### Chapter VI
#### Research Methodology

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Chapter VI
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6.1 Introduction

This chapter is devoted to the overall framework used for the study including sources of data, research design (including variables studied, measurements), sample design, questionnaire design, pre-testing of questionnaire, pilot study and establishment of reliability and validity and statistical techniques employed during the current study.

6.2 Type of study

The study had a focus on the profit sector. It was micro-positive in nature as it described the existing position in sales supervisors’ orientation, salesperson goal orientation, salesperson adaptive selling behaviour and sales performance. It was also normative in nature, as it developed and tested hypotheses regarding relationships between seven different constructs in the sales management space. The approach had been to be objective in approach of issue identification, information gathering and explanation of gathered data. It could therefore be said to be harmonious with “modern empiricism.”

The study was descriptive in nature and was based on both primary as well as secondary data. It was an empirical study carried out after taking responses from the salespersons involved in business-to-business selling. Data collected from respondents (Primary data) were subjected to suitable tabulation, coding and statistical analysis. Sales supervisor orientation was looked at from the eyes of salespersons and its impact was studied on sales performance. Learning orientation and performance orientation of salespeople also has been studied and their impact on sales performance was also part of this study. All attempts were made by the researcher to minimize bias and have maximum reliability.

Based on studies done earlier, some issues were recognised regarding data collection:

- Self-administered questionnaires were identified as most appropriate
- Personal interviews as a methodology for gathering data was rejected as it would envisage substantial manpower requirements
• Sending the questionnaire to existing customers of Mercuri Goldmann, a training organization was thought likely to give dramatically better response rates. This was familiarity and trust.

• Support from company management in advance by explaining the purpose of the study appeared to be a good strategy to increase response rates.

• Sending the questionnaire to the sales supervisors and enlisting their support in getting the questionnaires filled seemed to be a good way of getting responses. This is because the number of people to be followed up reduces.

• An online survey which could be answered by the respondent any time and using any mode like mobile, laptop or desktop appeared an easier way for responding.

• No inducements were envisaged to be used, based on prior research done by others.

6.3 Secondary data sources

Secondary data was collected from various academic and business journals in sales and sales management including, but not restricted to the following:

• Journal of personal selling and sales management
• Journal of selling and major account management
• Journal of marketing research
• Journal of selling
• Journal of marketing development and competitiveness
• Harvard Business Review etc.

These journals were accessed electronically through databases. Journals from 1990 onwards were accessed. However, in cases where the research article was seminal and path breaking in nature, even previous year journal articles were accessed.

Books, research papers, conference proceeding compendiums, and articles from related journals, newspapers and magazines and Internet were also accessed for this study.

Electronic theses and dissertations (ETDs) from various universities, if available, on similar subjects were also studied.
An attempt was made to study existing research models on sales and sales management, especially those related to business-to-business selling.

### 6.4 Primary data collection

The questionnaire method was used in gathering information for this study.

This study had salespeople as unit of observation and not sales supervisors. Thus, sales supervisors’ orientation has been studied through the eyes of salespeople. This is because supervisors are not the best people at evaluating themselves relative to objective criteria (Yammarino & Atwater, 1997). Sales supervisors may fill up any questionnaire on themselves in an aspirational way. The view of using salespeople as units of observation has been supported by other researchers (Blanchard, Zigarmi, & Zigarmi, 2000) and has also been used by previous researchers including Atuahene-Gima (1998). Avery (2001) explained this by stating that this is because salespersons are directly affected by managerial behaviour and also have first-hand experience with their supervisors. Therefore, sales supervisors and managers were not selected as respondents in the study and only salespeople were selected as respondents.

Thus, a carefully crafted and validated questionnaire method was administered to salespeople involved in business-to-business selling in India.

There is no published data on number of salespeople working in business-to-business selling in India. Therefore, first a list of companies engaged in business-to-business selling was drawn up. Getting responses from organizations about their sales management and sales team practices is not an easy task as many organizations would want to treat it as confidential information. To circumvent this issue, help was taken by the researcher’s organization-Mercuri Goldmann Pvt. Ltd. This organization is in the business of sales and service training and consulting and have worked with many big, medium and small organizations in the field of business-to-business selling. Having worked as partners with their clients, Mercuri has a high level of trust built over period of years. Thus, as a first step of drawing up the sample, a list of all organizations which Mercuri has worked with over a period of last three years was drawn up. They were then segregated into big, medium and small companies, based on turnover. Of these companies, seven large size companies, ten medium size companies and ten small size companies were selected. Sales heads and Human
Resource Heads were then contacted and permission sought for carrying out the survey. After permission was granted, the questionnaire was sent to 440 salespeople. Finally 350 responses were received after follow-up by researcher and the survey was closed subsequently. Thus, the sample size was 350 respondents who are involved in business-to-business selling, spread over all three categories. Stratified sampling was used. This study was a quantitative study using a questionnaire with Likert scale for seven constructs. A Likert type scale was used as it is easy to analyze statistically (Jackson, 2012). Demographic data was also gathered for each salesperson. Respondents were also informed of the purpose of the research and its importance.

6.5 Measurements

The main objective of the study was to study effects of “sales supervisors’ orientation” on “goal orientation”, “adaptive selling” and “sales performance” of B2B salespeople.

The construct domain needs to be clearly, faultlessly and precisely defined for measures to be useful (Gilber A. Churchill, 1979).

As in every well designed study, there need to be independent variables, dependent variables and control variables.

Independent variable:

Sales performance of salespeople in business-to-business selling was employed as the independent variable. This was measured by six items including performance in teams of identifying and selling to major accounts, sales volume compared to peers, selling of high profit margin products compared to peers, achievement versus targets compared to peers, selling of new company products compared to peers and assistance to sales supervisor in achieving his target compared to peers. These items have been taken from a similar study done and validated by Kohli et al. (Kohli et al., 1998).

Dependent variables:

This study had six dependent variables which were studied:

- End-result orientation of sales supervisor
- Activity orientation of sales supervisor
- Capability orientation of sales supervisor
• Learning orientation of salespeople
• Performance orientation of salespeople
• Adaptive selling behaviour of salespeople

Control variables:
Four control variables were used in this study:
• Overall company turnover in terms of whether turnover was less than Rs. 50 crores, from Rs 50 crores to less than Rs 250 crores and greater than Rs. 250 crores.
• Number of years spent in sales in the company in terms of less than two years, greater than two years but less than four years, greater than four years but less than six years and greater than six years
• Total number of years in sales till date was measured in terms of less than two years, greater than two years but less than four years, greater than four years but less than six years and greater than six years
• Description of organization was measured in terms of whether the organization was product manufacturing and sales organization, an organization which is a distributor of a Principal, a services selling organization, a sales and service organization or any other.

6.6 Questionnaire design
As a first step of developing the measurement development process, each construct needs to be conceptualized and operationalized to make them applicable to the research problem (Zikmund, 2003). Since all constructs used in the study have already been studied earlier by other literatures, indicators were used/adapted from earlier studies (Kohli et al., 1998; Spiro Rosann L. & Weitz, 1990). The questionnaire had three main parts: First, details about the respondent and his company, second perception of salesperson about his supervisor and finally his own selling behaviour.

While adapting questionnaire care was taken in ensuring proper content of the question and its wording. Each question was put in a language which was simple to understand and relevant to the respondents (Malhotra, 1999). All constructs were
operationalized using multiple scales so that they were more likely to be reliable than a single construct (Neuman, 2000).

Each independent variable had its own scale (1- “Strongly disagree” and 5-“Strongly agree”). All points on scales were labelled and were then used to collect data for questions.

All independent variables were measured using different number of items which are stated as below:

- Supervisory end-result orientation as an independent variable was measured using five items.
- Supervisory activity orientation as an independent variable was measured using six items.
- Supervisory capability orientation as an independent variable was measured using six items.
- Salesperson’s learning orientation as an independent variable was measured using five items.
- Salesperson’s performance orientation as an independent variable was measured using five items.
- Salesperson’s adaptive behaviour as an independent variable was measured using eight items.
- The Performance scale was adapted for measuring the dependent variable using a different five point Likert scale (1-Much worse and 5-Much better). It was measured using six items.

All questions in the questionnaire were stated positively. The scale questions were close ended with specific sequential choices. They had captions. Questions seeking demographic information were placed at the beginning of the questionnaire. It was ensured that only a small effort was required for respondents to complete the questionnaire.

6.7 Questionnaire pre-test

Pretesting of the questionnaire was carried out through a four step process.

Step 1: Checking for “simple to understand”
The draft questionnaire was provided to four salespeople who were involved in business-to-business selling. They filled up the questionnaire in presence of the researcher. They were asked to report items which they could not understand. There were no issues reported by them.

Step 2: Checking for identification of constructs

The questionnaire was given to three academicians to check whether all the constructs were clearly identifiable or not. One of the academicians made two observations which were incorporated and corrections made as follows:

- Possibility of common source problem. This was reduced by randomizing the items in part two and three of the questionnaire.
- Possibility of biased responses. This was reduced by randomizing the sequence of scales (sometimes beginning with strongly agree and sometimes beginning with strongly disagree)

Step 3: Checking for content validity

Content validity means that the set of items completely measure the construct and nothing else. They should also measure the full range of construct. The scales used in this study have been supported by extensive literature review, experience of the researcher as a practitioner. With a view of establishing the content validity, the researcher requested six experts from Mercuri Goldmann (an organization who are experts in sales and sales management training and consulting) to evaluate the questionnaire objectively. All items in the questionnaire were considered valid by the experts, after a couple of changes in two scales. The questionnaire was tested for reliability which is described in the next step.

Step 4: Checking for reliability

Any questionnaire needs to be pilot tested to detect possible flaws in its design. It needs to be corrected before final administration (Malhotra, 1999). A questionnaire is said to be reliable if it obtains the same responses if administered under same conditions (Field, 2013). Variation in scores attributable to random errors need to be minimized or zero (Gilber A. Churchill, 1979).
The modified draft questionnaire was then emailed to fifty salespeople who sell in a business-to-business environment. These executives were working in a similar position and level as the final respondents (Zikmund, 2003). Ten of them were contacted once again asked about any difficulties faced in understanding the questions. They were also asked about any questions which according to them, were irrelevant or repetitive. Concerns addressed during the pilot test were

- Face validity,
- Instructions and questions clarity and
- Questionnaire layout.

The time required to complete the questionnaire was also requested for. The questionnaire took around 15 to 20 minutes to answer as confirmed in pre-testing. Data gathered from the questionnaire was then checked for reliability using Cronbach’s Alpha as a measure of reliability using SPSS version 25.0.

Cronbach’s Alpha is one of the most ubiquitous index of reliability (Streiner, 2003). However, it is a characteristic of the test scores and not of the test itself (Yin & Fan, 2000). Therefore, it was felt necessary to test the pilot study questionnaire for reliability. The results obtained are shown below:

<table>
<thead>
<tr>
<th>Scale</th>
<th>Cronbach’s Alpha</th>
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<tbody>
<tr>
<td>Supervisory end result orientation</td>
<td>.822</td>
</tr>
<tr>
<td>Supervisory activity orientation</td>
<td>.914</td>
</tr>
<tr>
<td>Supervisory coaching orientation</td>
<td>.844</td>
</tr>
<tr>
<td>Salesperson learning orientation</td>
<td>.738</td>
</tr>
<tr>
<td>Salesperson performance orientation</td>
<td>.887</td>
</tr>
<tr>
<td>Salesperson adaptive behaviour</td>
<td>.823</td>
</tr>
<tr>
<td>Salesperson performance</td>
<td>.892</td>
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The Cronbach’s alpha for all scales ranged from .738 to a maximum of .914 indicating good internal consistency of the items. Cronbach’s alpha for supervisory end result orientation, which has 5 items is .822 whereas that of supervisory activity orientation, which has 6 items is the highest .914. Supervisory coaching orientation
has again has a high Cronbach’s alpha of .844. Learning orientation of the salesperson is the lowest amongst all scales and has a Cronbach’s alpha score of .738 which is the lowest. However, salesperson performance orientation, although having the same number of items (5) has a high Cronbach’s alpha of .887. Adaptive behaviour of the salesperson and sales performance both have a Cronbach’s alpha of greater than .9. As Cronbach’s alpha for all scales was found to be higher than .70 (Nunnally & Bernstein, 1994), the questionnaire used in the pilot study was found to be reliable.

Since the questionnaire was found to be valid as well as reliable, it was considered as final for administering to 350 respondents.

The questionnaire is attached at Annexure I.

6.8 Final Data collection

The questionnaire, once ready was uploaded to surveymonkey.com, an online questionnaire administration website. This method of administrating survey was selected as salespeople travel a lot and using an online platform would help in getting more responses and quicker responses. Also, questionnaires could be opened via desktop or mobile. Collation of responses was also simpler as up-to-date statistics of how many questionnaires have been completely filled in, how many are partially filled etc. is available at the fingertips of the researcher.

The survey was undertaken between October 2016 and September 2017. Twenty seven companies involved in business-to-business selling, of which seven large companies (having turnover greater than Rs. 250 crores), ten medium size companies (having turnover between Rs 250 crores and Rs 50 crores) and ten small size companies (having turnover less than Rs 50 crores) were identified. A constant check was kept on how many people had completed the questionnaire, how many had filled in partially and how many had not filled in. Those who filled up partially were sent an email informing them about it so that they could complete it. Their managers were also kept in the loop.

6.9 Statistical techniques applied:

Data was then screened for “univariate” outliers. There were no missing outliers. A number of statistical tests were performed using IBM SPSS Statistics 25.0.
Descriptive statistics terms of number, range, mean, and standard deviation were computed.

The following statistical techniques were employed to analyse the data.

Descriptive statistics:
To check means, standard deviation, range and maximum/minimum

Cronbach’s Alpha:
To measure reliability of instrument by testing internal consistency

Frequencies:
To measure count

Correlation analysis:
To test hypotheses

One way ANOVA:
To compare means

KMO test:
To check adequacy of sample in factor analysis

Bartlett’s test:
To check homogeneity of variances

Principal Component Analysis:
To reduce the number of constructs

Linear Multiple regression:
To model a relationship between two explanatory variables

t-test:
Significance of individual regression co-efficients in multiple regression model

F-test:
To understand variation between sample means/viation within the samples
6.9 Ethical considerations

The data from the respondent firms was very sensitive and therefore participation was sought on a voluntary basis. Firms were informed about the intent of the study. Formal permission was taken from the Sales Head and the Human Resources Head. Link to the questionnaire was first sent to the managers of the targeted respondents. The purpose of the study was elucidated to the managers. The managers were also personally spoken to over the phone and explained the purpose of the study. An assurance was also given that data would be shared in aggregate only. The researcher’s position in the industry and good offices of Mercuri Goldmann (the organization in which the researcher works presently) helped to prove legitimacy and objectivity and thereby increasing the response rate.

Follow-up emails were sent where required. Personal requests were made over phone to serve as a gentle reminder. This helped in increasing the response rate to a very large extent. All questionnaires which were indicated as partially filled were followed up so that they could be completed. The results were captured by surveymonkey.com and data then exported to SPSS.

6.11 Conclusion

The methodology for carrying out the overall study has been described in this study. Sources of data including primary and secondary data have been enumerated. The sample design has been articulated and process of pre-testing of the questionnaire has been described. Reliability and validity of the study has been demonstrated and statistical techniques to be employed in the current study have been described.