‘Partner’ 4 tyre version launched early in the year 2017 also covers the 6T category. But from 16T category onwards Ashok Leyland has products like Ecomet 1616, 2516, 3116, 3118, 3518, etc. are putting on the strong competition which has eaten into the Tata Motors’ market share. In fact, as of 2016 – 17 it was the market leader in the 37T category. The various models in the ICV and MHCV categories offered by Ashok Leyland are made available in cowl format and cabin options include the normal cabins as well as U-Truck series and the recently launched Captain series. Ashok Leyland is banking upon EGR based technology against primary competitor Tata’s SCR based engine technology. Named as iEGR it does not require any urea based additive and has comparatively less electronic sensors. The company also offers various products in different weight categories with Hino engines.

The third largest truck seller VECV or Eicher Motors (11.3%) has a range of trucks that cater from the 6T to 49T, the PRO series of trucks have been launched (in 2014) to modernize the truck (and bus) offerings from Eicher, primarily based on technology inputs from Volvo AB. Volvo Eicher also has a strong potential in MHCV segment due to its now improved technical capabilities due to its access to vehicle and systems technology of Volvo AB.

Also, Daimler India Commercial Vehicles (DICV), a fully owned subsidiary of Daimler AG, has also made strong initial progress and moved ahead of MNAL in the MHCV truck segment, presently has a market share of ~7%. It is important to note here that the brand Bharat Benz (DICV) offers its products in the range of 10T to 49T, although it is a relatively new player in the Indian truck market but given that the parent organization – Daimler AG, is the largest commercial vehicle manufacturer of the world, this brand could have a strong growth potential.
Table 37: Sales Portfolio Breakup In Percentage (Of Total Sale Of Buses And Trucks) Across Tonnage Categories For Major Truck Manufacturers As On Year 2015-16

<table>
<thead>
<tr>
<th>Overall Mkt. Share % in the Truck Market -&gt;</th>
<th>51.2</th>
<th>33.1</th>
<th>11.3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tata</td>
<td>Ash Ley</td>
<td>VECV</td>
</tr>
<tr>
<td>Non - Multi Axle Trucks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 7.5T</td>
<td>14</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>More than 7.5T - 12T</td>
<td>12</td>
<td>8</td>
<td>46</td>
</tr>
<tr>
<td>More than 12T - 16T</td>
<td>14</td>
<td>19</td>
<td>7</td>
</tr>
<tr>
<td>Multi Axle Trucks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than 16T - 25T</td>
<td>19</td>
<td>18</td>
<td>4</td>
</tr>
<tr>
<td>More than 25T</td>
<td>19</td>
<td>24</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Market analysis of heavy-duty vehicles in India, ICCT (2015)
Percentage figures are approximations suitable for contrast and comparison purposes.

As may be observed in Table 37, it is obvious that the sales portfolio of Tata, Ashok Leyland and Volvo Eicher Commercial Vehicles are very different. On one hand the market leader Tata Motors has an evenly laid out offering across various tonnage categories, whereas Ashok Leyland is more focused on higher tonnage segments, in fact it’s sales performance improves further in More than 25T category. It is also clearly demonstrated that Ashok Leyland’s sales focus has a significant disadvantage vis-à-vis Tata Motors in Below 7.5T category. Whereas, VECV has a tremendous sales focus on the More than 7.5T – 12 T product category and is also a strong performer in the Below 7.5T category.

So, the top three manufacturers have different business models or approaches in delivering value to their prospective customers. It is important to note here that DICV, the comparatively new player in this market has a sales portfolio that can put up significant challenge to Tata Motors and Ashok Leyland especially in the multi axle tonnage categories. It is worthwhile to note that parent organization, Daimler Trucks is the largest commercial vehicle manufacturer in the world and has immense technical capabilities of churning out products which have been successful in various developing countries under diverse operating environments.

Since Tata Motors and Ashok Leyland take up around 85% market share of the MHCV truck and 38% & 42% of their sales portfolio represent truck with or more than 16T GVW respectively it was decided to further focus on the ‘ROCE’ of Tata Motors (NDTV Profit - Tata, 2018) and Ashok Leyland (NDTV Profit - AL, 2018)
Table 38: ROCE of Tata Motors & Ashok Leyland (NDTV Profit - Tata, 2018),
(NDTV Profit - AL, 2018)

<table>
<thead>
<tr>
<th>Year</th>
<th>Tata Motors ROCE</th>
<th>Ashok Leyland ROCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-13</td>
<td>4.39</td>
<td>12.55</td>
</tr>
<tr>
<td>2013-14</td>
<td>0.93</td>
<td>4.67</td>
</tr>
<tr>
<td>2015-16</td>
<td>4.03</td>
<td>14.07</td>
</tr>
<tr>
<td>2016-17</td>
<td>-2.07</td>
<td>18.46</td>
</tr>
</tbody>
</table>

Tata Motors and Ashok Leyland have very different product portfolio in terms of manufacturing of commercial vehicles and passenger vehicles. Tata Motors is a manufacturer of commercial vehicles and passenger vehicles whereas Ashok Leyland primarily manufactures commercial vehicles. But still, the researchers felt it to be justified to contrast the ROCE of the two manufacturers. Firstly, the sales portfolio of Tata Motors has primarily had commercial vehicles (hovering around 70 – 75 percent since 2013 to 2016) (Tata Motors, 2017) and secondly, as in case of a multi plant monopoly, the marginal revenue (MR) and marginal cost (MC) would have to be equated to arrive at the profit maximization output produced by each plant. So, the overall ROCE would be similar across different plants (Shy, The Multi Plant Monopoly, 1998) and thus comparing the ROCE of these two manufacturers Tata and Ashok Leyland is justified. So, from Table 38 it can be observed that on comparing the ROCE of Tata Motors and Ashok Leyland it is found that both the Manufacturers have very different observations across the years and Ashok Leyland has provided a much steadier return.

Thus, from the above discussion, it is clear that the value proposition of the Business models of the top three Multi-Axle Vehicle Manufacturers in India i.e. Tata Motors, Ashok Leyland and Volvo Eicher are different from each other. Their focus on various product categories are also different – thus their business models for providing appropriate value (to their prospective customers in terms of quality and price) is different as well.

Thus, in light of the discussions in figure 21 & 22; Table 37 & 38 the null hypothesis:
**H$_{AB}$:** Business Models of the top three Multi Axle Truck Manufacturers in India are not different from each other, stands rejected.

### 7.5.5 Aligning Value Perception on Demand Side (Transporter) & Value Offerings on Supply Side (Manufacturer)

The previous sections have clearly shown that on the demand side there are distinctive set of customers who are suitable for Ashok Leyland or Tata.

The B quadrant (0, ↑) customers are extremely satisfied with their purchase due to the better perceived quality at a relatively lower price, those who make up segment B are dedicated Tata customers. The B quadrant customers are loyal towards the Tata brand and have a very positive brand judgement feeling in terms of credibility, consideration and sense of superiority and brand value progression (in terms of the Trucker’s CBBE model – discussed in cite brand paper). In fact, some of them could have reached the Brand Based Fraternity level of the Trucker’s CBBE model. These motivated Tata customers value the product characteristics in terms of Quality, Technology, Resale value and parts availability (Points of Difference). Tata customers find it important that the overall quality to be high; they expect their products to be high on technology and Tata Motors correctly has focused itself on SCR based engine technologies which although has extra electronic complexities and urea based additives has globally emerged as the leading technology to conform to stringent emission norms Tata Motors has also successfully integrated the engines of Cummins into its higher tonnage trucks for this category of customers to reiterate and emphasize the technology competence aspect of its products. Since Tata Motors is the market leader it also does lead in the used truck market where it commands a healthy resale value in most of its strong markets across India. It also happens to maintain one of the largest and most expansive networks of spare parts outlets across India.

Aspects like Price, after sales service, turnaround time, mileage and aesthetics are also very important for quadrant B customers. Tata trucks are priced comparatively lower than the nearest competitor and that positively affects these customers. As a market leader Tata trucks are supported with relatively cheap and easily available after sales service network. Turnaround time and mileage are now an objective possibility in post GST era; also, initiatives for RFID based automatic toll collections (FASTag) ensures that inter-state border check points can clear off trucks faster than before. The Signa
and Prima range of trucks specifically cater to the aesthetics aspects of a vehicle purchase for a typical quadrant B customer.

The C quadrant (1, ↑) customers greatly appreciate the perceived better-quality level in their Ashok Leyland Trucks and purchase them in greater proportion, such customers who make up segment C are dedicated Ashok Leyland customers. They are loyal towards the Ashok Leyland brand, these group of transporters have a very positive brand judgement feeling in terms of credibility, consideration and sense of superiority and brand value progression (in terms of the Trucker’s CBBE model – discussed in cite brand paper). In fact, some of them could have reached the Brand Based Fraternity level of the Trucker’s CBBE model. These customers value the product characteristics that Ashok Leyland provides to them in terms of technology and parts availability (Points of Difference). Since these customers are apprehensive of excessive usage of technology they prefer less sensors and electronic presence in their trucks, which in their opinion increases service related complexities and costs. It is indeed a smart move by Ashok Leyland to use technologies like iEGR where there are less number of sensors and there is no requirement for urea-based additives as required in SCR based combustion technologies, to ensure parts availability Ashok Leyland has increased its network of spare parts outlets through ‘Leyparts’ initiative. Other aspects like Aftersales service (service mandi), maintenance cost (increased service gap), tyre life (X-Guard tyres for mileage) and turnaround time (with effect of GST and FASTag) are also very important for quadrant C customers.

And finally, there are the D (0, ↓) customers who own a higher proportion of Tata trucks but perceive the Ashok Leyland trucks do provide a higher level of quality satisfaction; this are the price sensitive customers for whom cost of the truck is more important and buy the brand which they believe would cost them less. But this group of customers tend to suffer from post purchase dissonance. Although they had predominantly purchased Tata Motors products primarily based on price, after sales service, maintenance cost, mileage, tyre life, turnaround time and aesthetics; after using the products from both the brands these group of customers have perceived that Ashok Leyland products perform better in terms of after sales service, tyre life, maintenance cost and turnaround time. This customer group also realized that high technology

\[ \text{Technology has a significantly negative correlation with aftersales service (}-0.424) \]

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content is not very desirable for them, neither did they find resale value to be an important/significant aspect. In terms of parts availability this customer group has shown confidence in Ashok Leyland’s spare-parts outlet network.

7.6 Conclusion

It was found through the discussions in section 7.5 that the perception of value was indeed different across groups of transporters as identified in section 7.5.3; three distinctly different groups of customers (transporters) were identified and their different perceptions of quality and their willingness to pay the price for that desired quality was also found to be different across the various group of transporters. On the supply side it was found through section 7.5.4 that the top truck manufacturers have different proportion of focus across the various tonnage segments, all three manufacturers have different proportion of sales across different tonnage segment of the truck market.

So, it becomes clear that the manufacturers in recognition of the different value requirements and perceptions of their customers have structured themselves differently and developed different business models through which they try catering efficiently to their target customer groups while manufacturing & selling trucks in a proportion that is suitable for their target customers.