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ESSENTIALS OF MARKETING RESEARCH: PART II

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Measurement, Questionnaires, Analysis & Reporting

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Preface

The field of marketing has experienced unprecedented developments in the 20th century which have continued at no lesser pace in the 21st century. Within the last few decades shifts have been observed in the marketing thought, marketing practice and every direct and indirect issue and function related to marketing. The constant shift in the field has led to many interesting developments including the field of marketing research.

Despite the accessibility and prevalence of research in today's society, many people when asked, share common misperceptions about exactly what research is, how research can be used, what research can tell us, and the limitations of research. For some people, the term "research" conjures up images of scientists in laboratories watching guinea pig and chemicals experiments. When asked what is 'marketing research' people associate it with telemarketer surveys, or people approaching them at the local shopping mall to "just ask you a few questions about your shopping habits." In reality, these stereotypical examples of research are only a small part of what research comprises. It is therefore not surprising that many students (and managers) are unfamiliar with the various types of research methods, the basics of how research is conducted, what research can be used for, and the limits of using research to answer questions and acquire new knowledge.

As an active researcher, academic, consultant and trainer, I find the students and managers I interact with struggling to understand the various issues associated with marketing research. When probed they express three major concerns: 1. incapability to comprehend research language used in most books; 2. the coverage of most books and its usage in real life; and 3. Relevance of the examples used. Most books in the subject area are comprehensive and cover the subject in minute details but majority of the time readers require an overview and not the most in-depth understanding of a specific phenomenon. The heavy emphasis on technical language and the little found use and relevance of the books disengages the readers from purchasing, reading and understanding the research books and in turn these readers remain distant from the research process.

Therefore, there seems a need for a research book which can cover the relevant issues in a simple and palatable form for the readers and make them engaged in the process of research. This book attempts to attend to the above stated issues by introducing technical and analytical concepts in a very accessible manner. Some of the readers may get really interested in the field of marketing research after reading this book and so this book can be called a primer and simple background for understanding advanced technical textbooks in the field.

Every attempt has been made to keep this compendium simple and accessible however sometimes the use of jargons (technical terms) becomes necessary. In such cases, examples have also been added to make it easier for you to understand the phenomenon.

At this juncture, I would like to thank Kristin and Johan at Ventus publications who motivated me for this endeavour from conceptualization to concretization. I also take this opportunity to thank my students, friends, and colleagues, who have created this learning experience for me. Their discussions, remarks and debates have helped me learn and share this learning with you via this compendium. My special thanks to Ekta, my wife, without whose sacrifice and constant support this compendium would not have seen the light of the day. Hence, I dedicate the book to her.

Brighton, 29 Oct, 2008

Paurav SHUKLA

1. Measurement and scaling

1.1 Chapter summary

This chapter will introduce the concept of measurement and scaling. It will also provide discussion on the primary scales of measurement and go on to classify and describe both comparative and noncomparative scaling techniques. It will also discuss how an appropriate scaling technique be chosen in developing a right question. It will also focus on the concepts of validity and reliability in details.

1.2 Importance of measurement and scaling in marketing research

Like sampling we use measurement regularly in our daily lives. For example, if someone asks you of your favourite newspaper, your mind may create a list and you shall decide your favourite most newspaper from that. While deciding on that favourite newspaper your mind would have used several criteria such as your reading pattern, content of the newspaper, various other features such as writers involved, format, colour and pictures used, and columnists you prefer. Furthermore, your mind would have also told you the most preferred the second most preferred and even least preferred newspaper. The criteria your mind is using in deciding the favourite newspaper is called measurement. In research terms, measurement is nothing but the assignment of numbers or other symbols to characteristics of objects according to certain pre-specified rules. One of the important things to note here is that researchers do not measure objects but some characteristics of it. So in reality, researchers do not measure consumers but their perceptions, beliefs, attitudes, preferences and so on. The idea of assigning numbers can be helpful in two ways in accurate understanding of a phenomenon; (1) it allows statistical testing and (2) it helps facilitate easier communication as people have a clear idea with regard to what 10% or 20% means worldwide. Furthermore, numbers also provide objectivity in understanding a phenomenon. This added accuracy due to numbers is essential to effective decision making.

Scaling can be defined as an extension to the process of measurement. To successfully measure a phenomenon the researcher must gather appropriate raw data. The appropriateness of the raw data being collected depends directly on the scaling technique used by the researcher. Scaling can be defined as the process of assigning a set of descriptors or rules to represent the range of possible responses to a question about a particular phenomenon.[1] To illustrate, consider that a retail store manager wishes to know consumers' preference regarding the store's brand image. The researcher develops a scale where in 1 = extremely favourable and 10 = least favourable. The consumers now can respond using these boundaries. So scaling in a way is placing respondents n a continuum with respect to their preference of the store's brand image. Using the scale researchers can measure consumer responses easily. Moreover, can carry out some statistical analysis and also provide results which can easily be understood and acted upon by the manager. As one can observe, measurement and scaling is highly important in marketing research due to the overall objectivity they provide.

1.3 Scales of measurement: fundamental properties

There are four primary scales of measurement: nominal, ordinal, interval and ratio. However, before we get into defining them and understanding their use in marketing research we need to focus on the basic properties which help us identify the scales. Drawing from mathematical theory, there are four scaling properties that a researcher can use in developing scales: assignment, order, distance and origin.

1.3.1 Assignment property

The assignment property is also referred as description or category property. It refers to the researcher's employment of unique descriptors, or labels to identify each object within a set. For example, a researcher asking a question 'are you going to buy a new music system in the next six months?' can assign two descriptors to record the response from consumers; namely yes or no. Similarly another question relating to more preferred brand by consumers with regard to music system can have various brand names mentioned as descriptors.

1.3.2 Order property

The second measurement scale property, order property, refers to the relative magnitude between the descriptors.[2] The relative magnitude refers to three basic properties of any object mathematically. For example, if they are two objects A and B, there are three basic mathematical possibilities: (1) A is greater than B; (2) A is lesser than B; and (3) A is equal to B. Order property helps in identifying these properties.

1.3.3 Distance property

The distance property refers to a measurement scheme where exact difference between each of the descriptors is expressed in absolute.[3] For example, if you bought 4 cans of a drink and your friend bought 2 cans of the same drink you bought two more cans than your friend. Normally, the distance property is restricted to those situations where the raw responses represent some type of natural numerical answer.

1.3.4 Origin property

The origin property is a measurement scheme wherein exists a unique starting point in a set of scale points. For the most part, the origin property refers to a numbering system where zero is the displayed or referenced starting point in the set of possible responses. Other such origin property responses could be 'dissatisfied', 'neither dissatisfied nor satisfied', and
'highly satisfied'.

When developing scale measurements, it is important to understand and remember that the more scaling properties that can be simultaneously activated in a scale design, the more sophisticated raw data. As a scale design includes more scaling properties, it increases the amount of raw data that can be collected by the researcher. Furthermore, it is interesting to note here that each scaling property builds on the previous one. For example, a scale which includes order property will have assignment property built in. Similarly, a scale which possesses distance property will have assignment and order property both. An origin property based scale will have all assignment, origin and distance properties included in itself. This will become further clear as we discuss the basic levels of scale.

1.4 Primary scales of measurement

As stated in the last section there are four primary scales of measurement: nominal, ordinal, interval and ratio. Each of these scales of measurement provides specific scaling properties (assignment, order, distance and origin).

1.4.1 Nominal scale

A nominal scale is the most basic of four scales of measurement. It refers to figuratively labelling scheme in which the numbers serve only as labels or tags for identifying and classifying objects. In a way, it caters to researcher's need for assignment property. For example, identifying each respondent by assigning them a number is nominal scaling. Nominal scale is also used in most sports with each player assigned a specific unique number. In marketing research nominal scale is used in identifying respondents, products, attributes and so on. Nominal scale is also used for classification purposes in marketing research where scaled numbers serve as labels for classes or categories. For example, nominal scale is used in gender classification. The numbers in nominal scale do not reflect the amount of the characteristics possessed by the objects. For example, a marathon runner with a number 4500 does not mean he is superior to another marathon runner with a number 7200. The only permissible operation on the numbers in a nominal scale is counting. Only a limited number of statistical processes, such as percentages, mode, chi-square and binominal tests can be carried out using nominal scale based data.

1.4.2 Ordinal scale

The structure of ordinal scale activates both the assignment and order scaling properties. This scale allows respondents to express relative magnitude between the answers to a question. In simple words, the ordinal scale allows respondents to order their response in a hierarchical fashion. At the start of this chapter we discussed the example of favourite newspaper. That example is an ordinal scale where a respondent can determine whether an object has more or less of a characteristic than some other object. Thus, ordinal scale provides relative magnitude however cannot provide relative distance. Common examples of ordinal scale include ranking of sportsman, ranking of brands, quality rankings and organization rankings in business magazines, several socioeconomic characteristics such as occupational status. In marketing research, ordinal scale is used to create various lists such as fortune 500 list of top global companies, best 100 companies to work with and so on. Various statistical analysis techniques can be used to describe and infer information from ordinal scale including percentile, mean, and rank-order correlation.

1.4.3 Interval scale

An interval scale possesses assignment, order and distance properties. So, an interval scale provides a researcher all the information of an ordinal scale, and at the same time, allows comparison between different objects. For example, in ordinal scale when newspapers are ranked from 1 – 5 it is impossible to define the preference distance between the newspapers. In simple words, we cannot possibly say that the difference of preference between newspaper 1 and newspaper 2 as well as newspaper 2 and newspaper 3 is the same. However, using interval scale we can actually provide the preferential difference between the two objects (newspapers). This kind of scale is most appropriate when the researcher wants to collect state-of-behaviour, state-of-intention or certain kind of state-of-being data.[4] For example, if we ask two respondents about how much time do they spend reading a newspaper everyday, we can not only identify who spends more or less time in comparison to other but also we can know the exact difference in minutes (or other time interval) between the two respondents. Adding to our earlier example of best 100 companies to work with, if the researchers had asked the respondents to rate the companies on a rating scale it would have provided the distance between the companies and more meaningful information can be obtained. In an interval scale zero point (origin) is not fixed. Both origin and the units of measurement in interval scale are arbitrary. In marketing research, ratio scale is used to measure attitudes, opinions, index numbers and so on. All technique which can be applied to nominal and ordinal data can be used in interval scale measurement. Furthermore, many other statistical techniques, can be employed to analyse interval scale related data including range, mean, standard deviation, product-moment correlation, t-tests, ANOVA, regression and factor analysis.

1.4.4 Ratio scale

A ratio scale contains all the four scaling properties (assignment, order, distance and origin) in one. In other words, it possesses all the properties of nominal, ordinal, and interval scales and in addition an origin. Thus, in ratio scale, we can identify or classify objects, rank the objects, and can compare intervals or differences. Ratio scale is the most sophisticated of all scales and it enables the researcher not only to identify the absolute differences between each scale point but also to make absolute comparisons between the responses. It is also meaningful to compute ratios of scale value. For example, the difference between 10 and 15 and is the same as 30 and 35. Furthermore, 30 is 3 times as large as 10 in an absolute sense. Regular examples concerning ratio scale include weight, height and age. In marketing research, ratio scale is used when measuring variables such as sales, cost, customer numbers and so on. All statistical techniques can be applied to ratio scale based data. This includes specialised statistics such as geometric mean, harmonic mean and coefficient of variation.

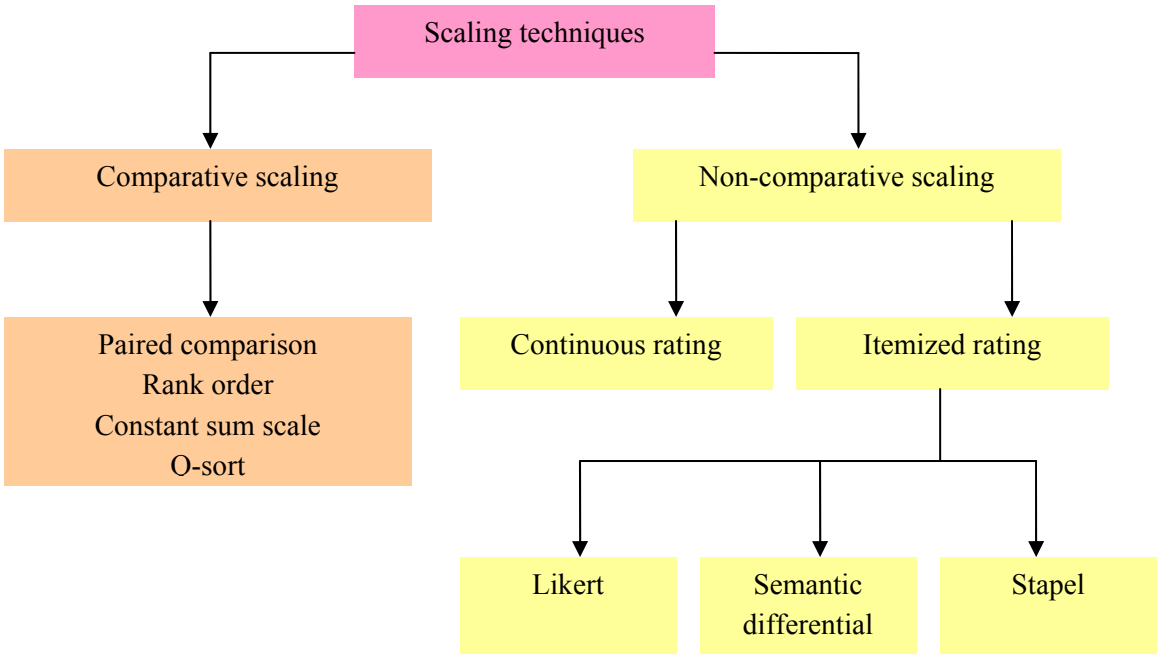
1.5 Comparative and non-comparative scaling

Researchers have identified several important characteristics for developing high quality scales. The high quality scales require (a) understanding the defined problem; (b) establishing detailed data requirements; (c) identifying and developing the constructs and (d) understanding the complete measurement scale. The above stated key features can assist marketing researchers in developing a reliable and valid scale.

As you would have observed from all of the chapters in *Essentials of Marketing Research: Part I – Approach, Research Design & Sampling* that one of the major aims for managers in today's world is to understand their consumers' and market's reaction to various stimuli. This stimuli results in a specific set of reaction and researchers are mostly given task to measure and interpret the reaction prior to it occurs. Managers are interested in knowing consumers' attitudes, beliefs, preferences, as well as competitive reactions among other important market phenomena. In this section we shall discuss how researchers can take on the task of measurement using various scaling techniques.

The scaling techniques regularly employed in marketing research can be classified into two basic strands: (a) comparative scaling and (b) non-comparative scaling. As the name suggests comparative scaling involves direct comparison of stimulus objects with one another. For example, managers are generally interested in knowing consumer preference regarding their brand in comparison to a competitor's brand. A researcher can then ask question such as what of the two brands consumer prefers and this would provide the manager a clear idea of what consumer preferences are. There are several techniques which are used in building comparative scale such as paired comparison, rank order, constant sum scale, and q-sort.

Figure 1.1:
Classification of scaling techniques



While comparative scaling is used for comparison between stimuli, on the other hand, non-comparative scaling involves each stimulus object being scaled independently of the other objects in the stimulus set. The resulting data in non-comparative scale are assumed to be interval or ratio scaled. For example, instead of direct comparison between brands researcher may ask the respondent to rate each brand separately on a scale of 1 – 10 and can evaluate each brand as well as compare the brands also. Non-comparative scaling techniques involve continuous rating scales as well as itemised rating scales. The itemised rating scales are further sub-divided into likert scale, semantic differential scale and stapel scale. As one can easily infer, non-comparative scaling is highly used in marketing research. In the following section we will focus on each of the scaling techniques in details.

1.6 Comparative scaling techniques

As discussed above, comparative scaling techniques provide a direct comparison between stimulus objects. Because the respondents are forced to choose one out of two (or many) stimulus objects, researchers can identify small differences between stimulus objects. One of the other advantages of comparative scaling is the easy application by researcher and easy understanding by the respondent. Comparative scaling involves fewer theoretical assumptions however as the data gathered using this technique is mostly ordinal it lacks distance and origin properties and therefore, does not provide possibility of carrying out various advance statistical techniques.

1.6.1 Paired comparison scaling

In paired comparison scaling, respondents are asked to choose one among two alternatives on a selected criterion. For example, a respondent may be asked to choose between two well-known toothpaste brands on the criterion of quality. The data obtained from paired comparison scaling is ordinal in nature. When there are more than two stimuli involved paired comparison scaling can still be useful technique to compare various stimuli. Lets say, a researcher is interested in knowing consumers preference among three different toothpaste brands, A, B and C. Using the paired comparison scaling researcher will create three questions for respondents namely:

1. Preference between toothpaste brand A and brand B
2. Preference between toothpaste brand B and brand C
3. Preference between toothpaste brand A and brand C.

If for the first question respondent choose brand A over brand B and in the second question chose brand B over brand C, using simple logic researcher can derive that brand A will be more preferred in comparison to brand C. In simple terms, using paired comparison scaling researcher can generate a rank order among stimuli. Paired comparison scaling is used in pricing decisions frequently. It is quite helpful when the number of stimuli is limited. In such circumstances, paired comparison can reveal direct comparisons and overt choice. However, when large number of stimuli is involved, paired comparison scaling becomes a tedious technique. Paired comparison scaling is highly used in product testing. Many food companies and other Fast Moving Consumer Goods (FMCG) companies use this technique to compare their existing product with an upcoming variant or with their competitor's products. Coca-Cola is reported to have conducted more than 190,000 paired comparisons before introducing new Coke in 1985.[5]

1.6.2 Rank order scaling

Rank order scaling as the name suggests is about ranking a specific set of stimuli on a pre-defined criterion. It's also quite popular among researchers when trying to understand a specific rank order among various stimuli. The respondents are provided with various stimuli objects and asked to rank the most preferred object, the second most preferred object and so on. The earlier example of newspaper selection was kind of rank order scaling where respondents were asked to choose most preferred to least preferred newspapers. This scaling technique also uses comparison between stimuli objects using a pre-determined criterion (in the case of newspapers it may be content quality, use of relevant images and so on). In absence of such criterion this technique may deliver biased results. Furthermore, looking at the ranking in isolation also can create bias. For example, newspaper X may be the most preferred in terms of content quality however may be ranked lower in overall readability. Rank order scaling generates ordinal data and therefore lacks distance and origin properties. Due to the absence of distance and origin properties rank order scaling cannot provide an objective difference between various stimuli objects. For example, in the newspaper example, the researcher using rank order scaling cannot confidently state that the difference between preference of newspaper X, Y and Z (ranked as most to least preferred) is constant. In other way, we cannot determine if the preference difference between newspaper X and newspaper Y; and newspaper Y and newspaper Z is the same. While there are disadvantages of using rank order scaling, the ease of understanding is the greatest advantage associated with rank order scaling. When asked, most respondents can easily understand the instructions for ranking as the ranking process reflects our real life shopping environment and choice process.

1.6.3 Constant sum scaling

In constant sum scaling, respondents are asked to assign a constant sum of units (could include points, currency, and so on) to a specific set of stimulus objects with respect to some pre-defined criterion. For example, researcher may ask the respondents to assign a number according to their perceptions of a specific stimuli object on the criteria chosen so as the total becomes 100. The attributes are scaled by counting the points assigned to each criterion by all the respondents and divided by the number of respondents. Table 1.1 below provides detailed explanation of how constant sum scaling is used in real life. The table explains respondents' preferences regarding various pre-defined criteria namely: content quality, supplements, writers (columnists) involved, images used, breadth of coverage (local, regional, local and global) and advertisements. Respondents were asked to rate each criteria in such a way that the total of their responses becomes 100. Two hundred responses were collected. From the table, it can be observed that respondents put content quality as the most preferred factor and advertisement in the newspaper to be least preferred factor. Furthermore, it can also be stated that supplements provided with the newspapers as well as images used within the newspaper are twice as important in comparison to writers or columnist involved with the newspaper. Using the numbers assigned researcher can easily convert constant sum scale into rank order scale.

Table 1.1:
Example of constant sum scaling

Criteria	**Overall respondent preference (200 responses)**
Content quality	35
Supplements	20
Writers (Columnists) involved	10
Images used	20
Breadth of coverage (local, regional, national, global)	15
Advertisements	00
Total	100

Constant sum scale can also help segment various respondents according to their preferences and provide groupings. Even if constant sum scale has distance and origin properties the results lack generalizability and therefore researchers suggest constant sum scale to be treated as ordinal data measurement technique.[6] One of the major advantages of constant sum scale is that it provides fine discrimination among stimulus objects without requiring too much time. The respondent disengagement at times affects the validity of this scale when the larger number of criteria is present. Furthermore, respondents may make mistakes in bringing the total 100. However, constant sum scales can be helpful when measuring consumer shopping basket preferences. Such as, how much would they spend on each specific food items if they had £100. With the advent of internet based surveys, constant sum scales have become easier to implement because software used in the background can keep track of the total and inform the respondent of the changes required.

1.6.4 Q-sort

Q-sort can be called an extension to rank order scaling. It uses a rank order procedure in which objects are sorted into piles based on similarity with respect to some pre-defined criteria. It provides grouping according to the respondents' preferences among a relative larger number of objects quickly. For example, respondents may be provided with 70 different statements relating to their preference regarding a specific phenomenon on individual cards. Thereafter, they can be asked to asked to place them into six different categories ranging from most preferred to least preferred. This kind of sorting provides how respondents group variables in their mind.

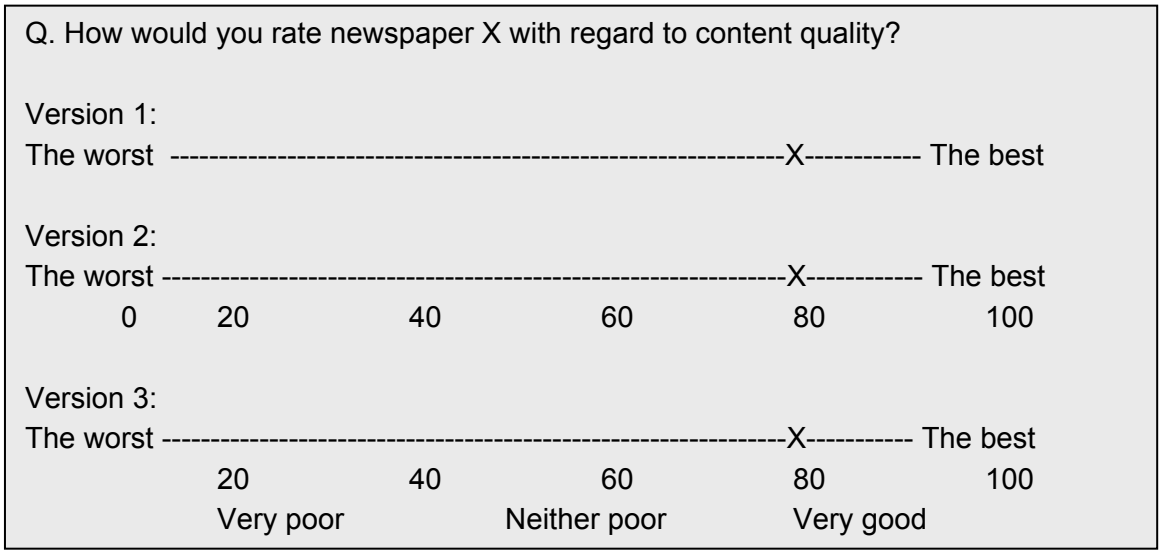
1.7 Non-comparative scaling

As the name suggests, in non-comparative scaling, researchers use whatever rating standard seems appropriate to them. Respondents answering non-comparative scale based questions do not compare the object being rated either to another object or to some specified standard. They evaluate only one object at a time. Non-comparative scaling involves two techniques namely: continuous and itemized rating scales. Itemized scales are further divided in Likert, semantic differential and stapel scale. Each of these scales will be discussed in details in this section.

1.7.1 Continuous rating scale

Continuous rating scale is also known as graphic rating scale in which respondents rate the objects by placing a mark at the appropriate position on a line that runs from one extreme criterion to the other. The respondent is provided with the freedom here to choose a point anywhere along the line and is not restricted to ranking only. The figure 1.2 below illustrates various types of continuous rating scale which can be used in getting responses from the respondents.

Figure 1.2:
Continuous rating scale



There can be various other types wherein the line can be changed from horizontal to vertical, the scale points can be changed from positive to negative aspects and so on. Once the respondent provides the rating on the line, the researcher divides the line into as many categories as desired and assign scores based on the categories into which the ratings fall. In the example above, we can observe that the respondent exhibits a very favourable opinion towards the content quality of newspaper X. While they are easy to construct and understand, inferences from continuous rating scale is cumbersome and at times unreliable. Furthermore, this scale provides little extra information to the researcher and therefore its usage in marketing research was limited. However, with the advent of internet based surveys this rating scale is seeing a revival as using computers it is easier to handle such scale.

1.7.2 Itemized rating scale

Itemized rating scales involve selection of a specific category out of various categories pre-defined by the researcher. A brief description is associated with each category and respondents are asked to select the best fitting category with the stimuli object. Itemized scales are widely used in marketing research. Likert, semantic differential and stapel scale are among the most used itemized rating scale and we shall describe them in details in this section.

1.7.2.1 Likert scale

Likert scale is one of the highly used scales in marketing research which focuses on degree of agreement or disagreement. The scale is named after Rensis Likert who developed the scale.[7] The respondent is presented with a series of statements about the stimulus objects and asked to provide views on agreement or disagreement with each of the statement. A typical Likert scale constitutes of five items ranging from 'strongly disagree' to 'strongly agree'. For the ease of statistics, researchers also associated numbers with Likert scale. Figure 1.3 below provides an example of Likert scale.

Figure 1.3:
An example of Likert Scale

Q. Following are some statement relating too Newspaper X. Please indicate how strongly you agree or disagree with the statements using the scale provided by circling one of the numbers:

1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree.

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a. Newspaper X has high quality content	1	2	3	4	5
b. Newspaper X has the best writers	1	2	3	4	5
c. Newspaper X has a balance of local and national coverage	1	2	3	4	5
d. Newspaper X is my preferred newspaper	1	2	3	4	5

The representation of Likert scale makes it easier for the respondents to answer the questions. Researchers also use variety of number systems instead of 1 to 5, such as – 2 to + 2 or reversing the number order from 5 to 1. The analysis on Likert scale can be conducted on item basis or on the basis of the total score which can be calculated for each respondent by summing across items. Likert scale can also help in developing comparison constructs. For example, the scale can be repeated for Newspaper Y and the results can be compared. The Likert scale has several advantages including ease of development and understanding. It can be administer using any survey method. On the other hand, Likert scale can take much time to complete as respondents have to read each statement and provide a response relating to it.

1.7.2.2 Semantic differential scale

Semantic differential scale includes a seven-point bi-polar scale in comparison to Likert's five-point scale. While in Likert each item number of scale is defined in semantic differential scale the endpoints are clearly defined. For example, 'satisfaction' and 'dissatisfaction' can be used as the endpoints. Figure 1.4 provides an example of semantic differential scale for Newspaper X.

Figure 1.4:
An example of semantic differential scale

Q. In this question we would like to know your perceptions regarding Newspaper X. Please mark 'X' on each line that best indicates your perception. Please make sure that you have put the mark on every line.

Newspaper X is:

Easy read	:-----:-----:-----:-----:-X--:-----:	Hard read
Unreliable	:-----:-----:-----:-----:-X--:-----:	Reliable
Modern	:-----:-----:-----:-X--:-----:-----:	Old fashioned
Rational	:-X--:-----:-----:-----:-----:-----:	Emotional

In the above example, one can easily observe the pattern of respondent's perceptions. The respondent thinks that Newspaper X is hard to read but reliable and rational in its approach. One of the advantages of semantic differential scale is the improved design wherein the negative and positive aspects related to a stimuli object can be interchanged on right and left side. This controls the tendency of many respondents with very positive or very negative views, who tend to mark with a bias in their minds. For the ease of statistical analysis, semantic differential scale can be scored on either -3 to + 3 or 1 to 7. Similar to Likert scale semantic differential scale can also provide interesting comparison between brands, products, organizations and so on.

1.7.2.3 Stapel scale

Stapel scale consists of a single criterion in the middle of an even-numbered range of values, from -5 to +5, without a neutral point. The scale is generally presented vertically. The respondents are asked to choose a specific number describing the stimuli object of concern on the pre-defined criterion. Figure 1.5 provides a detailed description of Stapel scale. As it can be seen from the figure that Stapel scale looks fairly similar to semantic differential scale however, it's represented by numbers. The data obtained from Stapel scale can be analysed in the same way as semantic differential scale. The advantage of Stapel scale is that it does not require any phrases to achieve bipolarity as required in semantic differential scale. Of all the itemized rating scales, Stapel scale is least used in the field of marketing research. It is mainly due to the thinking that respondents will not be able to understand the scale and might provide a biased response.

Figure 1.5:
An example of Stapel scale

Q. In this question we would like to know how accurately a keyword describes the Newspaper X. If you think the keyword describes the Newspaper X very accurately you should choose a higher positive number. In case you think that keyword does not describe the Newspaper X very accurately choose a larger negative number. You can select any number you feel appropriate.

+5	+5	+5
+4	+4	+4
+3	+3	+3
+2	+2	+2
+1	+1	+1
Content quality	Price	News coverage
-1	-1	-1
-2	-2	-2
-3	-3	-3
-4	-4	-4
-5	-5	-5

1.8 Selecting an appropriate scale

Over the years, researchers have developed many scales of measurement and many modifications have been suggested and used. As stated in the discussion above, the scales can take many different forms and therefore it becomes utmost important for researchers to take several important decisions while constructing these scales.

The decisions mostly pertain to (a) length of scale points; (b) balance of the scale; (c) forced vs. nonforced scales; (d) scale description and presentation. Length of scale points has a direct impact on respondent engagement. The longer the scale the higher the confusion however the researcher can get finer details. This paradox between engagement versus detail is always present within scales. Researchers over the years have suggested appropriate length be anywhere between five to nine scale points. In most cases, researchers develop balanced scale wherein favourable and unfavourable categories are equal however, sometimes unbalanced scales are also used. Researchers must take extra precaution in analysing unbalances scale. Forced scale choice is important when researchers are asking respondents about sensitive issues. Many times when it comes to sensitive issues, respondents tend to stay in the neutral ground and researcher may not be able to capture the real response. In such circumstance forced scale where the neutral point is removed is quite helpful. The scale description in words and the presentation may also deter respondents' engagement and therefore, extra care must be taken in developing an appropriate scale.

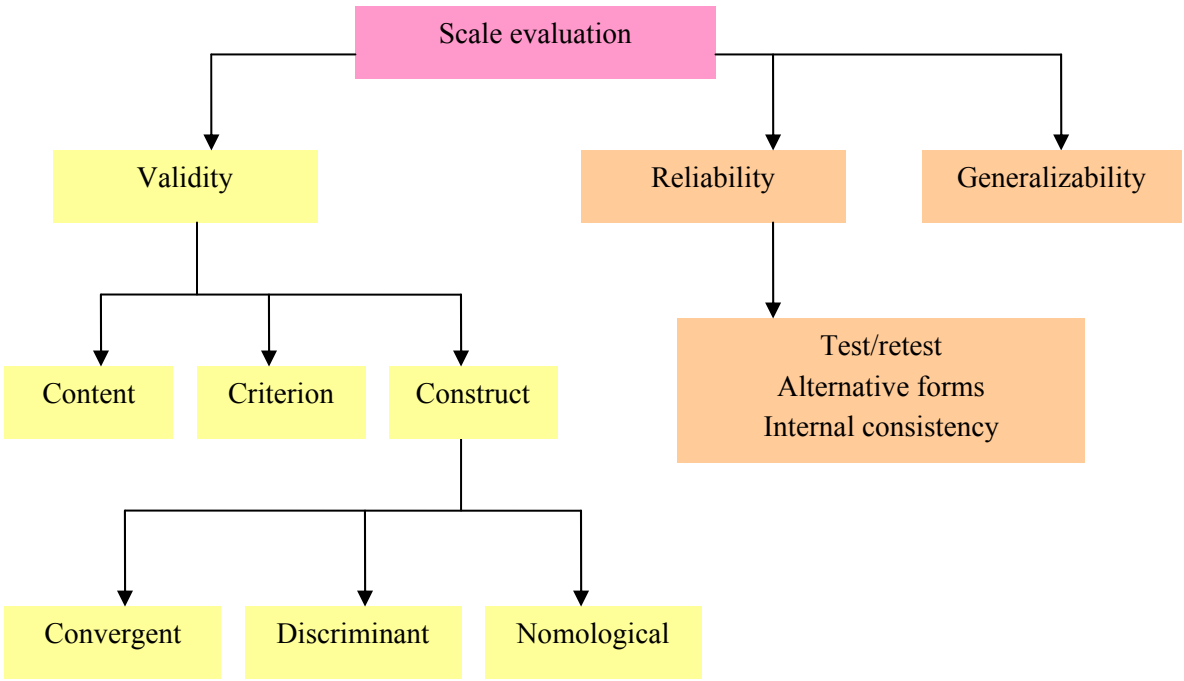
1.9 Scale evaluation

While researchers always attempt to develop a robust and appropriate scale to measure a specific phenomenon, error in measurement can occur due to very many reasons. Researchers have identified various sources of error in measurement. These include:

a. Respondent error: respondent characteristics such as intelligence, education can affect the test score.
b. Short-term personal factors: such as fatigue, stress, anxiety
c. Situational factors: such as noise in the surroundings, presence of other people
d. Clarity errors: such as poor framing of question or scale
e. Mechanical errors: such as poor printing, recording error and poor design
f. Interviewer error: interviewer differences and their bias in interviewing
g. Analysis error: inappropriate methods of analysis used.

The above mentioned errors can affect the real results being reported. Researchers have defined errors in two broad streams namely, systematic error and random error. Systematic error affects the measurement constantly while random error, as the name suggests is random in nature. To avoid such errors and control the research process, after developing an appropriate scale, researcher must assess the scale on three dynamic constructs: validity, reliability and generalizability. Validity can be measured by examining content, criterion and construct validity. Construct validity is divided into three parts namely, convergent, discriminant and nomological validity. Reliability can be assessed by examining test/retest reliability, alternative forms reliability and internal consistency reliability. Figure 1.6 represents the classification graphically.

Figure 1.6:
Scale evaluation classification



1.9.1 Validity

Validity of a scale is defined as the extent to which differences in observed scale scores reflect the true differences among objects on the characteristics being measured.[8] In simple words, by testing validity researcher can decide is the scale measuring what it is meant to measure. A perfectly valid scale will have no measurement errors.

As the name suggests, content validity (or face validity as it is called some other times) refers to the content of the scale. It involves a subjective but systematic evaluation of how well the content represents the task at hand. At times, researchers as well as some other experts in the field are asked to look at the scale and provide their opinion as to weather the scale measures the phenomenon. Being a subjective evaluation technique it is not considered a sufficient measure of the validity of a scale. Criterion validity refers to examining whether the measurement scale performs as expected in relation to other variables selected as meaningful criteria. Construct validity is the bridge between theory and the scale. It explains the questions of what construct or characteristic the scale is measuring and what deductions can be made concerning the theory underlying the scale.

Construct validity is classified into three parts namely: convergent, discriminant and nomological validity. Convergent validity focuses on how well the scale's measurement positively correlates with different measurements of the same scale. Discriminant validity refers to the fact that the scale being investigated does not significantly correlate with other constructs that are operationalized as being different. Nomological validity allows researchers to evaluate how well one particular construct theoretically networks with other established constructs that are related yet different.

1.9.2 Reliability

Reliability in research relates to consistency of results over a period of time. A scale is called reliable if it produces consistent results when repeated measurements are made.[9] Systematic errors do not have an effect on reliability however random errors do. There are three ways in which reliability is measured: test-retest reliability, alternative forms reliability and internal consistency reliability.

As the name suggests, in test-retest reliability measurement, same respondents are administered identical sets of scale items at two different times (usually 2 – 4 weeks). The degree of similarity between the measurements (measured through correlation between both measurements) determines the reliability. The higher the correlation between the two measurements, the higher the scale reliability. In measuring alternative forms reliability, two equivalent forms of the scale are constructed and then the same respondents are measured at two different times.[10] Internal consistency reliability is used to assess the reliability of a summated scale where several items are summated to form a total score. In simple words, each item in the scale must measure part of what the scale is developed to measure. Various techniques such as 'split-half reliability' or 'coefficient alpha' (also known as Cronbach's alpha) are used to measure internal consistency reliability. In split-half reliability the scale is broken in two halves and the resulting half scores are correlated. High correlation between the two halves shows higher internal consistency. In case of coefficient alpha the average of all possible split-half coefficients is calculated. The value beyond 0.7 suggests acceptable internal reliability.[11]

1.9.3 Generalizability

Generalizability refers to the extent to which one can generalize from the observations at hand to a universe of generalizations.[12] For example, a researcher may wish to generalize a scale developed for use in personal interviews to other modes of data collection, such as mall-intercept and telephone interviews. Likewise, one may wish to generalize from a sample of observers to a universe of observers, from a sample of times of measurement to the universe of times of measurement, from a sample of items to the universe of items and so on.[13] To generalize to other universes, generalizability theory procedures must be employed.

1.10 Conclusion

In this chapter we focused on the concepts of measurement and scaling. Both these constructs are very important in marketing research as they help in developing a better construct measurement, appropriate analysis and provide ease of interpretation and communication of the findings. Scales of measurement have four fundamental properties: assignment property, order property, distance property and origin property. The progression into each property is such that the later scale possesses the earlier scale's property. For example, origin property possesses assignment, order and distance properties.

There are four primary scales of measurement namely: nominal, ordinal, interval and ratio scale. Nominal scale possesses only assignment property; ordinal scale possesses order property, interval scale possesses distance property and ratio scale possesses origin property. However, as stated above it can be understood that ratio scale in a way possesses all the four properties.

Comparative and non-comparative scaling are the two types of scaling methods used in marketing research. Comparative scaling includes paired comparison, rank order, constant sum and q-sort scaling techniques. Non-comparative scaling includes two types: continuous rating and itemized rating scales. Itemized scaling is further divided into Likert, semantic differential and Stapel scaling.

Selecting an appropriate scale requires consideration of various factors including (a) length of scale points; (b) balance of the scale; (c) forced vs. nonforced scales; (d) scale description and presentation. Scales should also be evaluated on for their validity, reliability and generalizability. There are three major types of validity measured by researchers: content, criterion and construct validity. Construct validity is further divided into convergent, discriminant and nonological validity. There are three types of reliability measures including test/retest, alternative forms and internal consistency reliability.

2. Questionnaire design

2.1 Chapter summary

Once researchers have taken a decision to employ a specific research design and sampling procedure and determined the measurement and scaling method, they can now develop a questionnaire to collect the data required for the study. This chapter will focus on the questionnaire design and development. We will start by discussing the significance of questionnaire design in marketing research. Next, we shall describe the steps involved in questionnaire design and several guidelines for developing an appropriate questionnaire based on question structure, layout and wording. The chapter will also discuss the importance of pilot testing.

2.2 Significance of questionnaire building

A researcher's ability to design an appropriate measurement scale does not by itself provide guarantee that relevant data will automatically collected. Therefore, understanding what involves in building a questionnaire becomes utmost important for a researcher and manager. Much of the primary data collection required for solving marketing problems involves asking questions to respondents and recording their response. Most problems in the field of marketing research are complex in the nature and require primary data collection. In such cases, a questionnaire becomes a potent tool for collecting primary data.

A questionnaire is a formalized set of questions involving one or more measurement scales designed to collect specified primary data. Measurement scales discussed in the previous chapter provide the building blocks for questionnaire design. Regardless of the form of administration, a questionnaire is characterized by two main objectives. First, it must convert the information required by managers in a format of questions. Second, the questions asked must be created in a format in which respondent will understand it and be willing to answer them. The first objective poses a tough challenge to researchers in converting management dilemma into a researchable questionnaire which respondents will be willing to answer. The second objective requires researcher to build a questionnaire in a format that will encourage and motivate the respondents in becoming involved and complete the interviewing process. Incomplete interviews seldom provide any useful insights and therefore the researcher must strive for reducing respondent disengagement as much as possible. A well-designed questionnaire would generally overcome the problem of disengagement. The researcher must also keep a tab on the various errors stemming from the process including the response, respondent and researcher errors as discussed earlier in chapter 3.

2.3 Process of questionnaire design

Designing questionnaire has been always an issue of debate in marketing research as some researchers view it as art which is based on experience of the researcher,[14] while others consider it as a science based on sound theoretical development.[15] While the debate is still going on with regard to what a questionnaire design is all about, there is consensus among the research community that the designing process involves some established rules of logic, objectivity and systematic procedures.[16] While the systematic procedure provides guidelines to avoid major mistakes, each questionnaire requires a customized path for development. The generic structure in developing questionnaire is described as follows:

(a) Specification of the information needed in researchable format
(b) Selection of interview method
(c) Determination of question composition
(d) Determination of individual question content
(e) Developing question order, form and layout
(f) Pilot testing the questionnaire

In this section each of these steps will be discussed in details. Before proceeding however it is important to note that while the process stated above is quite helpful, researcher may need to follow a different pattern in developing the questionnaire. For example, the researcher may develop the form and layout of the questionnaire simultaneously or prior to piloting the questionnaire the researcher may fine tune the questionnaire.

2.3.1 Specification of the information needed in researchable format

The first step in developing a questionnaire is to specify the information needed in researchable format. A dummy table (discussed in chapter 3 in *Essentials of Marketing Research: Part 1 – Approach, Research Design & Sampling*) could be very helpful in converting information needed into researchable format. The researcher should also look at the research objectives and hypotheses and match this information. At this stage, it is very important to have a clear idea of target population and sample. The characteristics of the respondents have a great influence on questionnaire design. For example, questions which are appropriate for elderly consumers might not be appropriate for young consumers. Unclear understanding of the information needed could lead to the development of an improper questionnaire which has direct effect on the analysis and the final results.

2.3.2 Selection of interview method

In the chapter 3 (*Essentials of Marketing Research: Part 1 – Approach, Research Design & Sampling*) we discussed various methods of interview including personal, mail, telephone and internet based interviews. The type of interviewing method also plays an important role in questionnaire design. For example, in personal interview situations, respondents are able to see the questionnaire and interact in person with the interviewer. This provides an opportunity to ask varied questions involving complexities because instant feedback mechanism is available. Due to the personal interaction it is also possible sometimes to ask lengthy questions. In telephone interviews, because the respondent cannot see the questionnaire it is quite hard to ask complex and lengthy questions. Therefore, the questions should be short and to the point involving little complexity. Even with the use of computer assisted telephone interviews (which involves sophisticated skip patterns and randomization) the questions have to be kept simple. The length related issues can be dealt with in mail questionnaire however because in this situation the respondent is left on his or her own it is recommended that the questions be kept simple. Internet based questionnaire provide high level of interactivity however, as the respondent is trying to tackle each question on his or her own, the researcher must take this into consideration in questionnaire development process. The interview method also has an effect on the scaling technique due to the issue of complexity. In personal interviews most complex scales can easily be used however, in telephone interviews researchers tend to prefer nominal scales. At times researchers have used other scales in telephone interviews with varied effects. In mail interviews complex scales can be used however, detailed explanation with examples is always desirable. Similar pattern is also observed in internet based interviews.

2.3.3 Determination of question composition

Once the information is specified in the researchable format and the interview method is decided, the next stage for the researchers will be to determine what kind of question are they going to ask to the respondents. There are two major types of question structures: unstructured (also called open ended questions) and structured (also called close ended questions).

Unstructured questions (or open-ended questions) are questions in which respondents are asked to answer the questions in their own words. These types of questions allow the respondents to express their general attitude and opinions and provide rich insights relating to the respondents views about a certain phenomenon. Unstructured questions are highly used in exploratory research. While unstructured questions provide freedom of expression there are inherent disadvantages associated with them with regard to interviewer bias. If the interviewer is recording the answers by writing the summary down while respondents speaks, the recording may be biased as its based on skills of interviewer on deriving the main points. It is always advisable to use audio recording if possible. Another disadvantage of this questioning is creating coding and interpretations. The overall coding of unstructured questions is costly and time consuming.[17] To avoid mistakes of response recording and coding related errors, researchers use pre-coding wherein they identify possible answers and assign responses to the categories they have identified.

Most conclusive studies employ structured (or close-ended) questions. These types of questions allow the respondents to answer the questions in a pre-defined format. There are three main types of structured questions, dichotomous, multiple choice and scale questions. This type of question format reduces the amount of thinking and effort required by respondents. Interviewer bias in eliminated with unstructured questions because either the interviewer or respondents themselves have to check a box or a line, circle a category, hit a key on a keyboard or record a number.[18] In simple words, structured format gives the researcher an opportunity to control the respondent's thinking and allows simplicity. Of the three major types of structured questions, dichotomous question is the simple most questioning category. A dichotomous question has only two response alternatives, yes or no, male or female and so on. Sometimes, a neutral alternative is also added in the questions such as 'don't know' or 'no opinion'. While simplicity is the greatest advantage of dichotomous questions, the response bias becomes a great disadvantage also. Dichotomous questions are good when considering collecting demographic information however, with attitude measurement they are of little use. Multiple choice questions provide an extension to the dichotomous question wherein a respondent is provided with a set of alternatives and is allowed to choose more than one alternative. Multiple choice questions also have an inherent position and order bias wherein respondents tend to choose the first or last statement in the list. To avoid such bias several forms of the questions with the same alternatives should be prepared. This can easily be handled when interviewing respondents on internet or on telephone using CATI. Another disadvantage of multiple choice questions is the effort required in developing an effective question. A theoretical exploration as well as an exploratory study can assist in such process. The third alternative for structured questionnaire is scale questions, which were discussed in detail in chapter 1.

2.3.4 Determination of individual question content

Each individual question is unique from its content perspective and therefore must be treated with caution in the development process. Using components such as words, order, tenses and so on, each question attempts to fulfil the overarching research objectives.

One of the most important components of any question is words. Researchers have to be very clear in the choice of words which can easily be understood in the correct manner by respondents. If the researchers and respondents do not assign the same meaning to the used words, the response will be biased.[19] Wording of a question could create problems such as ambiguity, abstraction, and connotation. To avoid these problems researchers can take several steps such as:

(1) Use ordinary words which can easily be understood by the respondents
- For example, instead of using the word 'ambidextrous' one can use 'skilful'

(2) Avoid ambiguous words
- For example, word 'hot' or 'cool' change their meaning according to the context they are used in

(3) Avoid leading questions
- For example, do you think immigration is hurting local economy and making locals lose their jobs?

(4) Avoid implicit questions
- For example, do you think a government backed website will have more trust and credibility?

(5) Avoid generalizations
- For example, what is the per capita annual milk consumption in your family?

(6) Avoid double barrelled questions
- For example, do you think you will purchase this product for low price and high quality?

There are several other considerations before researcher decides the final question. Once the question is developed researchers need to ask 'Is this question necessary?' 'Does it fulfil the part of the research objective as desired?' Sometimes it is possible that a single question might not suffice a phenomenon to be studied and may require more than one question. For example, instead of asking 'what is the per capita annual milk consumption in your family?' a researcher will be better off asking following two questions:

- What is the total weekly (monthly) milk consumption in terms of litres (pints) in your family?
- How many people including you live in your household?

The researchers also need to understand the problem of memory loss which has been discussed in earlier chapters. The memory loss issue can hamper respondent's ability and willingness to answer. For example, 'what did you eat Wednesday two weeks ago?' will be a question which will be impossible for most respondents to answer because they do not remember the phenomenon. Similarly, asking respondents to rank 20 items in a single question will make it too difficult for them and most will be unwilling to attempt the same.

2.3.5 Developing question order, form and layout

The question order, format and layout can have a significant impact on respondent engagement. Questionnaire with unclear order, format and layout generally get very low response rate and in turn become costly exercise. The questionnaire can be divided in three main parts generally: forward and opening questions; generic information questions; specific information questions.

The forward and opening questions are highly important in gaining respondents' trust and making them feel comfortable with the study. It also improves the response rate among the respondent if they find it worthwhile and interesting. Questions pertaining to opinion can give a good start to most questionnaires as everyone likes to give some opinion about issues at hand. At times, when it is necessary to qualify a respondent (i.e. determine if they are part of the defined target population), opening questions can act as qualification questions.

Generic information questions are divided into two main areas: classification information questions and identification information questions. Most socioeconomic and demographic questions (age, gender, income group, family size and so on) provide classification information. On the other hand, respondent name, address, and other contact information provide identification information. It is advisable to collect classification information before identification information as most respondents do not like their personal information collected by researchers and this process may alienate the respondent from the interview.

The specific information questions are questions directly associated with the research objectives. They mostly involve various scales and are complex in nature. This type of questions should be asked later in the questionnaire after the rapport has been established between the researcher and the respondent. Most researchers agree that it is good to start with forward and opening questions followed progressively by specific information question and concluding with classification and identification information questions.

The format and layout of the questionnaire has a direct impact on respondent engagement. It is always suggested that the questionnaire format and layout should have some type of symmetry. This can lead to higher response rate.

2.3.6 Pilot testing the questionnaire

Once the preliminary questionnaire has been developed using the above stated process a researcher should assign coding (discussed in the next chapter) to every question and test the questionnaire on a small sample of respondents to identify and eliminate potential problems. This sampling process is called pilot testing. It is advised that, a questionnaire should not be used in the field survey without being adequately pilot tested. A pilot test provides testing of all aspects of a questionnaire including, content, wording, order, form and layout.[20] The sample respondents selected for the pilot test must be similar to those who will be included in the actual survey in terms of their background characteristics, familiarity with the topic and attitudes and behaviours of interest. An initial personal interview based pilot test is recommended for all types of surveys because the researcher can observe respondents' attitudes and reactions towards each question. Once the necessary changes have been made using the initial personal interview based pilot test, another pilot test could be conducted for mail, telephone or internet based survey. Most researchers recommend a pilot test sample between 15 and 30 respondents. If the study is very large involving multiple stages, a larger pilot test sample may be required. Finally, the response obtained from the pilot test sample should be coded and analysed. These responses can provide a check on the adequacy of the data obtained in answering the issue at hand.

2.4 Conclusion

In this chapter we focused on an important aspect of overall research process, questionnaire design. A questionnaire is a robust tool in collecting primary data for both exploratory and conclusive studies. Regardless of the form of administration, a questionnaire is characterized by two main objectives. First, it must convert the information required by managers in a format of questions. Second, the questions asked must be created in a format in which respondent will understand it and be willing to answer them.

While every questionnaire design involves unique set of solutions, researchers agree that a structured process can be employed in preparing an appropriate questionnaire. The steps of this process include; specification of information needed in researchable format; selection of interview method; determination of question composition; determination of individual question content; developing question order, form and layout and pilot testing the questionnaire. Each of these steps is important however their order may differ from one study to the other.

3. Data preparation and preliminary data analysis

3.1 Chapter summary

After developing an appropriate questionnaire and pilot testing the same, researchers need to undertake the field study and collect the data for analysis. In this chapter, we shall focus on the fieldwork and data collection process. Furthermore, once the data is collected it is important to use editing and coding procedures to input the data in the appropriate statistical software. Once the data is entered into the software it is also important to check the data before the final analysis is carried out. This chapter also deals with the how to code the data, input the data and clean the data. It will further discuss the preliminary data analysis such as normality and outlier check. The last section of this chapter will focus on the preliminary data analysis techniques such as frequency distribution and also discuss hypothesis testing using various analysis techniques.

3.2 Survey fieldwork and data collection

As stated earlier, many marketing research problems require collection of primary data and surveys are one of the most employed techniques for collection of primary data. Primary data collection therefore, in the field of marketing research requires fieldwork. In the field of marketing (especially in the case of corporate research) primary data is rarely collected by the person who designed the research. It is generally collected by the either people in the research department or an agency specialising in fieldwork. Issues have been raised with regard to fieldwork and ethics. If a proper recruitment procedure is followed, such concerns rarely get raised. The process of data collection can be defined in four stages: (a) selection of fieldworkers; (b) training of fieldworkers; (c) supervision of fieldworkers and (d) evaluation of fieldwork and fieldworkers.

Prior to selecting any fieldworker the researcher must have clarity as to what kind of fieldworker will be suitable for a particular study. This is critical in case personal and telephone interview because the respondent must feel comfortable interacting with the fieldworker. Many times researchers leave the fieldworkers on their own and this can have a direct impact on overall response rate and quality of data collected. It is very important for the researcher to train the fieldworker with regard to what the questionnaire and the study aim to achieve. Most fieldworkers have little idea of what exactly research process is and if not trained properly, they might not conduct the interviews in the correct manner. Researchers have prepared guidelines for fieldworkers in asking questions. The guidelines[21] include:

a. Be thoroughly familiar with the questionnaire.
b. Ask the questions in the order in which they appear in the questionnaire.
c. Use the exact wording given in the questionnaire.
d. Read each question slowly.
e. Repeat questions that are not understood.
f. Ask every applicable question.
g. Follow instructions and skip patterns, probing carefully.

The researcher should also train the fieldworkers in probing techniques. Probing helps in motivating the respondent and helps focus on a specific issue. However, if not done properly, it can generate bias in the process. There are several probing techniques[22]:

a. Repeating the question
b. Repeating the respondents' reply
c. Boosting or reassuring the respondent
d. Eliciting clarification
e. Using a pause (silent probe)
f. Using objective/neutral questions or comments

The fieldworkers also should be trained on how to record the responses and how to terminate the interviews politely. A trained fieldworker can become a good asset in the whole of the research process in comparison to a fieldworker who is feeling disengagement with the whole process.

It is important to remember that fieldworkers are generally paid on hourly or daily basis and paid minimum wages in many cases. Therefore, their motivation to conduct the interviews may not be as high as a researcher overlooking the whole process. This brings about the issue of supervision, through which, researchers can keep a control over the fieldworkers by making sure that they are following the procedures and techniques in which they were trained. Supervision provides advantages in terms of facilitating quality and control, keeping a tab on ethical standards employed in the field, and control over cheating.

The fourth issue with regard to fieldwork is the issue of evaluating fieldwork and fieldworkers. Evaluating fieldwork is important from the perspective of authenticity of the interviews conducted. The researcher can call 10-20% of the sample respondents to inquire the fieldworker actually conducted the interviews or not. The supervisor could ask several questions within the questionnaire to reconfirm the data authenticity. The fieldworkers should be evaluated on the total cost incurred, response rates, quality of interviewing and the data.

3.3 Nature and scope of data preparation

Once the data is collected, researchers' attention turns to data analysis. If the project has been organized and carried out correctly, the analysis planning is already done using the pilot test data. However, once the final data has been captured, researchers cannot start analysing them straightaway. There are several steps which are required to prepare the data ready for analysis. The steps generally involve data editing and coding, data entry, and data cleaning.

The above stated steps help in creating a data which is ready for analysis. It is important to follow these steps in data preparation because incorrect data can results into incorrect analysis and wrong conclusion hampering the objectives of the research as well as wrong decision making by the manager.

3.3.1 Editing

The usual first step in data preparation is to edit the raw data collected through the questionnaire. Editing detects errors and omissions, corrects them where possible, and certifies that minimum data quality standards have been achieved. The purpose of editing is to generate data which is: accurate; consistent with intent of the question and other information in the survey; uniformly entered; complete; and arranged to simplify coding and tabulation.

Sometimes it becomes obvious that an entry in the questionnaire is incorrect or entered in the wrong place. Such errors could have occurred in interpretation or recording. When responses are inappropriate or missing, the researcher has three choices:

> (a) Researcher can sometimes detect the proper answer by reviewing the other information in the schedule. This practice, however, should be limited to those few cases where it is obvious what the correct answer is.
> (b) Researcher can contact the respondent for correct information, if the identification information has been collected as well as if time and budget allow.

(c) Researcher strike out the answer if it is clearly inappropriate. Here an editing entry of 'no answer' or 'unknown' is called for. This procedure, however, is not very useful if your sample size is small, as striking out an answer generates a missing value and often means that the observation cannot be used in the analyses that contain this variable.

One of the major editing problem concerns with faking of an interview. Such fake interviews are hard to spot till they come to editing stage and if the interview contains only tick boxes it becomes highly difficult to spot such fraudulent data. One of the best ways to tackle the fraudulent interviews is to add a few open-ended questions within the questionnaire. These are the most difficult to fake. Distinctive response patterns in other questions will often emerge if faking is occurring. To uncover this, the editor must analyse the instruments used by each interviewer.

3.3.2 Coding

Coding involves assigning numbers or other symbols to answers so the responses can be grouped into a limited number of classes or categories. Specifically, coding entails the assignment of numerical values to each individual response for each question within the survey. The classifying of data into limited categories sacrifices some data detail but is necessary for efficient analysis. Instead of requesting the word male or female in response to a question that asks for the identification of one's gender, we could use the codes 'M' or 'F'. Normally this variable would be coded 1 for male and 2 for female or 0 and 1. Similarly, a Likert scale can be coded as: 1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree and 5 = strongly agree. Coding the data in this format helps the overall analysis process as most statistical software understand the numbers easily. Coding helps the researcher to reduce several thousand replies to a few categories containing the critical information needed for analysis. In coding, categories are the partitioning of a set; and categorization is the process of using rules to partition a body of data.

One of the easiest ways to develop coding structure for the questionnaire is to develop a codebook. A codebook, or coding scheme, contains each variable in the study and specifies the application of coding rules to the variable. It is used by the researcher or research staff as a guide to make data entry less prone to error and more efficient. It is also the definitive source for locating the positions of variables in the data file during analysis. Most codebooks – computerized or not – contain the question number, variable name, location of the variable's code on the input medium, descriptors for the response options, and whether the variable is alpha (containing a – z) or numeric (containing 0 – 9). Table 3.1 below provides an example of a codebook.

Table 3.1:
Sample codebook for a study on DVD rentals

Variable instructions	SPSS Variable name	Coding
Identification n°	ID	Number of each respondent
Movie rentals(1)	Rent	1= yes 2= no
Movie genre(2)	Genre	1= comedy 2= action/adventure 3= thriller 4= drama 5= family 6= horror 7= documentary
DVD rental sources(3)	Source	1= in-store 2= online
Renting for(4)	Time	1= less than 6 months 2= 6 months – 1 year 3= 1 –2 years 4= 2-5 years 5= above 5 years

Coding close ended questions is much easier as they are structured questions and the responses obtained are predetermined. As seen in the table 3.1 the coding of close ended question follows a certain order. However, coding open ended questions is tricky. The variety of answer one may encounter is staggering. For example, an open ended question relating to what makes you rent a DVD in the above questionnaire created more than 65 different types of response patterns among 230 responses. In such situations, content analysis is used, which provides an objective, systematic and quantitative description of the response.[23] Content analysis guards against selective perception of the content, provides for the rigorous application of reliability and validity criteria, and is amenable to computerization.

3.3.3 Data entry

Once the questionnaire is coded appropriately, researchers input the data into statistical software package. This process is called data entry. There are various methods of data entry. Manual data entry or keyboarding remains a mainstay for researchers who need to create a data file immediately and store it in a minimal space on a variety of media. Manual data entry is highly error prone when complex data is being entered and therefore it becomes necessary to verify the data or at least a portion of it. Many large scale studies now involve optical character recognition or optical mark recognition wherein a questionnaire is scanned using optical scanners and computer itself converts the questionnaire into a statistical output. Such methods improve the overall effectiveness and efficiency of data entry. In case of CATI or CAPI data is directly added into the computer memory and therefore there is no need for data entry at a later stage. Many firms now a days use electronic devices such as PDAs, Teblet PCs and so on in fieldwork itself and thereby eliminating the data entry process later on. However, as the data is being manually entered in this process, researchers must look for anomalies and go through the editing process.

3.3.4 Data cleaning

Data cleaning focuses on error detection and consistency checks as well as treatment of missing responses. The first step in the data cleaning process is to check each variable for data that are out of the range or as otherwise called logically inconsistent data. Such data must be corrected as they can hamper the overall analysis process. Most advance statistical packages provide an output relating to such inconsistent data. Inconsistent data must be closely examined as sometimes they might not be inconsistent and be representing legitimate response.

In most surveys, it happens so that respondent has either provided ambiguous response or the response has been improperly recorded. In such cases, missing value analysis is conducted for cleaning the data. If the proportion of missing values is more than 10%, it poses greater problems. There are four options for treating missing values: (a) substituting missing value with a neutral value (generally mean value for the variable); (b) substituting an imputed response by following a pattern of respondent's other responses; (c) casewise deletion, in which respondents with any missing responses are discarded from the analysis and (d) pairwise deletion, wherein only the respondents with complete responses for that specific variable are included. The different procedures for data cleaning may yield different results and therefore, researcher should take utmost care when cleaning the data. The data cleaning should be kept at a minimum if possible.

3.4 Preliminary data analysis

In the earlier part of this chapter, we discussed how responses are coded and entered. Creating numerical summaries of this process provides valuable insights into its effectiveness. For example, missing data, information that is missing about a respondent or case for which other information is present, may be detected. Mis-coded, out-of-range data, extreme values and other problems also may be rectified after a preliminary look at the dataset. Once the data is cleaned a researcher can embark on the journey of data analysis. In this section we will focus on the first stage of data analysis which is mostly concerned with descriptive statistics.

Descriptive statistics, as the name suggests, describe the characteristics of the data as well as provide initial analysis of any violations of the assumptions underlying the statistical techniques. It also helps in addressing specific research questions. This analysis is important because many advance statistical tests are sensitive to violations in the data. The descriptive tests provide clarity to the researchers as to where and how violation is occurring within the dataset. Descriptive statistics include the mean, standard deviation, range of scores, skewness and kurtosis. This statistics can be obtained using frequencies, descriptives or explore command in SPSS. To make it clear, SPSS is one of the most used statistical software packages in the world. There are several other such software packages available in the market which include, Minitab, SAS, Stata and many others.[24]

For analysis purposes, researchers define the primary scales of measurements (nominal, ordinal, interval and ratio) into two categories. They are named as categorical variables (also called as non-metric data) and continuous variables (also called as metric data). Nominal and ordinal scale based variables are called categorical variables (such as gender, marital status and so on) while interval and ratio scale based variables are called continuous variables (such as height, length, distance, temperature and so on).

Programmes such as SPSS can provide descriptive statistics for both categorical and continuous variables. The figure below provides how to get descriptive statistics in SPSS for both kinds of variables.

Figure 3.1:
Descriptive analysis process

Categorical variables:
SPSS menu
Analyse > Descriptive statistics > Frequencies
(Choose appropriate variables and transfer them into the variables box using the arrow button. Then choose the required analysis to be carried out using the statistics, charts and format button in the same window. Press OK and then you will see the results appear in another window)

Continuous variables:
SPSS menu
Analyse > Descriptive statistics > Descriptives
(Choose all the continuous variables and transfer them into the variables box using the arrow button. Then clicking the options button, choose the various analyses you wish to perform. Press OK and then you will see the results appear in another window)

The descriptive data statistics for categorical variables provide details regarding frequency (how many times the specific data occurs for that variable such as number of male and number of female respondents) and percentages. The descriptive data statistics for continuous variables provide details regarding mean, standard deviation, skewness and kurtosis.

3.5 Assessing for normality and outliers

To conduct many advance statistical techniques, researchers have to assume that the data provided is normal (means it is symmetrical on a bell curve) and free of outliers. In simple terms, if the data was plotted on a bell curve, the highest number of data points will be available in the middle and the data points will reduce on either side in a proportional fashion as we move away from the middle. The skewness and kurtosis analysis can provide some idea with regard to the normality. Positive skewness values suggest clustering of data points on the low values (left hand side of the bell curve) and negative skewness values suggest clustering of datapoints on the high values (right hand side of the bell curve). Positive kurtosis values suggest that the datapoints have peaked (gathered in centre) with long thin tails. Kurtosis values below 0 suggest that the distribution of datapoints is relatively flat (i.e. too many cases in the extreme).

There are other techniques available too in SPSS which can help assess normality. The explore function as described in the figure below can also help assess normality.

Figure 3.1:
Checking normality using explore option

Checking normality using explore option
SPSS menu
Analyse > Descriptive statistics > Explore
(Choose all the continuous variables and transfer them into the dependent list box using the arrow button. Click on the independent or grouping variable that you wish to choose (such as gender). Move that specific variable into the factor list box. Click on display section and tick both. In the plots button, click histogram and normality plots with tests. Click on case id variable and move into the section label cases. Click on the statistics button and check outliers. In the options button, click on exclude cases pairwise. Press OK and then you will see the results appear in another window)

The output generated through this technique provides quite a few tables and figures. However, the main things to look for are:

(a) 5% trimmed mean (if there is a big difference between original and 5% trimmed mean there are many extreme values in the dataset.)
(b) Skewness and kurtosis values are also provided through this technique.
(c) The test of normality with significance value of more than 0.05 indicates normality. However, it must be remembered that in case of large sample, this test generally indicates the data is non-normal.
(d) The histograms provide the visual representation of data distribution. Normal probability plots also provide the same.
(e) Boxplots provided in this output also help identify the outliers. Any cases which are considered outliers by SPSS will be marked as small rounds at the edge of the boxplot lines.

The tests of normality and outliers are important if the researcher wishes to know and rectify any anomalies in the data.

3.7 Hypothesis testing

Once the data is cleaned and ready for analysis, researchers generally undertake hypothesis testing. Hypothesis is an empirically testable though yet unproven statement developed in order to explain a phenomena. Hypothesis is generally based on some preconceived notion of the relationship between the data derived by the manager or the researcher. These preconceived notions generally arrive from existing theory or practices observed in the marketplace. For example, a hypothesis could be that 'consumption of soft drinks is higher among young adults (pertaining to age group 18-25) in comparison to middle aged consumers (pertaining to age group 35-45)'. In the case of the above stated hypothesis we are comparing two groups of consumers and the two samples are independent of each other. On the other hand, a researcher may wish to compare the consumption pattern relating to hard drinks and soft drinks among the young adults. In this case the sample is related. Various tests are employed to analyse hypothesis relating to independent samples or related samples.

3.7.1 Generic process for hypothesis testing

Testing for statistical significance follows a relatively well-defined pattern, although authors differ in the number and sequence of steps. The generic process is described below.

1. Formulate the hypothesis

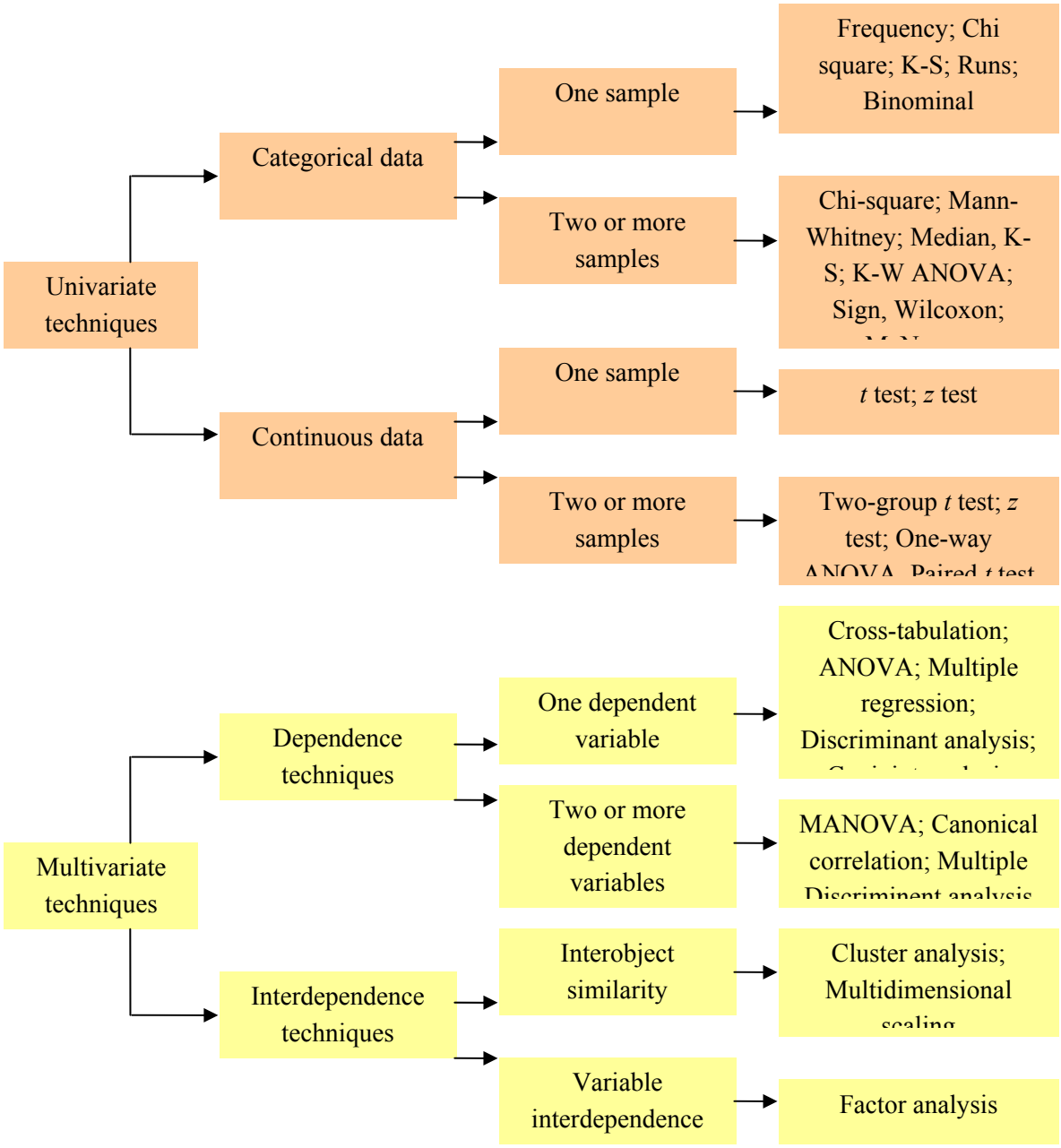
While developing hypothesis, researchers use two specific terms: null hypothesis and alternative hypothesis. The null hypothesis states that there is no difference between the phenomena. On the other hand, alternative hypothesis states that there is true difference between the phenomena. While developing null hypothesis, researcher assumes that any change from what has been thought to be true is due to random sampling error. In developing alternative hypothesis researcher assumes that the difference exists in reality and is not simply due to random error.[25] For example, in the earlier explained hypothesis relating to hard drinks and cola drinks, if after analysis, null hypothesis is accepted, we can conclude that there is no difference between the drinking behaviour among young adults. However, if the null hypothesis is rejected, we accept the alternative hypothesis that there is difference between the drinking of hard and soft drinks among young adults. In research terms null hypothesis is denoted via H_0 and alternative hypothesis as H_1.

2. Select an appropriate test

Statistical techniques can be classified into two streams namely univariate and multivariate (bivariate techniques have been included as multivariate analysis here). Univariate techniques are appropriate when there is a single measurement of each element in the sample, or there are several measurements of each elements but each variable is analysed in isolation. On the other hand, multivariate techniques are suitable for analysing data when there are two or more measurements of each element and the variables are analysed simultaneously.[26] The major difference between univariate and multivariate analysis is the focus of analysis where univariate analysis techniques focus on averages and variances, multivariate analysis techniques focus on degree of relationships (correlations and covariances).[27] Univariate techniques are further classified on the basis of the nature of the data (i.e. categorical or continuous). Multivariate techniques are classified on the basis of dependency (i.e. dependence techniques and independence techniques).

The figure below explains the various types of analysis techniques researchers use when analysing data.

Figure 3.2
Classification of Univariate and Multivariate techniques



As seen from the figure above there are many types of univariate and multivariate analysis techniques. For categorical data (involving nominal and ordinal scales), when there is only one sample, frequency distribution, chi-square, Kolmogorov-Smirnov, runs and binominal tests can be used. However, when there two or more samples involved, analysis techniques such as chi-square, Mann Whitney, Median, K-S, and Kruskal-Wallis Analysis of Variance (ANOVA) can be useful for independent samples and sign, McNemar, and Wilcoxon tests can be useful for related samples. Multivariate techniques involving dependencies and one dependent variable could involve cross-tabulation, ANOVA, multiple regression, discriminant analysis and conjoint analysis. However, if there are two or more dependent variables in these dependence techniques, multivariate analysis of variance (MANOVA), canonical correlation, and multiple discriminant analysis can be used. For the interdependence multivariate techniques when a researcher wishes to measure interobject similarity cluster analysis and multidimensional scaling can be used. On the other hand, if a researcher wishes to measure variable interdependence factor analysis can be used. We shall not be covering these techniques in details as they are quite advance in nature and it is beyond the remit of this book.

3. Select desired level of significance

In marketing research, we accept or reject a hypothesis on the basis of the information provided by our respondent sample. Since any sample will almost surely vary somewhat from its population, we must judge whether the differences between groups are statistically significant or insignificant. A difference has statistical significance if there is good reason to believe the difference does not represent random sampling fluctuations only. For example, in case of the first hypothesis we developed relating to the young adults and middle aged consumers, we found that the young adults consume 21 soft drinks a week and the middle aged people consumer 16 soft drinks a week. Can we state there is a meaningful difference between the groups? To define this meaningfulness we need to conduct significance testing.

In either accepting or rejecting a null hypothesis, we can make incorrect decisions. A null hypothesis may get accepted when it should have been rejected or rejected when it should have been accepted. These incorrect decisions lead to errors which are termed as Type I error and Type II error. When a Type I error (Also termed as alpha error – α) occurs, a true null hypothesis is rejected. When a Type II error (also termed as beta error – β) one fails to reject a false null hypothesis. Although β is unknown as it is a population parameter, it is related to α. An extremely low value of α (e.g. $\alpha = 0.0001$) will result in intolerably high β errors. So it is necessary to balance the two errors. Marketing researchers therefore use α value generally as 0.05 or 0.01. Increasing sample size also can help control Type I and II errors.

4. Compute the calculated difference value

After the data are collected, researchers use a formula for the appropriate significance test to obtain the calculated value.

5. Obtain the critical value

Once the test is conducted for t value or chi-square or other measure, researchers must look up the critical value in the appropriate table for that distribution. These tables are generally available in many research books or can be easily obtained from internet.[28] The critical value is the criterion that defines the region of rejection from the region of acceptance of the null hypothesis.

6. Compare the calculated and critical values

Once the calculated and critical values are obtained the researcher then compares the values. If the calculated value of the test statistics is greater than the critical value of the test statistics, the null hypothesis is rejected. Furthermore, if the probability associated with the calculated value of the test statistics is less than the level of significance (α) then the null hypothesis is rejected.

7. Marketing research interpretation

The conclusion reached by hypothesis testing must be converted into a language which can be understood by managers. In this way, what was stated as a managerial problem gets answered.

3.8 Conclusion

In this chapter, we discussed three aspects of marketing research process: data collection, data preparation and preliminary data analysis. Once the questionnaire is designed, to collect primary data researchers need to involve fieldworkers. It is very important for the researcher to control the selection, training and supervision process of the fieldworkers as it can have a direct impact on the quality of the data collected.

Once the data is collected using fieldwork, the next stage for the researcher is to edit and code the data. The editing and coding process can be tedious at times but are important in the data entry process. The editing and coding processes help identify anomalies within the data which can at times be solved using various data cleaning methods.

The clean data is then used for analysis purposes by researchers. The first step for analysis is to look for normality and outliers. It is important to do these tests as many advance statistical tests are quite sensitive to extreme values in dataset.

After the preliminary data is analysed for normality, researchers undertake hypothesis testing. Researchers first develop a null hypothesis which stats there is no difference between the phenomena being measured. Once an appropriate hypothesis is formulated, researchers choose between various statistical tests which are classified broadly into two categories: univariate and multivariate techniques. Researchers then select the desired level of significance to avoid Type I (α) and Type II (β) errors. After that they compute the critical value and obtain the calculated value. Once both the values are obtained, researchers compare the values and decide on the acceptance or rejection of null hypothesis.

4. Report preparation and presentation

4.1 Chapter summary

In this chapter we focus on the last two aspects of marketing research process: report preparation and presentation. One of the important aspects of any research project is to assist managers in decision making process and lot depends on how the researcher communicates the findings of the research project to the managers. If the results of the research are not effectively communicated to the manager, the decision making process may not be as sound as expected. An effective research report can overcome this challenge. This chapter therefore, will focus on how to write a research report which can be easily understood by manager as well as can help in decision making process as desired. We shall focus on the issue of content, format, layout and style.

4.2 Importance of marketing research report

As discussed in the summary above, marketing research report is the bridge between researcher and manager with regard to the research findings. Even if the research project is carried out with most meticulous design and methodology, if the research results are not effectively communicated using the research report to the manager, the research project may not be a success. This is because the research results will not help in achieving the major aim of any research project, which is to support the decision making process. Research report is a tangible output of the research project and not only helps in decision making but also provides documentary evidence and serves as a historical record of the project. Many a times, managers are only involved in looking at the research report (i.e. oral presentation and written report) and therefore most times the research project is judged by the quality of the research report. This has direct association with the relationship between the researcher and manager. All of the above reasons suggest the importance of marketing research report.

4.3 Reporting the results: key issues to remember

Before communicating the results of the project to the manager, the researcher should keep several issues in mind for effective communication. The first and foremost rule for writing the report is to empathize. The researcher must keep in mind that the manager who is going to read and utilize the findings of the research project might not be as technically knowledgeable with statistical techniques or at times with the methodology. Furthermore, the manager will be more interested in knowing how results can be used for decision making rather than how they have been derived. Therefore, the jargons and technical terms should be kept at minimum. If the jargons cannot be avoided, then researcher should provide a brief explanation for the manager to understand it.

The second rule researcher should keep in mind is related to the structure of the report. The report should be logically structured and easy to follow. The manager should easily be able to grasp the inherent linkages and connections within the report. The write up should be succinct and to the point. A clear and uniform pattern should be employed. One of the best ways to check weather the structure of the report is sound or not, the report should be critically looked at by some of the research team members.

Furthermore, researcher must make sure that the scientific rigour and objectivity is not lost when presenting the research project findings. At times, because of the heavy involvement of researcher in the overall research process, it is possible that there is a loss of objectivity. Therefore, researcher should keep a tab on the aspects of objectivity of the overall report. Many times managers do not like to see the results which oppose their judgemental beliefs however the researcher must have the courage to present the findings without any slant to conform to the expectations and beliefs of the managers.

A professionally developed report is always well received as it makes the important first impression in manager's mind. It is therefore very important for researcher to focus on the presentation of the report. The other important aspect is the use of figures, graphs and tables. There is an old saying that, 'a picture is worth 1000 words' and that is quite true when reporting the results of a research project. Use of figures, graphs and tables can help in interpretations as well as greatly enhance the look and feel of the report which in turn can augment the reader engagement.

If the report is prepared keeping in mind the above stated key issues, the overall credibility of the research report as well as of the researcher can be greatly enhanced.

4.4 Generic marketing research report

A professional marketing research report must focus on several issues including (a) effective communication of findings to the manager; (b) provide sound and logical recommendation on the basis of the findings; and (c) develop report in a manner that it serves for future reference.

As the client needs, research problem definition, research objectives and methods very for each situation, every marketing research report is unique in its own sense. However, many parts of the basic format of any marketing research report remains generic. Following provides the format for a generic marketing research report.

1. Title page
2. Table of contents
3. Executive summary
    a. Research objectives
    b. Brief discussion on methodology
    c. Major findings
    d. Conclusion
    e. Recommendations
4. Introduction
    a. Problem definition
5. Research design
    a. Type of design used
    b. Data collection
    c. Scaling techniques
    d. Questionnaire development and pilot testing
    e. Sampling
    f. Fieldwork
6. Data analysis and findings
    a. Analysis techniques employed
    b. Results
7. Conclusion and recommendation
8. Limitations and future directions
9. Appendices
    a. Questionnaire and forms
    b. Statistical output

As one can observe, the above stated format closely resembles with the marketing research process itself. In the discussion below we will focus on each of the above stated generic parts of a marketing research report.

Title page

The title page indicates the subject of the report, information regarding researcher and his/her associations and the name of the recipient, along with organizational details. The title should reflect the nature and objective of the project succinctly.

Table of contents

The table of contents should list the topics covered with appropriate page numbers. In most reports, only major headings and subheadings are included. It is also common to provide list of tables and figures after the table of contents.

Executive summary
The executive summary is a very important part of the overall report. Many consider it the soul of the report and it has been observed that at times executives only read the summary of the report and decide on the quality of the report as well as sometimes take decisions only on the basis of the summary. The executive summary therefore is a brief and meticulously prepared part of the overall report. The executive summary should focus on: (a) why and how the research was carried out; (b) what was found; and (c) what can be interpreted and acted upon by the manager. Therefore, in most reports executive summary contains research objectives, brief description of methodology employed, major findings, conclusions and recommendations.

Introduction
The introduction provides background information necessary for a clear understanding of the report. It may include definition of terms, relevant background details for the project (sometimes using secondary data analysis), and scope of the research. Furthermore, it also provides detailed explanation of the research problem and research objectives. After reading the introduction, the reader should know precisely as to what is the research about, why was it conducted, and what gap the research addresses which was not addressed previously.

Research design
The research design section of a report focuses on details relating to how the research was conducted. It focuses specifically on what type of research design was used with clear justifications. Furthermore, it explains both secondary and primary data collection processes. It describes how were the measurement scales developed and provide information on their validity and reliability. It further informs the reader about the development of the questionnaire and the pilot testing. It discusses what changes or tweaks were performed and why. This section also describes in details the sampling process including sample population definition, sample size, sample type, and the sampling technique. It further describes the fieldwork procedures employed.

Data analysis and findings
In this section researcher should describe the structure of data analysis and various techniques employed to achieve the objectives of analysis without using much technical details and jargons. Many times researchers do get carried away in explaining this in too much technicality. This can make the reader disengaged with the report as they might not be able to grasp what is being said. It is always good to provide the reader with some details regarding why a specific analysis technique was used and how the results can be interpreted.

The sophisticated analysis related data should be provided in appendices for the reader to look at if they are interested in it. The presentation of findings should directly be correlated with the research problem.

It is important to use graphs and tables as they help reader understand the details much easily in most cases. However, unnecessary use of figures and tables should also be avoided.

Conclusion and recommendation
This section is derived out of the findings section and so closely correlates with the analysis and findings section. Conclusions can be considered broad generalizations that focus on answering questions related to the research objectives. They are succinct in nature and provide the reader with a clear interpretation of what the findings convey. Recommendations on the other hand, are generated by critical thinking and are associated with the ability of researcher to suggest the future solutions for the problem. The researcher should use each conclusion derived from the research and critically analyse it before suggesting any recommendations. Recommendations should focus on how the manager can use them to generate competitive advantage.

Limitations and future directions
Most scientific research projects follow a rigorous research approach; however several limitations at times are unavoidable. Common limitations associated with marketing research include sampling bias, time and cost constraints, measurement errors, and so on. As every study is unique in its own way, there are study specific limitations also. Researcher should clearly state the limitations of the project in the report. This also provides an opportunity to the researcher for reflection on the project and how future projects can be improved without the specific limitations relating to the project at hand.

Appendices
The appendices section should include the other relevant details which might be helpful to the reader. The questionnaire form and sophisticated technical analysis should be added in this section also. Cross-referencing should be done within the report so the reader can find this information easily.

4.5 What not to do when writing reports

While the above section discussed how to prepare a good marketing research report one also needs to understand what not to do when writing reports. There are several issues the researchers must keep an eye on. When writing a research report the researchers should make sure that the explanations provided for each aspects of the process. Furthermore, many times it happens so that the researcher in the zeal to describe the phenomena goes over the top with regard to explanation and provides too much detail which disengages the reader. This tends to happen mostly in the analysis part where statistical processes are explained. Sometimes, it has also been observed that researchers are too focused on the packaging, style and format and not the content and substance. This can affect the quality of the report, credibility of the researcher, and the overall relationship between researcher and manager. With many research projects it has been seen that several other interesting findings are observed. However, when the findings are not relevant with the key research objectives they should be avoided. If included they can confuse the reader and can disengage them.

4.6 Report presentation

The presentation has become an integral part of most marketing research projects. Most managers are finding it hard to read the entire report and so prefer the researcher to present the report in an oral presentation. Furthermore, the presentation provides an opportunity for the research and management team to interact the issues of concern and in that way it becomes an important exercise.

For any presentation, the most important aspect is preparation. Researcher should first develop an outline of the presentation keeping the audience in mind. Once the outline is developed, the researcher should focus on the content management and decide as to what is relevant and important and what is not. Use of various audio-visual aids as well as other materials such as chalkboards or flipcharts should be planned out in advance. While audio-visual presentation adds to the overall engagement, chalkboards and flipcharts provide flexibility in presentation.

The rules regarding what to do and what not to do when writing reports also apply to the presentation and researcher must keep in mind that the presentation is being done for the managers to grasp the results. Researcher must remember that the research was conducted for assistance in decision making and was not a statistical exercise. Therefore, the focus of the presentation should be on how the research can help managers in making a better informed decision.

4.7 Conclusion

As discussed in this chapter, the prime objective of any marketing research report is to communicate in an effective manner, the results of the research, so the manager can take informed decisions. Marketing research report provides the communication bridge between the researcher and the manager and that is why it is an important aspect of the overall research process.

It is very important for the researcher to remember that the report is being prepared for the manager and therefore researcher must empathize with the manager in the writing process. The report must be logically structured and easy to follow. The objectivity of the research is also a supreme concern and researcher should oppose inclusion of any judgement beliefs which cannot be supported. The researcher should make sure that the report is well written and looks professional.

The generic marketing research project follows a format which includes title page, table of contents, executive summary, introduction, research design, data analysis and findings, conclusion and recommendations, limitations and future directions, and appendices. Each component of the report has its own importance and should therefore be carefully prepared.

Researcher must make sure that they do not over or under emphasize the relevant issues. It is easy to get carried away when developing research project report. The researcher must focus on managers' needs and should make sure that the report consistently adheres to it. The same rules apply when preparing report presentation which also has become an integral part of any research project.

References

[1] Nunnally, J. C. (1978), Psychometric theory: McGraw-Hill New York.
[2] Stevens, S. S. (1946), "On the Theory of Scales of Measurement," Science, 103 (Jun 7), 677-80.
[3] Crask, M. R. and R. J. Fox (1987), "An exploration of the interval properties of three commonly used marketing research scales: a magnitude estimation approach," Journal of the Market Research Society, 29 (3), 317-39.
[4] Hair, Joseph, Robert Bush, and David Ortinau (2003), Marketing Research: Within a changing information environment (2nd ed.). London: McGraw-Hill.
[5] Pendergrast, M. (1993), For God, Country and Coca-Cola: The Unauthorized History of the Great American Soft Drink and the Company That Makes It. London: Scribner Book Company.
[6] Malhotra, N. and D. Birks (2003), Marketing Research: An Applied Approach. London: Prentice Hall.
[7] Albaum, G. (1997), "The Likert scale revisited," Market Research Society, 39, 331-48.
[8] Malhotra, N. K., J. Agarwal, and M. Peterson (1996), "Methodological issues in cross-cultural marketing research," International Marketing Review, 13 (5), 7-43.
[9] Sinha, P. (2000), "Determination of reliability of estimations obtained with survey research: a method of simulation," International journal of Market Research, 42 (3), 311-18.
[10] Peter, J. P. (1979), "Reliability: A Review of Psychometric Basics and Recent Marketing Practices," Journal of Marketing Research, 16 (1), 6-17.
[11] Nunnally, J. C. (1978), Psychometric theory: McGraw-Hill New York.
[12] Malhotra, N. (2004b), Marketing Research: An Applied Orientation. New Jersey: Pearson Education.
[13] Rentz, J. O. (1987), "Generalizability Theory: A Comprehensive Method for Assessing and Improving the Dependability of Marketing Measures," Journal of Marketing Research, 24 (1), 19-28.
[14] Malhotra, N. (2004a), Marketing Research (4th ed.). Harlow: Prentice Hall.
[15] Hair, Joseph, Robert Bush, and David Ortinau (2003), Marketing Research: Within a changing information environment (2nd ed.). London: McGraw-Hill.
[16] Schaeffer, N. C. and S. Presser (2003), "The Science of Asking Questions," Annual Review of Sociology, 29 (1), 65-88.
[17] Montgomery, A. C. and K. S. Crittenden (1977), "Improving Coding Reliability for Open-Ended Questions," Public Opinion Quarterly, 41 (2), 235-43.
[18] Alreck, P. L. and R. B. Settle (1995), The Survey Research Handbook: Guidelines and Strategies for Conducting a Survey: McGraw-Hill.
[19] Mandal, A., J. Eaden, M. K. Mayberry, and J. F. Mayberry (2000), "Questionnaire surveys in medical research," Journal of Evaluation in Clinical Practice, 6 (4), 395-403.
[20] Sudman, S. and N. M. Bradburn (1982), Asking Questions. New York: Jossey-Bass.
[21] Guenzel, P. J., R. Berkmans, and C. Cannell (1983), "General interviewing techniques," Ann Arbor, MI: Institute for Social Research.
[22] Gubrium, J. F. and J. A. Holstein (2001), Handbook of Interview Research: Context & Method: Sage Publications Inc.
[23] Krippendorff, K. (2004), Content Analysis: An Introduction to Its Methodology. London: Sage.
[24] For further information visit: http://en.wikipedia.org/wiki/List_of_statistical_packages
[25] Boyd, H., R. Westfall, and S. Stasch (1989), Marketing research: Text and Cases. Boston: Irwin.
[26] Malhotra, N. (2004b), Marketing Research: An Applied Orientation. New Jersey: Pearson Education.
[27] Hair, J. F., W. C. Black, B. Babin, and R. E. Anderson (2006), Multivariate data analysis (6th ed.). Englewood Cliffs, NJ: Prentice-Hall.

[28] For example, http://www.statsoft.com/textbook/sttable.html or just by typing 'statistical tables' or any specific table such as 'z value table' in your favourite search engine will provide you with results relating to the statistical tables.