Chapter 6: Triangulation of Findings and Interpretation of Results

The research methodology in Chapter 4 covers the method adopted for this thesis, which is a mixed method approach, triangulation design to answer the research questions. Triangulation design is the most common and well-known approach to mixing methods (Creswell, Plano Clark, et al., 2003). The purpose of this design is “to obtain different but complementary data on the same topic” (Morse, 1991, p. 122) to best understand the research problem. The intent in using this design is to bring together the differing strengths and non-overlapping weaknesses of quantitative methods (large sample size, trends, generalization) with those of qualitative methods (small N, details, in depth) (Patton, 1990). This design and its purpose of converging different methods has been discussed extensively in the literature (e.g., Jick, 1979; Brewer & Hunter, 1989; Greene et al., 1989; Morse, 1991). This design is used when a researcher wants to directly compare quantitative statistical results with qualitative findings or to validate or expand quantitative results with qualitative data. The Triangulation Design is a one-phase design in which researchers implement the quantitative and qualitative methods during the same timeframe and with equal weight.

This section triangulates the quantitative survey results and qualitative case studies findings and compares the results across both research themes, customer knowledge measure and customer analytics measure.

6.1 Theme- Customer Knowledge Measure

The below mentioned table 6.1 triangulates the findings of both survey analysis and analysis of case studies in the theme- ‘Customer Knowledge Measure’.
Table 6.1: Triangulation of findings in the theme - Customer Knowledge Measure

<table>
<thead>
<tr>
<th>Sub-Themes</th>
<th>Sub-Sub Themes</th>
<th>Area</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Customer Demographics</td>
<td>1.1 Access to Customer demographics data</td>
<td>Qualitative Data Results</td>
<td>None of the case companies had access to all the basic minimum information about their end- customers that includes- email ID, mobile no and address.</td>
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<tr>
<td></td>
<td></td>
<td>Reasons given by case companies</td>
<td>The reasons cited were: a) not all customers shared the details during a purchase. b) only 2 out of 3 case companies had their own web-store fronts and hence had access to demographic details of only e-commerce customers and not their customers from brick and mortar store fronts; c) the other case company sold through traditional and modern trades and through online intermediaries and hence could not get access to customer demographics.</td>
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<td></td>
<td></td>
<td>Quantitative Data Results (Descriptive analysis)</td>
<td>96 % of the survey companies had a multi-tiered distribution network and did not have access to end consumer demographics.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interpretation</td>
<td>Traditional consumer product businesses lack access to minimum end consumer</td>
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<td>Sub-Themes</td>
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<tr>
<td></td>
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<td><strong>Qualitative Data Results</strong></td>
<td>In the company owned retail stores and company owned web store fronts, the customer purchase transaction details were accessible by case companies. In the case of Large Format Retailer and the Traditional Distribution Network, the purchase details were in-accessible.</td>
</tr>
<tr>
<td>1.2 Customer</td>
<td>1.2 Access to Customer purchases across channels</td>
<td><strong>Reasons given by case companies</strong></td>
<td>Getting access to data from a Large format retailer and the distribution channel was a challenge.</td>
</tr>
<tr>
<td>Purchases</td>
<td></td>
<td><strong>Quantitative Data Results (Descriptive analysis)</strong></td>
<td>94% companies had access to only sales data of tier 1 distribution network, additionally, 4 % of the total had access to tier 2 (Secondary Sales). 6 % of the total survey companies had access to end consumer purchases that had their own brick and mortar stores and web store front. 96 % of them did not have common view of inventory across all channels and 87 % of them do not have a common</td>
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<tr>
<td></td>
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<td>view of customers across all channels.</td>
</tr>
<tr>
<td>Interpretation</td>
<td></td>
<td></td>
<td>The traditional businesses in India have a multi-tier distribution network and hence have access to customer and inventory data at level 1 or maximum level 2 of trades alone. Only the companies with their own brick and mortar channels and web-store fronts have access to end consumer purchasing data.</td>
</tr>
<tr>
<td>1.3. Customer Interactions</td>
<td>1.3 Access to customer interactions-product trials, browsing and searching</td>
<td>Qualitative Data Results</td>
<td>This was available to 2 case companies that had web-store front. In fact, one of the case company was in the process of developing a digital product catalogue mobile app for its customers. The digital catalogue in the brick and mortar store will help customer select product for trials, browse the collection and express their likes and provide feedback for various products. Rest of the case companies did not have access to this information at all</td>
</tr>
<tr>
<td>Reasons given by case companies</td>
<td>Not having their own web-store front and not investing in mobile based application to</td>
<td></td>
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<td>Sub-Themes</td>
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<td></td>
<td>provide a digital shopping experience to customers was the reason that most of the case companies did not have access to customer interactions, product trials, browsing and searching information.</td>
</tr>
<tr>
<td>Quantitative Data Results (Descriptive analysis)</td>
<td></td>
<td>96% of the survey companies had a multi-tiered distribution network and did not have access to end consumer demographics. In addition, 82% of survey companies are unsure about how well they are placed in personalization of their interactions to individual customers and 9% of them were sure that they were behind their competition in this. Against industry leaders such as Amazon and Walmart, the survey companies considered themselves behind them in the execution of personalized interactions to individual consumers.</td>
<td></td>
</tr>
<tr>
<td>Interpretation</td>
<td></td>
<td></td>
<td>Not providing a digital shopping experience to customers prevents the traditional businesses from getting access to customer</td>
</tr>
</tbody>
</table>
interaction information that forms the core for personalized messaging, offers, ad promotions.

6.2 Theme- Customer Analytics Measure

The below mentioned table 6.2 triangulates the findings of both survey analysis and analysis of case studies in the theme- ‘Customer Analytics Measure’.

<table>
<thead>
<tr>
<th>Sub-Themes</th>
<th>Sub-Sub Themes</th>
<th>Area</th>
<th>Findings</th>
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<tbody>
<tr>
<td>6.2.1</td>
<td>6.2.1.1</td>
<td>Qualitative Data Results</td>
<td>None of the case companies were viewing customer purchasing in an interactive visual dashboard. The Sr. Management at the case companies acknowledged the fact that data visualization will help them understand a) What and when did an event happen? b) How much is impacted and how often does it happen? c) What is the problem? And they admitted that they lacked a holistic view of customer purchases across various dimensions like regions, city, channels etc.</td>
</tr>
</tbody>
</table>

**Reasons given by case companies**

They had not invested in any data-visualization tool yet and in one of the case companies the management decision making is by gut and intuition rather than using data.
<table>
<thead>
<tr>
<th>Sub-Themes</th>
<th>Sub-Sub Themes</th>
<th>Area</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Quantitative Data Results (Descriptive analysis)</td>
<td>Only 4% of the survey companies were using interactive data visualization to understand customer purchasing. Rest 96% were not visually analysing customer behaviour and purchasing.</td>
<td></td>
</tr>
<tr>
<td>Interpretation</td>
<td>From the survey data and the case studies, it is apparent that majority of the respondent traditional businesses were not using interactive data visualization to analyse customer behaviour and purchasing. Therefore, they are definitely missing out on an in-depth analysis of customer purchasing patterns.</td>
<td></td>
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</tr>
<tr>
<td>6.2.1.2 Interactive visual analysis of Product sales and profitability by various channels</td>
<td>Qualitative Data Results</td>
<td>None of the case companies were viewing product sales and profitability in an interactive visual dashboard.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reasons given by case companies</td>
<td>They had not invested in any data-visualization tool and in one of the case companies the management decision making is by gut and intuition rather than using data.</td>
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</tr>
<tr>
<td></td>
<td>Quantitative Data Results (Descriptive analysis)</td>
<td>Only 7% of the survey companies were using interactive data visualization to understand customer purchasing. Rest 93% were not using data visualization.</td>
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<td>Sub-Themes</td>
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<tr>
<td></td>
<td></td>
<td><strong>Interpretation</strong></td>
<td>From the survey data and the case studies, it is apparent that majority of the respondent traditional businesses were not using interactive data visualization to analyse product sales and profitability by various channels. Therefore, are definitely missing out on an in-depth analysis of customer purchasing patterns.</td>
</tr>
<tr>
<td><strong>6.2.2</strong> Machine and Predictive Analytics Measure</td>
<td>6.2.2.1 Customer segmentation for targeted marketing and personalized offers using Clustering Techniques.</td>
<td><strong>Qualitative Data Results</strong></td>
<td>None of the case companies were segmenting customers using clustering techniques. They were instead trying it in excel sheets and by top management’s gut and intuition. Their promotions and offers were targeted to a large group of customers rather than to individuals.</td>
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<td></td>
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<td><strong>Reasons given by case companies</strong></td>
<td>The case companies attributed the following for not being able to achieve this: a) lack of complete information on customer preferences and behaviour; b) lack of skills on predictive analytics/machine learning; c) in addition, they also had not invested in technology tools to drive this.</td>
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</table>
|            |                | **Quantitative Data Results** *(Descriptive analysis)* | Only one out of 85 survey companies were using clustering techniques. The survey companies were asked to respond to questions that revolved around customer centricity. In response to the question, if product pricing, discounts and promotions tactics were targeted to a group of customers to an individual customer, the majority (98 %) respondent as “Group of Customers”.
|            |                | **Interpretation** | This goes to show that the traditional consumer product companies are yet to understand individual customer behavior and preferences to tailor their offerings to them. |
|            | **6.2.2.2 Dynamic Pricing** | **Qualitative Data Results** | None of the case companies were even close to attempting to achieve this.
<p>|            |                | <strong>Reasons given by case companies</strong> | Once again, lack of customer behaviour and preferences data required to achieve this was given as the primary reason. Lack of in-house skills and not investing in advanced analytics tools were also cited as reasons behind not being able to achieve Dynamic Pricing. |</p>
<table>
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<tbody>
<tr>
<td></td>
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<td>Quantitative Data Results (Descriptive analysis)</td>
<td>None of the survey companies were pricing their products to individual customers.</td>
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<tr>
<td></td>
<td></td>
<td>Interpretation</td>
<td>The traditional consumer businesses are yet to start dynamic pricing technique to price their products to individual customer.</td>
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<td></td>
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<td>Qualitative Data Results</td>
<td>All the three case companies were keen on using association rules techniques and achieve market basket analysis. But, none of them were able achieve this successfully. Only one of the case companies was trying to achieve this for their web store sales data using google analytics.</td>
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<tr>
<td></td>
<td></td>
<td>Reasons given by case companies</td>
<td>The senior management at the cases companies stated lack of skills on predictive analytics and its tools as reasons for not being able to achieve this.</td>
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<tr>
<td></td>
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<td>Quantitative Data Results (Descriptive analysis)</td>
<td>94 % survey companies do not have access to market basket analysis of their sales.</td>
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<tr>
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<td>Interpretation</td>
<td>Overall, traditional consumer product companies were not using association rules algorithms to perform market basket analysis. They were not examining buying</td>
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<td>Finding s</td>
<td>habits of the customers by identifying the associations among the items purchased by the customers in their baskets. This way, they were missing out on opportunities to up-sell and cross sell that leads to increase in the sales of a product by identifying the frequent items purchased by the customers.</td>
</tr>
<tr>
<td>6.2.2.4 Use Forecasting models to predict superstar products and profitable customers</td>
<td>Qualitative Data Results</td>
<td>All the case companies wanted to achieve this and were arriving at this using the gut and intuition of top management. None of predictive analytics.</td>
<td>Reasons given by case companies</td>
</tr>
<tr>
<td></td>
<td>Quantitative Data Results</td>
<td>Over 91 % of survey companies were unable to predict their superstar products and customers.</td>
<td>(Descriptive analysis)</td>
</tr>
<tr>
<td>6.2.2.5 Computer Customer Lifetime Value</td>
<td>Qualitative Data Results</td>
<td>None of the case companies knew what calculation goes into computing this. They were not serious about this measure at all.</td>
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<td>Sub-Themes</td>
<td>Sub-Sub Themes</td>
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<tr>
<td></td>
<td></td>
<td>Reasons given by case companies</td>
<td>Lack of knowledge of this metric and skills to achieve this.</td>
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<tr>
<td></td>
<td></td>
<td>Quantitative Data Results (Descriptive analysis)</td>
<td>None of the survey companies could compute Customer Lifetime Value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interpretation</td>
<td>Traditional consumer product businesses are unable to compute Customer Lifetime Value.</td>
</tr>
</tbody>
</table>
6.3 Summary of Findings

It is evident from the above tables 6.1 and 6.2 that the survey companies and the case companies fell short in ‘Customer Knowledge Measure’ and ‘Customer Analytics Measure’. The respondent companies did consider analytics as a strategic investment and rated the following as the top three goals to derive from analytics

1) Improved trade-spend effectiveness
2) Enhance your understanding of customer (customer insights)
3) Provide relevant insights to sales force.

Since the traditional distribution network driven sales contributes to the most of the revenues for the traditional businesses, managing trade spend becomes important for them to ensure profits. Getting a good understanding of customers is their second priority.

On the availability of historical data for analytics purposes, about 58% of the companies had 1-5 years’ data available for analytics and 33 % of them had less than 1 years’ data. The survey results state that even for companies with historical data of over 5 years, significant number of companies still have less than one year of data being used for OLAP purposes.

On the current state of analytics capability of survey companies in comparison to the peers in their industry segment world-wide, most of them (81 %) state that they are behind their industry peers world-wide and about 18% of them acknowledge that they are significantly behind them.

The biggest challenge in analytics adoption as stated by the survey companies was poor data quality leading to lack of trust on data shown by business leaders for decision making. The other two important challenges were a) the company culture that believed in intuition driven decision making than data driven and b) the inability of survey companies to integrate data from multiple data sources.

On the analytics investment side, given their size of operations data volumes, it is generally expected that such strategic investments should be significantly higher for larger companies when compared to their smaller counterparts, but the results do not show that in the survey and case analysis. Planned Analytics investments of larger segment does seem to be commensurate to their sales turnovers. In addition, there are about 15 % of them that plan to invest less than INR 20 lacs. It can also be observed that in every segment, there are companies where the respondents have stated they don’t know the kind of BI investments that are planned for their organizations.