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by

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MEASUREMENT OF ATTITUDES

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From the discussion in Chapter -- on the nature of attitudes, we know that attitude is a hypothetical construct to represent certain underlying response tendencies. As hypothetical constructs, attitudes cannot be measured directly. Any attempt to assess them can only be inferential in nature: study those types of behaviour which are reasonably assumed to indicate the attitudes to be measured; quantify these indications so as to get an idea of how much the given individuals or groups differ in their psychological orientations toward a particular object or issue. The behaviours to be studied for the purpose may be those which occur in a natural setting or a simulated situation. Such behaviour may be verbal or performance. For example, a person talking about, say, prohibition when he is seated in a teastall over his usual cup of tea exhibits verbal behaviour in a natural setting. If you were to formally interview him on his views about prohibition, you would again have his verbal behaviour, but in an artificial environment. Observation of his visits to bars or drink sessions at home would provide data on his natural "performance" behaviour. If, on the other hand, he served as a subject in an experiment designed to study his behaviour, we would obtain performance data in a simulated setting.

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An attitude may comprise characteristics of strength, magnitude or intensity, importance, salience or centrality, complexity, flexibility, etc. Commonly, however, attitude measurements are concerned with the magnitude dimension and its direction; that is, the degree of favourableness or unfavourableness of a person with regard to a psychological object. A psychological object, as we have already seen in Chapter —, may be a person, a group, an idea, a symbol, or anything with regard to which people could harbour positive or negative feelings.

WHY MEASURE ATTITUDES

People have likes and dislikes and have them in varying degrees. But why study and measure them? Attitudes are action tendencies and as such they can facilitate or hinder action at all levels: individual, group, community, state, and national.

Consider the case of population control. Among the various possible activities toward progress, the government wanted the people to adopt birth control and compulsory sterilization was introduced in certain parts of the country. But, this move, as we all know, gave rise to immense anxiety and antagonism among people and the programme ended in a fiasco. Such blatant disregard for people's attitudes not only thwarted many a corresponding programme, but, tagged on to other grievances of the kind under Emergency, also turned into a massive timebomb which, after an adequate gestation

period, blew up the once invincible reign of Mrs. Gandhi and her colleagues. At the same time, certain other activities like the introduction of new variety seeds in agriculture and the introduction of adult education had a better fate. To determine, therefore, what action to introduce when and how to introduce it for the desired effect among a target population, the action planners must know how far the existing action tendencies of the population are receptive/resistent to the proposed action. Such knowledge would help devise appropriate means for triggering the desired change.

It is not being suggested here that attitudes have to be changed first in order that intended behaviour may follow; nor is the reverse being implied that behaviour must be changed so that corresponding attitudes will emerge. In fact, attitude may influence behaviour and in turn be influenced by it. Such mutuality between behaviour and attitude has been discussed in Chapter --. But, whatever the theoretical position on this what-comes-first issue, it is a fact that introduction of change more often than not faces some degree of resistance. Such resistance is dependant on how favourably or unfavourably the population in question is inclined toward the proposed course of action and related issues. It is here that knowledge of the target population's attitudes can guide any effort for planning and implementing developmental change. Action plans which ignore the attitudes of people can only look forward to chance success.

It is indeed likely that action change, once introduced and adopted, gives rise to a host of new attitudes towards the action and other connected issues in life. People's attitude toward themselves, having been exposed to a new course of action, may undergo change. They may also develop positive or negative attitudes toward the change agents. Such emergent attitudes, if of the unfavourable kind, will come in the way of future efforts. Assessment of the psychological impacts of interventions is, therefore, of interest not just to psychologists. All those engaged in any kind of persuasive, promotional, or developmental activities would need similar measures both in order to judge the expediency of introducing a particular action and to know the effects of having introduced it. Further, measurement of attitudes is a necessity for experimental and other studies concerned with attitude change.

APPROACHES TO ATTITUDE MEASUREMENT

How do we measure attitudes? We have said that we arrive at measures of attitudes by inference. But we need data on which to base our inference. Such data are collected by various methods. We may observe the ongoing behaviour of people in the natural setting; we may assign a well-defined task to respondents and record their performance; we could generate data by giving the respondents partially structured stimuli to interpret or react to; physiological reactions of respondents when exposed to the

attitudinal object can provide us with relevant data. For example, Westie and DeFleur (1959) studied the attitudes of subjects by taking the latter's galvanic skin responses, heartbeat, etc. when presented with pictures of Negroes and Whites in various social situations. Hess and Polt (1960) found that pleasant stimuli gave rise to pupillary dilation, whereas unpleasant ones led to pupillary constriction on the part of subjects. We may also directly ask the respondents to state their feelings with regard to the issue under study. There is yet another set of methods of data collection, known as unobtrusive or nonreactive methods, in which respondents' cooperation or involvement is dispensed with.

DIRECT OBSERVATION

This method involves recording of actual behaviour of people, whose attitude is to be studied. It is indeed an objective method and well suited for certain kinds of issues. For example, it is quite commendable to observe the actual overt behaviour of strikers by participating in the strike itself to gain a measure of the strikers' attitude. We could also observe a company executive in his day-to-day dealings with his subordinates to assess his attitudes towards them. Not all issues, however, lend themselves to direct observation. Can you, for instance, use this method of data collection to study the attitude of voters? Even the most dedicated and non-partisan psychologist would not have access to the polling booths to observe the actual voting

behaviour of people. Again, if you wanted to study and measure attitudes toward sex, could you possibly observe the overt sexual behaviour of people? Some situations may, no doubt, permit simulation of a natural setting and role-play can be enacted to be able to observe behaviour and infer the underlying attitude(s).

Even where accessibility is not a problem, direct observation of behaviour is not practicable if we want to have data on a large number of individuals. In addition to the difficulty of observing every individual in a large sample, there is no telling as to when an individual will exhibit the behaviour which is relevant to the study in question. Thus, over and above the intense effort and cost involved, indefinite patience may also be called upon. Further, even when we have managed to spot some behaviour related to our study, we do not know if the behaviour was an outcome of the related attitude or one caused by other factors. Take for instance a boy who goes to church regularly. You have observed his behaviour, all right. But, does this behaviour mean that he is favourably inclined toward prayer and religion? Not necessarily. On asking him directly, you may discover that his girl friend cherishes religious sentiments and attends prayer services regularly. He goes there only to meet her !

Observation of behaviour, even when the behaviour is the outcome of the attitude being studied, may tell us the direction of the underlying attitude (i.e. whether it is positive or negative), but it cannot as easily indicate the magnitude or strength of the

attitude. It is also difficult to establish the reliability of behavioural measures of attitudes. The observers' perception as well as their ability to report what they have observed vary considerably. All these weaknesses, however, do not suggest that observation of overt behaviour is futile for assessing attitudes. They only caution us that care needs to be taken in deciding upon the suitability of this method to a given situation.

SOME OTHER APPROACHES

Projective techniques and objective tasks, where the attitude objects are disguised, are successful ways of overcoming many of the difficulties encountered in direct observation. But these methods are not very popularly used in measuring attitudes—probably because of low reliability in interpreting such data. Measures of galvanic skin responses (GSR), pupil dilations, vascular constrictions, heart-beat, etc. can also indicate attitudes. But such physiological arousals may not always discriminate attitudes. For instance, both positive and negative tendencies may give rise to similar readings in the galvanic skin response apparatus. Physiological measures have, no doubt, been carefully and gainfully used in certain occasions and interested readers may refer to Leiderman and Shapir's (1964) Physiological Approaches to Social Behaviour.

SELF-REPORT APPROACH

All the different methods used for measuring attitudes have their own strengths and limitations. One method may be more suitable than another for a given study and the same method may be inappropriate on another occasion. There is no one method, therefore which is universally good or well-suited. However, going through the literature on attitude measurement, we find that self-report have been tried and their applicability has been proven and advocated. But in practice, the pencil-and-paper type of self-report measures have stolen the scene to this day.

Direct Questioning

If we want to know how people feel about a certain thing, it seems most natural to ask them straight away as to what their feelings are. Direct questioning has, therefore, had an appeal as a method of studying attitudes. But, however logical and smooth this technique may seem to be, it serves only a limited purpose of roughly classifying respondents as favourable, unfavourable, and indifferent with regard to a psychological object. Here we have the same problem as the one often encountered in direct observation. Normally, neither direct observation nor direct questioning assesses the degree of attitudes an individual possesses. In the absence of such an index, we cannot discriminate among individuals within the favourable and the unfavourable

groups; nor can we know the distance between the two groups. There may, of course, be times when we require only to know as to how many are for and how many against a particular issue. Direct questioning will adequately serve the purpose here.

We must bear in mind that inhibiting and/or social desirability factors can contaminate responses to direct-questioning. For example, if you were to study people's attitudes toward the National Emergency when the Emergency was on, many a respondent would be reluctant to give you an answer or would, in all likelihood, loudly proclaim a favourable attitude. When controversial issues are involved and pressures and threats are operative, direct questioning is not the suitable means of data collection for assessing attitudes.

Even when no threats are present, not all individuals are capable of articulating their feelings. A person may possess certain attitudes and behave accordingly, but may not be aware of them. Psychoanalysts have borne abundant witness to such phenomena. Thus, direct questioning or any other self-report technique will be of little avail if the respondent has no access to his own attitudinal orientations, buried in the realms of the unconscious. We shall return to the drawbacks of self-report methods a little later.

SCALES OF MEASUREMENT

To have more refined measures of attitudes than rough classifications of "for" and "against", some scaling devices can be made use of. Before going into scalar measures of attitudes, we shall first discuss scales of measurement in general.

Measurement is assignment of mathematical symbols to objects and events according to rules. In order to assign different symbols to different objects, one must be able to differentiate objects on a given aspect, attribute or property. Such differentiation may be rough and crude or may be refined and specific. You may, for instance, want just to classify objects, persons, or responses into different categories. A nominal scale will suffice for this purpose. The only criterion to assign "objects" to different categories of a nominal scale is whether the objects are the same or different with regard to the property being studied. To classify individuals, for example, according to the province they come from or according to the religion they belong to would constitute a nominal scale. If you assign numbers to the different categories in this scale, the numbers are just identification names. They are not amenable to mathematical operations like calculation of means, coefficient of correlations, etc. You can, of course, count the number of subjects under each category label (numeral or verbal) and find the modal category--that category in which the highest number of individuals fall. You may also perform a test of

association, if you categorized the individuals according to two (or more) attributes. For example, if you categorized individuals both according to their province and their religion, you could perform the Chi-square test to see if a particular province(s) tend(s) to be associated with a particular religion.

If you want to know the relative positions of persons or objects with respect to a characteristic, you need an ordinal scale, in which individuals or objects are ranked as first, second, third, etc., depending on the "more" or "less" of the attribute possessed by the individuals or objects. The ordinal scale can state who has more or less of the attribute under study, but not how much more or how much less. If person P is ranked first, Q second, R third, etc., we cannot know if the difference between P and Q is or is not the same as the difference between, for instance, U and V; the magnitude of difference between any two consecutive ranks remains unknown and is likely to vary.

An interval scale can tell us whether P is as much higher than Q as Y is than Z on a particular attribute. In other words, in an interval scale, the difference between any two adjacent positions. Thus, the interval scale is an improvement over the ordinal scale, even as the latter is over the nominal scale.

There is another type of scale, called the ratio scale, which is commonly used in the physical sciences. To have a ratio scale the absolute zero point needs to be determined. A ten-inch rod

can be said to be exactly twice as long as a five-inch one, because both the rods share a common starting point, namely, the real zero point. But in the subject matter of the social sciences, the zero point is arbitrary and, therefore, we cannot express relationships between objects, persons, or events in terms of strict ratios. Psychophysics has made attempts, in limited areas, to establish absolute zero points. By and large, however, the social sciences do not use ratio scales: they employ ordinal and interval scales in their studies.

Attitude Scales

With a view to assessing the degree of attitudes possessed by persons and to be able to study a large number of people, the scaling technique was introduced into attitude measurement. Various scales of attitude measurement have been developed. Here we shall only broadly discuss the characteristics of some prevalent attitude scales so as to be acquainted with the general steps involved in their construction and use. It is likely that, in spite of the numerous scales available¹, you do not find one handy or suitable when you take up a particular study. Knowledge of how to develop an attitude scale will obviate such a crippling situation and help you have an instrument tailor-made for a given study. For a detailed discussion of how to construct an attitude scale, you may refer to Allen L. Edwards' (1957) Techniques of Attitude Scale Construction.

¹ Pareek and Rao's (1974) Handbook of Psychological and Social Instruments gives fairly exhaustive information about such instruments available in the country.

Thurstone's Scale

Louis L. Thurstone and E.J. Gage (1929) in their classic study of attitudes toward Church developed an interval scale by using the method of equal-appearing intervals. To construct the Thurstone scale, a large number of statements are collected which express various possible opinions about the issue or object, the attitudes regarding which one wants to study. These statements, after having been edited for relevance and clarity, are given to judges, who are to independently sort them into eleven sets along a continuum that ranges from "most unfavourable", through "neutral" to "most favourable". The eleven sets of statements are to occupy positions in the continuum in such a way that the positions are at equal intervals; that is, the difference between any two adjacent positions is the same as the one between any other two adjacent positions. For the final form of the scale, only those items are retained which have high interjudge agreement and which fall at equal intervals.

The judges are to assign the statements to appropriate positions on the scale only on the logical basis of how favourable or unfavourable an opinion every statement express by itself and not how far the judges personally agree or disagree with the statements. The average judged position of a statement on the eleven-point continuum is the scale value for that statement. Thus, when a Thurstone scale is ready, every state-

ment in it (there are usually about twenty statements) has a numerical value already determined. When administered, the respondent just checks the items he agrees with and his attitude score is the mean value of the items he checked.

Likert's Scale

For the Likert scale, various opinion statements are collected, edited and then given to a group of subjects to rate the statements on a five-point continuum: 1 = strongly agree; 2 = agree; 3 = undecided; 4 = disagree; and 5 = strongly disagree. The subjects express the degree (one to five) of their personal agreement or disagreement with each of the statements. Only those items which in the analysis best differentiate the high scorers and the low scorers of the sample subjects are retained and the scale is ready for use. To measure the attitude of a given group of respondents, this scale is given to them and every respondent indicates whether he strongly agrees, agrees, is undecided, disagrees, or strongly disagrees with each statement. The respondent's attitude score is the sum of his ratings of all the statements. For this reason, the Likert scale is also known as the Scale of Summated Ratings.

In the Thurstone scale, the respondent checks only those items with which he agrees, whereas in the Likert scale he indicates his degree of agreement or disagreement for all the items in the scale. Further, the development of a Likert scale does not require a panel of judges. It may be noted that Likert

did not assume equal intervals between the scale points. His scale is ordinal and, therefore, can only order respondents' attitudes on a continuum; it does not indicate the magnitude of difference between respondents.

By and large, a great majority of researchers prefer the Likert technique to Thurstone's. In many current research studies we come across seven-point scales being used, which bear the appearance of the Likert scale. It must be noted that the typical Likert technique requires an item analysis to establish that all the items in the scale measure the same attitude, no matter whether the scale has five or more points.

Bogardus' Social-distance Scale

Back in 1933, E.S. Bogardus developed an attitude scale, called the social-distance scale, which became a classic instrument to measure attitudes toward ethnic groups. Different nationalities or racial groups are listed and various possible relationships with them are also given:

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Close kin-ship by marriage	As personal chums	As neighbours	As colleagues	As citizens	As visitors	Would exclude from my country
America							
Chinese							
English							
French							
Negroes							

The respondent is asked to indicate the relationships to which he is willing to admit members of each group. His attitude is measured by the closeness of the relationship he chooses.

The social-distance scale implied that a respondent who admitted a stimulus person to a particular relationship would also admit him to all other relationships which are related and are less close than the chosen relationship. Thus, if a person says that he would take a member^{of} a given group as spouse, he would also have him/her as a friend or neighbour. But, such assumption about the cumulative nature of the items in the scale would hold good only if all the items expressed one and the same aspect or dimension of the attitude in question. A person may be willing to marry a member of a particular group purely for the advantages such a marriage might entitle him to. But he may not be ready to have a member from that group as friend or neighbour.

Guttman's Scalogram

With a view to ensuring a cumulative measure of attitudes, Guttman developed a more refined Scalogram to measure unidimensional attitudes. The Scalogram consists of a set of statements related to the attitude in question and arranged in increasing order of difficulty of acceptance. It is based on the same logic as the one in the Stanford-Binet test of intelligence: if a person solves a difficult item, he should be able to solve all simpler items.

The same way, if a person agrees with a statement that expresses a higher degree of a given attitude, he must be agreeable to all other statements which express lower degrees of the same attitude. Obviously, this logic holds good only if all the items in the scale are from one and the same universe, that is, the scale measures the same aspect of a particular attitude.

To construct the scalogram, opinion statements are collected and arranged in such a way that most people would accept the first statement and, going down the list, fewer and fewer persons would accept the subsequent statements. The list of statements, thus arranged, is given to sample subjects in order to test the increasing degree of acceptance. Based on the "aspect" responses of respondents, the items are accordingly modified, arranged, and tested again on sample subjects. This process continues till a "scalable" (i.e. empirically tested for increasing degree of acceptance) set of items is developed. The final set of statements with their particular order is the scalogram. When this instrument is used for measuring a person's attitude, the person checks all the items he accepts. His score is the total number of successive or nearly successive items he has checked.

In practice, however, it has been observed that rarely respondents check items without skipping one or more items. This phenomenon confirms the difficulty involved in preparing a perfectly unidimensional scale. It may also point to the probable fact that people in real life respond not to a single dimension of reality, but to peculiar combinations of them.

The Semantic Differential

The now-classic research by Osgood and his colleagues, based on extensive factor-analytic studies across cultures, has shown that people understand, or give meaning to, words or concepts along three dominant dimensions--the evaluative (good-bad) dimension, the potency (strong-weak) dimension, and the activity (active-passive) dimension. It has also found that scores on the evaluative dimension correlate highly with other measures of attitude toward a particular social object.

The Semantic Differential, developed by Osgood, Suci and Tannenbaum, can be used to measure attitudes from the meaning (semantic = meaning or psychological significance) which people give to a word or concept that is related to an attitude object. This instrument consists of a series of bipolar adjectives such as fair-unfair, pleasant-unpleasant, good-bad, clean-dirty, valuable-worthless, etc. Each pair constitutes a continuum of seven points, the end-points being the opposites of the adjective pairs and the midpoint being the neutral position. A sample of the bipolar continua is given below:

1	2	3	4	5	6	7
Fair						Unfair
1	2	3	4	5	6	7
Valuable						Worthless
1	2	3	4	5	6	7

Suppose, by means of the Semantic Differential, you want to measure an individual's attitude towards legalised abortion. The respondent is given a set of bipolar adjectives (such as the ones sampled here) and he is asked to indicate as to where for him the given attitude object (legalised abortion) falls in each continuum. The numeral corresponding to the position checked by the subject is his score for that continuum. His overall attitude score is the sum (or the mean) of the scores on all the continua.

Limitations of Self-report

The direct questioning and the various scaling methods we have discussed depend on respondents' own account of their reactions to a psychological object. The purpose of these instruments is also often apparent to the respondent. Responses to self-report techniques are, therefore, under the conscious control and voluntary distortions of the respondent. If the respondent wants to preserve his self-image, or if he wants to impress the investigator favourably, he would respond in accordance with this purpose and not in accordance with his attitude which is being studied. In a study of attitude towards Harijans, for example, the respondent might state favourable attitudes in order to present a positive picture of himself as being educated, mature, open-minded, etc. But, in truth, he may harbour vehemently negative feelings against the group. When sensitive and controversial issues are studied, the respondent may feel apprehensive about

expressing his true attitudes toward the issue. He may be afraid of the consequences, which he perceives will result from his honest disclosure. In addition to being affected by such social desirability factors, responses to these instruments may also get distorted by the response-set of the individual. Response-set refers to the consistent tendency to agree or disagree with items, regardless of what the items are about.

These and other shortcomings of self-report techniques have long been recognized and steps to minimize them have also been suggested and followed. To make the purpose of the instrument less obvious to the respondent, a number of test items not relevant to the attitude object may be included. Giving assurances of anonymity and confidentiality can help de-inhibit the respondent in his answers. The importance of frank responses for the development of scientific knowledge, if properly pointed out, may win the cooperation of some respondents. Forced-choice formats (in which carefully edited alternative responses, either all positive or all negative, are listed and the respondent is asked to tick the one closest to his own view) are of help in breaking a person's response-set. Another way to counteract possible response-sets is wording the test items in such a way that for half the number of items (randomly spread over the whole test) agreement represents a favourable response, and for the other half an unfavourable response.

Think up additional ways of making it easier for the respondent to overcome the influences of social-desirability factors and of nullifying response-sets.

UNOBTRUSIVE MEASURES

All the methods discussed thus far depend, in one way or another, on the cooperation or at least the physical presence of subjects, in whose attitudes the investigator is interested. Such dependence or intrusion into a social setting is likely to contaminate responses. To make up for situations where the measurement technique itself is reasonably suspected to produce what is to be measured, some ingenious approaches have been suggested under the name of nonreactive or unobtrusive methods. These methods include examination of the physical traces of erosion and accretion, perusal of private and public records, etc. For example, to get a measure of the popularity of a particular exhibit in a museum, the relative wear of the flooring below the exhibits has been studied. Such measures may not, however, be congenial to studies of current attitudes. Observation of natural behaviour, which we have discussed earlier, can be used unobtrusively if care is taken that such observation is not noticed by the persons observed. Exploring further nonreactive approaches to serve measurement of attitudes will gainfully widen the restricted horizons of today.

MULTIPLE MEASURES

Typically, an investigator interested in measuring the attitude of a group towards a particular issue, selects (or develops) and uses just one instrument which he judges as suitable for the study. But, if he used more instruments to measure the same attitude of the same group with regard to the same issue, he would certainly obtain as many different measures as the number of instruments used. Which of them is the true measure? One of them true and others false? Maybe, none of them is true!

Well, measurement techniques at the time of their construction are subjected to a check for validity. That is, the instruments are tested to see if they in fact measure what they are intended to measure. On this ground, therefore, we know that results got by means of such instruments are not altogether false. But, we also know that the validity coefficients are always less than 1. This means the measures obtained in response to a particular instrument have been influenced by the main variable (the attitude being studied) as well as extraneous factors not related to the main variable. The kind of extraneous factors and the amount of their contaminating influence vary from instrument to instrument. Therefore, some social scientists argue that use of several independent instruments, in each of which different identifiable extraneous factors are operative, will give us a more reliable measure. Such a multiple-indicator approach to attitude measurement has been tried and advocated as an improvement

over the commonplace single-indicator approach. Here a word of caution is in order. It, no doubt, appeals to reason that viewing an issue from various angles leads to a better grasp of or insight into the issue. But, increasing the number of instruments does not, by itself, guarantee better results. If the instruments used happen to be defective, any increase in their number will only inflate the errors.

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