DATA INTERPRETATION

INTRODUCTION

1. What is Data?

Information represented in its simplest form is referred to as data. In fact, *data* is the plural form of *datum* (i.e., Latin for *given*), which means a piece of information. Information can be in the form of a statement or a numerical/visual figure. In other words, data is any *given collection of information in its rawest form*, without interpreting it or performing any analysis upon it. Data can be either qualitative or quantitative in nature. For example, the statement *"Mt. Everest is the highest mountain peak in the world"* is a qualitative piece of information, while the statement *"Mt. Everest is 8,848 meters high" is* a quantitative piece of information. Most of our discussion regarding Data Interpretation that follows will deal with quantitative or numerical data. Our aim in Data Interpretation is usually to arrive at quantitative as well as qualitative conclusions after analyzing the given data.

Sample Data: Given below is some numerical data pertaining to the total runs scored by the Indian Cricket team by the end of each of the first ten overs during one of its matches against Srilanka.

Over	1	2	3	4	5	6	7	8	9	10
Total Runs	4	12	18	22	34	39	47	52	61	68

Organized Data: When data is first recorded, it usually is not in an organized format. For example, a stock register at a depot or a cash register at a cash counter, data when initially collected in a market survey, etc., are all in an unorganized format. In order to extract meaningful information out of this data, it should first be organized and prepared for further analysis and interpretation. In fact the very process of organizing the data itself often throws up important conclusions regarding it. Organizing data is an integral part of Data Interpretation. Often, it may even be required to re-organize the data given in a certain format into another convenient format depending upon the nature of the analysis that needs to be done. For example, survey responses that are already organized according to the age of the respondents may need to be re-organized according to the profession of the respondents.

2. What are the different types of Data?

Data can be classified according to the type of source from which it has been obtained. There are two types of data in this form of classification, namely Primary Data and Secondary Data.

Primary Data: Any data that is collected directly from the actual circumstances to which it pertains is referred to as primary data. For example, if a teacher were to count the number of students present in the class, then the teacher would be gathering primary data.

Secondary Data: Unlike primary data, secondary data is always collected from pre-recorded sources like survey reports, records, registers and databases etc. For example, if the teacher were to find the number students who have never been absent during the last one month, then the teacher would refer to the attendance register, which is a pre-recorded source of data.

3. What is Data Analysis/Interpretation?

In simple terms, Data Analysis Interpretation is nothing but performing various calculations or operations upon the given data in order to arrive at meaningful conclusions. The conclusions can be either quantitative or qualitative in nature. In some cases, it may be sufficient to merely organize or re-organize the given data without the necessity of performing any actual calculations on it.

The sample data given earlier can be considered to be purely quantitative in nature. However when the numerical data is analyzed (or interpreted), then some meaningful and useful quantitative as well as qualitative conclusions can be drawn.

For example, using a simple calculation, one could say that *during the first ten overs, India scored at an average rate of 68/10 = 6.8 runs per over*. This is a quantitative conclusion. Also, some further simple calculations will give us the actual number of runs scored in each of the ten overs. This is obtained by finding the differences in the total runs at the end of every pair of succeeding overs. For example, *12 – 4 = 8 runs were scored in the second over*. This type of analysis will then yield several qualitative conclusions. For example, *of the first ten overs, the maximum number of runs (i.e., 34 – 22 = 12) were scored in the fifth over*.

There are various types of analyses that can be done for any given data. The type of analysis that should be performed depends upon the nature, volume and complexity of the data and also upon the kind of conclusions that need to be drawn from the analysis. The analysis could be as simple as those mentioned for the above example or it may be as complicated as to be possible only through hi-tech computers using sophisticated software. One such example of a complicated analysis is our daily weather forecast that we get to hear over the TV or the radio. The forecast process involves gathering huge volumes of data regarding various factors that influence the weather and then performing immensely complicated calculations upon that data possible only through the use of state-of-the-art supercomputers.

Different types of data representation: When we talk about organization of data, the format in which the data is represented immediately becomes an important aspect which needs some attention. Since the interpretation and analysis of data is the main reason for attempting to organize data, the format in which data is represented must be conducive for the relevant interpretations and analyses that may consequently be done on the data. There are several standard formats of representation like Tables, Line Graphs, Bar Graphs, Pie Charts etc., in which data can be represented. However, depending upon the nature of the data and the kind of analysis to be done, several other formats, sometimes even completely new ones, can also be adopted. The student will not only need to become conversant with the standard formats but will also be expected to deal with these new formats of data representation with the help of the basic sense of data interpretation that he or she will develop over his or her course of preparation.

4. Why bother with Data and Data Interpretation?

Data and Data Interpretation are an integral part of many aspects of today's world. The areas of Science, Engineering and Technology, Mathematics, Demographics, Economics and Business Management are some of the significant ones that are heavily dependent upon data and data analysis for their routine processes. However, there are two primary reasons why *you* need to not only familiarise yourself with the area of Data Interpretation but also becomes reasonably proficient at it.

(i) As a future Business Manager: The reason why you are expected to be reasonably proficient with Data Interpretation and its application is since you are aspiring to one day become a business manager, who is expected to know what to do, how to do, when to do and how much to do. Data and its analysis will then be an inevitable part of your work. A business manager constantly deals with decisions that have to be made, usually within considerably less time available on hand. Since effective decisions cannot be made without background information and analysis, anyone who is not comfortable with data and data interpretation will find it very difficult to cope up with his or her work.

A typical illustration would be a product manager who must decide on how best to allocate his or her promotion budget across zones so as to boost the overall sales of his or her product. In order to do this, the manager will have to first asses the sales data across different zones for the recent past and then identify the zone/s that have not shown the expected performance and growth in sales.

(ii) As an Exam Taker: Having understood the importance of Data and Data Interpretation for a business manager, it will not be any surprise to know that data interpretation is a very integral and important part of any management entrance exam. Any management institute would want to admit only those candidates who show adequate aptitude for such skills. Also, as the entrance exams to most of the MBA schools are highly competitive in nature, a candidate should not only have an aptitude for data interpretation but should also be proficient at it, to the point of being able to compete in a highly competitive situation.

However, it must be mentioned here that the best part about Data Interpretation is that the number of concepts and the variety involved in the types of questions that are possible is very limited. This is very much unlike other areas such as Quantitative Aptitude and Verbal Ability etc., wherein the vastness of the subject itself poses a formidable obstacle to mastering the area.

In the past few years CAT has constantly been giving a weightage of 20% - 30% to questions based on this area. Many other important entrance exams like XAT and JMET have also started to give an almost equal level of importance to the area of Data Interpretation.