

MEASUREMENT

(Including Classification)



Identify Key Characteristics

What features of the system are you interested in?

For each feature:

What ideas about this feature are you trying to capture?

Can you substitute something more specific?

How well does this capture the idea?

Is the idea you wish to capture by measurement inherently multidimensional in important ways or should a single measurement do?

Do these “key characteristics” adequately capture the essence of the real system?

Decide how to measure them

Experience in the field Is there a generally accepted way of measuring this characteristic in the field?
Is this currently accepted in the field as the best way to measure this entity?
If there is an accepted method and you want to use something else:
What is your justification?
Have others tried to measure this? How did they do it?
Are there known problems with their measure?

A fall-back Can I draw on the experience of others in measuring similar characteristics?

Anticipate problems

Validity & reliability To what extent does this measurement really capture the characteristic I want to measure?
What are the practical implications of the extent to which it fails?
Will repeat measurements on the same units give very similar results?
Will different people making such measurements obtain very similar results?
Will different measuring instruments give very similar results?
If not, what impact will this have on the usefulness of any conclusions?

Analysis Will I be able to analyse data containing measurements like this?
Will this measure make the analysis unnecessarily difficult?
Will another choice confer greater statistical efficiency?

“Audience” reaction Will others be able to understand this measure?
Will the audience for the results accept that this is a sensible way to measure this?
Will I be able to understand the results of an analysis based on these measures?
Will I be able to communicate the results of an analysis based on these measures?

Practical implementation Can I implement these measures in practice on the scale needed for the study?
Is the equipment/personnel required for this measure available? affordable?
Is the measure unacceptably or unnecessarily difficult? expensive? invasive?
Are there cheaper/easier/less invasive alternatives that will serve almost as well?

People: Do these measures take account of the psychological, cultural and perceptual differences of the people to be measured?

Can I do better?