

# Delineation of population and place and validation of research

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RSM 321 (Lecture 7)

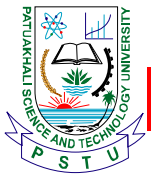
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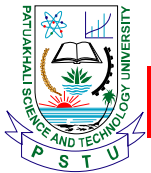
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Date: 26 AUG. 2013

# Outline

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- ❖ Delineation of population and place
- ❖ Reliability and validity of research

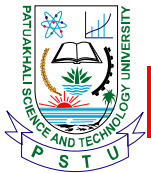


# Delineation of population and place

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Is about specifying

- What or who are your research units?
- Where will you collect your data?

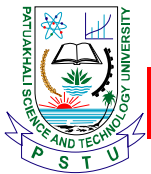


# Concepts in quantitative research



Typically for quantitative research: reality is perceived in 'units', 'variables' and 'values'

- ❑ A unit or research unit is the person, animal, object or phenomenon you want to say something about.
- ❑ A variable is a characteristic of research units in which they may differ.
- ❑ Values are the different outcomes of a variable.

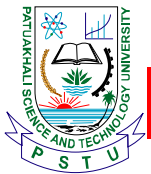


# Concepts in quantitative research



Variables can be classified according to their measurement scale. A measurement scale can be-

- Categorical (no unit of measurement)
  - Nominal
  - Ordinal
  
- Metric (unit of measurement)
  - Interval
  - Ratio

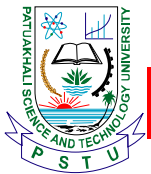


# Measurement scales of variables



Measurement scale	Characteristics			
	Distinction	Order	Distance	Natural zero
Nominal	+			
Ordinal	+	+		(rarely)
Interval	+	+	+	
Ratio	+	+	+	+

Kumar, R., p. 66-70



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# Measurement validity and reliability

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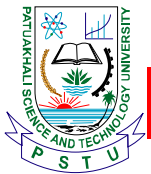
Criteria for the quality of an operational definition:

❑ **Measurement validity**: Does the variable really measure what it is supposed to measure?

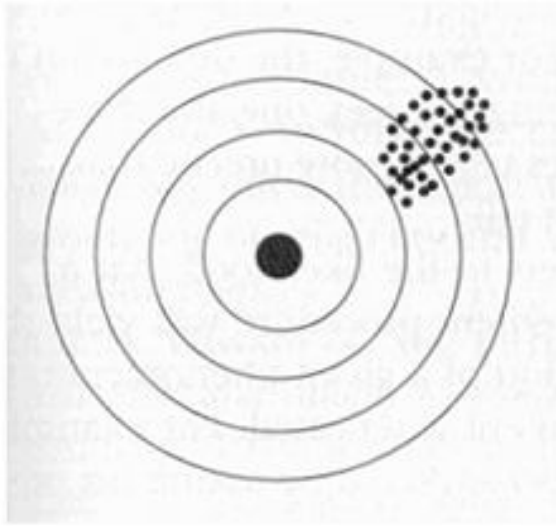
- Example: a test to measure surface water pollution should not include assessments of pollution in precipitation (rain, snow, hail, etc.).
- Example: a test to measure a person's intellectual capacities (for university admission) should not include questions about the person's social background

❑ **Reliability**: Does the measurement give the same result on subsequent occasions?

• Checking an athlete's urine specimen for doping is always done twice!

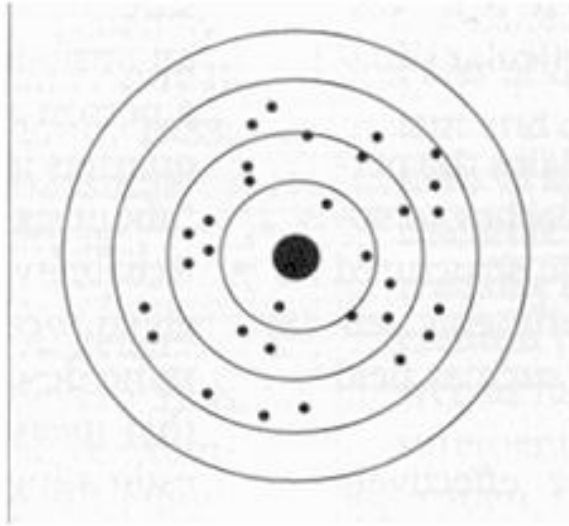


# Measurement validity and reliability



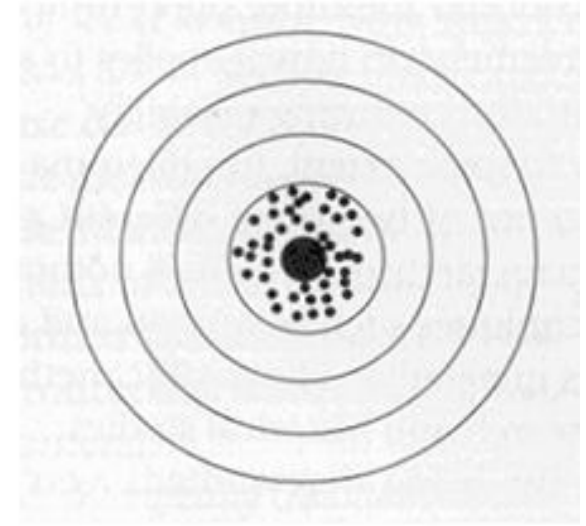
Validity poor  
(systematic error)

Reliability OK



Validity OK

Reliability poor  
(random error)



Validity OK

Reliability OK

Figure is from Babbi, E. The practice of social research. 9<sup>th</sup> edition. Stamford, CT: Wadsworth, p. 145



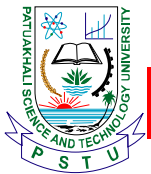
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# Types of measurement validity

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- Face and content validity
  - Face validity: At first sight there appears to be a logical link between measurement instrument (question, operationalization) and the objective
  - Content validity: Experts agree that the research instrument (operationalization) covers full range of aspects of the theoretical concept
  - Both are based on subjective logic!
- Concurrent validity
  - Comparison of the results of two instruments (one "gold standard")
- Predictive validity
  - Can the instrument predict an outcome that it theoretically should predict
- Construct (concept) validity
  - The results obtained when using the instrument comply with theoretical expectations about relationships between concepts



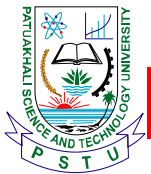
# Reliability

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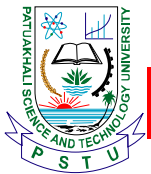
**An instrument is reliable if it gets the same results on separate occasions (all other things being equal)**

**Reliability can only be assessed adequately by repeating the measurement (test/re-test)**

Problem: People give a less extreme answer on second occasion. This effect is called regression (towards the mean)



# Thank YOU



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## Questions??