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Advance Research methods
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Q2: VALIDITY:

Validity tells us how accurately a method measures something. If a method measures what it claims to measure, and the results closely corresponds to real world value, then it can be considered valid. There are four main types of validity, but here we have to two only two of them in detail.

VALIDITY TYPES:

- ① Construct validity.
- ② Content validity.
- ③ Face validity.
- ④ Criterion validity.

Here we have to discuss two types out of four types.

① CONSTRUCT VALIDITY:

Construct validity evaluates whether a measurement tool really represent the thing we are interested in measuring, it is central to establishing the overall

validity of a method

what is a construct?

A construct refers to a concept or characteristic that can not be directly observed, but can be measured by observing other indicators that are associated with it.

Constructs can be characteristic of individuals, such as intelligence, obesity, job satisfaction or depression. They can also be broader concepts applied to organizations or social groups such as gender equality, corporate social responsibility or freedom of speech. For example.

There is no objective, observable entity called "depression" that we can measure directly, but based on existing psychological research and theory, we can measure depression based on a collection of symptoms and indicators such as low-self confidence and low energy levels.

What is construct validity? Construct validity is about ensuring that the method of measurement matches the construct you want to measure. If

You develop a questionnaire to diagnose depression, you need to know does the questionnaire really measure the construct of depression? Or is it actually measuring the respondents mood, self-esteem or some other construct.

To achieve construct validity you have to ensure that your indicators and measurement are carefully developed based on relevant existing knowledge. The questionnaire must include only relevant questions that measures known indicators of depression.

② FACE VALIDITY:

Face validity considers how suitable the content of a test seems to be on the surface. It is similar to content validity, but face validity is more informal and subjective assessment. For example:

You create a survey to measure the regularity of dietary habits. You review the survey items, which ask questions about every meal of the day and snacks eaten in between for every day of week.

on its surface, the survey

Seems like a good representation of what you want to test, so you consider it to have high face validity.

As face validity is subjective measure, it is often considered the weakest form of validity. However, it can be useful in the initial stages of developing method.

Q4: REALIBILITY :

Reliability tells us how consistently a method measure something. When you apply the same method to the same sample under the same conditions, you should get the same results. If not the method of measurement may be unreliable.

There are four main types of reliability. Each can be estimated by comparing different sets of results produced by the same method.

There are four types of reliability.

- ① Test-retest
- ② Intersates -
- ③ Parallel forms.
- ④ Internal consistency.

Here we have to explain one type of reliability.

~~with~~ we will discuss here parallel form of reliability in detail as under.

PARALLEL FORM RELIABILITY:

In parallel forms reliability you first have to create two parallel forms. One way to accomplish this is to create a large set of questions that address the same construct and then randomly divide the questions into two sets. The correlation between the two parallel forms is the estimate of reliability. One major problem with this approach is that you have to be able to generate lots of items that reflect the same construct.

This is often no easy feat. Furthermore this approach makes the assumption that the randomly divided halves are parallel. Even by chance this will some time not be the case. The parallel form approach is very similar to the split-half reliability. The major difference is that parallel forms are constructed so that the two forms can be used independent of each other and considered equivalent.

measures.

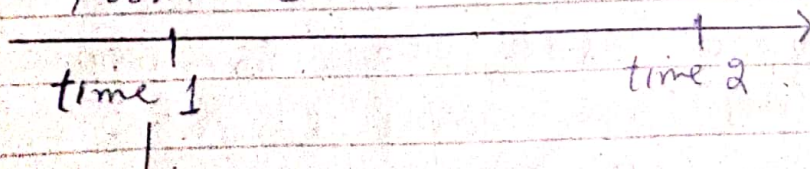
For instance, we might be concerned about a testing threat to internal reliability validity.

If we use Form A for the pretest and Form B for the posttest we minimize that problem, it would even be better if we randomly assign individuals to receive Form A or B on the pretest and then switch them on the posttest. With split half reliability we have an instrument that we wish to use a single measurement instrument and only develop randomly split halves for purpose of estimating reliability.

Form A

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Form B



It is important in educational assessment it is often necessary to create different versions of tests to ensure that students do not have access to the questions

in advance. Parallel forms reliability means that, if the same student take two different versions of a reading comprehension test, they should get similar results in both tests.

The most common way to measure parallel forms reliability is to produce a large set of questions to evaluate the same thing, then divide these randomly into two questions sets. The same group of respondents answers both sets, and you calculate the correlation between the results. High correlation between the two indicates high parallel forms reliability.

For improving parallel forms reliability ensure that all questions or test items are based on the same theory and formulated to measure the same thing.

Q3: SCALING.

Scaling is the procedure of measuring and assigning the objects to the numbers according to the specified rules. In other words the process of locating the measured objects on the continuum, a continuous sequence of numbers to which the objects are assigned is called as scaling.

Scaling may be.

- Nominal
- ordinal
- Interval

- Nominal Scale: The nominal scale of measurement only deals with non-numeric variables and there is no relative ordering of the categories when the scale is used for classification purpose then the numbers scaled on a nominal basis serve as tags for the categories.

For example in the case of a gender scale an individual can be categorized as male or female. This means the objects in each category are said to be mutually exclusive and equivalent to be the characteristic represented by

the nominal numbers.

It is to be noted that the nominal scale does not determine the amount of characteristic possessed by the object and is only used for counting purposes.

- Ordinal scale.

It is a ranked order scale in which the numbers are assigned to the objects to determine the relevant extent to which certain characteristic is possessed. It helps in identifying that whether the objects has more or less of characteristic as compared to another object. but does not tell about how much or less the characteristic is. The ordinal scale tell about the relative position of the objects and not the magnitude of differences between the objects.

The most common examples of the ordinal scale are quality rankings, occupational status, ranking of teams in tournaments, rank orders of winners etc.

In the case of an ordinal scale, the equivalent objects are assigned the same rank. Any Any series of numbers

Can be assigned to the objects provided it preserves the ordered relationship between the objects. Thus in ordinal scale, it is the order that matters and not the relative degree of differences between the objects.

Interval Scale:

is a numeric scale in which the numbers are assigned to the objects in such a way that numerically equal distances on the scale represent the equal distance between the characteristic of the objects being measured.

The most common example is a Celsius temperature scale in which the differences between the values is same.

In the case of interval scales, the distance between the descriptors is also known. Time is another most common example of an interval scale in which the values are known constant and measurable.

In the ordinal scales there is no fixed beginning which means these scales do not possess the original characteristics, For example in case of the temperature scale, there is no point

where the temperature can be zero and without a true zero point it is impossible to compute ratios.

Q1: To take admissions into three universities at Peshawar. For initiating of students, there I am confused a bit. ~~whether~~ whether it is public sector university or private sector university.

public sector universities are on merit basis and private sector universities are on self finance basis, there is a probability sampling method means that every student is a member of the population has a chance of being selected.

It is mainly used in qualitative research. there are four main types of probability sample, hence regarding this question simple random sampling method is suitable. In a simple random sampling every member of the population has an equal chance of being selected. your sampling frame should include

the whole population.

To conduct this type of sampling you can use tools like random numbers generators or other techniques that are based entirely on chance.

Here biasness and errors are occur usually. In this simple random sampling method difficulty accessing lists of the whole population.

In simple random sampling an accurate statistical measure of a large population can only be obtained when a full list of the entire population to be studied is available.

In some instances detail on population of students at a university or a group of employees at a specific company: