Problems Encountered:

A crucial phase in the social sciences is the problem of precisely measuring in quantitative terms the rich variety of social and psychological qualities and traits. Experimental psychology has greatly influenced the field of learning, memory, sensation and perception. In the realm of intellectual activities, mental testing has made great advances. But the field of emotions, motives and attitudes suffers from a lack of scientific approach. These are still probed by haphazard and unscientific methods such as casual observation, subjective inferences, superficial questioning, guesswork and the like.

The complexity of social phenomena makes the application of rigorous scientific methods of attack rather difficult. There are also emotional barriers to psychological measurement (Nunnally 1959). Such efforts are often reacted to as "noisy activities", asking personal questions, embarrassing people and experimenting in emotionally laden situations. Moreover, one dislikes seeing oneself portrayed in statistical terminology. It further gives most of us certain anxiety to have our abilities laid bare for easy comparison with those of others.

The scientific study of social phenomena suffers from another serious
handicap, namely, the problem of describing it in objective terms. Such phenomena are a complex affair. It cannot be described by a single numerical index and hence gives rise to problems in its measurement.

Attitudes are generally inferred from one's overt behaviour or verbal expressions. But both of these may not represent the real attitudes. For example, if we see a man buying apples from market every day we may infer he likes apples. But actually, he might be disliking it. The purchase of it may be dominated by the likes of his wife, or the cheap price of the fruit as compared to other types of fruits, or any one of many other possible reasons, which may not be directly connected with the activity of fruit buying.

Uncertainty of detecting the true attitudes and measuring them remains even if opinion is taken as an index. There is the possibility of conscious or unconscious deception. The person may misrepresent or modify his expressions for reasons of social pressure. People are often reluctant to express their attitudes for fear of social disapproval. One's attitudes are considered one's personal affairs. Thus, both the actions as well as verbal expressions may be distortions of his real attitudes.

This discrepancy between the index and truth is universal (Thurstone and Chor 1929). However, even if people are intentionally
distorting their attitudes, we are at least measuring what they are trying to make others believe. All that we can do is to minimise the conditions that prevent the subject from divulging the truth. Moreover, the methods of measurement should be so devised as to avoid a direct embarrassing question. Thus, even if we do not measure the exact truth, we will be very much nearer the truth.

Another objection is that an attitude is a complex term and cannot be described by a single numerical index. There are so many factors involved in a person's attitude on any social issue that it cannot be adequately described by a simple score. Thurstone (1931b) answers this objection by saying that this is true of all measurement. It is a universal characteristic of measurement. A "table", for example, is a complex term. When the height of the table is measured, the whole table is not described. As an attitude is a complex affair, so an ordinary table is also a complex affair. But the table is not considered beyond the scope of measurement. It can be measured from various angles and so can attitude.

The study of attitudes is further complicated by the fact that attitudes change from time to time. People reveal different attitudes when exposed to different situations. Further, the methods devised to study them suffer from one inadequacy or other. But this does not put attitudes beyond the scope of measurement. Efforts are being made to devise scientific methods to control factors and quantitatively measure this aspect. By adhering to certain principles of interviewing, questionnaire formulating and
scaling techniques, the social scientists are trying to increase the validity of their reports. Efforts are being made to quantify the verbal reports obtained through observations, informal discussions and subjective inferences. The methods developed are still in their infancy but, they contribute a good deal to the quantitative measurement of human behaviour.

Methods of Measurement:

Techniques used to appraise human behaviour have a long history dating back to several thousand years. Simple tests of physical strength were common in the most primitive societies. Even such formal devices as the written tests go as far back as the recorded history goes or even beyond it. The Chinese had a highly organised examination system before the time of Christ. However, it is not many years when attitudes were considered beyond the reach of precise measurement. But, today in the more advanced countries, attitude measurement has become an industry. In some places one can buy information on attitude and opinion surveys for the price of a daily newspaper. Public opinion surveys and attitude studies are conducted regularly by certain commercial agencies and the information is available to all, payment of which is not expensive. Now the literature concerning attitude measurement has become so voluminous that one is freed to confine to only the recent studies. The measurement of attitudes is no more considered an uncharted territory.

The developmental history of the methods of attitude measurement ranges from crude observations to the development of psychophysical scales.
It is a brief story of progress from the simplest direct questions to the fairly reliable instruments now available.

There are many ways in which people's attitudes can be inferred and recorded. Among the methods used in attitude studies are the observation, the interview, the case method, public opinion polls, the questionnaire, various rating and ranking devices, projective techniques and attitude scales.

In earlier days, when attitude scales were non-existent and the indirect assessment of attitudes by projective techniques was not known, various other simpler methods of attitude and opinion measurement were listed by many. Beha (1931, 1932), Clark (1924), Rein (1938), Moore and Garrison (1932), for example, list the following methods of attitude measurement: 1. Observation, 2. case method, 3. questionnaire, 4. interview, 5. ranking, 6. rating, and 7. paired comparisons. Some earlier writers, however, made a reference to scales and indirect methods too. Gradually, the attitude scales came into existence as a better way of quantitatively measuring attitudes. At the same time, the importance of indirect measurement also began to be realised.

Attitudes are considered to be emotionally charged. Therefore, at times, it is not possible to measure them by direct means. The projective techniques thus gained in importance in this field as well. Along with these finer methods, however, the opinion polls which is the crudest and simplest method of measuring attitude also became equally popular. The opinion polls became popular because
they were often successful in predicting success of candidates in voting polls. The latter writers like Guilford (1939), Reemers and Gage (1955), Kroch and Crutchfield (1943), Klimesh (1954), Albig (1956), Sherif and Sherif (1956), Briti (1938), Young (1956), etc., therefore, added the opinion polls, scales and projective techniques to the methods mentioned earlier. Guilford (1939) refers to sociometric tests as well, as a method of attitude measurement.

Sherif and Sherif (1956) classify all these methods in only two categories, (i) indirect techniques like projective techniques and, (ii) direct techniques like opinion polls, scales, etc.

Campbell (1950) presents another comprehensive classification of methods of attitude measurement:

1. Non-disguised-structured tests. The classic direct tests of Thurstone (Thurstone and Chave 1929), Likert (1932) etc.

2. Non-disguised-non-structured tests: The free-response interview, the questionnaire approaches, biographical and essay surveys.

3. Disguised-non-structured tests: Those techniques which offer the respondent opportunity for the spontaneous expression of attitudes in an ambiguous or non-structured setting, like Dubin's (1940) "Ploy technique", Proshensky's (1943) and Brown's (1947) "picture technique".

4. Disguised-structured tests: The respondent participates in an objective task. It is like an achievement or ability test. The test is structured, but still offers opportunity for unconscious
operating bias to distort behaviour in a systematic manner.
Examples of such tests are Heuson's (1948) error-choice test.

The classification of methods used in attitude research may be made by several criteria. One may classify these methods on the basis of scoring, according to the method of construction or, according to the method of administration. The various methods of measuring attitudes finally boil down to the simple matter of asking questions, whether in opinion polls, or questionnaires or interview or scales. Some form of questions are always there (McNemar 1946). Below is presented a brief description of the methods used in attitude measurement:

1. Observation: Observation is both the most primitive and yet the most modern technique of research. It ranges from the most casual and uncontrolled experience to the experimentally controlled laboratory records. Observation is defined as "systematic and deliberate study through the eye of spontaneous occurrences at the time they occur" (Young 1956, p.301). Fruitful observation begins only when certain rules are followed. Scientific observation demands formulation of definite objectives, systematisation of planning and recording, subjection to scientific tests and controls. The "seeing" is most meaningful when the eye follows certain points of view.

Observation can be controlled as well as uncontrolled. In non-controlled observation we resort to careful scrutiny of real life
situations making no attempts to use instruments of precision.
In controlled observation, certain aids to accuracy, variety of instruments like sound recorders, motion pictures, observation schedules and rating scales are used to provide more standardised conditions of observation.

Observation when systematically planned and recorded becomes a useful tool in the hands of social scientists. Uncontrolled, haphazard and casual observation is of little value. It can be used in the exploratory phase. Highly structured observation, supplemented by various instruments of precision, provided by checks on observer’s bias, formulating standards against which to correct the judgements, using certain methods to quantify the data, can give reliable and useful information.

Perhaps, the greatest asset of observation is that behaviour is recorded as it occurs. But this has its limitations too. Quantification is difficult in this method; observer’s bias may vitiate the results and, one may have to wait for the incident to occur.

2. Interview: Another important method is “interview”. Only in the study of human beings, it is possible for the scientist to talk to his subjects and investigate directly his attitudes, etc. It is often called “conversation with purpose”. It secures information through face to face association and, adds reliability, validity, focus and precision to the common act of conversation. The advantage of interview technique are that uneducated and illiterate
persons can be studied. It is flexible and misunderstandings can be readily clarified. By providing additional observation of respondent, it can reveal information about complex, emotionally laden aspects.

The greatest disadvantage of interview is that it suffers from interviewer's personal bias. It is also considered as unstandardised instrument. However, the development of highly structured schedules and interview guides is a possible solution to the problem of standardisation. There is also a gradual recognition of the location and control of interviewer's bias. Attempts are directed to make the method more refined, systematic and standardised. Guided by a shrewd and careful observer this could be a powerful instrument for obtaining information about attitudes.

3. The Case Method: This method is used for exploring and analysing the life of a social unit - a person, an institution, a group, a culture or community. Attitude studies are often conducted by this method. Case study data is obtained from personal documents, diaries, autobiographies, letters, confessions, life-history data, records in the files of social agencies, etc.

Ogbua (1932) differentiates between formal and informal case methods. An essay type of description of an attitude given by the subject can be used to evaluate his attitudes. The description can be written or oral. If oral indicators are used, it is called "informal case method". Employment of written indicators makes it
"formal case method". The formal and informal case methods, according to Droba (1932) can again be of two types: 1. an individual may be asked to express his own attitude; 2. he may be asked to express attitudes of his acquaintances.

Case data are vivid and absorbing. Historically, case method is very old but, its use in attitude research is of relatively recent origin. Its main drawback is that it is not amenable to quantitative analysis. The objections to the methods of observation, interview and case study are that they are too subjective. Much depends upon the interpretations by the investigator. Moreover, these methods are qualitative rather than quantitative.

4. The Questionnaire: Apparently the best way to know about a person's opinions and attitudes would be to question him. The responses are expected to reveal the opinions or attitudes about the issue at hand. Practically all attempts at determining opinions and attitudes are at the verbal level. The questionnaires are designed to collect data from large, diverse and widely scattered groups of persons. It is used in gathering objective, quantitative data and is a type of form which the respondent fills in himself. The questionnaires may be regarded as a type of interview conducted in writing. It is less efficacious than interview in that the personal contact between the subject and investigator is lacking. The fundamental procedure in questionnaire method is a series of questions selected to represent opinions. It is described
as a collection of items which sample particular responses from the attitude universe (Sells 1960). The items are not scaled. Sometimes they are divided into two groups to represent the favourable and unfavourable opinions. Questionnaires may be of two types:

1. Structured Questionnaires: Those in which there are definite concrete and pre-ordained questions. The question may further be of the closed type, simply asking the subject to indicate "Yes - No", or "true - false". It may be a categorical, fixed alternate or multiple choice question, in which the subject has to check one of the given alternatives. Often the respondent may simply be asked to state his agreement or disagreement with a series of questions. The questions may also be open-end type, inviting free response, where freedom to phrase the answers is given. Still other variations are used.

2. Non-Structured Questionnaire: Such questionnaires are often called interview guides. They contain definite subject matter areas, the coverage of which is required during the interview but, the interviewer is free to arrange the form of inquiry. Usually, in exploratory phase or pilot stages of work this type of questionnaire is used.

If the questions are carefully formulated and the questionnaire is properly administered, it yields quantitative information about a person's opinions and attitudes. The questionnaire and interview approach put a heavy reliance upon the subject's verbal
reports. So, it becomes necessary for the investigator to secure full cooperation of the subject in order to get frank and pertinent answers.

5. The Rating Method: Yet, another approach to the measurement of attitudes and opinions is the method of rating. Rating Methods are of two types: i. self-rating - the subjects rate themselves with reference to an attitude or opinion; ii. rating by others - attitudes of persons are rated by their friends, acquaintances, experts like a clinician. An Interviewer may also be asked to rate the attitudes of his subjects. Experts may infer and rate the attitudes of persons by casual observation of their behaviour, or from their verbal statements about the attitude object.

Rating scales may further be divided into two types: i. relative rating scale. (a) rank order scale - the judge places the individual from high to low on the given attitude; (b) the percentage scale - individual is assigned a percentage position in the population. II The absolute rating scale: (a) the graphic rating scale - a line is presented, representing a continuum from one end to the other, from most favourable to extremely unfavourable. The judge places a check mark at the appropriate position along the line; (b) the specific category scale - the categories are defined as very much, moderately, uncertain, etc., and the individual is placed in the category he belongs to. In graphic rating scale usually the two ends are defined and in category scale, all categories are defined.
The main disadvantage of this method is that in self-rating, one tends to overrate oneself towards the desirable end. The ratings by others are often vitiated by the 'halo' effect. A person high in one trait may be rated high on other traits. Rating devices, no doubt, are useful to get at the intensity with which an attitude is held.

6. The Ranking Method: The ranking method is often called the "relative rating" method. In this method, the desirability of the subject about an indicator is relative to other indicators. For example, a subject may be asked to arrange the given nationalities in order of merits.

Both these rating and ranking methods may be used for rating or ranking the objects of attitudes or the expressions of attitudes. One may, for example, be asked to rank the different nationalities on the statements representing different degrees of "dryness" or "wetness" on the question of prohibition. The former was used by Segerdus (1925a) who asked the subjects to classify the national or racial groups into the given classes on the basis of felt feelings, such as "friendly feeling", "neutrality" and "hostile feelings". The latter method was used by G. W. Allport (1929) who asked the judges to rate items on radicalism-conservatism and prejudice in the given categories.

Rating and ranking methods are often employed alongside in interviews, opinion polls, attitude scales or even in observation.
7. Public Opinion Polls: Those are also called "single question techniques". The crudest method of measuring attitudes is the ballot or single response counting. Surveys of public opinions as used by the social scientists in attempting to tap attitudes of groups are most widely known all over the world. Reports of such surveys are usually published in newspapers and magazines or circulated privately to the interested persons.

The purpose of opinion polls is to obtain some sort of distribution of attitude responses in some specified group or sample of the group. Such a distribution in its simplest form may be merely a statement of percentages of those who favour and who do not favour the opinion.

Opinion polls are identified with pre-election prediction. In many such studies polls had successfully predicted election results. The type of question asked in a polling survey is of the typical "Yes - No" or "agree - disagree" type. For example, "Do you believe that all countries will agree to live peacefully?". The replies may be in the form of "Yes, no, don't know".

Sometimes a limited number of choices are provided, such as "which class do you belong to - upper, middle or lower?".

Open-ended questions are also not infrequent in opinion polls, for example, "What do you think of the recent Chinese aggression on Indian border?". Occasionally rating devices have been employed to get at the intensity with which an attitude is held.
The questions that are asked in opinion polls may be "matter of fact" questions, such as, on family budget, manners of spending leisure hours, etc. Questions may be asked about the intentions of the groups, for instance, intentions of war veterans after the war is over. The questions may be about their attitudes toward some past or present critical situation like the recent Chinese attack on our Country.

Polls have potential value in correcting wrong assumptions. For example, contrary to the expectations polls may reveal that the heavy taxation system recently levied has not been grudged by the public.

The responses of opinion polls are used to categorise the individuals as belonging to one or more classes. Percentage of persons believing or not believing in something is also reported. Sometimes, various breakdowns are made for group comparisons, as to how women compare with men, older people with younger, etc.

The greatest disadvantage of such survey techniques is that they are usually only two point devices, calling forth "Yes - No" to a single question. Therefore, only the direction of attitudes is measured. Other dimension like degree, intensity and finer shadings of attitude complex are not accounted for.
Detailed analysis of the above-mentioned methods is given by numerous writers, like Albic (1956), Doeb et al. (1954), Festinger and Katz (1953), Cood and Scates (1954), Hammers and Gege (1955), Seltize et al. (1959), Tarvers (1955), Young (1956) etc.

8. Indirect Assessment of Attitudes: The use of projective techniques in the study of attitudes is also gaining more and more popularity. Sherif and Sherif (1956) hold that when faced with a straight question, such as a pollster puts a direct question or when an attitude tester asks one to rate his stand on a five-point scale, the usual tendency is to appear appropriate in terms of the currently fashionable trends. This becomes still more important if the issue at hand is a controversial one, or the respondent is not on the popular side of the fence or there are other social pressures. Under such circumstances, answers to straight questions are hardly the real expressions of his attitudes but are rather the expressions of the social situation the individual is in.

Therefore, certain indirect methods, which aim at measuring attitudes without the respondent's being aware of it, are based. These techniques are called "disguised techniques". Campbell (1950) classifies the disguised techniques into two groups:

1. Disguised-non-structured tests of social Attitudes:
category are included those techniques which offer the respondent opportunity for spontaneous expressions of his attitude in an ambiguous non-structured setting. Most of these techniques are borrowed from clinical tools. These tests include "projective techniques" similar to those used in the study of personality. The term "projective techniques" implies a field of unstructured material on which the individual can project his personal meanings, significances, feelings and attitudes. Such tests are borrowed from the field of personality measurement and modified to assess attitudes.

(a) Pictorial techniques: Such tests are based on T. A. T. and Rorschach tests. Froshanksy (1943) devised a picture test to study anti and pro labour attitudes which correlated highly with New Comb's test to measure attitude towards organised labour. Responses to various ambiguous and unstructured pictures revealed the anti and pro labour attitudes. Fromm (1941) presented to his subjects pictorial cartoons. Brown (1947) modified the Rosenzwing picture - Fustation Test to study ethnic atti­tudes. He modified the cartoon like pictures to represent various ethnic group persons like the Jews, or Negroes. Sanford and Rosenstock have made use of drawings to study attitudes.

(b) Verbal Techniques: These techniques are like the word association or sentence completion tests.
(i) Word association tests: The word association technique employed in the study of social attitudes is essentially the same as used by Carl Jung years ago in the study of abnormal behaviour. Havoc et. al. (1957) developed a word association test (WA) for measuring various attitudes. They prepared WA triplets where the keyword is to be associated with one of the two given alternatives. Two instruments were prepared; one to tap religious and political attitudes (WA Form R—P) and the other to tap radicalism-conservatism and authoritainmentism—egalitarianism (WA Form RC—AE).

(ii) Sentence completion tests: This test is similar to WA test. The respondent is required to complete a sentence like: "I hate -------", "Negro body odour--------", "Social Intermarriage -------", etc.

(iii) Story and argument test: The subject is given enough of the story or argument to focus his attention upon a given issue, but not enough to indicate how it will turn out. He has to supply a conclusion.

There are various other similar verbal techniques.

(e) Play techniques: Techniques involving the manipulation of
dolls have been used to study the attitudes of children.

In one study, White children were given 'white' and 'coloured' dolls to play out specific scenes as "going to school", "arranging a party" etc. Inclusion or exclusion of coloured dolls or the roles assigned to them revealed their attitudes toward Negro children. Dubin (1940) utilized "toys" in a similar fashion to study attitudes. He asked the subjects to construct a picture of the world "as you see it today" and then "as you would like it to be".

(d) Psychodrama and Sociodrama: The method requires that the subject act out a role either as himself (psychodrama) or as somebody else (sociodrama) as he would in a real life situation. A white subject, for instance, may be presented with the problem of acting out the role of a Negro factory worker, who has been absent from work several times and has now been called into Boss's office to explain his absence. The manner in which he plays the role provides an insight into his attitude.

If Disguised-Structured-Tests of Social Attitudes:
In this type of tests, the respondents participate in an objective task. The test is structured and still offers opportunity for unconsciously operating bias to distort behaviour in a systematic manner. Most of these tests are based upon
the fact that a person's attitudes are likely to influence his memory perceptions, beliefs, and judgments.

(a) Information Tests: In an information test, the subject has to respond as "true or false" to the given information which is not correct. The direction of people's guesses bears a relationship to their attitudes.

Weschler (1950) constructed an error-choice test to study pro and anti-labour attitudes. An example of Weschler's test is "During the strike wave of 1948 the percent of estimated working time lost was (a) 1.1% (b) 3.2%". The correct percent was 1.5. It is assumed that the pro-labour subject will choose answer (a) since it defends labour and anti-labour subject will choose answer (b). Hammond (1948) also constructed a similar error-choice attitude test. Some correct factual answers are also planted among a host of information test items for which no correct answer is provided. The systematic error in one direction or another in checking alternatives is taken as the measure of attitudes of the individual on the issue.

(b) Tests of Perception, Memory, and Judgement: It has long been recognised that perception, memory and judgement can be influenced by one's attitudes. Recall of pictorial material and stories reveals the influence of social attitudes on memory. For example, in one test some posters and pictures were exposed to children and it was found that Negro children were less remembered.
Another test revealed selective recall of statements relevant to a given attitude. Levin and Murray (1943) found that learning and forgetting of controversial material were related to attitudes. One tends to learn rapidly and remember longer the passages in harmony with one's attitudes.

Newcomb (1946) found that the subjects know those items of information on which they had favourable attitudes. He found high relationship between favourable attitudes toward Spanish Loyalists and information concerning Spanish Civil War. Those most favourable to Loyalist Spain tended to be those best informed.

(c) Estimation of group opinion and social norms: Mullen (1943) and some others have demonstrated that there is persistent correlation between a person's own attitudes and his estimation of group opinion. So, a person's attitudes can be assessed by giving him the objective task of estimating group opinion.

Campbell (1950) and Reamers (1954) give a comprehensive review of such various indirect techniques of attitude measurement. Regarding the validity of these techniques, some studies give encouraging evidence while others reveal discrepancies. The indirect methods, however, are still in their experimental stage.

9. Attitude Scales:
Of all the methods of attitude measurement, by far the most widely
used and carefully designed are the attitude scales. These scales aim to provide a quantitative measurement of the individual's attitudes. The attitude scales and scaling methods are discussed in the following Chapter.

SUMMARY:

Attitudes are markedly tinged with feelings and emotions. People are also likely to camouflage their real attitudes. Besides, attitudes are found to change from time to time. All this renders the task of measurement both complex and difficult. However, the social scientists have equipped themselves with various controls and devices. Research techniques like "scientific observation", "interview", "case method", "questionnaire", "rating", etc., are made available to us. Some of these methods are cited for reference in this Chapter. The important ones among these are discussed at length. An analytical review of these shows that the most widely used and accepted method for the measurement of attitude is by means of attitude scales.