CHAPTER – 6
PRESENTATION AND ANALYSIS OF DATA
AND HYPOTHESIS TESTING

Presentation and analysis of data is important part of research. In previous chapters researcher has covered Introduction, review of literature and research methodology used for the research. During survey researcher has collected information with way of interview and questionnaire i.e. Primary data as well as Secondary data. In this chapter researcher has presented this collected primary data & secondary data and employed tabulation, cross tabulation apart from various statistical tools and test like %, average, mean, mode etc. This chapter is mainly divided in 2 parts. PART-I deals with presentation of data with help of tables, graphs and PART – II deals with Hypothesis testing with help of statistical methods.

PART –I Presentation Analysis of Data

The data collected through interview, questionnaire and from external agency is presented and analysed in this part with help of tables and graphs. As this research is done in 3 countries i.e. Thailand, Indonesia and Vietnam and based on 2 selected components Commercial Tyre and Commercial Wheel. To facilitate reading and understanding researcher has done the analysis as per country and then automobile component for that country. The primary data is collected through Questionnaire (Annexure A), so it has also analysed in sequence of the question and necessary interpretation is provided after data presentation.

As mentioned in Research Methodology, survey done in 3 countries and 7 dealers/ component manufacturers for each country. These 7 dealers/manufacturers are referred as Respondent 1 to Respondent 7 – R1, R2, R3, R4, R5, R6 & R7. In below presentation and analysis of data the terms used as R1 to R7 to present data of respective respondent. The average value is considered for analysis. The details of respondents are covered in Annexure B.
While analysing the data, the researcher has followed a sequence as per questionnaire. Analysis for commercial Tyre has done first followed by Wheel rim. The sequence of analysis is as follows & same is conducted for Thailand, Indonesia.

1) Total Demand of market for Tyre and Wheel rim.
2) Total supply to market from various countries
3) Requirement of market according to type and size of Tyre and Wheel Rim.
4) Brand preferences in the market for Tyre and Wheel rims & vehicles.
5) Consumer Priorities while buying Tyre and Wheel rim.
6) Market perception for Commercial tyre and Wheel rim w.r..t. Importing country i.e. China, India & other or local country.
7) After above analysis researcher has also analysis import duty for Tyres and Wheels while importing from various countries followed by Import-export between India and selected country for automotive component.

6.1. Presentation and Analysis of Thailand Market
The first country for analysis is Thailand market. Thailand is one of the big market selling approx. 1.8 Mn vehicles per annum. Researcher has studied this market in depth for Commercial Tyre and Commercial Wheel rim. Each question is analysed first for Commercial Tyre and then for commercial wheel rim.

6.1.1 Total Spare/Retail Market Demand
The focus of research is mainly on Spare market i.e. requirement of replacement market called Spare/Retail market. With help of this question researcher tried to find out total requirement of spare market for Commercial Tyre and Commercial Wheel Rim. The demand is again divided in to type, size etc. That analysis has also done in detailed in this section. Apart from Demand in market this section also covers supply of Tyre and Wheel in the market.

A) Total Spare Market Demand
Total demand refers to total requirement of Spare market for Tyre and Wheel irrespective of size or type.
A.1.) Commercial tyre

Tyre is one of the fast consuming component in market due to wear and tear, so the demand is expected to be high for commercial tyre. Below are the demand formulated in tabular form as stated by respondent and average calculated. Data up to 2012 is actual demand and 2013 & 2014 are forecasted demand.

Table No. 6.1: Commercial Tyre Spare Market Demand in Thailand

( Figures in ,000 )

<table>
<thead>
<tr>
<th>Year</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
<th>R6</th>
<th>R7</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>680</td>
<td>700</td>
<td>750</td>
<td>800</td>
<td>400</td>
<td>650</td>
<td>650</td>
<td>661</td>
</tr>
<tr>
<td>2011</td>
<td>720</td>
<td>750</td>
<td>800</td>
<td>900</td>
<td>500</td>
<td>700</td>
<td>700</td>
<td>724</td>
</tr>
<tr>
<td>2012</td>
<td>800</td>
<td>800</td>
<td>900</td>
<td>1000</td>
<td>600</td>
<td>850</td>
<td>750</td>
<td>814</td>
</tr>
<tr>
<td>2013 FC</td>
<td>850</td>
<td>860</td>
<td>950</td>
<td>1120</td>
<td>700</td>
<td>900</td>
<td>800</td>
<td>882</td>
</tr>
<tr>
<td>2014 FC</td>
<td>910</td>
<td>900</td>
<td>1010</td>
<td>1210</td>
<td>810</td>
<td>940</td>
<td>850</td>
<td>947</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers

Analysis and Interpretation –

The data collected from 7 respondent shows growth of @ 8-10% on year on year basis in spare market. The market is expected to increase by 40% in 5 years’ time span. It is also observed that variation of +/- 25% from the estimation of demand between the respondents. This is mainly due to the respondent is a mix of Dealers and manufacturers. Manufacturers are selling tyres to OEM (Original Equipment Manufacturer) customers as well. Certain customers like Trailer manufacturers can be treated as spare market customer by Tyre manufacturers while Dealers may consider them as OEM customer. So variation of 25% is possible as the estimation is for total demand of country.

Overall average of the demand in 2012 (actual consumption) is 814,236 approx 800K, which is expected to increase up to 950K in following two years, which shows good demand for commercial tyres in Thailand Market and good scope for Tyre manufacturers/importers.
A.2.) Commercial wheels
After understanding demand for Commercial Tyre, let’s understand demand for commercial wheel rims also in spare market. Wheel Rim is not as fast moving as Tyre, but still as vehicle requirement are increasing for trailer market and due to overloading, bad road issues there is good demand for wheel rims in Thailand market.

Table No. 6.2: Commercial Wheel Rim Spare Market Demand in Thailand
( Figures in ,000 )

<table>
<thead>
<tr>
<th>Year</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
<th>R6</th>
<th>R7</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>75</td>
<td>70</td>
<td>80</td>
<td>100</td>
<td>90</td>
<td>80</td>
<td>90</td>
<td>835</td>
</tr>
<tr>
<td>2011</td>
<td>95</td>
<td>90</td>
<td>95</td>
<td>110</td>
<td>95</td>
<td>90</td>
<td>95</td>
<td>957</td>
</tr>
<tr>
<td>2012</td>
<td>100</td>
<td>100</td>
<td>110</td>
<td>120</td>
<td>100</td>
<td>95</td>
<td>100</td>
<td>103</td>
</tr>
<tr>
<td>2013 FC</td>
<td>110</td>
<td>120</td>
<td>125</td>
<td>130</td>
<td>110</td>
<td>110</td>
<td>105</td>
<td>115</td>
</tr>
<tr>
<td>2014 FC</td>
<td>125</td>
<td>140</td>
<td>155</td>
<td>145</td>
<td>125</td>
<td>125</td>
<td>120</td>
<td>133</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers

Analysis and Interpretation –
As explained earlier, Wheel rims are not as fast moving as Tyres due to no direct wear and tear, however there is requirement in spare market. The data collected shows growth of @ 10-15% on year on year basis in spare market. The variation of +/- 10% from the estimation of demand between the respondents. This variation is possible as the estimation is for total demand of country.

Overall average of the demand in 2012 ( actual consumption) is 103,571 approx 100K, which is expected to increase upto 130K by 2014, which shows good demand for commercial wheel rims in Thailand Market. This is mainly increase in vehicle & Trailer production. Trailers required wheels for their trollies. Also in Asian countries overload is one of the common factor, which increases demand for wheel rim.

B) Total spare market Supply
After understanding total demand, researcher also tried to survey the supply of Tyre and Wheels in Thailand market. Below is the analysis for Total Supply in Spare market
B.1.) Commercial tyres
The main purpose to study the supply is to understand supply through domestic production v/s supply from imports. Commercial tyres are produced locally in Thailand, so it is interesting to understand imports as well.

Table No. 6.3: Commercial Tyre Spare Market Supply in Thailand
(Figures in ,000) (Year 2012)

<table>
<thead>
<tr>
<th>Production</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
<th>R6</th>
<th>R7</th>
<th>Avg.</th>
<th>% Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Production</td>
<td>640</td>
<td>640</td>
<td>720</td>
<td>850</td>
<td>480</td>
<td>680</td>
<td>560</td>
<td>652</td>
<td>79%</td>
</tr>
<tr>
<td>Import from China</td>
<td>120</td>
<td>120</td>
<td>108</td>
<td>100</td>
<td>90</td>
<td>170</td>
<td>150</td>
<td>122</td>
<td>15%</td>
</tr>
<tr>
<td>Import from India</td>
<td>16</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td>35</td>
<td>10</td>
<td>1%</td>
</tr>
<tr>
<td>Import from other countries</td>
<td>16</td>
<td>40</td>
<td>72</td>
<td>50</td>
<td>30</td>
<td>25</td>
<td>35</td>
<td>38</td>
<td>5%</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers. Data in table shown graphically in Graph no 6.1.

Graph No. 6.1: Commercial Tyre Spare Market Supply in Thailand

Analysis and Interpretation –
In Thailand market, strong presence is there of domestic manufacturers like Michelin, Bridgestone etc. The data is analysed on 2012 actual market position. Almost 80% demand is fulfilled by Domestic production i.e. 640K tyres. Around 15% of
requirement is fulfilled by Chinese Tyres & penetration from Chinese tyres is increasing, mainly due to price advantage of Chinese tyres. Small presence of other countries like Korean & Indonesian Tyre, which is around 5%. However presence from Indian Tyres is very small i.e. approx. 10K tyre which works out to be 1% of total market. As Domestic manufacturers are strong and dominating market due to their quality and service, it is really difficult for other countries brands to enter in Thailand market.

**B.2.) Commercial wheels**

As seen above supply of Tyre in Thailand Market. Let’s understand supply of commercial wheel rim in Thailand market and imports in Thailand market. As there is no commercial wheel rim manufacturer in Thailand it is interesting to understand imports from various countries.

**Table No. 6.4: Commercial Wheel Rim Spare Market Supply in Thailand**

( Figures in ,000 ) (Year 2012)

<table>
<thead>
<tr>
<th>Production</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
<th>R6</th>
<th>R7</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import from China</td>
<td>70</td>
<td>80</td>
<td>85</td>
<td>96</td>
<td>80</td>
<td>75</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Import from India</td>
<td>10</td>
<td>10</td>
<td>15</td>
<td>18</td>
<td>15</td>
<td>10</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>Import from other countries</td>
<td>15</td>
<td>10</td>
<td>10</td>
<td>6</td>
<td>5</td>
<td>10</td>
<td>5</td>
<td>8</td>
</tr>
</tbody>
</table>

**Source:** Primary data survey of the dealers/manufacturers. Data in table shown graphically in Graph no 6.2.

**Graph No. 6.2: Commercial Wheel Rim Spare Market Supply in Thailand**
Analysis and Interpretation –
In Thailand market presently no domestic production for commercial wheel rims, hence the demand is fulfilled by imports. Imports from China are dominating mainly due to low price and huge availability in market. Also as studied earlier Thailand and China is also having free trade agreement, due to which Chinese wheels are imported duty free, which also gives boost for China imports. Almost 80% market is dominated by Chinese wheel rims.

Inspite of China domination other countries like India, Japan, Europe, Indonesia are present with 20%. India’s presence is 10%. There is requirement of new technology wheels (covered in next point) for Thailand market, where there is requirement of branded/quality wheels, where Indian, Japanese or European wheels are preferred.

C) Total Spare/Retail Market Demand (According to types)
Tyres are namely classified as Radial Tyre and Bias Tyres. Second classification is Tube type tyres and Tubeless tyres. Basically Radial tyre and Tubeless tyres are new technologies introduced by tyre manufacturers in market. These new types are gaining popularity due to its certain advantages. Here researcher tried to find out penetration of those tyres in the market.

C.1.) Total Spare/Retail Market Demand for Radial and Bias commercial tyre
As explained above Radial Tyres are comparatively new technology than Bias tyres and gaining popularity in market.

Graph No. 6.3: Presence of Radial and Bias commercial tyre in Thailand market

Source: Primary data survey of the dealers/manufacturers.
Analysis and Interpretation –
There is always technological advantage & Radial tyres are having certain advantages over bias tyres, hence the market is shifting towards Radial tyre from Bias tyre. So the penetration of Radial tyres is 43% and increasing whereas Bias tyre penetration is 57%, which is reducing. Radial tyres are also required for Tubeless tyres, which is covered in next point.

C.2.) Total Spare/Retail Market Demand for Tube type and Tube less Tyre
After understanding demand for Radial or Bias Tyre, Tubeless tyre are new technology in market, let’s understand the penetration of this type of tyres.

Graph No. 6.4: Presence of Tube type and Tubeless commercial tyre in Thailand market

![Pie Chart]

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –
As explained above, there is always acceptance for new technological product. Same is the case for Tube less tyres. In Passenger car industry almost 100% demand is converted into Tubeless tyres, however in Commercial Vehicle market the penetration is increasing. It is almost 39% in 2012 in Thailand market and increasing rapidly. Still majority portion is of Tube type tyres @ 61%.

C.3.) Total Spare/Retail Market Demand for Tube type and Tube less commercial wheel rims.
Like Tyre in commercial wheel rims also there is introduction of Tubeless wheels, which will be suitable for tyres. Let’s understand penetration of Tubeless wheels against Tube type wheels.
Analysis and Interpretation –
As the demand for Tubeless tyre is increasing naturally it requires Tubeless wheel rim, hence penetration of Tubeless wheel rim is also increasing in Thailand in market. Above data shows that for around 40% penetration of Tubeless wheel rims and traditional tube type wheels are present with 60%. For Tubeless tyres, need quality wheel rims also, hence as explained earlier Indian/Japnees wheels are preffered over Chines wheel rims.

D) Total Spare/Retail Market Demand (According to size)
After major type of wheel rims, researcher also studied the sizes used in this market. As per the vehicle model or load carrying capacity differe tyre and wheels are used on vehicles.

D.1.) Commercial tyres
Tyre size is mainly recommended by OEM as per the vehicle model and load carrying capacity of the vehicle. For e.g. 10R-20, where Internal diameter of wheel rim is 20” and width is 10”. Following is the analysis of Tyres used in Thailand market.
Analysis and Interpretation –

Considering Thailand market the tyre size requirements are as shown in the graph. The penetration are as follows:

1) 10R-20 : 37%,
2) 11R-22.5 : 35%
3) 295-80/R22.5: 18%,
4) 82.5R-16 and other : 10%

The major size used is 10R-20, which is tube type tyre and second important size is 11R 22.5 which is Tubeless Tyre. This information is useful for the tyre manufacturers to understand the sizes used in market and check their capability.

D.2.) Commercial wheels

As sizes for tyre varies, same is applicable for wheel rim as well. Wheels are also classified on width and diameter of wheel e.g. 7.5-20, where 20” is Diameter of wheel which fits with 20” Tyre size and 7.5” is width of wheel, which is always lesser than Tyre.
Graph No. 6.7: Presence of Commercial Wheel sizes in Thailand market

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –
Considering Thailand market the wheel size requirements are as shown in the graph. The penetration are as follows:
1) 7.0/7.5-20 : 52%  
2) 6.0-16 : 8%  
3) 22.5 X 8.25 : 30%  
4) 22.5X7.5/17.5X6.00 : 10%
Around 52% penetration is of 7.0/7.5-20 size wheel rim which is tube type wheel rim and 30% penetration is of 22.5X8.25 size wheel rim which is tubeless wheel rim.

E) Total Spare/Retail Market Demand (According to brand)
Here researcher tried to understand top 3 brand is Thailand market for commercial tyres as well as commercial wheel rims and their share of business.

Graph No. 6.8: Top 3 Commercial Tyres brands in Thailand market

Source: Primary data survey of the dealers/manufacturers.
**Analysis and Interpretation –**

As seen earlier majority of Thailand market is cater by domestic manufacturers. Michelin and Bridgestone are having local manufacturing of tyres in Thailand and they command the market with 30% SOB each. Other tyre like Maxis, D Stone China are in balance 25%.

**E.2.) Commercial wheels**

Like 3 top brands in Tyre mentioned earlier, below are top 3 brands for Wheel rims as well.

**Graph No. 6.9: Top 3 Commercial Wheels brands in Thailand market**

![Pie chart showing top 3 commercial wheels brands in Thailand market]

**Source:** Primary data survey of the dealers/manufacturers.

**Analysis and Interpretation –**

There is no commercial wheel rim manufacturer in Thailand, so all the requirements are catered by imports. So China is dominating with 78% market share, where there are many brands available in market for e.g. ZX, Sunrise etc. Indian wheels with Hayes Brand name is present with 12% market share & other wheels are with approx. 10% market share.

**6.1.2. Top 3 Vehicle manufacturers in Thailand Market.**

As all the research is related to commercial vehicle, researcher has also collected data regarding top 3 brands or vehicle sold in the Thailand market.
Analysis and Interpretation –
As per above graph and data collected Isuzu leading the market with 45% of market share followed by Hino 44% and then Fuso 11%. All these are Japanese vehicle manufacturers.

6.1.3. Consumer Priorities while purchasing Commercial Tyre and Wheel in Thailand market
This is important section of the research, where researcher tried to find out market perception regarding Tyre and wheel rims based on 7 different parameters. These parameters are Price, Quality, brand Name, Warranty/service, Credit terms, Availability in Market and Origin of country.
Researcher asked the respondent to rank above 7 parameters on the scale of 1-10 to understand their priorities. Based on feedback the data has tabulated and then graphs are prepared to understand the ranking of each parameter.

A) Ranking of Consumer priorities while purchasing Commercial Tyre.

As mention above average ranking of respondent with respective 7 different parameters are plotted in histogram as below:-
Graph No. 6.11: Ranking of Consumer priorities while purchasing Commercial Tyre in Thailand Market

Analysis and Interpretation –
As per data collected in Thailand market, the first priority of consumers while purchasing Commercial tyre is Quality and Brand name. As tyre is costlier part, consumers are more careful about quality and brand name of the tyre while making their buying decision. Warranty/Service is also important and next priority. Warranty normally associates with Brand name/manufacturer name in case of big manufacturers like Michelin & Bridgestone.
Price is next factor which is definitely important, but consumers are ready to pay price for quality if required. As 80% production is by Domestic tyre manufacturers having good availability of market, the other parameters like Origin of country, credit term are rated in the last.

B) Ranking of Consumer priorities while purchasing Commercial Wheel Rims.

Like Tyre researcher has also studied consumer priorities while purchasing Wheel rims & plotted same as below:
Analysis and Interpretation –
As per data collected in Thailand market, the first priority of consumers while purchasing Commercial wheel is Price and availability in market. Exactly opposite to Tyre!! Comparatively wheel is not as costly as Tyre & bit rigid in nature, hence buyers are looking for more cheap option for same. As wheel rims are imported from other countries availability in market is also important parameter while making their buying decision. As market is changing from Tube type to tubeless, quality also started playing important role in buyers’ decision. Brand name, Warranty/Service, origin of country are considered as less important as lot of brands are getting imported from China. However for certain customers or Tyre manufacturer’s brand name or good quality product is important & they try to balance between price & quality product. Chinese products are dominated due to low price and good availability in market.

6.1.4. Market Perception regarding manufacturing country in Thailand Market
In earlier topic researcher analysed buyer priorities while purchasing Tyre or wheel rim, here researcher would like to present data regarding market perception about manufacturing companies, who are selling commercial wheel rims and tyre in Thailand market. To understand this again researcher has asked respondents to rank 7 parameter on Good/Medium/bad scale or High/medium/Low scale. Then same as converted in to 1-2-3 ranking for tabulation purpose and then graph has plotted. The parameters are
Price, Quality, Brand Name, Warranty/Service, Availability in market, Life of product and penetration potential.

A) Market perception for Commercial tyre.
Let’s understand the market perception for various countries w.r.t. important parameters while purchasing commercial tyre.

A.1.) Market Perception of China Tyre

Graph No. 6.13: Market Perception of China Tyre in Thailand Market

- **Price:** Selling at very low price as a strategy.
- **Quality:** Perception regarding Quality is not good, treated as low Quality product.
- **Brand Name:** No major Brand name as selling with various brand name in market.
- **Warranty/Service:** No Warranty or service provided by Chinese Tyre suppliers.
- **Availability in Market:** Very good on availability in market & it is a strong point of Chinese wheel suppliers to penetrate in market.
- **Life of Product:** Treated as low life product due to quality
- **Penetration Potential:** Good potential as price is important parameter and Chinese products are available at low price. Also introduced Radial tyres which has advantage for Chines tyres.

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –
As per the data collected Market Perception for Tyre from China is as below. Same is compare with other in Hypothesis Testing of this chapter.

- **Price:** Selling at very low price as a strategy.
- **Quality:** Perception regarding Quality is not good, treated as low Quality product.
- **Brand Name:** No major Brand name as selling with various brand name in market.
- **Warranty/Service:** No Warranty or service provided by Chinese Tyre suppliers.
- **Availability in Market:** Very good on availability in market & it is a strong point of Chinese wheel suppliers to penetrate in market.
- **Life of Product**: Treated as low life product due to quality
- **Penetration Potential:** Good potential as price is important parameter and Chinese products are available at low price. Also introduced Radial tyres which has advantage for Chines tyres.
A.2.) Market Perception for India

Graph No. 6.14: Market Perception of India Tyre in Thailand Market

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –
As per the data collected Market Perception for Tyre from India is as below. Same is compare with other in Hypothesis Testing of this chapter.

- Price: Medium pricing strategy. No as cheap as China.
- Quality: Perception regarding Quality is moderate, treated as respectable Quality product.
- Brand Name: No much Brand name exist in Thailand market for Indian Tyre.
- Warranty/Service: No Warranty or service provided by Indian suppliers.
- Availability in Market: No much availability of Indian Product in the market. Available with few dealers.
- Life of Product: Treated as medium life product due to moderate quality.
- Penetration Potential: Comparatively low penetration potential, mainly due to domestic tyres are dominating market. Market is also shifting toward radial tyres, where Indian Tyres are still struggling.

A.3.) Market Perception for domestically produced foreign brand Tyres

There are certain tyre manufacturers which are producing locally in Thailand however they are multinational brands like Michelin, Bridgestone. Market perception about these products is different than Tyre produced locally by local brands like Mexxis etc.
Graph No. 6.15: Market Perception for domestically produced foreign brand Tyres in Thailand Market

![Bar chart showing market perception of foreign brand tyres](chart.png)

**Source:** Primary data survey of the dealers/manufacturers.

**Analysis and Interpretation –**

As per the data collected Market Perception for domestic tyre with foreign brands is as below. As explained the rating is done on the scale of 1-3 and all the rating for these tyre is above 2, which is on higher side compare to other tyres.

- **Price:** High Price strategy, due to Quality, life, Branding of product.
- **Quality:** Very strong image regarding Quality of product.
- **Brand Name:** Strongly present in Thailand market & captured majority of market share.
- **Warranty/Service:** Also good at warranty policies and service.
- **Availability in Market:** Wide selling network, so present in all parts of country with good availability and variety.
- **Life of Product:** Proven for life of product and having good life due to technological back up.
- **Penetration Potential:** Already good in penetration and having good potential for future as well.

**A.4.) Market Perception for Domestically produced local brand Tyres**

As briefed earlier there are certain brands which are local brands and also produced locally is having some market share.
Analysis and Interpretation –

As per the data collected Market Perception for domestic tyre with local brands is as below.

- Price: Comparatively medium price than foreign brands.
- Quality: Good at Quality rating is 2 out of 3.
- Brand Name: Well known in market and consumers are preferring this brand over Chinese in case of cost constraint.
- Warranty/Service: Also good at warranty policies and service.
- Availability in Market: Wide selling network, so present in all parts of country with good availability and variety.
- Life of Product: Moderate life of product, respectable product in market.
- Penetration Potential: Already available in market with sizable presence. Due to balance between quality and price, good penetration potential.

A.5.) Market Perception for Tyres from other countries

Certain brands are available from other countries like Korea or Japan. Below is analysis of their market perception in the market.
Graph No. 6.17: Market Perception for tyres from other countries in Thailand Market

Analysis and Interpretation –
These are also good products like India and present at small % in market.

- Price: Comparatively medium price than local foreign brands, but higher than China.
- Quality: Good at Quality rating so respectable quality.
- Brand Name: Need to work on brand name as no much popular in market.
- Warranty/Service: Not strong on warranty and service part.
- Availability in Market: Limited availability in market.
- Life of Product: Moderate life of product.
- Penetration Potential: Market is dominated by Domestic production and also from Chinese product, limited penetration potential in market.

B) Market Perception for Commercial wheels
After understanding Market Perception for Tyres from various countries. Let’s understand market perception for Wheels from various countries as well. As explained earlier no commercial wheel manufacturer is present in Thailand, so all market demand is cater by import of wheels, hence it is interesting to understand the perception about imports from various countries.
B.1.) Market Perception for Commercial Wheels from China
As seen earlier lot of imports from China wheels with various brand names like ZX, Sunrise etc.

Graph No. 6.18: Market Perception for commercial wheels from China in Thailand Market

![Commercial Wheel Rim Graph]

**Analysis and Interpretation** –
As per the data collected Market Perception for Wheels from China is as below. Same is compare with other in Hypothesis Testing of this chapter.

- **Price:** Selling at very low price as a strategy & penetrate in market.
- **Quality:** Perception regarding Quality is not good, treated as low Quality product.
- **Brand Name:** No major Brand name as selling with various brand name in market.
- **Warranty/Service:** No Warranty or service provided by Chinese Tyre suppliers.
- **Availability in Market:** Very good on availability in market & it is a strong point of Chinese wheel suppliers to penetrate in market.
- **Life of Product:** Treated as low life product due to quality
- **Penetration Potential:** Good potential as price is important parameter and Chinese products are available at low price. Strong in Tube type wheels, also focusing on Tubeless wheels.

B.2.) Market Perception for Commercial Wheels from India
Around 10% imports of Wheels from India. Below is the analysis of market perception for India wheels.
Graph No. 6.19: Market Perception for commercial wheels from India in Thailand Market

**Source:** Primary data survey of the dealers/manufacturers.

**Analysis and Interpretation –**

As per the data collected Market Perception for Wheels from India is as below. Same is compare with other in Hypothesis Testing of this chapter.

- **Price:** Comparatively high on price. No as cheap as China. Higher import duty compare to China.
- **Quality:** Perception regarding Quality is good, treated as respectable Quality product as promoted by Tyre manufacturers also.
- **Brand Name:** Medium on brand name. people knows Lemmerz as a brand in market,
- **Warranty/Service:** Low Warranty or service provided by Indian suppliers.
- **Availability in Market:** Moderate on availability in market as selling through Tyre manufacturing channels like Michelin, Bridgestone, so available in market.
- **Life of Product:** Considered very good on life of product, hence good acceptance as quality product.
- **Penetration Potential:** As no wheel manufacturer in Thailand + low quality impression regarding Chines wheels, moderate scope of penetration with help of Tyre manufacturer as a package or with some segment where Quality product is required.
B.3.) Market Perception for Commercial Wheels from Other countries

Wheels are also getting imported in Thailand from some of other countries like Japan, Indonesia and Korea. However import % is less @ 10%.

Graph No. 6.20: Market Perception for commercial wheels from other countries in Thailand Market

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –

As per the data collected Market Perception for Wheels from India is as below. Same is compare with other in Hypothesis Testing of this chapter.

- **Price**: Comparatively very high on price. Mainly due to high import duty.
- **Quality**: Perception regarding Quality is good, as mostly used on OEM vehicle as CKD & sold by OEM’s as spare.
- **Brand Name**: Good on brand name people knows like Topi Japan due to OEM.
- **Warranty/Service**: Low Warranty or service.
- **Availability in Market**: Limited availability in market as Sold moistly with OEM’s so not available much for spares.
- **Life of Product**: Considered very good on life of product, hence good acceptance as quality product.
- **Penetration Potential**: Due to high price and no much sales channel limited scope for penetration.
6.1.5. Import Duty Structure for Commercial Tyre and Wheels

After understanding market perception for Tyre & Wheels for various countries, it is also important to understand import duty structure for Tyres and wheels imported to Thailand from various countries. Duty plays an important role to decide price. If duty difference is high between 2 countries, certainly one country gets advantage over other country.

Table No. 6.5: Import Duty Structure for Commercial Tyre and Wheels in Thailand market

<table>
<thead>
<tr>
<th>Country of origin</th>
<th>Import duty for Tyre</th>
<th>Import duty for Wheels</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>10%</td>
<td>0%</td>
</tr>
<tr>
<td>India</td>
<td>7%</td>
<td>30%</td>
</tr>
<tr>
<td>Other country</td>
<td>Japan 10%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation

Above table is showing duty difference for imports from various countries. Regarding commercial tyres import duty from India is 7% compare to 10% from other countries including China. So due to current Free Trade Agreement, India got advantage over other countries.

Regarding Commercial Wheel rims, exactly opposite case duty from China is 0% whereas duty from India and other countries is 30%. So 20% is big gap for any product to compete in market. China is also having Free Trade agreement like India with Thailand, certain commodities are considered for duty concession, in which Wheel rim is there for China, where as duty for Indian product is also decreasing gradually on year on year basis by approx. 1% every year, however to become competitive this product needs to be included on priority list by Government to reduce duty.

6.1.6. Export and Import between Thailand and India

To understand present Import and export between India and Thailand, researcher has collected secondary data from private agency called Samrudhi data information services. This data is mainly collected from all the ports of India from where import and export is taking place. Again all commodities are classified as Harmonised custom code called HS code, which is unique no for particular category of product. The data is available w.r.t. this HS code. In below analysis researcher has collected data related to HS code – 8708 (Parts and accessories for motor vehicle). Most of auto components
are covered under this code. However these components are for all types of vehicles. This comparison is just to understand balance trade between 2 countries.

A) Export and Import to Thailand from India

Below table shows Export and Import between India and Thailand in INR for HS Code 8708

Table No. 6.6: Export and Import to Thailand from India

<table>
<thead>
<tr>
<th>parts and accessories for motor vehicles</th>
<th>Export (INR)</th>
<th>Import (INR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>2,44,97,68,893</td>
<td>2,51,34,77,469</td>
</tr>
<tr>
<td>2009</td>
<td>3,66,58,30,156</td>
<td>2,65,88,40,159</td>
</tr>
<tr>
<td>2010</td>
<td>4,37,30,31,837</td>
<td>3,49,32,62,862</td>
</tr>
<tr>
<td>2011</td>
<td>4,96,44,31,126</td>
<td>4,40,79,93,613</td>
</tr>
<tr>
<td>2012</td>
<td>5,77,33,46,799</td>
<td>5,80,30,03,862</td>
</tr>
</tbody>
</table>

Source: Data from Samrudhi Data Communication services ltd.

Analysis and Interpretation

Above table shows there in continuous increase in trade between these 2 countries. The effect is more specially after Free Trade Agreement between these 2 countries. Export has increased from 2.4 Bn INR to 5.7 Bn INR within 5 years, however import is more than export i.e. increased from 2.5 Bn INR to 5.8 BN INR. It has been observed that also imports from Thailand got slight higher benefits than Export from India due to free trade agreement.

Summary

In this section researcher has done detailed analysis of Thailand market to understand present demand for Tyres and Wheel, present supply in market. Various types and sizes used in the market, various players in market.

Also studied in detail market perception for Tyres and wheel w.r.t. various parameters like price, quality etc and compare the same with help of tabulation of graphs wherever required. At the end researcher has also presented import duty structure for Tyre and Wheels in Thailand from various countries. Also studied import export between India and Thailand with respective HS Code of part and accessories of motor vehicle.

Similar study now will be conducted with Indonesia and Vietnam market.
6.2. Presentation and Analysis of Indonesia Market

After analysing Thailand market in details next country for analysis is Indonesia. Indonesia is 2nd biggest market after Thailand in ASEAN countries producing approx. 1.3 Mn vehicles per annum. Researcher has studied this market in depth for Commercial Tyre and Commercial Wheel rim like Thailand market. As the data is similar to Thailand market like selected products are Tyre and Wheels & also focus on imported countries are China, India and local market, introduction in most of the cases is same as Thailand market. Hence in below analysis of Indonesia and then Vietnam market, introduction is given in brief to avoid repetition. One can always refer introduction in Thailand market for details required.

6.2.1. Total Spare/Retail Market Demand

With help of this question researcher tried to find out total requirement of spare market for Commercial Tyre and Commercial Wheel Rim in Indonesia market. The demand is again divided in to type, size etc. Researcher also covered supply of these components below.

A) Total Spare Market Demand

Total demand refers to total requirement of Spare market for Tyre and Wheel irrespective of size or type.

A.1.) Commercial tyre

Below are the demand formulated in tabular form as stated by respondent and average calculated. Data upto 2012 is actual demand and 2013 & 2014 are forecasted demand.

Table No. 6.7: Commercial Tyre Spare Market Demand in Indonesia (Figures in ,000)

<table>
<thead>
<tr>
<th>Year</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
<th>R6</th>
<th>R7</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>125</td>
<td>NA</td>
<td>130</td>
<td>120</td>
<td>130</td>
<td>NA</td>
<td>NA</td>
<td>126</td>
</tr>
<tr>
<td>2011</td>
<td>150</td>
<td>NA</td>
<td>160</td>
<td>150</td>
<td>160</td>
<td>NA</td>
<td>NA</td>
<td>155</td>
</tr>
<tr>
<td>2012</td>
<td>180</td>
<td>NA</td>
<td>190</td>
<td>180</td>
<td>200</td>
<td>NA</td>
<td>NA</td>
<td>187</td>
</tr>
<tr>
<td>2013 FC</td>
<td>220</td>
<td>NA</td>
<td>220</td>
<td>210</td>
<td>240</td>
<td>NA</td>
<td>NA</td>
<td>222</td>
</tr>
<tr>
<td>2014 FC</td>
<td>245</td>
<td>NA</td>
<td>260</td>
<td>240</td>
<td>270</td>
<td>NA</td>
<td>NA</td>
<td>253</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers
Analysis and Interpretation –
The data collected from respondent shows growth of @ 15-20% on year on year basis in spare market. The market is fast increasing and expected become double in 5 years’ time.

Overall average of the demand in 2012 (actual consumption) is 187,500 approx. 200K, which is expected to increase upto 250K by 2014, which shows good demand for commercial tyres in Indonesia market. This is mainly due to increase in mining sector, which requires lot of vehicles + always running under overload condition in mining areas resulted in fast wear and tear of tyres and wheels.

A.2.) Commercial wheels
After understanding demand for Commercial Tyre, let’s understand demand for commercial wheel rims also in spare market. As explained earlier due to mining sector overload and bad road issues there is good demand for wheel rims in Indonesia market.

A.2.) Commercial wheels
Table No. 6.8: Commercial wheels Spare Market Demand in Indonesia (Figures in ,000 )

<table>
<thead>
<tr>
<th>Year</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
<th>R6</th>
<th>R7</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>NA</td>
<td>75</td>
<td>80</td>
<td>75</td>
<td>NA</td>
<td>85</td>
<td>80</td>
<td>79</td>
</tr>
<tr>
<td>2011</td>
<td>NA</td>
<td>80</td>
<td>90</td>
<td>90</td>
<td>NA</td>
<td>100</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>2012</td>
<td>NA</td>
<td>100</td>
<td>115</td>
<td>100</td>
<td>NA</td>
<td>120</td>
<td>110</td>
<td>109</td>
</tr>
<tr>
<td>2013 FC</td>
<td>NA</td>
<td>115</td>
<td>130</td>
<td>120</td>
<td>NA</td>
<td>145</td>
<td>130</td>
<td>127</td>
</tr>
<tr>
<td>2014 FC</td>
<td>NA</td>
<td>135</td>
<td>155</td>
<td>140</td>
<td>NA</td>
<td>165</td>
<td>155</td>
<td>149</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers

Analysis and Interpretation –
As explained earlier, good demand of wheel rims in Indonesian market due to mining application. The data collected shows growth of @ 10-15% on year on year basis in spare market. The variation of +/- 10% from the estimation of demand between the respondents. This variation is possible as the estimation is for total demand of country.

Overall average of the demand in 2012 (actual consumption) is 108,750 approx 100K, which is expected to increase upto 150K by 2014, which shows good demand for commercial wheels in Indonesia Market.
B) Total spare market Supply
Let’s understand supply of wheel and tyres in Indonesia market. Below is the analysis for Total Supply in Spare market

B.1.) Commercial tyres
The main purpose to study the supply is to understand supply through domestic production v/s supply from imports. Commercial tyres are produced locally in Indonesia, so it is interesting to understand imports as well.

Table 6.9: Commercial Tyre Spare Market Supply in Indonesia
(Figures in ,000)

<table>
<thead>
<tr>
<th>Production</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
<th>R6</th>
<th>R7</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>135</td>
<td>NA</td>
<td>140</td>
<td>130</td>
<td>140</td>
<td>NA</td>
<td>NA</td>
<td>136</td>
</tr>
<tr>
<td>Import from China</td>
<td>22</td>
<td>NA</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>NA</td>
<td>NA</td>
<td>28</td>
</tr>
<tr>
<td>Import from India</td>
<td>25</td>
<td>NA</td>
<td>20</td>
<td>15</td>
<td>30</td>
<td>NA</td>
<td>NA</td>
<td>22</td>
</tr>
<tr>
<td>Import from other countries</td>
<td>0</td>
<td>NA</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers. Data in table shown graphically.

Graph No. 6.21: Commercial Tyre Spare Market Supply in Indonesia

Source: Primary data survey of the dealers/manufacturers.
Analysis and Interpretation –
Like Thailand market, in Indonesia market also strong presence is there of domestic manufacturers like Michelin, Bridgestone etc. Almost 70% demand is fulfilled by Domestic production i.e. 140K tyres. Around 15% of requirement is fulfilled by Chinese Tyres & penetration from Chinese tyres is increasing, mainly due to price advantage of Chinese tyres.
Indian Tyres are also present with good share of business like 15%. As Indonesian market is still dominated by Bias tyre due to mining application, Indian manufacturer like MRF is holding good position and selling good 25-30K tyres in Indonesian market.

B.2.) Commercial wheels
Also let’s understand supply of commercial wheel rim in Indonesia market and imports in Indonesian market.

B.2.) Commercial wheels
Table 6.10: Commercial wheels Spare Market Supply in Indonesia

<table>
<thead>
<tr>
<th>Production</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
<th>R6</th>
<th>R7</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>NA</td>
<td>25</td>
<td>25</td>
<td>20</td>
<td>NA</td>
<td>35</td>
<td>30</td>
<td>27</td>
</tr>
<tr>
<td>Import from China</td>
<td>NA</td>
<td>60</td>
<td>70</td>
<td>60</td>
<td>NA</td>
<td>70</td>
<td>70</td>
<td>66</td>
</tr>
<tr>
<td>Import from India</td>
<td>NA</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>NA</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Import from other countries</td>
<td>NA</td>
<td>10</td>
<td>15</td>
<td>15</td>
<td>NA</td>
<td>15</td>
<td>15</td>
<td>14</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.
Analysis and Interpretation –

In Indonesia market 2 wheel manufacturers are present namely Palingda and Auto Korindo. However they can produce upto 20” wheel size and catering to 25% demand of the market. Around 50% market is dominated by Chinese product. Imports from China are dominating mainly due to low price and huge availability in market.

Inspite of domestic production & China domination other countries like India, Japan, Turkey are present with 15-20%. India’s presence is very small @ 4-5%. There is requirement heavy duty wheel with better life in mining sector of Indonesia, where there is requirement of good wheels, where Indian and Turkish wheels are preferred.

C) Total Spare/Retail Market Demand (According to types)

As explained in Thailand market 6.1.1.1.C1, Tyres are namely classified as Radial Tyre and Bias Tyres. Second classification is Tube type tyres and Tubeless tyres. Here researcher tried to find out penetration of those tyres in the market.

C.1.) Total Spare/Retail Market Demand for Radial and Bias commercial tyre

As explained above Radial Tyres are comparatively new technology than Bias tyres and gaining popularity in market.
Graph No. 6.23: Presence of Radial and Bias commercial tyre in Indonesia market

Table No. 6.11: Presence of Radial and Bias commercial tyre in Indonesia market

<table>
<thead>
<tr>
<th></th>
<th>Domestic Production</th>
<th>Import From China</th>
<th>Import From India</th>
<th>Import From Other Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radial Tyres</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Bias Tyres</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.

Fig No – 6.1 Radial – Bias Tyre production comparison

Source: Primary data survey of the dealers/manufacturers.
Analysis and Interpretation

Radial tyres are having certain advantages over Bias tyre, hence market is expected to shift from Bias to Radial. However due to heavy application in Indonesian market, it is not shifting as fast as Thailand market. Penetration of Radial tyres is 15% and increasing whereas Bias tyre is still dominating with 85%. Also as shown in above graph Radial tyres are produced locally and imported from China, where as Bias tyres are produced locally, imported from China, India and other countries as well.

C.2.) Total Spare/Retail Market Demand for Tube type and Tube less commercial tyre

Similar to Radial tyres, Tubeless tyre are new technology in market, lets understand the penetration of this type of tyres.

Graph No. 6.24: Presence of Tube type and Tubeless commercial tyre in Indonesia market

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –

As explained above, there is always acceptance for new technological product. Same is the case for Tube less tyres. However in Commercial Vehicle market the penetration is increasing. It is almost 14-15% in 2012 in Indonesian market and increasing gradually. Still majority portion is of Tube type tyres @ 85-86%.
C.3.) Total Spare/Retail Market Demand for Tube type and Tube less commercial wheel rims.

Like Tyre in commercial wheel rims also there is introduction of Tubeless wheels, which will be suitable for tyres. Let’s understand penetration of Tubeless wheels against Tube type wheels.

**Graph No. 6.25: Presence of Tube type and Tubeless commercial wheel rims in Indonesia market**

![Presence of Tube type and Tubeless commercial wheels rims in Indonesian market](image)

**Source:** Primary data survey of the dealers/manufacturers.

**Analysis and Interpretation** –

As the demand for Tubeless tyre is increasing naturally it requires Tubeless wheel rim, hence penetration of Tubeless wheel rim is also increasing in Indonesian in market. Above data shows that for around 15% penetration of Tubeless wheel rims and traditional tube type wheels are present with 85%.

D) Total Spare/Retail Market Demand (According to size)

After major type of wheel rims, researcher also studied the sizes used in this market. As per the vehicle model or load carrying capacity different tyres and wheels are used on vehicles.

D.1.) Commercial tyres

Tyre size is mainly recommended by OEM as per the vehicle model and load carrying capacity of the vehicle. For e.g. 10R-20, where Internal diameter of wheel rim is 20” and width is 10”. Following is the analysis of Tyres used in Indonesia market.
Graph No. 6.26: Presence of Commercial tyre sizes in Indonesia market

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –
Considering Indonesian market the major size used is 10R-20, which is tube type tyre around 65%. Second important size is 12R 24, again Tube type Tyre requires for mining application which is @ 15%. Tubeless Tyre 295-80/R 22.5 is also 15%. This information is useful for the tyre manufacturers to understand the sizes used in market and check their capability.

D.2.) Commercial wheels
Commercial wheel sizes already explained in 6.1.1.1.D2. Below is various sizes of wheels used in Indonesian market.

Graph No. 6.27: Presence of Commercial wheels sizes in Indonesia market

Source: Primary data survey of the dealers/manufacturers.
Analysis and Interpretation –

1) 7.0/7.5-20 : 60%  
2) 8.0-20 : 15%  
2) 8.5-24 : 15%  
4) 22.5X8.25 : 10%

Around 60% penetration is of 7.0/7.5-20 size wheel rim which is tube type wheel rim and 15% penetration is of 22.5X8.25 size which is wheel rim which is tubeless wheel rim. However good penetration of 8.0-20” & 8.5-24” Tube type wheel rims required for vehicle running in mining area.

E) Total Spare/Retail Market Demand (According to brand)

Major Tyre brand in Indonesia market.

E.1.) Commercial tyres

Graph No. 6.28: Top 3 Commercial tyres brands in Indonesia market

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –

As seen earlier majority of Indonesian market is cater by domestic manufacturers. Bridgestone and Michelin are having local manufacturing of tyres in Thailand and they command the market with 40% & 20% SOB respectively. Next preferred brand is MRF from India with 10% SOB.
E.2.) Commercial wheels

Graph No. 6.29: Top 3 Commercial wheels brands in Indonesia market

Analysis and Interpretation –
Though there are 2 wheel manufacturers in Indonesia, still majority wheels used are Chinese due to low price and availability in wide range. Local manufacturer Palingda and Auto Korindo are producing tube type wheels upto 20” and mainly focusing to supply to OEM, hence their presence is limited to 10% each in spare market. Wheels from Turkey having 20% SOB mainly in mining area due to life and quality of wheels. Indian wheels have recently entered & having 4-5 % SOB, trying to penetrate in market.

6.2.2. Top 3 Vehicle manufacturers in Indonesia Market.
As all the research is related to commercial vehicle, researcher has also collected data regarding top 3 brands or vehicle sold in the Indonesia market.

Graph No. 6.30: Top 3 vehicle manufacturers in Indonesia market

Source: Primary data survey of the dealers/manufacturers.
Analysis and Interpretation –
Indonesia is also dominated by Japanese vehicle manufacturers. As per above graph and data collected Hino leading the market with 55% of market share followed by Fuso 27% and then Isuzu 18%.

6.2.3. Ranking of different characteristics on a scale on 1-10
Consumer Priorities while purchasing Commercial Tyre and Wheel in Indonesia market
As already briefed in 6.1.3 section researcher tried to find out market perception regarding Tyre and wheel rims based on 7 different parameters. Below is detailed analysis of ranking done by respondent.

A) Ranking of Consumer priorities while purchasing Commercial Tyre.
As mention above average ranking of respondent with respective 7 different parameters are plotted in histogram as below:-

Graph No. 6.31: Ranking of Consumer priorities while purchasing Commercial Tyre in Indonesia market

![Graph showing ranking of consumer priorities](image)

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –
As per data collected in Indonesia market, the first priority of consumers while purchasing Commercial tyre is Quality and Brand name. As tyre is costlier part, consumers are more careful about quality and brand name of the tyre while making their buying decision. Second important parameter is availability in market and price
of tyre. Warranty normally associates with Brand name/manufacturer name in case of big manufacturers like Michelin & Bridgestone.

As 60% production is by Domestic tyre manufacturers having good availability of market, the other parameters like Origin of country, credit term are rated in the last.

B) Ranking of Consumer priorities while purchasing Commercial Wheel Rims.

Like Tyre researcher has also studied consumer priorities while purchasing Wheel rims & plotted same as below:

Graph No. 6.32: Ranking of Consumer priorities while purchasing Commercial wheel rims in Indonesia market

Analysis and Interpretation –

As per data collected in Indonesia market, the first priority of consumers while purchasing Commercial wheels rim is Quality, as per end users wheel is lasting hardly for 6 months if not a good quality product in market. Hence for mining application consumers are preferring good quality product. Second important factor is availability in market followed by Price. Limited options available with good quality product, hence consumers are preferring product whichever easily available at low price. Next preference is given to Brand name, Warranty/Service provided by wheel supplier and also origin of country. However as mentioned above for mining application good quality product is important with heavy duty application. Chinese products are dominated due to low price and good availability in market.
6.2.4. Market Perception regarding manufacturing country in Indonesia Market

After understanding consumer priorities while purchasing any product, next exercise done by researcher is to understand market perception of manufacturing country. The methodology is explained in topic no 6.1.4 in Thailand market section.

A) Market perception for Commercial tyre.

Let’s understand the market perception for various countries w.r.t. important parameters while purchasing commercial tyre.

A.1.) Market Perception of China Tyre

Graph No. 6.33: Market Perception of China Tyre Indonesia market

![Graph showing market perception of China Tyre](image)

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –

As per the data collected Market Perception for Tyre from China is as below. Same is compared with other in Hypothesis Testing of this chapter.

- **Price**: Selling at very low price as a common strategy.
- **Quality**: Perception regarding Quality is not good, treated as low Quality product.
- **Brand Name**: No major Brand name as selling with various brand name in market.
- **Warranty/Service**: No Warranty or service provided by Chinese Tyre suppliers.
- **Availability in Market**: Very good on availability in market & it is a strong point of Chinese wheel suppliers to penetrate in market.
Life of Product: Treated as low life product due to quality, hardly last for 3-4 months.

Penetration Potential: Good potential as price is important parameter and Chinese products are available at low price. Also introduced Radial tyres which has advantage for Chinese tyres.

A.2.) Market Perception for India

Graph No. 6.34: Market Perception of India in Indonesia market

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –
As per the data collected Market Perception for Tyre from India is as below. Same is come with other in Hypothesis Testing of this chapter.

- Price: Medium pricing strategy. No as cheap as China.
- Quality: Perception regarding Quality is good for Bias tyres, treated as respectable Quality product.
- Brand Name: Brand name is also good, MRF tyres are well known brand in Indonesian market.
- Warranty/Service: No Warranty or service provided by Indian suppliers.
- Availability in Market: good dealer network to sell Indian product, hence availability is good in the market.
- Life of Product: Comparatively good life of product, hence good image in market.
Penetration Potential: Presently medium penetration & also good chances to retain market share. However market is also shifting toward radial tyres, where Indian Tyres are still struggling, need to focus on same.

A.3.) Market Perception for domestically produced foreign brand Tyres
There are certain tyre manufacturers which are producing locally in Indonesia however they are multinational brands like Michelin, Bridgestone. Market perception about these products is different and important to understand same.

Graph No. 6.35: Market Perception for domestically produced foreign brand Tyres
Indonesia market

Analysis and Interpretation –
As per the data collected Market Perception for domestic tyre with foreign brands is as below.

- Price: High Price strategy, due to Quality, life, Branding of product.
- Quality: Very strong image regarding Quality of product.
- Brand Name: Strongly present in Indonesia market & captured majority of market share.
- Warranty/Service: Also good at warranty policies and service.
- Availability in Market: Wide selling network, so present in all parts of country with good availability and variety.
Life of Product: Comparatively good life of product, as considering application of tyres, it is expected to get reduced life.

Penetration Potential: Already good in penetration and having good potential for future as well.

B) Market Perception for Commercial wheels

After understanding Market Perception for Tyres from various countries. Let’s understand market perception for Wheels from various countries as well.

B.1.) Market Perception for Commercial Wheels from China

Graph No. 6.36: Market Perception for Commercial Wheels from China in Indonesia market

![COMMERCIAL WHEEL RIM CHINA](on the Scale of 1-5)

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –

As per the data collected Market Perception for Wheels from China is as below. Same is compare with other in Hypothesis Testing of this chapter.

- Price: Selling at very low price as a strategy & penetrate in market.
- Quality: Perception regarding Quality is not good, treated as low Quality product.
- Brand Name: No major Brand name as selling with various brand name in market.
- Warranty/Service: No Warranty or service provided by Chinese Tyre suppliers.
- Availability in Market: Very good on availability in market & it is a strong point of Chinese wheel suppliers to penetrate in market.
- Life of Product: Treated as low life product due to quality. Wheel last for 3-4 months.
- Penetration Potential: Good potential as price is important parameter and Chinese products are available at low price. Strong in Tube type wheels, also focusing on Tubeless wheels.

**B.2.) Market Perception for Commercial Wheels from India**

Small imports @ 4-5% of Wheels from India. Below is the analysis of market perception for India wheels.

**Graph No. 6.37: Market Perception for Commercial Wheels from India in Indonesia market**

![Graph](image)

**Source:** Primary data survey of the dealers/manufacturers.

**Analysis and Interpretation** –

As per the data collected Market Perception for Wheels from India is as below. Same is compare with other in Hypothesis Testing of this chapter.

- **Price:** Comparatively high on price. No as cheap as China. Introduced heavy duty wheel in market.
- **Quality:** Perception regarding Quality is good, treated as respectable Quality product as used in mining application for better life.
- **Brand Name:** Medium on brand name. People knows Lemmerz as a brand in market,
- **Warranty/Service:** Low Warranty or service provided by Indian suppliers.
Availability in Market: Comparatively low on availability in market, need to increase spread in market.

Life of Product: Considered good on life of product, hence good acceptance as quality product in mining area with avg life of 1 year.

Penetration Potential: As customer requires heavy duty good quality wheels sometimes customise wheels for specific application good potential for penetration in the market.

B.3.) Market Perception for Commercial Wheels from Other countries
Good imports from Turkey @ 20% due to demand from mining area application.

Graph No. 6.38: Market Perception for Commercial Wheels from Other countries in Indonesia market

![Graph showing Market Perception for Commercial Wheels from Other countries in Indonesia market](chart.png)

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –
As per the data collected Market Perception for Wheels from other countries (mainly Turkey) is as below:-

- Price: Comparatively very high on price. Mainly import from Turkey.
- Quality: Perception regarding Quality is good, used for special application.
- Brand Name: Good on brand name. People knows Turkish wheel like Jantas/Jantsa etc.
- Warranty/Service: Low Warranty or service.
- Availability in Market: Presently supplying around 15 K wheels, hence sufficient availability in market.
Life of Product: Considered very good on life of product, hence good acceptance as quality product.

Penetration Potential: Due to demand for good quality product is increasing good penetration potential.

6.2.5. Import Duty Structure for Commercial Tyre and Wheels

It is also important to understand import duty structure for Tyres and wheels imported to Indonesia from various countries. Duty plays an important role to decide price. If duty difference is high between 2 countries, certainly one country gets advantage over other country.

Table No. 6.12: Import Duty Structure for Commercial Tyre and Wheels in Indonesia market

<table>
<thead>
<tr>
<th>Country of origin</th>
<th>Import duty for Tyre</th>
<th>Import duty for Wheels</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>India</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>Other country</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>Turkey</td>
<td>15%</td>
<td>15%</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation

Above table shows for all tyre and wheels import duty for China and India even for other countries is 15%, except ASEAN country import. Though it is same for all countries, local manufacturers get advantage of same. No major advantage of FTA between India and ASEAN countries. Need to approach government appropriately to prioritise reduction in duty.

To all imports to Indonesia, manufacturer needs to apply for SNI certification, which is mandatory to import in Indonesia. So before import manufacturer needs to ensure such certification for their product.
6.2.6. Export and Import between Indonesia and India
As explained in topic no 6.1.6. along with Thailand researcher has also studied Export-Import between India and Indonesia, the criteria and methodology is same as used for Thailand and explain in 6.2.1. for HS code 8708( parts and accessories for motor vehicle) as below.

A) Export and Import to Indonesia from India
Below table shows Export and Import between India and Indonesia in INR for HS Code 8708.
Table No. 6.13: Export and Import to Indonesia from India

<table>
<thead>
<tr>
<th>8708 parts and accessories for motor vehicles</th>
<th>Export (INR)</th>
<th>Import (INR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>37,38,49,834</td>
<td>14,64,86,885</td>
</tr>
<tr>
<td>2009</td>
<td>40,33,95,640</td>
<td>11,10,01,388</td>
</tr>
<tr>
<td>2010</td>
<td>30,65,81,453</td>
<td>19,28,53,414</td>
</tr>
<tr>
<td>2011</td>
<td>32,93,77,845</td>
<td>17,85,50,143</td>
</tr>
<tr>
<td>2012</td>
<td>37,41,90,506</td>
<td>20,62,80,912</td>
</tr>
</tbody>
</table>

Source: Data from Samrudhi Data Communication services ltd.

Analysis and Interpretation
From above table lot of fluctuation observed in Export and same remain almost flat in 5 years i.e. export to Indonesia was around 373 Mn INR , remain almost same as 374 Mn INR, due to in-between global recession. However imports are steadily increasing from 146 Mn INR in 2008 to 206 Mn INR in 2012 due to import of natural minerals like Coal, rubber from Indonesia.

Summary
Like in Thailand market, researcher has done detailed analysis for Indonesian market as well understand present demand for Tyres and Wheel, present supply in market. Various types and sizes used in the market, various players in market. Also studied in detail market perception for Tyres and wheel w.r.t. various parameters like price, quality, duty structure etc and compare the same with help of tabulation of graphs wherever required.
Let’s focus on Vietnam as 3rd and last selected country for analysis.
6.3. Presentation and Analysis of Vietnam Market
After analysing Thailand and Indonesia next selected country is Vietnam. Vietnam is one of the growing country with growth rate of approx. 5. Vehicle production is around 140K, which is comparatively less than Thailand and Indonesia, however it is growing market. Researcher has studied this market in depth for Commercial Tyre and Commercial Wheel rim.

6.3.1. Total Spare/Retail Market Demand
With help of this question researcher tried to find out total requirement of spare market for Commercial Tyre and Commercial Wheel Rim. The demand is again divided into type, size etc. That analysis has also done in detailed in this section. Apart from Demand in market this section also covers supply of Tyre and Wheel in the market.

A) Total Spare Market Demand
Total demand refers to total requirement of Spare market for Tyre and Wheel irrespective of size or type.

A.1.) Commercial tyre
Below are the demand formulated in tabular form as stated by respondent and average calculated. Data upto 2012 is actual demand and 2013 & 2014 are forecasted demand.

Table No. 6.14: Commercial Tyre Spare Market Demand in Vietnam (Figures in ,000)

<table>
<thead>
<tr>
<th>Year</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
<th>R6</th>
<th>R7</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>210</td>
<td>NA</td>
<td>235</td>
<td>225</td>
<td>220</td>
<td>220</td>
<td>240</td>
<td>225</td>
</tr>
<tr>
<td>2011</td>
<td>230</td>
<td>NA</td>
<td>265</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>260</td>
<td>250</td>
</tr>
<tr>
<td>2012</td>
<td>250</td>
<td>NA</td>
<td>280</td>
<td>275</td>
<td>300</td>
<td>270</td>
<td>275</td>
<td>275</td>
</tr>
<tr>
<td>2013</td>
<td>270</td>
<td>NA</td>
<td>295</td>
<td>305</td>
<td>350</td>
<td>290</td>
<td>290</td>
<td>300</td>
</tr>
<tr>
<td>FC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>285</td>
<td>NA</td>
<td>315</td>
<td>330</td>
<td>390</td>
<td>315</td>
<td>310</td>
<td>324</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –
The data collected from respondent shows growth of @8-10% on year on year basis in spare market. The market is growing and expected to grow by 50% in 5 years time.
Overall average of the demand in 2012 (actual consumption) is 275,000 approx. 275K, which is expected to increase upto 325K by 2014, which shows good demand for commercial tyres in Vietnam market. Overloading is one of the common factor in Vietnam market.

A.2.) Commercial wheels

After understanding demand for Commercial Tyre, let’s understand demand for commercial wheel rims also in spare market.

**Table No. 6.15: Commercial wheels Spare Market Demand in Vietnam**

<table>
<thead>
<tr>
<th>Year</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
<th>R6</th>
<th>R7</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>30</td>
<td>30</td>
<td>40</td>
<td>30</td>
<td>35</td>
<td>30</td>
<td>40</td>
<td>33</td>
</tr>
<tr>
<td>2011</td>
<td>35</td>
<td>35</td>
<td>45</td>
<td>40</td>
<td>40</td>
<td>46</td>
<td>45</td>
<td>41</td>
</tr>
<tr>
<td>2012</td>
<td>40</td>
<td>45</td>
<td>55</td>
<td>50</td>
<td>50</td>
<td>54</td>
<td>60</td>
<td>50</td>
</tr>
<tr>
<td>2013 FC</td>
<td>45</td>
<td>60</td>
<td>70</td>
<td>65</td>
<td>65</td>
<td>68</td>
<td>75</td>
<td>64</td>
</tr>
<tr>
<td>2014 FC</td>
<td>55</td>
<td>75</td>
<td>85</td>
<td>85</td>
<td>80</td>
<td>85</td>
<td>80</td>
<td>78</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.

**Analysis and Interpretation –**

The demand is picking up in Vietnam market because of overloading factor. The data collected shows growth of @ 20-25% on year on year basis in spare market. Overall average of the demand in 2012 (actual consumption) is 50,571 approx 50 K, which is expected to increase upto 80K by 2014, which shows good demand for commercial wheels in Vietnam Market.

B) Total spare market Supply

Let’s understand supply of wheel and tyres in Vietnam market. Below is the analysis for Total Supply in Spare market

**B.1.) Commercial Tyres**

There is no local production of tyres in Vietnam, so all the demand is fulfilled by Imports. Let’s understand they supply of tyres in Vietnam market.
Table No. 6.16: Commercial tyres Spare Market Demand in Vietnam (Figures in ,000)

<table>
<thead>
<tr>
<th>Production</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
<th>R6</th>
<th>R7</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>0</td>
<td>NA</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Import from China</td>
<td>50</td>
<td>NA</td>
<td>62</td>
<td>55</td>
<td>80</td>
<td>55</td>
<td>70</td>
<td>62</td>
</tr>
<tr>
<td>Import from India</td>
<td>50</td>
<td>NA</td>
<td>72</td>
<td>65</td>
<td>60</td>
<td>65</td>
<td>70</td>
<td>64</td>
</tr>
<tr>
<td>Import from other countries</td>
<td>150</td>
<td>NA</td>
<td>150</td>
<td>140</td>
<td>160</td>
<td>145</td>
<td>70</td>
<td>136</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.

Graph No. 6.39: Commercial tyres Spare Market Supply in Vietnam

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –

As explained earlier in Vietnam market there is no tyre manufacturer, hence all demand is fulfilled by imports mainly from ASEAN countries i.e. Thailand. Imports from Thailand is approx. 50%, this is mainly due to less import duty advantage compare to other countries. Michelin and Bridgestone and Mexxis are supplying from Thailand. Around 25% of requirement is fulfilled by Chinese Tyres & penetration from Chinese tyres is increasing, mainly due to price advantage of Chinese tyres.

Indian Tyres are also present with good share of business like 25%. As like Indonesian market, Vietnam market is still dominated by Bias tyre. Indian manufacturer like MRF & JK tyres is holding good position and selling good 50-60K tyres in Vietnam market.
B.2.) Commercial wheels

Also let’s understand supply of commercial wheel rim in Indonesia market and imports in Indonesian market.

**Table No. 6.17: Commercial Wheel Rim Spare Market Supply in Vietnam**

( Figures in ,000 )

<table>
<thead>
<tr>
<th>Production</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
<th>R6</th>
<th>R7</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>6</td>
<td>7</td>
<td>4</td>
<td>3</td>
<td>10</td>
<td>4</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Import from China</td>
<td>35</td>
<td>40</td>
<td>45</td>
<td>40</td>
<td>35</td>
<td>45</td>
<td>50</td>
<td>41</td>
</tr>
<tr>
<td>Import from India</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Import from other countries</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

*Source: Primary data survey of the dealers/manufacturers.*

**Graph No. 6.40: Commercial wheels Spare Market Supply in Vietnam**

*Source: Primary data survey of the dealers/manufacturers.*

**Analysis and Interpretation** –

In Vietnam market there is a small wheel rim catering to small part of market with 10% market share. Around 80% market is dominated by Chinese product. Imports from China are dominating mainly due to low price and huge availability in market.

Small presence by Indian wheels of around 3%, as no focus on this market from Indian Wheel manufacturers. 4-5% wheels are getting imported from Korea mainly due to Korean vehicles are on road. There is requirement heavy duty and quality wheel with better life for overload application.
C) Total Spare/Retail Market Demand (According to types)
As explained in Thailand market 6.1.1.1.C1, Tyres are namely classified as Radial Tyre and Bias Tyres. Second classification is Tube type tyres and Tubeless tyres. Here researcher tried to find out penetration of those tyres in the market.

C.1.) Total Spare/Retail Market Demand for Radial and Bias commercial tyre
As explained above Radial Tyres are comparatively new technology than Bias tyres and gaining popularity in market.

Graph No. 6.41: Presence of Radial and Bias commercial tyre in Vietnam market

![Pie Chart: Presence of Radial and Bias commercial tyre in Vietnam market](image)

**Source:** Primary data survey of the dealers/manufacturers.

**Analysis and Interpretation**
As explained earlier Radial tyres are having certain advantages over Bias tyre, hence penetration of Radial tyres is increasing rapidly in Vietnam market and replacing Bias tyres. Radial tyre penetration of 58% whereas Bias tyre is still present with 42%. Bias tyres are mainly imported from India China and Thailand whereas Radial tyres are mainly imported from Thailand and China.

C.2.) Total Spare/Retail Market Demand for Tube type and Tube less tyre
Similar to Radial tyres, Tubeless tyre are new technology in market, let’s understand the penetration of this type of tyres.
Graph No. 6.42: Presence of Tube type and Tubeless tyre in Vietnam market

![Pie chart showing the presence of Tube type and Tubeless tyres. Tube Type Tyres account for 73% while Tubeless Tyres account for 27%.]

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –

As explained above, there is always acceptance for new technological product. Same is the case for Tubeless tyres. Though market is using Radial tyres still majority market is Tube type only with 73% penetration. However it is shifting towards Tubeless tyres rapidly, present penetration is @ 27%.

C.3.) Total Spare/Retail Market Demand for Tube type and Tubeless commercial wheel rims.

Like Tyre in commercial wheel rims also there is introduction of Tubeless wheels, which will be suitable for tyres. Let’s understand penetration of Tubeless wheels against Tube type wheels.

Graph No. 6.43: Presence of Tube type and Tubeless commercial wheel rims in Vietnam market

![Pie chart showing the presence of Tube type and Tubeless commercial wheel rims. Tube Type wheels account for 73% while Tubeless wheels account for 27%.]

Source: Primary data survey of the dealers/manufacturers.
Analysis and Interpretation –
As the demand for Tubeless tyre is increasing naturally it requires Tubeless wheel rim, hence penetration of Tubeless wheel rim is also increasing in Indonesian market. Above data shows that for around 27% penetration of Tubeless wheel rims and traditional tube type wheels are present with 73%.

D) Total Spare/Retail Market Demand (According to size)
After major type of wheel rims, researcher also studied the sizes used in this market. As per the vehicle model or load carrying capacity different tyre and wheels are used on vehicles.

D.1.) Commercial tyres
Tyre size is mainly recommended by OEM as per the vehicle model and load carrying capacity of the vehicle.

Graph No. 6.44: Commercial tyre sizes in Vietnam market

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –
Considering Vietnam market the major size used is 10R-20, which is tube type tyre around 45-50%. Second important size is 12R 20, again Tube type Tyre requires for heavy duty application which is @ 20%. Tubeless Tyre 295-80/R 22.5 is also 20%. This information is useful for the tyre manufacturers to understand the sizes used in market and check their capability.
D.2.) Commercial wheels

Commercial wheel sizes already explained in 6.1.1.1.D2. Below is various sizes of wheels used in Indonesian market.

Graph No. 6.45: Commercial wheel sizes in Vietnam market

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –

Around 45% penetration is of 7.0/7.5-20 size wheel rim which is tube type wheel rim and 35% penetration is of 22.5X8.25 size which is wheel rim which is tubeless wheel rim. However good penetration of 8.0-20”” Tube type wheel rims required for vehicle with overloading.

E) Total Spare/Retail Market Demand (According to brand)

Major Tyre brand in Indonesia market.

E.1.) Commercial tyres

Graph No. 6.46: Top 3 Commercial tyre brands in Vietnam market

Source: Primary data survey of the dealers/manufacturers.
Analysis and Interpretation –
As seen earlier 50% of Vietnam market is catered by tyres imported from Thailand by Bridgestone and Michelin. Bridgestone is having SOB of 35% & Michelin is present with 15% SOB. Next preferred brand is also from Thailand Mexxis @ 10% SOB. However Indian brands like MRF & JK are also well known for Bias tyres.

E.2.) Commercial wheels

Graph No. 6.47: Top 3 Commercial wheel brands in Vietnam market

![Pie chart showing top 3 commercial wheels brands in Vietnam market: China (59%), Korea (24%), Local (10%)]

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –
Though there is small wheel manufacturer in Vietnam called CONG TY TNHM TM-DV-SX- Hy THINH , still majority wheels used are Chinese due to low price and availability in wide range. Local manufacturer having their presence is limited to 13%. Other wheels imported are Korean wheels due to Hyundai Trucks. Indian wheels have recently entered & having 3-4 % SOB, trying to penetrate in market

6.3.2. Top 3 Vehicle manufacturers in Vietnam Market.
As all the research is related to commercial vehicle, researcher has also collected data regarding top 3 brands or vehicle sold in the Vietnam market.
Graph No. 6.48: Top 3 vehicle brands in Vietnam market

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –
Vietnam market is also dominated by Japanese and Korean vehicle manufacturers. As per above graph and data collected Hino leading the market with 40% of market share followed by Isuzu 35% and then Hyundai 25%.

6.3.3. Ranking of different characteristics on a scale on 1-10
Consumer Priorities while purchasing Commercial Tyre and Wheel in Vietnam market
As already briefed in 6.1.3 section researcher tried to find out market perception regarding Tyre and wheel rims based on 7 different parameters. Below is detailed analysis of ranking done by respondent.

A) Ranking of Consumer priorities while purchasing Commercial Tyre.
As mention above average ranking of respondent with respective 7 different parameters are plotted in histogram as below:-
Graph No. 6.49: Ranking of Consumer priorities while purchasing Commercial Tyre in Vietnam market

![Graph No. 6.49: Ranking of Consumer priorities while purchasing Commercial Tyre in Vietnam market](image)

**Source:** Primary data survey of the dealers/manufacturers.

**Analysis and Interpretation –**
As per data collected in Vietnam market, the first priority of consumers while purchasing Commercial tyre is Quality and Brand name. As tyre is costlier part, consumers are more careful about quality and brand name of the tyre while making their buying decision. Second important parameter is availability in market and price of tyre. Warranty normally associates with Brand name/manufacturer name in case of big manufacturers like Michelin & Bridgestone. Country of origin and credit terms are having low weight age.

**B) Ranking of Consumer priorities while purchasing Commercial Wheel Rims.**
Like tyre, researcher has also studied consumer priorities while purchasing Wheel rims & plotted same as below:

Graph No. 6.50: Ranking of Consumer priorities while purchasing Commercial wheels in Vietnam market

![Graph No. 6.50: Ranking of Consumer priorities while purchasing Commercial wheels in Vietnam market](image)

**Source:** Primary data survey of the dealers/manufacturers.
Analysis and Interpretation –

As per data collected in Vietnam market, the first priority of consumers while purchasing Commercial wheels rim is availability in market followed by price of the product. Next important factor is Quality of product, however limited options available with good quality product, hence consumers are preferring product whichever easily available at low price. Next preferences are Brand name, Warranty/Service provided by wheel supplier and also origin of country.

6.3.4. Market Perception regarding manufacturing country in Vietnam Market

After understanding consumer priorities while purchasing any product, next exercise done by researcher is to understand market perception of manufacturing country. The methodology is explained in topic no 6.1.4 in Thailand market section.

A) Market perception for Commercial tyre.

Let’s understand the market perception for various countries w.r.t. important parameters while purchasing commercial tyre.

A.1.) Market Perception of China Tyre

Graph No. 6.51: Market Perception of China Tyre in Vietnam market

![COMMERCIAL TYRE CHINA](image)

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –

As per the data collected Market Perception for Tyre from China is as below. Same is compare with other in Hypothesis Testing of this chapter.

- Price: Selling at very low price as a common strategy for all ASEAN countries.
Quality: Perception regarding Quality is not good, treated as low Quality product.
Brand Name: No major Brand name as selling with various brand name in market.
Warranty/Service: No Warranty or service provided by Chinese Tyre suppliers.
Availability in Market: Very good on availability in market & it is a strong point of Chinese wheel suppliers to penetrate in market.
Life of Product: Treated as low life product due to quality, as overloading in Vietnam.
Penetration Potential: Good potential as price is important parameter and Chinese products are available at low price. Also introduced Radial tyres which has advantage for Chinese tyres.

A.2.) Market Perception for India

Graph No. 6.52: Market Perception of India Tyre in Vietnam market

- **Quality:** Perception regarding Quality is good for Bias tyres, treated as respectable Quality product.
- **Brand Name:** Brand name is also good, MRF & JK tyres are well known brand in Vietnam market.
- **Warranty/Service:** Fairly good on providing warranty and service through dealers.

**Analysis and Interpretation** –
As per the data collected Market Perception for Tyre from India is as below. Same is compare with other in Hypothesis Testing of this chapter.

- **Price:** Medium pricing strategy. Very well accepted in market for Bias tyres.
- **Quality:** Perception regarding Quality is good for Bias tyres, treated as respectable Quality product.
- **Brand Name:** Brand name is also good, MRF & JK tyres are well known brand in Vietnam market.
- **Warranty/Service:** Fairly good on providing warranty and service through dealers.

Source: Primary data survey of the dealers/manufacturers.
Availability in Market: good dealer network to sell Indian product, hence availability is good in the market.

Life of Product: Comparatively good life of product, hence good image in market.

Penetration Potential: Presently good penetration & also good chances to retain market share. However market is also shifting toward radial tyres, where Indian Tyres are still struggling, need to focus on same.

A.3.) Market Perception for other countries
There are certain tyre manufacturers like Michelin & Bridgestone, which are producing in Thailand and importing in Vietnam. Market perception about these products is different and important to understand same.

Graph No. 6.53: Market Perception for other countries in Vietnam market

Analysis and Interpretation –
As per the data collected Market Perception for foreign brands but imported from ASEAN countries is as below.

- Price: High Price strategy, due to Quality, life, Branding of product.
- Quality: Very strong image regarding Quality of product.
- Brand Name: Strongly present in Vietnam market & captured majority of market share.
- Warranty/Service: Weak in warranty and service
- Availability in Market: Wide selling network, so present in all parts of country with good availability and variety.
Life of Product: Comparatively good life of product, as considering application of tyres, it is expected to get reduced life.

Penetration Potential: Already good in penetration and having good potential for future as well.

B) Market Perception for Commercial wheels

After understanding Market Perception for Tyres from various countries. Let’s understand market perception for Wheels from various countries as well.

B.1.) Market Perception for Commercial Wheels from China

Graph No. 6.54: Market Perception for commercials wheels from China in Vietnam market

![Graph showing market perception for commercial wheels from China](image)

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation –

As per the data collected Market Perception for Wheels from China is as below. Same is compare with other in Hypothesis Testing of this chapter.

- **Price:** Selling at very low price as a strategy & penetrate in market.
- **Quality:** Perception regarding Quality is not good, treated as low Quality product.
- **Brand Name:** No major Brand name as selling with various brand name in market.
- **Warranty/Service:** No Warranty or service provided by Chinese Tyre suppliers.
- **Availability in Market:** Very good on availability in market & it is a strong point of Chinese wheel suppliers to penetrate in market.
- **Life of Product:** Treated as low life product due to quality due to overloading of vehicles.
- Penetration Potential: Good potential as price is an important parameter and Chinese products are available at low price. Strong in Tube type wheels, also focusing on Tubeless wheels.

**B.2.) Market Perception for Commercial Wheels from India**

Small imports @ 3-4% of Wheels from India. Below is the analysis of market perception for India wheels.

**Graph No. 6.55: Market Perception for commercials wheels from India in Vietnam market**

![Bar Chart: Commercial Wheel Rim India](chart)

**Source:** Primary data survey of the dealers/manufacturers.

**Analysis and Interpretation –**

As per the data collected Market Perception for Wheels from India is as below. Same is compare with other in Hypothesis Testing of this chapter.

- Price: Comparatively high on price. No as cheap as China. Introduced Tubeless wheels in market.
- Quality: Perception regarding Quality is good, treated as respectable Quality product for tubeless tyre application.
- Brand Name: Medium on brand name. No much presence in Vietnam market.
- Warranty/Service: Low Warranty or service provided by Indian suppliers.
- Availability in Market: Comparatively low on availability in market, need to increase spread in market.
- Life of Product: Considered good on life of product, however need to prove in market.
Penetration Potential: As Tubeless wheel penetration is increasing in market & Tyre manufacturers’ needs good quality product to promote along with their tyre, moderate penetration potential.

B.3.) Market Perception for Commercial Wheels from local manufacturer
Small manufacturer in Vietnam as briefed earlier having SOM 15%.

Graph No. 6.56: Market Perception for commercials wheels from local manufacturers in Vietnam market

As per the data collected Market Perception for Wheels from local manufacturer is as follows:-

- **Price**: Price is low as producing locally, sometime assembling wheels disc & rim imported from China.
- **Quality**: Perception regarding Quality is medium.
- **Brand Name**: Medium also on brand name as not present in OEM.
- **Warranty/Service**: Medium on Warranty and service. Provided repair/replacement service wherever required.
- **Availability in Market**: Adequate availability in market.
- **Life of Product**: Medium life compare to other imports.
- **Penetration Potential**: As market is growing, good penetration potential however capacity and capability will be a hurdle.

*Source: Primary data survey of the dealers/manufacturers.*
6.3.5. Import Duty Structure for Commercial Tyre and Wheels

It is also important to understand import duty structure for Tyres and wheels imported to Indonesia from various countries. Duty plays an important role to decide price. If duty difference is high between 2 countries, certainly one country gets advantage over other country.

Table No. 6.18: Import Duty Structure for Commercial Tyre and Wheels in Vietnam market

<table>
<thead>
<tr>
<th>Country of origin</th>
<th>Import duty for Tyre</th>
<th>Import duty for Wheels</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>India</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>Other country</td>
<td>Thailand</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5%</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation

Above table shows for all tyre and wheels import duty for China and India even for other countries is 25%, except ASEAN country import. ASEAN countries is having 5% import duty so having big advantage over other country import. No major advantage of FTA between India and ASEAN countries. Need to approach government appropriately to prioritise reduction in duty.

6.3.6. Export and Import between Vietnam from India

As explained in topic no 6.1.6. along with Thailand researcher has also studied Export-Import between India and Vietnam, the criteria and methodology is same as used for Thailand and explain in 6.2.1. for HS code 8708 (parts and accessories for motor vehicle) as below.

Table No. 6.19: Export and Import between Vietnam and India

<table>
<thead>
<tr>
<th>Parts and accessories for motor vehicles</th>
<th>Export (INR)</th>
<th>Import (INR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>1,44,39,121</td>
<td>11,67,570</td>
</tr>
<tr>
<td>2009</td>
<td>2,18,83,330</td>
<td>69,44,157</td>
</tr>
<tr>
<td>2010</td>
<td>2,25,89,785</td>
<td>65,71,278</td>
</tr>
<tr>
<td>2011</td>
<td>2,39,91,849</td>
<td>85,27,517</td>
</tr>
<tr>
<td>2012</td>
<td>2,64,29,937</td>
<td>96,24,504</td>
</tr>
</tbody>
</table>

Source: Data from Samrudhi Data Communication services ltd.
Analysis and Interpretation
From above table it is observed that trade is increasing steadily. Export is more than import. In 2008 export was 14 Mn INR which has increased to 26 Mn INR by 2012. Imports are steadily increasing from 1 Mn INR in 2008 to 9.6 Mn INR in 2012.

Summary
Researcher has done detailed analysis of Vietnam market to understand spare market demand in similar way of Thailand and Indonesia. Vietnam do not have Tyre manufacturer & all tyre requirement are fulfilled by Imports from Thailand, India and China. There is duty advantage for imports from ASEAN countries. For wheels also there is small wheel manufacturer in Vietnam and most of the demands are fulfilled by imports mainly from China.

In above section Researcher done the detailed analysis of all the three countries i.e. Thailand, Indonesia and Vietnam.
Thailand and Indonesia are having domestic manufacturers of Tyre and dominating market. Vietnam do not have Tyre manufacturer, hence all Tyre requirements are imported. Regarding Wheel rims Thailand do not have wheel manufacturer, Vietnam is having small wheel manufacturer and however Indonesia is having 2 wheel manufacturers. In spite of all this penetration from China product is increasing due to low price and availability in market. Market perception for Chinese product w.r.t. Quality, brand is at lower level, whereas market perception for Indian product is medium or high w.r.t. Quality of product. However Indian product are weak in availability in certain market causes limited penetration.
These finding will be summarised in next chapter and suitable suggestion made to various agencies. In below section i.e. Part B, researcher has tested the hypothesis considered with help of data analysed in part I.
PART –II- Hypothesis Testing

One of the important stage in research is to test Hypothesis assumed in the beginning of research. After systematic analysis of the data, hypothesis testing is done with help of various statistical tools. In this chapter researcher has done hypothesis testing with help of Simpler Regression Analysis (fitted line plot), Pearson Correlation factor, two sample T test and simple statistical tool like Mean (Avg). As the research is based in 3 countries and two selected component, each hypothesis is tested for each component for respective country. For better understanding for each test in the beginning the graphs are plotted as a result of statistical test for 1 example only. Later on only table plotted with with respective P Value, Pearson factor, R Seq factor and then inferences drawn from these values.

6.4 Testing Hypothesis  H1

“Thailand, Indonesia and Vietnam are importing lot of Auto Components from various countries”

Researcher has collected data of domestic production v/s Import from various countries to selected country w.r.t. Commercial Tyre and Wheel. Some of the countries are having domestic production which is dominating the market whereas some of the countries do not have domestic production for certain product. On the above data Simple Linear Regression Analysis was done with help of fitted line plot and Pearson Correlation factor calculated to understand Import pattern.

The main hypothesis is divided in sub hypothesis for Country and then for product as below:-

H1T1 – Thailand is importing lot of Commercial Tyres from Various Countries.
H1T2 – Thailand is importing lot of Commercial Wheel rims from Various Countries.
H1I1 – Indonesia is importing lot of Commercial Tyres from Various Countries.
H1I2 – Indonesia is importing lot of Commercial Wheel rims from Various Countries.
H1V1 – Vietnam is importing lot of Commercial Tyres from Various Countries.
H1V2 – Vietnam is importing lot of Commercial Wheel rims from Various Countries.
A) Thailand Market
First country selected is Thailand country. Researcher has conducted Hypothesis testing for Commercial Tyre and Wheel Rim as below.

A.1.) Commercial Tyre
As explained above below is the one example shown with graphs for fitted plot diagrams. Researcher has calculated P value, R Seq value and Pearson Co-relation factor to understand relation between demand and supply.

Graph No. 6.57: Volume V/S Domestic Production  
Graph No. 6.58 Volume V/S Imports

Table No. 6.20. Pearson Correlation statistics for Hypothesis $H_{11}$

<table>
<thead>
<tr>
<th>Commercial Tyre</th>
<th>Pearson Correlation Factor</th>
<th>P-Value</th>
<th>R-Seq</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Volume V/S Domestic Production</td>
<td>0.997</td>
<td>0.048</td>
<td>98</td>
</tr>
<tr>
<td>b) Volume V/S Imports</td>
<td>0.995</td>
<td>0.064</td>
<td>98</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation: -
There is positive and significant correlation (P-Value < 0.05) between demand and domestic production. So Domestic production is increasing as demand is increasing in Thailand market for Tyres. There is positive but non-significant (P-Value > 0.05) correlation between demand and Import of Tyres. This means imports are also increasing with volume increase but not significant. However as import is increasing with demand, hypothesis $H_{11}$ is partially accepted.
A.2.) Commercial Wheel Rim

Table No. 6.21. Pearson Correlation statistics for Hypothesis \( H_{1T2} \)

<table>
<thead>
<tr>
<th>Commercial Wheel Rim</th>
<th>Pearson Correlation Factor</th>
<th>P-Value</th>
<th>R-Seq</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Volume V/S Imports</td>
<td>1</td>
<td>*</td>
<td>100</td>
</tr>
</tbody>
</table>

**Source:** Primary data survey of the dealers/manufacturers.

**Analysis and Interpretation:** -

It has been observed that there is no wheel rim producer in Thailand market, so there is no data for Domestic production. All demand is fulfilled by Imports from various countries like China, India, and Indonesia etc. Pearson Correlation factor is 1 & R Seq is 100. So this hypothesis \( H_{1T2} \) is accepted for Wheel Rim.

B) Indonesian Market

Let’s conduct the testing for Tyre and wheel rim in Indonesia market as well.

B.1.) Commercial Tyre

Same statistical test like Thailand are used for testing tyre supply in Indonesia market. Below is the summary of the data with P value.

Table No. 6.22. Pearson Correlation statistics for Hypothesis \( H_{1i} \)

<table>
<thead>
<tr>
<th>Commercial Tyre</th>
<th>Pearson Correlation Factor</th>
<th>P-Value</th>
<th>R-Seq</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Volume V/S Domestic Production</td>
<td>0.987</td>
<td>0.104</td>
<td>95</td>
</tr>
<tr>
<td>b) Volume V/S Imports</td>
<td>0.986</td>
<td>0.107</td>
<td>94</td>
</tr>
</tbody>
</table>

**Source:** Primary data survey of the dealers/manufacturers.

**Analysis and Interpretation:** - Like Thailand, Indonesia is also having domestic production for tyres which is dominating and 70% share of business as seen in analysis. However Imports are also considerable @ 30%. Imports of Tyres increases with increase in volume positive Pearson Correlation factor. However it is non-significant (P-Value > 0.05). Hypothesis \( H_{1i} \) is partially accepted.
B.2.) Commercial Wheel Rim
There are 2 wheel rim manufacturers in Indonesia market. SO testing is done on Domestic production as well as Imports.

Table No. 6.23. Pearson Correlation statistics for Hypothesis $H_{1_2}$

<table>
<thead>
<tr>
<th>Commercial Wheel Rim</th>
<th>Pearson Correlation Factor</th>
<th>P-Value</th>
<th>R-Seq</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Volume V/S Domestic Production</td>
<td>0.977</td>
<td>0.136</td>
<td>91</td>
</tr>
<tr>
<td>b) Volume V/S Imports</td>
<td>1.000</td>
<td>0.008</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation: -
Positive correlation between demand and domestic production, also between Demand and imports. Significant increase in Imports as volume increases (P-Value < 0.05), hence Hypothesis $H_{1_2}$ is accepted.

C) Vietnam Market
Vietnam is next selected country, testing of hypothesis is done on Vietnam as well.

C.1.) Commercial Tyres
There is no Tyre manufacturer present in Vietnam, so all demands are fulfilled by imports from various countries.

Table No. 6.24. Pearson Correlation statistics for Hypothesis $H_{1_1}$

<table>
<thead>
<tr>
<th>Commercial Wheel Rim</th>
<th>Pearson Correlation Factor</th>
<th>P-Value</th>
<th>R-Seq</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Volume V/S Imports</td>
<td>1</td>
<td>*</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation:-
As mentioned above no Tyre producer in Vietnam market, so there is no data for Domestic production. All demand is fulfilled by Imports from various countries like China, India, and Thailand etc. Pearson Correlation factor is 1 & R Seq is 100. So this hypothesis $H_{1_1}$ is accepted for Wheel Rim.
C.2.) Commercial Wheel rim
Small Wheel manufacturer in Vietnam, lets test hypothesis for Wheel rim.

Table No. 6.25. Pearson Correlation statistics for Hypothesis $H_{1v2}$

<table>
<thead>
<tr>
<th>Commercial Wheel Rim</th>
<th>Pearson Correlation Factor</th>
<th>P-Value</th>
<th>R-Seq</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Volume V/S Domestic Production</td>
<td>0.999</td>
<td>0.025</td>
<td>99.7</td>
</tr>
<tr>
<td>b) Volume V/S Imports</td>
<td>1.000</td>
<td>0.006</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation:-
Positive Relationship indicates increase in domestic production as well as import as volume is increasing. For import P value is less than 0.05, so imports is significant, hence hypothesis $H_{1v2}$ is accepted.

6.5 Testing Hypothesis $H_2$

“Import from other countries at lower price and vast availability in market restricts penetration for Indian Automobile Component”

Researcher has collected comparative data of products imported in selected countries from China and India. The data mainly is comparison of Price, Market availability and Penetration potential for India as well as for China products. On the above data Two sample T – test applied to understand comparison and P value is calculated. Based on P value inferences are drawn for Tyre and Wheels in selected countries.

The main hypothesis is divided in sub hypothesis for Country and then for product as below:-

$H_{2t1}$ – Import of Commercial Tyres from other countries to Thailand at lower price and vast availability in market restricts penetration for Indian Commercial Tyres.

$H_{2t2}$ – Import of Commercial Wheel rims from other countries to Thailand at lower price and vast availability in market restricts penetration for Indian Commercial Wheel.

$H_{2i1}$ – Import of Commercial Tyres from other countries at lower price to Indonesia and vast availability in market restricts penetration for Indian Commercial Tyres.
H2\textsubscript{12} – Import of Commercial Wheel rims from other countries to Indonesia at lower price and vast availability in market restricts penetration for Indian Commercial Wheel.

H3\textsubscript{V1} – Import of Commercial Tyres from other countries at lower price to Vietnam and vast availability in market restricts penetration for Indian Commercial Tyres.

H3\textsubscript{V2} – Import of Commercial Wheel rims from other countries to Vietnam at lower price and vast availability in market restricts penetration for Indian Commercial Wheel.

**A) Thailand Market**

Below is the test conducted for Tyre and Wheels in Thailand Market

**A.1.) Commercial Tyre**

As explained above below is the one example shown with graphs for Box plot diagrams. Researcher has calculated P value to understand comparison between two parameters.

![Boxplot graphs](image.png)

**Graph No. 6.59**: China vs India  
**Graph No. 6.60**: Other country vs India  
**Graph No. 6.61**: Local vs India

**Table No. 6.26. Paired T test statistics for Hypothesis H2\textsubscript{11}**

<table>
<thead>
<tr>
<th>Two-sample T test for Price (95% Confidence level)</th>
<th>Price Comparison</th>
<th>P-Value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) China vs India</td>
<td>0.002</td>
<td>Significant</td>
<td></td>
</tr>
<tr>
<td>b) Other country vs India</td>
<td>0.022</td>
<td>Significant</td>
<td></td>
</tr>
<tr>
<td>c) Local vs India</td>
<td>0.862</td>
<td>Non-significant</td>
<td></td>
</tr>
</tbody>
</table>

**Market Availability**

| a) China vs India                                 | 0.005            | Significant |

**Penetration Potential**

| a) China vs India                                 | 0.027            | Significant |

**Source:** Primary data survey of the dealers/manufacturers.
Analysis and Interpretation: -

P value shows there is no-significant difference between Indian product price and Local product price. However P Value shows significantly lower price of Chinese as well other country product v/s Indian Product. Regarding market availability also P value shows Significant difference between India and China, inference of that is availability of Chinese product are significantly vast than Indian product. Regarding penetration potential also Chinese Tyres are having significantly better penetration potential than Indian Tyres in Thailand market. Hence hypothesis $H_{21}$ is accepted.

A.2.) Commercial Wheels

<table>
<thead>
<tr>
<th>Two-sample T test for Price (95% Confidence level )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price Comparison</td>
</tr>
<tr>
<td>a) China vs India</td>
</tr>
<tr>
<td>b) Other country vs India</td>
</tr>
</tbody>
</table>

Market Availability

| Price Comparison               | P-Value | Remark |
| a) China vs India             | 0.005   | Significant |

Penetration Potential

| Price Comparison               | P-Value | Remark |
| a) China vs India             | 0.03    | Significant |

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation:-

P Value shows significantly lower price of Chinese Product v/s Indian Product, whereas no much significant difference between price between Indian Wheels and other country (Japan) wheels. On Market availability and Penetration potential there is significant difference between India and China (P-Value<0.05). Inference is Chinese wheels are at lower price, vast market availability and better market penetration potential than Indian wheels hence $H_{21}$ is accepted.
B) Indonesia Market
Presentation of statistical data and testing of same for Indonesia market.

B.1.) Commercial Tyre
Table No. 6.28. Paired T test statistics for Hypothesis H2\textsubscript{I1}

| Two-sample T test for Price(95% Confidence level) |
|-----------------------------------|-----------------|----------------|
| Price Comparison                  | P-Value         | Remark         |
| a) China vs India                 | 0.019           | Significant    |
| b) Local vs India                 | 0.065           | Non-significant|

Market Availability

| Price Comparison                  | P-Value | Remark  |
| a) China vs India                 | 0.34    | Non-significant |

Penetration Potential

| Price Comparison                  | P-Value | Remark  |
| a) China vs India                 | 0.33    | Non-significant |

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation:

P value shows there is no-significant difference between Indian product price and Local product price. However P Value shows significantly lower price of Chinese v/s Indian Product. Regarding market availability also P value shows Non-Significant difference between India and China, inference of that good availability of Chinese as well as Indian Tyres in Indonesian market. Regarding penetration potential also Indian Tyres are having good penetration potential as Indonesian Market requires Quality product. Hence hypothesis H2\textsubscript{I1} is rejected.

B.2.) Commercial Wheels
Table No. 6.29. Paired T test statistics for Hypothesis H2\textsubscript{I2}

| Two-sample T test for Price (95% Confidence level) |
|-----------------------------------|-----------------|----------------|
| Price Comparison                  | P-Value         | Remark         |
| a) China vs India                 | 0.022           | Significant    |
| b) Other country vs India         | 0.053           | Non-significant|

Market Availability

| Price Comparison                  | P-Value | Remark  |
| a) China vs India                 | 0.03    | Significant |

Penetration Potential

| Price Comparison                  | P-Value | Remark  |
| a) China vs India                 | 0.3     | Non-significant |

Source: Primary data survey of the dealers/manufacturers.
Analysis and Interpretation: -
P value shows there is no-significant difference between Indian product price and other country product price. However P Value shows significantly lower price of Chinese v/s Indian Product. Regarding market availability also P value shows significant difference between India and China, inference of that is better availability of Chinese Wheels compare to Indian wheels. Regarding penetration P value shows non-significant difference means Indian Wheels are having good penetration potential as Indonesian Market requires Quality product. Hence hypothesis \( H_{2_{vl}} \) is rejected.

C) Vietnam Market
Presentation of statistical data and testing of same for Indonesia market.

C.1.) Commercial Tyre.

<table>
<thead>
<tr>
<th>Table No. 6.30. Paired T test statistics for Hypothesis ( H_{2_{vl}} )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Two-sample T test for Price(95% Confidence level)</strong></td>
</tr>
<tr>
<td>Price Comparison</td>
</tr>
<tr>
<td>a) China vs India</td>
</tr>
<tr>
<td>b) Other Countries vs India</td>
</tr>
<tr>
<td>Market Availability</td>
</tr>
<tr>
<td>a) China vs India</td>
</tr>
<tr>
<td>Penetration Potential</td>
</tr>
<tr>
<td>a) China vs India</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation: - P value shows there is Non-significant difference between Indian product price and Other countries product price. However P Value shows significantly lower price of Chinese v/s Indian Product. Regarding market availability as well as Penetration potential P value shows Non-Significant difference between India and China, inference of that good availability of Chinese as well as Indian Tyres in Vietnam market. Regarding penetration potential also Indian Tyres are having good penetration potential as Vietnam Market still requires Bias tyres. Hence hypothesis \( H_{2_{vl}} \) is rejected.
C.2.) Commercial Wheel Rims

Table No. 6.31. Paired T test statistics for Hypothesis \( H_2 \)

<table>
<thead>
<tr>
<th>Two-sample T test for Price (95% Confidence level)</th>
<th>Price Comparison</th>
<th>P-Value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) China vs India</td>
<td>0.002</td>
<td>Significant</td>
<td></td>
</tr>
<tr>
<td>b) Other Countries vs India</td>
<td>0.30</td>
<td>Non-significant</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Market Availability</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) China vs India</td>
<td>0.009</td>
<td>Significant</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Penetration Potential</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a) China vs India</td>
<td>0.02</td>
<td>Significant</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Primary data survey of the dealers/manufacturers.

**Analysis and Interpretation:** - P Value shows significantly lower price of Chinese Product v/s Indian Product, whereas no much significant difference between price between Indian Wheels and other country (Japan) wheels. On Market availability and Penetration potential there is significant difference between India and China (P-Value<0.05). Inference is Chinese wheels are at lower price, vast market availability and better market penetration potential than Indian wheels hence \( H_2 \) is accepted.

6.6 Testing Hypothesis \( H_3 \)

"Market Perception for Indian Automobile components is better than Chinese components in terms of Quality, Service and Brand recognition”

To understand perception for Indian Automobile Components researcher has collected comparative data of products imported in selected countries from China and India. The data mainly is comparison of Quality, Service, Brand and life of product for India as well as for China products. On the above data Two sample T – test applied to understand comparison and P value is calculated. Based of P value inferences are drawn for Tyre and Wheels in selected countries.

The main hypothesis is divided in sub hypothesis for Country and then for product as below:-
H₃ᵀ₁ – Market Perception for Commercial Tyres from India is better than Chinese Tyres in terms of Quality, Service and Brand recognition in Thailand market.

H₃ᵀ₂ – Market Perception for commercial wheel rims from India is better than Chinese wheel rims in terms of Quality, Service and Brand recognition in Thailand Market.

H₃ᴵ₁ – Market Perception for Commercial Tyres from India is better than Chinese Tyres in terms of Quality, Service and Brand recognition in Indonesia Market.

H₃ᴵ₂ – Market Perception for commercial wheel rims from India is better than Chinese wheel rims in terms of Quality, Service and Brand recognition in Indonesia Market.

H₃₊₁ – Market Perception for Commercial Tyres from India is better than Chinese Tyres in terms of Quality, Service and Brand recognition in Vietnam market.

H₃₊₂ – Market Perception for commercial wheel rims from India is better than Chinese wheel rims in terms of Quality, Service and Brand recognition in Vietnam Market.

A) Thailand Market

Below are the tests conducted for Tyre and Wheels in Thailand Market.

A.1.) Commercial Tyre

To test above Hypothesis T Sample test conducted between China and India on various parameters like Quality, and Brand. Warranty Service and Product Life.

**Table No. 6.32. Paired T test statistics for Hypothesis H₃ᵀ₁**

<table>
<thead>
<tr>
<th>Two-sample T test for Various Characteristics (95% Confidence level)</th>
<th>P-Value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Tyre</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Quality Comparison</td>
<td>0.004</td>
<td>Significant</td>
</tr>
<tr>
<td>b) Brand Comparison</td>
<td>0.240</td>
<td>Non-significant</td>
</tr>
<tr>
<td>c) Warranty Service Comparison</td>
<td>0.961</td>
<td>Non-significant</td>
</tr>
<tr>
<td>d) Life of Product Comparison</td>
<td>0.002</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.

**Analysis and Interpretation:** -

P Value shows Chinese Component are significantly negative on Quality and Life of Product. Whereas difference is non-significant on Brand Name and Warranty. It inference that Market perception for Quality and Life of product for Indian product is good, however need to focus on Brand and Warrant service. Hypothesis H₃ᵀ₁ is partially accepted for Quality.
A.2.) Commercial Wheel

Similar test conducted for wheel rim as well in Thailand Market.

Table No. 6.33. Paired T test statistics for Hypothesis H_{3t2}

<table>
<thead>
<tr>
<th>Two-sample T test for Various Characteristics(95% Confidence level )</th>
<th>Commercial Wheel</th>
<th>P-Value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Quality Comparison</td>
<td>0.002</td>
<td>Significant</td>
<td></td>
</tr>
<tr>
<td>b) Brand Comparison</td>
<td>0.024</td>
<td>Significant</td>
<td></td>
</tr>
<tr>
<td>c) Warranty Service Comparison</td>
<td>0.961</td>
<td>Non-significant</td>
<td></td>
</tr>
<tr>
<td>d) Life of Product Comparison</td>
<td>0.002</td>
<td>Significant</td>
<td></td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation: -

P Value shows Chinese Component are significantly negative on Quality, Brand and Life of Product. Whereas difference is non-significant on Warranty. It inference that Market perception for Quality, Brand and Life of product for Indian wheel rim is good in Thailand Market, however need to focus on Warranty service. Hypothesis H_{3t2} is partially accepted for Quality & Brand recognition.

B) Indonesia Market

Presentation of statistical data and testing of same for Indonesia market.

B.1.) Commercial Tyre

Table No. 6.34. Paired T test statistics for Hypothesis H_{3t1}

<table>
<thead>
<tr>
<th>Two-sample T test for Various Characteristics(95% Confidence level )</th>
<th>Commercial Tyre</th>
<th>P-Value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Quality Comparison</td>
<td>0.007</td>
<td>Significant</td>
<td></td>
</tr>
<tr>
<td>b) Brand Comparison</td>
<td>0.019</td>
<td>Significant</td>
<td></td>
</tr>
<tr>
<td>c) Warranty Service Comparison</td>
<td>1.000</td>
<td>Non-significant</td>
<td></td>
</tr>
<tr>
<td>d) Life of Product Comparison</td>
<td>0.034</td>
<td>Significant</td>
<td></td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.
Analysis and Interpretation: -
P Value shows Chinese Component are significantly negative on Quality, Brand and Life of Product. Whereas difference is non-significant on Warranty. It inference that Market perception for Quality, Brand and Life of product for Indian Tyres is good in Indonesia Market, however need to focus on Warranty service. Hypothesis H3 is partially accepted for Quality & Brand recognition.

B.2.) Commercial Wheel
Table No. 6.35. Paired T test statistics for Hypothesis H3

<table>
<thead>
<tr>
<th>Two-sample T test for Various Characteristics(95% Confidence level)</th>
<th>Commercial Wheel</th>
<th>P-Value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Quality Comparison</td>
<td>0.007</td>
<td>Significant</td>
<td></td>
</tr>
<tr>
<td>b) Brand Comparison</td>
<td>0.019</td>
<td>Significant</td>
<td></td>
</tr>
<tr>
<td>c) Warranty Service Comparison</td>
<td>1.000</td>
<td>Non-significant</td>
<td></td>
</tr>
<tr>
<td>d) Life of Product Comparison</td>
<td>0.034</td>
<td>Significant</td>
<td></td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation: -
P Value shows Chinese Component are significantly negative on Quality, Brand and Life of Product. Whereas difference is non-significant on Warranty. It inference that Market perception for Quality, Brand and Life of product for Indian Wheel Rim is good in Indonesia Market, however need to focus on Warranty service. Hypothesis H3 is partially accepted for Quality & Brand recognition.

C) Vietnam Market
Similar exercise is conducted in Vietnam market as well for Tyre and Wheels.

C.1.) Commercial Tyre
Table No. 6.36. Paired T test statistics for Hypothesis H3

<table>
<thead>
<tr>
<th>Two-sample T test for Various Characteristics(95% Confidence level)</th>
<th>Commercial Tyre</th>
<th>P-Value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Quality Comparison</td>
<td>0.006</td>
<td>Significant</td>
<td></td>
</tr>
<tr>
<td>b) Brand Comparison</td>
<td>0.001</td>
<td>Significant</td>
<td></td>
</tr>
<tr>
<td>c) Warranty Service Comparison</td>
<td>0.185</td>
<td>Non-significant</td>
<td></td>
</tr>
<tr>
<td>d) Life of Product Comparison</td>
<td>0.087</td>
<td>Non-significant</td>
<td></td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.
Analysis and Interpretation: - P Value shows Chinese Component are significantly negative on Quality, Brand recognition. Whereas difference is non-significant on Warranty and life of product. It inference that Market perception for Quality, Brand for Indian Tyres is good in Vietnam Market, however need to focus on Warranty service and improvement of product life. Hypothesis $H_{3v1}$ is partially accepted for Quality & Brand recognition.

C.2.) Commercial Wheel

Table No. 6.37. Paired T test statistics for Hypothesis $H_{3v2}$

<table>
<thead>
<tr>
<th>Two-sample T test for Various Characteristics(95% Confidence level )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Wheel</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>a) Quality Comparison</td>
</tr>
<tr>
<td>b) Brand Comparison</td>
</tr>
<tr>
<td>c) Warranty Service Comparison</td>
</tr>
<tr>
<td>d) Life of Product Comparison</td>
</tr>
</tbody>
</table>

Source: Primary data survey of the dealers/manufacturers.

Analysis and Interpretation: - P Value shows Chinese Component are significantly negative on Quality. Whereas difference is non-significant on Brand Name, Warranty and product life. It inference that Market perception for Quality for Indian product i.e. Wheel Rim is good, however need to focus on Brand and Warrant service. Hypothesis $H_{3v1}$ is partially accepted only for Quality.

Summary:-

This chapter is mainly focused on Analysis and Interpretation of data collected through questionnaire by the researcher. This session was divided in two parts. Summary of part I is given at the end of that part. Part II is mainly focusing on Hypothesis testing. Researcher has taken 3 hypothesis regarding Tyre and Wheel rim for selected market. Summary of all hypothesis is given below:-
Table No. 6.38. Summary of hypothesis testing

| H1 - Thailand, Indonesia and Vietnam are importing lot of Auto Components from various countries. |
|---------------------------------|----------------|----------------|
| H1\textsubscript{T1} Thailand Market | Commercial Tyre | Partially Accepted |
| H1\textsubscript{T2} | Commercial Wheel | Fully Accepted |
| H1\textsubscript{I1} Indonesia Market | Commercial Tyre | Partially Accepted |
| H1\textsubscript{I2} | Commercial Wheel | Fully Accepted |
| H1\textsubscript{V1} Vietnam Market | Commercial Tyre | Fully Accepted |
| H1\textsubscript{V2} | Commercial Wheel | Fully Accepted |

| H2 - Import from other countries at lower price and vast availability in market restricts penetration for Indian Automobile Component. |
|---------------------------------|----------------|----------------|
| H2\textsubscript{T1} Thailand Market | Commercial Tyre | Accepted |
| H2\textsubscript{T2} | Commercial Wheel | Accepted |
| H2\textsubscript{I1} Indonesia Market | Commercial Tyre | Rejected |
| H2\textsubscript{I2} | Commercial Wheel | Rejected |
| H2\textsubscript{V1} Vietnam Market | Commercial Tyre | Rejected |
| H2\textsubscript{V2} | Commercial Wheel | Accepted |

| H3 - Market Perception for Indian Automobile components is better than Chinese components in terms of Quality, Service and Brand recognition |
|---------------------------------|----------------|----------------|
| H3\textsubscript{T1} Thailand Market | Commercial Tyre | Partially accepted for Quality |
| H3\textsubscript{T2} | Commercial Wheel | Partially accepted for Quality & Brand |
| H3\textsubscript{I1} Indonesia Market | Commercial Tyre | Partially accepted for Quality & Brand |
| H3\textsubscript{I2} | Commercial Wheel | Partially accepted for Quality & Brand |
| H3\textsubscript{V1} Vietnam Market | Commercial Tyre | Partially accepted for Quality & Brand |
| H3\textsubscript{V2} | Commercial Wheel | Partially accepted for Quality |

In short in H3, for all markets Hypothesis is accepted for Quality & rejected for Warranty/Service. However accepted for brand recognition for some markets for some products.

Thus now researcher completed the presentation of analysis of objectives as well as hypothesis. In the subsequent chapter, researcher will present the findings of the study, give suggestions and conclude the research journey. Researcher will also provide clues for future research in the area of study.