RESEARCH METHODS

Research Idea/ Question	Observation Experience Literature Review Peer Critiques Pilot Studies

Research Hypothesis	**Explanation/ Conjecture about**	**Observation**
	Model	Variables [Independent; dependent; control] Relationships [causal; directional] Covariation [direct, inverse, non-linear]

Research Design	**1**	**How to provide the explanation?**	**What type of observation (evidence)?**
		Experimental Quasi experimental Non experimental	Cross sectional design Longitudinal design -Time series (longterm trends,cyclical, seasonal, irregular, forecasting) -Panel design, cohorts

2	**How convincing is the explanation?**	**How convincing is the observation (evidence)?**
	Internal validity [Threats: History; Maturation; Statistical Regression; Selection; Experimental mortality; Testing; Instrumentation; Design contamination External validity [Threats: uniqueness; selection; setting; history; testing; reaction]	Measurement issues: Reliability (stability; equivalence; Internal consistency) Operational validity (face; content; criterion) Sensitivity Scales: nominal;ordinal; interval;ratio

3	**How to select observations?**	
		Population; sampling frame; sampling design; sample; unit; statistic; parameter
	Sampling techniques	Probability samples [random;systematic;stratified; cluster] Nonprobability [convenience; purposive; quota;snowball] Sample size: n=[p*(1-p)]*(z/a)^2 a=accuracy; z=z-score for confidence lvl