

CHEAT SHEET

LANGUAGE OF RESEARCH	
Types of Studies	Descriptive Studies: When a study is designed primarily to describe what is going on or what exists.
	Relational Studies: When a study is designed to look at the relationships between two or more variables.
	Causal Studies: When a study is designed to determine whether one or more variables (e.g., a program or treatment variable) causes or affects one or more outcome variables.
Evidence-based Practice	The use of the best available programs or treatments based on careful evaluation using critically reviewed research.
Time	Cross-sectional: A cross-sectional study is one that takes place at a single point in time. In effect, we are taking a ‘slice’ or cross-section of whatever it is we’re observing or measuring.
	Longitudinal: A longitudinal study is one that takes place over time – we have at least two (and often more) waves of measurement in a longitudinal design.
	Repeated Measures: Two or a few waves of measurement
	Time Series: Many waves of measurement over time
Relationship	Refers to the correspondence between two variables.
	Causal Relationship: Two variables are not only in correspondence, but one causes the other.
	Correlation Relationship: Two variables that perform in a synchronized matter.
	Third-variable problem: An unobserved variable that accounts for a correlation between two variables.
Patterns of Relationships	Positive Relationship: In a positive relationship, high values on one variable are associated with high values on the other and low values on one are associated with low values on the other.
	Negative Relationship: A negative relationship implies that high values on one variable are associated with low values on the other. This is also sometimes termed an inverse relationship.
Variables	A variable is any entity that can take on different values (for example <i>age</i>).
	Quantitative Variable: Data in the form of numbers.
	Qualitative Variable: A variable that is not in numerical form.
	Attribute: An attribute is a specific value of a variable.
	Independent Variable: The independent variable is what you (or nature) manipulates – a treatment or program or cause.
	Dependent Variable: The dependent variable is what is affected by the independent variable – your effects or outcomes.
	Exhaustive: Each variable should be exhaustive, it should include all possible answerable responses.
	Mutually Exclusive: In addition to being exhaustive, the attributes of a variable should be mutually exclusive, no respondent should be able to have two attributes simultaneously.
Hypotheses	A specific statement of prediction.
	Alternative Hypothesis: We call the hypothesis that you support (your prediction) the alternative hypothesis.
	Null Hypothesis: We call the hypothesis that describes the remaining possible outcomes the null hypothesis.
	One-tailed Hypothesis: If your prediction specifies a direction, and the null therefore is the no difference prediction and the prediction of the
	Two-tailed Hypothesis: When your prediction does not specify a direction, we say you have a two-tailed hypothesis.

	opposite direction, we call this a one-tailed hypothesis.	
	Hypothetical-deductive Model: A model in which two mutually exclusive hypotheses that together exhaust all possible outcomes are tested, such that if one hypothesis is accepted, the second must therefore be rejected.	
Unit of Analysis	The entity that you are analysing in your analysis (e.g. groups, individuals, social interactions, artefacts).	
	Hierarchical Modelling: The incorporation of multiple units of analysis at different levels of a hierarchy within a single analytic model.	
Research Fallacies	A fallacy is an error in reasoning, usually based on mistaken assumptions.	
	Ecological Fallacy: The ecological fallacy occurs when you make conclusions about individuals based only on analyses of group data.	Exception Fallacy: An exception fallacy is sort of the reverse of the ecological fallacy. It occurs when you reach a group conclusion on the basis of exceptional cases.

PHILOSOPHY OF RESEARCH		
Validity	The best available approximation of the truth of a given proposition, inference or conclusion.	
	Cause Construct: Your abstract idea or theory of what the cause is in a cause-effect relationship you are investigating.	Effect Construct: We have an idea of what we are ideally trying to affect and measure.
	Operationalization: The act of translating a construct into its manifestation. The result is also referred to as an operationalization (that is, you might describe your actual program as an operationalized program).	
Types of Validity	Conclusion Validity: In this study, is there a relationship between the two variables? The degree to which conclusions you reach about relationships in your data are reasonable.	
	Internal Validity: Assuming that there is a relationship in this study, is the relationship a causal one?	
	Construct Validity: Assuming that there is a causal relationship in this study, can we claim that the program reflected well our construct of the program and that our measure reflected well our idea of the construct of the measure?	
	External Validity: Assuming that there is a causal relationship in this study between the constructs of the cause and the effect, can we generalize this effect to other persons, places or times?	
Threats to Validity	Reasons your conclusion or inference might be wrong.	
Deduction	Deductive reasoning works from the more general to the more specific. Sometimes this is informally called a “top-down” approach. We might begin with thinking up a theory about our topic of interest. We then narrow that down into more specific hypotheses that we can test. We narrow down even further when we collect observations to address the hypotheses. This ultimately leads us to be able to test the hypotheses with specific data – a confirmation (or not) of our original theories.	
Induction	Inductive reasoning works the other way, moving from specific observations to broader generalizations and theories. Informally, we sometimes call this a “bottom up” approach. In inductive reasoning, we begin with specific observations and measures, begin to detect patterns and regularities, formulate some tentative hypotheses that we can explore, and finally end up developing some general conclusions or theories.	
Epistemology	Epistemology is the philosophy of knowledge or of how we come to know.	
Methodology	Methodology is focused on the specific ways – the methods – that we can use to try to understand our world better.	

Positivism	In its broadest sense, positivism is a rejection of metaphysics. It is a position that holds that the goal of knowledge is simply to describe the phenomena that we experience.
Post-Positivism	The rejection of positivism in favour of a position that one can make reasonable inferences about phenomena based upon theoretical reasoning combined with experience-based evidence.
Critical Realism	The belief that there is an external reality independent of a person's thinking (realism) but that we can never know that reality with perfect accuracy (critical).
Subjectivism	The belief that there is no external reality and that the world as you see it is solely a creation of your own mind.
Constructivism	People who hold a philosophical position that maintains that reality is a conceptual construction (they can be realists or subjectivists).

ETHICS IN RESEARCH	
Voluntary Participation	The principle of voluntary participation requires that people not be coerced into participating in research.
Informed Consent	This means that prospective research participants must be fully informed about the procedures and risks involved in research and must give their consent to participate.
Confidentiality	Almost all research guarantees the participants confidentiality – they are assured that identifying information will not be made available to anyone who is not directly involved in the study.
Anonymity	The stricter standard is the principle of anonymity which essentially means that the participant will remain anonymous throughout the study – even to the researchers themselves.
Right to Service	Good research practice often requires the use of a no-treatment control group – a group of participants who do not get the treatment or program that is being studied. But when that treatment or program may have beneficial effects, persons assigned to the no-treatment control may feel their rights to equal access to services are being curtailed.
Institutional Review Board (IRB)	Most institutions and organizations have formulated an Institutional Review Board (IRB), a panel of persons who reviews grant proposals with respect to ethical implications and decides whether additional actions need to be taken to assure the safety and rights of participants.