STATISTICS

SUBJECT : ECONOMICS

CHAPTER NUMBER:1(1.2)

CHAPTER NAME : INTRODUCTION(MEANING, SCOPE AND IMPORTANCE OF STATISTICS)

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

MEANING OF STATISTICS :

STATISTICS HAS BEEN DEFINED DIFFERENTLY BY DIFFERENT WRITERS FROM TIME TO TIME, EMPHASISING PRECISELY THE MEANING SCOPE AND LIMITATIONS OF THE SUBJECT .

STATISTICS AS STATISTICAL DATA (PLURAL SENSE)WHEREAS OTHER AS STATISTICS METHOD (SINGULAR SENSE).

- IN PLURAL SENSE , IT MEANS COLLECTION OF NUMERICAL FACTS.

- IN SINGULAR SENSE , STATISTICS DEAL WITH THE COLLECTION , PRESENTATION, ANALYSIS AND INTERPRETATION OF QUANTATITIVE INFORMATION .

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

MEANING OF STATISTICS :

STAISTICS AS NUMERICAL SET OF DATA (PLURAL SENSE)

IN THE PLURAL SENSE STATISTICS REFERS TO AGGREGATES FACTS, AFFECTED TO A MARKED EXTENT BY MULTIPLICITY OF CAUSES, NUMERICALLY EXPRESSED ENUMERATED OR ESTIMATED ACCORDING TO REASONABLE STANDARDS OF ACCURACY, COLLECTED IN A SYSTEMATIC MANNER FOR PREDETERMINED PURPOSE AND PLACED IN RELATION TO EACH OTHER .

FOR EXAMPLE DATA RELATING TO AGGREGATE PERCENTAGE OF 5 TOPPERS OF 12th CLASS OF A SCHOOL .

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

MEANING OF STATISTICS :

STAISTICS AS USED IN PLURAL SENSE , MUST POSSESS THE FOLLOWING CHARACTERSTICS :

1. **STATISTICS ARE AGGREGATE OF FACTS:** SINGLE OR UNRELATED ITEMS ARE NOT CONSIDERED AS STATISTICS.

2. **STATISTICS ARE AFFECTED BY MULTIPLICITY OF CAUSES:** IN STATISTICS THE COLLECTED INFORMATION ARE GREATLY INFLUENCED BY A NUMBER OF FACTORS AND FORCES WORKING TOGETHER.

3. **STATISTICS ARE NUMERICAL FACTS:** ONLY NUMERICAL DATA CONSTITUTE STATISTICS.

4. **STATISTICS ARE ENUMERATED OR ESTIMATED WITH A REASONABLE STANDARD OF ACCURACY**: WHILE ENUMERATING OR ESTIMATING DATA, A REASONABLE DEGREE OF ACCURACY MUST BE ACHIEVED.

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

MEANING OF STATISTICS :
STAISTICS AS USED IN PLURAL SENSE , MUST POSSESS THE FOLLOWING CHARACTERSTICS :

5. **STATISTICS ARE COLLECTED IN A SYSTEMATIC MANNER:** DATA SHOULD BE COLLECTED BY PROPER PLANNING BY UTILISING TOOL/S DEVELOPED BY TRAINED PERSONNEL.

6. **STATISTICS ARE COLLECTED FOR A PREDETERMINED PURPOSE** : IT IS NECESSARY TO DEFINE THE OBJECTIVE OF ENQUIRY, BEFORE COLLECTING THE STATISTICS. THE OBJECTIVE OF ENQUIRY MUST BE SPECIFIC AND WELL DEFINED.

7. **STATISTICS SHOULD BE COMPARABLE:** INTRODUCTION TO STATISTICS ONLY COMPARABLE DATA WILL HAVE SOME MEANING. FOR STATISTICAL ANALYSIS, THE DATA SHOULD BE COMPARABLE WITH RESPECT TO TIME, PLACE GROUP, ETC.

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

STATISTICS AS METHOD (SINGULAR SENSE)
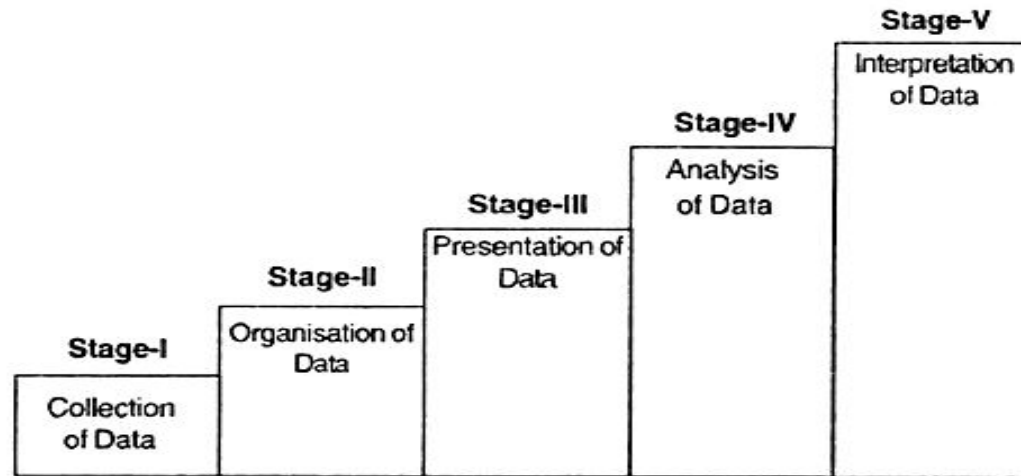
Stages	Statistical Study	Statistical Tools
Stage-I	Collection of data	Census or sample techniques
Stage-II	Organisation of data	Array of data and tally bars
Stage-III	Presentation of data	Tables, graphs and diagrams.
Stage-IV	Analysis of data	Percentages, averages.
Stage-V	Interpretation of data	Magnitude of percentages, averages, degree of relationship between different variables.

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

STATISTICS AS METHOD (SINGULAR SENSE)

1. **COLLECTION OF DATA** : IT IS THE MAIN AND THE FIRST STEP IN A STATISTICAL ENQUIRY . THE TECHNIQUE OF COLLECTION OF DATA DEPENDS UPON THE OBJECTIVE OF THE STUDY
2. **ORGANISATIO OF DATA** : AFTER COLLECTION , THE DATA IS ORGANISED IN A PROPER FORM WHICH INVOLVES EDITING AND CLASSIFICATION.
3. **PRESENTATION OF DATA** : AFTER CLASSIFICATION, THE DATA IS PRESENTED IN SOME SUITABLE FORM OF TEXT ,TABLE , DIAGRAM OR GRAPH.
4. **ANALYSIS OF DATA** : AFTER PRESENTATION OF DATA, ANALYSIS IS DONE WITH THE HELP OF SIMPLE MATHEMATICAL TECHNIQUES . THIS INCLUDES MEASURE OF CENTRAL TENDENCY , MEASURES OF DISPERSION, CORRELATION AND REGRESSION ETC.

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

STATISTICS AS METHOD (SINGULAR SENSE)

5. **INTERPRETATION OF DATA :** IT IS THE LAST STEP IN THE STATISTICAL METHODOLOGY .

- IT INVOLVED STATISTICAL THINKING , SKILL AND EXPERIENCE TO DERIVE MEANING FROM ANALYSED DATA .
- THE INTERPRETATION PROVIDES THE FINAL CONCLUSIONS DRAWN FROM THE ANALYSED DATA

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

PLURAL SENSE VERSUS SINGULAR SENSE

1. STATISTICS IN PLURAL SENSE DEALS WITH NUMERICAL INFORMATION WHEREAS IN SINGULAR SENSE STATISTICS IS A BODY OF VARIOUS METHODS AND TOOLS .

2. STATISTICS IN PLURAL SENSE IS DESCRIPTIVE IN NATURE BUT IN SINGULAR SENSE IT IS BASICALLY A TOOL OF ANALYSIS.

3. STATISTICS IN PLURAL SENSE IS OFTEN IN THE RAW STATE , WHEREAS IN SINGULAR SENSE IT HELPS IN PROCESSING THE RAW DATA.

4. STATISTICS IN PLURAL SENSE IS QUANTITATIVE BUT IN SINGULAR SENSE IT IS AN OPERATIONAL TECHNIQUE.

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

EMPIRICAL ANALYSIS AND QUANTITATIVE ANALYSIS

EMPIRICAL ANALYSIS REFERS TO A METHOD IN WHICH A SUBJECT IS STUDIED ON THE BASIS OF OBSERVATIONS OF EXPERIMENTS. IN EMPIRICAL ANALYSIS, KNOWLEDGE IS ACQUIRED AS A RESULT OF ACTUAL EXPERIENCE.

UNDER NATURAL SCIENCE SUCH AS PHYSICS, CHEMISTRY AND BIOLOGY , THIS METHOD IS COMMONLY USED AND RELEVANT LAWS AND STATEMENT CAN BE TESTED AND EXPERIMENTED IN LABORATORIES.

 AS AGAINST THIS ECONOMICS IS A SOCIAL SCIENCE WHERE IN HUMAN BEHAVIOUR IS THE SUBJECT OF STUDY AND EMPIRICAL ANALYSIS CANNOT BE USED TO STUDY ECONOMICS AND OTHER SOCIAL SCIENCES . THE PROBLEM OF SOCIAL SCIENCES CAN BE EFFECTIVELY STUDIED THROUGH THE TECHNIQUE OF QUANTITATIVE ANALYSIS /

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

EMPIRICAL ANALYSIS AND QUANTITATIVE ANALYSIS

QUANTITATIVE ANALYSIS IS AN ATTEMPT TO LEVEL PRECISIONS TO THE FACTS SO THAT

THEY CAN BE EASILY COMPARED.UNDER 8 FIRST OF ALL FACTS ARE EXPRESSED IN THE

FORM OF QUANTITIES LIKE 25 30 35 AND THEN SUCH NUMERICAL DATA IS CLASSIFIED

AND ANALYSED TO DRAW REASONABLE CONCLUSIONS

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

FUNCTION OF STAISTICS :

STATISTICS PERFORMS MANY FUNCTIONS USEFUL TO HUMAN BEINGS.
THE BROAD FUNCTION PERFORMED BY STATISTICS ARE :

1. **SIMPLIFY COMPLEX FACTS**
2. **TO PRESENT FACTS IN DEFINITE FORM**
3. **TO MAKE COMPARISON OF FACTS**
4. **TO FACILITATE PLANNING AND POLICY FORMULATION**
5. **TO HELP IN FORECASTING**
6. **FORMULATION AND TESTING OF HYPOTHESIS**
7. **TO ENLARGE INDIVIDUAL KNOWLEDGE AND EXPERIENCE**

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

FUNCTION OF STAISTICS :

1. TO SIMPLIFY COMPLEX FACTS **:** IT IS VERY DIFFICULT FOR AN INDIVIDUAL TO UNDERSTAND AND CONCLUDE FROM HUGE NUMERICAL DATA . STATISTICAL METHODS TRY TO PRESENT THE GREAT MASS OF COMPLEX DATA INTO SIMPLE AND UNDERSTANDABLE FORM.

 FOR EXAMPLE STATISTICAL TECHNIQUES LIKE MEAN, MEDIAN , CORRELATION , GRAPH MAKE COMPLEX DATA INTELLIGIBLE AND UNDERSTANDABLE IN SHORT PERIOD AND IN BETTER WAY.

2. PRESENT FACTS IN A DEFINITE FORM : QUANTITATIVE FACTS CAN EASILY BE BELIEVED AND TRUSTED IN COMPARISON TO ABSTRACT AND QUALITATIVE FACTS . STATISTICS SUMMARISES THE GENERALIZED FACT AND PRESENT THEM IN A DEFINITE FORM.

FOR EXAMPLE STATEMENTS LIKE ANNUAL RATE OF INFLATION IN A COUNTRY IS 10% IS MORE CONVINCING THAN STATEMENT LIKE PRICES ARE RISING.

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

FUNCTION OF STAISTICS :

3. TO MAKE COMPARISON OF FACTS : COMPARISON IS ONE OF THE MAIN FUNCTION OF STATISTIC . AS THE ABSOLUTE FIGURES CONVEY LESS CONCRETE MEANING. FOR COMPARISON OF DATA , VARIOUS STATISTICAL METHOD LIKE AVERAGE, RATE, PERCENTAGE, RATIO ETC. ARE USED .

FOR EXAMPLE : PER CAPITA INCOME OF DEVELOPING COUNTRIES MAY NOT BE OF MUCH USE UNLESS WE KNOW THE PER CAPITA INCOME OF DEVELOPED COUNTRIES.

4. TO FACILITATE PLANNING AND POLICY FORMULATION: ON THE BASIS OF NUMERICAL DATA AND THEIR ANALYSIS , BUSINESSMAN AND ADMINISTRATORS CAN PLAN FUTURE ACTIVITIES AND SHAPE THEIR POLICIES.

5. TO HELP IN FORECASTING : AS BUSINESS IS FULL OF RISKS AND UNCERTAINTIES, CORRECT FORECASTING IS ESSENTIAL TO REDUCE THE UNCERTAINITIES OF BUSINESS. STATISTICAL TOOLS LIKE INTERPRETATION , TIME SERIES ANALYSIS HELPS IN MAKING PROJECTION FOR FUTURE .

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

FUNCTION OF STAISTICS :

6. FORMULATION AND TESTING OF HYPOTHESIS : STATISTICS METHODS ARE EXTREMELY USEFUL IN FORMULATING AND TESTING HYPOTHESIS .

FOR EXAMPLE : WITH THE HELP OF STATISTICAL TECHNIQUES WE CAN TEST THE HYPOTHESIS WHETHER A RISE IN THE RAILWAY FARES WILL AFFECT PASSENGERS TRAFFIC OR NOT,

7. **TO ENLARGE INDIVIDUAL KNOWLEDGE AND EXPERIENCE** : STATISTIC ENABLE PEOPLE TO ENLARGE THEIR HORIZON. IT SHARPENS THE FACULTY OF RATIONAL THINKING AND REASONING , AND IS HELPFUL IN PROPOUNDING NEW THEORIES AND CONCEPTS .

IMPORTANCE OF STATISTICS

STATISTICS IS WIDELY USED IN MODERN TIME. INITIALLY IT WAS EMPLOYED BY THE GOVERNMENT TO COLLECT INFORMATION ON PUBLIC AFFAIRS .

THE IMPORTANCE OF STATISTICS IN THE FOLLOWING MAJOR AREAS :

- IMPORTANCE TO THE GOVERNMENT
- IMPORTANCE IN ECONOMICS
- IMPORTANCE IN ECONOMIC PLANNING
- IMPORTANCE IN BUSINESS
- IMPORTANCE OF STATISTICS TO GOVERNMENT

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

IMPORTANCE OF STATISTICS TO THE GOVERNMENT

THE SUBJECT OF STATISTICS WAS INITIALLY USED BY THE ANICIENT RULERS IN ASSESSMENT OF THEIR MILITARY AND ECONOMIC STRENGTH . GRADUALLY ITS SCOPE WAS ENLARGED TO TACKLE OTHER PROBLEMS RELATING TO POLITICAL ACTIVITIES OF THE ECONOMY .

- IN THE PRESENT SCENARIO, GOVERNMENT COLLECTS THE LARGEST AMOUNT OF STATISTICS FOR VARIOUS PURPOSE.
- THE ROLE OF GOVERNMENT HAS INCREASED AND REQUIRES MUCH GREATER INFORMATION IN THE FORM OF NUMERICAL FIGURES TO FULFILL THE WELFARE OBJECTIVES IN ADDITION TO THE EFFICIENT RUNNING OF THEIR ADMINISTRATION.
- POPULAR STATISTICAL METHODS SUCH AS TIME SERIES ANALYSIS , INDEX NUMBERS, FORECASTING AND DEMAND ANALYSIS ARE EXTENSIVELY USED IN FORMULATING ECONOMIC POLICIES.
- IN A DEMOCRATIC COUNTRY LIKE INDIA VARIOUS POLITICAL GROUPS ARE ALSO GUIDED BY THE STATISTICAL ANALYSIS REGARDING THEIR POPULARITY IN MASSES.

SO IT CAN BE CONCLUDED THAT, IT IS IMPOSSIBLE TO THINK ABOUT FUNCTIONING OF THE MODERN GOVERNMENT IN THE ABSENCE OF STATISTICS.

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

IMPORTANCE OF STATISTICS IN ECONOMICS :

STATISTICS IS AN INDISPENSABLE TOOL FOR A PROPER UNDERSTANDING OF BUSINESS ECONOMICS PROBLEMS.

- EVERY BRANCH OF ECONOMICS TAKES SUPPORT FROM STATISTICS IN ORDER TO PROVE VARIOUS ECONOMIC THEORIES IN IT.

- STATISTICS PROVIDES IMPORTANT GUIDELINES FOR THE FORMULATION OF VARIOUS ECONOMIC POLICIES.

- MOST OF THE ECONOMIC PROBLEMS ARE CAPABLE OF BEING EXPRESSED IN NUMERICAL FIGURES . FOR EXAMPLE OUTPUT OF AGRICULTURE, VOLUME OF EXPORTS, PRICE OF COMMODITIES ,ETC. IN EACH CASE, THE DATA IS AFFECTED BY MULTIPLICITY OF FACTORS. FURTHER IT CAN BE SHOWN THAT THE OTHER CONDITIONS PRESCRIBED FOR STATISTICAL DATA ARE ALSO SATISFIED.

THUS THE STUDY OF VARIOUS ECONOMIC PROBLEMS ESSENTIALLY OF STATISTICAL NATURE.

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

IMPORTANCE OF STATISTICS IN ECONOMICS :

SOME OF THE USES OF STATISTICS IN ECONOMICS ARE AS FOLLOWS :

1. **FORMULATION OF ECONOMIC LAWS:** THE FAMOUS **LAW OF DEMAND** AND THE CONCEPT OF **ELASTICITY OF DEMAND** HAVE BEEN DEVELOPED BY THE INDUCTIVE METHOD OF GENERALIZATION , WHICH IS ALSO BASED ON STATISTIC PRINCIPLES.

2. **HELPS IN UNDERSTANDING AND SOLVING AND ECONOMICS PROBLEM**: STATISTICAL DATA AND STATISTICAL METHOD PLAY A VITAL ROLE IN UNDERSTANDING AND SOLVING ECONOMIC PROBLEMS SUCH AS POVERTY , UNEMPLOYMENT, DISPARITIES IN THE DISTRIBUTION OF INCOME AND WEALTH ETC.

3. **STUDY OF MARKET STRUCTURE:** STUDY PERFECT COMPETITION, OLIGOPOLY , MONOPOLY ETC. REQUIRES STATISTICAL COMPARISON OF MARKET PRICES, COST AND PROFITS OF INDIVIDUAL FIRMS.

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

IMPORTANCE OF STATISTICS IN ECONOMICS :

SOME OF THE USES OF STATISTICS IN ECONOMICS ARE AS FOLLOWS :

4. **HELPS IN ESTABLISHING MATHEMATICAL RELATION:** STATISTICAL METHOD CAN ALSO BE USED TO ESTIMATE MATHEMATICAL RELATION BETWEEN VARIOUS ECONOMIC VARIABLES . FOR EXAMPLE DATA ON PRICES AND CORRESPONDING QUANTITIES DEMANDED OF A COMMODITY , CAN BE USED TO ESTIMATE MATHEMATICAL FORM OF DEMAND RELATIONSHIP BETWEEN THE TWO VARIABLES .

5. **USEFUL TO STUDY BEHAVIOUR OF DIFFERENT ECONOMIC CONCEPTS**: TREND SERIES ANALYSIS USED TO STUDY THE BEHAVIOUR OF PRICE, PRODUCTION AND CONSUMPTION OF COMMODITIES , MONEY IN CIRCULATION AND BANK DEPOSIT AND CLEARINGS.

6. **PRICE ANALYSIS:** STATISTICAL SURVEY OF PRICE HELPS IN STUDYING THE THEORIES OF PRICE S, PRICING POLICY AND PRICE TRENDS AS WELL AS THEIR RELATIONSHIP TO THE GENERAL PROBLEM OF INFLATION .

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

IMPORTANCE OF STATISTICS IN ECONOMIC PLANNING

ECONOMICS PLANNING IS INDISPENSABLE FOR ACHIEVING FASTER RATE OF GROWTH THROUGH BEST USE OF NATION'S RESOURCES :

- AT EVERY STAGE OF ECONOMIC PLANNING , THERE IS A NEED FOR FIGURES AND STATISTICAL METHOD.
- USING STATISTICAL TECHNIQUES, IT IS POSSIBLE TO ACCESS THE AMOUNT OF VARIOUS RESOURCES AVAILABLE IN THE ECONOMY AND ACCORDINGLY DETERMINE WHETHER THE SPECIFIED RATE OF GROWTH IS SUSTAINABLE OR NOT.
- STATISTICAL ANALYSIS OF DATA REGARDING AN ECONOMY MAY REVEAL CERTAIN CRUCIAL AREAS LIKE INCREASING RATE OF INFLATION, WHICH MAY REQUIRE IMMEDIATE ATTENTION.

SO IT IS RATHER IMPOSSIBLE TO THINK OF A SITUATION WHERE ECONOMIC PLANNING CAN BE DONE WITHOUT THE USE OF STATISTICAL TECHNIQUES.

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

IMPORTANCE OF STATISTICS IN BUSINESS

STATISTIC IS IMPORTANT IN THE BUSINESS DUE TO THE FOLLOWING :

1. **FOR ESTABLISHING A BUSINESS UNIT** : BEFORE STARTING A BUSINESS, IT IS NECESSARY TO KNOW ITS FEASIBILITY . IT INVOLVES DETAILED INFORMATION ABOUT LOCATION , SIZE OF OUTPUT, AVAILABILITY OF INPUTS , TAXES, SIZE OF MARKET SHARE, TURNOVER ETC. STATISTICS PROVIDES GUIDELINES WHICH MAY PROVE TO BE HELPFUL IN MAKING KEY DECISIONS.
2. **FOR ESTIMATING THE DEMAND OF PRODUCT** AFTER LAUNCHING OF BUSINESS, THE NEXT STEP IS TO ESTIMATE THE PRESENT AS WELL AS FUTURE DEMAND OF THE PRODUCT. STATISTICAL METHOD ARE EXTREMELY HELPFUL IN PREPARING TREND LINES LEADING TO RELIABLE FORECASTING.
3. **FOR PRODUCTION PLANNING** BUSINESSMAN HAS TO PLAN ITS PRODUCTION SO THAT HE IS ABLE TO MEET THE DEMAND OF ITS PRODUCT AND INCURR MINIMUM LOSSES ON ACCOUNT OF OVER OR UNDER PRODUCTION . CAREFUL PRODUCTION PLANNING IS ESSENTIAL FOR MAINTAINING A BALANCE BETWEEN DEMAND AND SUPPLY.

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

IMPORTANCE OF STATISTICS IN BUSINESS

STATISTIC IS IMPORTANT IN THE BUSINESS DUE TO THE FOLLOWING :

4. **FOR MAKING QUALITY CONTROL** : STATISTICAL TECHNIQUES (LIKE PREPARATION OF CONTROL CHART) CAN ALSO BE USED TO CONTROL THE QUALITY OF THE PRODUCT MANUFACTURED BY A FIRM.

5. **FOR MAKING MARKETING STRATEGY :** BEFORE PRODUCTS IS LAUNCHED, MARKET RESEARCH TEAM MAKES USE OF VARIOUS STATISTICAL TECHNIQUES (LIKE PILOT SURVEY) TO ANALYSE DATA ON POPULATION , PURCHASING POWER, HABITS OF CONSUMERS, COMPETITOR ,E PRICING ETC . SUCH STUDIES REVEAL THE POSSIBLE MARKET POTENTIAL FOR THE PRODUCT.

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

IMPORTANCE OF STATISTICS IN BUSINESS

STATISTIC IS IMPORTANT IN THE BUSINESS DUE TO THE FOLLOWING :

6. **ACCOUNTS WRITING AND AUDITING** EVERY BUSINESS FIRMS KEEPS ACCOUNTS OF ITS REVENUE AND EXPENDITURE.
- FOR TAKING CERTAIN DECISIONS IN A BUSINESS THESE ACCOUNTS ARE REQUIRED TO BE SUMMARISED IN A STATISTICAL WAY .
- THIS MAY CONSIST OF CALCULATIONS OF TYPICAL MEASURES LIKE AVERAGE PRODUCTION FOR UNIT OF LABOUR , AVERAGE PRODUCTION PER HOUR , AVERAGE RATE OF RETURN ON INVESTMENT ETC
- STATISTICAL METHOD MAY ALSO BE HELPFUL IN GENERALIZING RELATIONSHIPS BETWEEN TWO OR MORE SUCH VARIABLES.

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MEANING, SCOPE AND IMPORTANCE OF STATISTICS

LIMITATION OF STATISTICS :

THE MAIN LIMITATIONS OF STATISTICS ARE :

1. **STATISTIC DOESN'T STUDY QUALITATIVE PHENOMENA :** STATISTICS CAN BE APPLIED IN STUDYING ONLY THOSE PROBLEM WHICH CAN BE STATED AND EXPRESS QUANTITATIVELY.
   - QUALITATIVE CHARACTERISTICS SUCH AS HONESTY , POVERTY , WELFARE , BEAUTY HEALTH ETC CANNOT DIRECTLY BE MEASURED QUANTITATIVELY.
   - AS A RESULT , QUALITATIVE CHARACTERISTICS ARE NOT SUITABLE FOR STATISTICAL ANALYSIS.
2. **STATISTIC DOESN'T DEAL WITH INDIVIDUALS** : STATISTICS DEALS ONLY WITH AGGREGATE OF FACTS AND NO IMPORTANCE IS ATTACHED TO INDIVIDUAL ITEMS . FOR EXAMPLE MARKS OF 1 STUDENTS OF A CLASS DOESN'T CONSTITUTE STATISTICS BUT THE AVERAGE MARKS HAVE STATISTICAL RELEVANCE.
3. **STATISTICS CAN BE MISUSED** : STATISTICS CAN BE MISUSED BY IGNORANT OR WRONGLY MOTIVATED PERSONS . ANY PERSONS CAN MISUSE TATISTICS AND DRAW ANY TYPE OF CONCLUSION HE LIKES .

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

LIMITATION OF STATISTICS :

4. **STATISTICAL RESULTS ARE TRUE ONLY ON AVERAGE :** STATISTICS AS A SCIENCE IS NOT AS ACCURATE AS MANY OTHER SCIENCES ARE. NATURAL SCIENCES ARE EXACT AS THEIR RESULT ARE UNIVERSALLY TRUE. HOWEVER STATISTICAL LAWS ARE NOT EXACT . FOR EXAMPLE IF THE AVERAGE NUMBER OF THEFTS IN A TOWN IS 3 PER WEEKS , IT DOESN'T MEAN THAT IF 3 THEFT HAVE TAKEN PLACE ON THE FIRST DAY OF THE WEEK , THERE WILL BE NO MORE THEFTS IN THAT WEEK.

5. **STATISTICAL LAW ARE NOT EXACT :** STATISTICAL LAWS ARE PROBABILISTIC IN NATURE, INFERENCE BASED ON THEM ARE ONLY APPROXIMATE AND NOT EXACT LIKE INFERENCES BASED ON MATHEMATICAL OR SCIENTIFIC LAWS.

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

LIMITATION OF STATISTICS :

6. **ONLY EXPERTS CAN MAKE THE BEST POSSIBLE USE OF STATISTICS :** THE TECHNIQUES OF STATISTICS ARE NOT SO SIMPLE TO BE USED BY ANY LAYMAN . THESE TECHNIQUES CAN ONLY BE USED BY EXPERTS AS THEY ARE COMPLICATED IN NATURE.

7. **STATISTICAL DATA SHOULD BE UNIFORM AND HOMOGENEOUS** : IT IS ESSENTIAL THAT DATA MUST BE UNIFORM AND HOMOGENEOUS AND HETEROGENEOUS DATA ARE NOT COMPARABLE . FOR EXAMPLE IT WOULD BE OF NO USE TO COMPARE THE HEIGHT OF TREES WITH THE HEIGHTS OF MEN . BECAUSE THESE DATA ARE OF HETEROGENEOUS NATURE.

MEANING, SCOPE AND IMPORTANCE OF STATISTICS

DISTRUST OF STATISTICS :

DISTRUST OF STATISTICS MEANS LACK OF CONFIDENCE IN STATISTICAL METHOD AND STATEMENT .

- INSPITE OF THE SERVICES PROVIDED BY STATISTICS , CONSIDERABLE DISTRUST EXIST IN THE MINDS OF PEOPLE WITH REGARD TO ITS RELIABILITY AND USEFULNESS.

- THE REASON FOR THIS DISTRUST IS IMPROPER USE OF STATISTICAL TOOLS BY UNSCRUPULOUS (without principle) , IRRESPONSIBLE , INEXPERIENCED AND DISHONEST PERSONS.

THANKING YOU
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