Introduction to communications research (summary) assignment

A priori (from the earlier) Knowledge is independent of experience 2. A posteriori (from the later) Knowledge is dependent on experience Week 2: Research, Science & Measurement The Scientific Method! Which is an organized, objective, and controlled empirical analysis of one or more variables Characteristics (OPPOSE) Public Most research is based on freely available information Should include information on sampling, methods, measurements etc. Objective RULES: by following explicit rules and procedures, researchers have less opportunity to influence results

Predictive Pinnacle: establish models and theories for future events and behaviors Self-correcting Theories are altered or rejected when errors are uncovered Empirical Science is concerned with a world that is knowable and measurable Cumulative & Systematic Literature Review: considering critical points of current knowledge, including substantive findings, as well as theoretical and methodological contributions Theory systematic explanation for the observations that relate to a phenomena Hypothesis: A specified and testable proposition about the relationship between or more variables.

Research Question: A formally stated question intended to provide indications about something. Conceptualization: The process through which we specify what we mean (through indicators) when we use particular terms in research. Indicators: empirical observations that we choose to consider as reflections and representation of concepts. Multiple conceptualizations of the same concept may exist and are parsed out into dimensions, which are specifiable aspects of a concept Internal validity: the extent to which a causal connection from a study is warranted.

Extraneous variables: things that influence the relationship between variables ender investigation. External validity: how well the results of a study can be generalized across populations, settings, and time Improve by: (k ' sample', Ix ' stuff) Random samples Heterogeneous samples Replicating studies Representative samples Independent variable vs. Dependent variable Discrete variable vs. Continuous variable Meteorology: science of measurement; theory of ratios, Measurement: the assignment of numbers to objects/events; the process of linking abstract concepts to empirical indicators.

Levels of measurement I _ Nominal Numbers assigned to discrete categories aka discrete data aka categorical rabbles 2. Ordinal Nominal + rank order 3. Interval Ordinal + equal distance between ranks 4 _ Ratio Interval + true zero point Accurate measure is vital because.. Conclusions are only as good as your data type Of measure determines statistical tools used if relationship between variables is to be tested, they must be personalized imperfect measurement acts as noise when conducting data analysis Week 3: Sampling and Survey Sampling utilities induction. Types: NON-PROBABILITY Selection NOT suggested by probability theory E. G. Convenience sampling, purposive sampling snowball sampling quota impaling PROBABILITY Selection in accordance with probability theory. Typically involving some random- selection mechanism E. G. Equal Probability of Selection Method (PEPS), simple random sampling, systematic sampling Sampling: process of selecting units of analysis (e. G. , people, tweets, social interactions) from a larger population. Population: the broader group Of interest; the theoretically specified aggregation of the units of a study.

Study population: the aggregation of units from which a sample is actually selected. Sampling frame: the list of units comprising a population – it is essential that he sampling trace include all, or very close to all, members of the theoretical population of interest. Study sample: the actual units of analysis used in data collection and data analysis by researchers, Purposive or Judgmental Sampling: units selected on the basis of the researchers' judgment about which units will be most useful. Often used in expert studies. Snowball Sampling: interviewees may recommend and add others to the sample.

Nan-probability sampling is biased and systematically favors certain outcomes. Representatives: The quality Of a sample in having the same degree Of oration as the actual population. Parameter: summary description of a given variable in a population. PROBABILITY SAMSUNG DESIGNS Simple Random Sampling Units comprising a population are assigned numbers, then a random set of numbers is generated and the units having those numbers are included in the Systematic Sampling Every kith unit is selected for inclusion in the sample. E. G. Very 25th doctor in a health professional directory. Typically the first unit is selected at random. Stratified Sampling Stratification: grouping Of units composing a population into homogeneous groups (strata) before sampling. Coupled with simple random, systematic, or cluster sampling, improves the representatives Of a sample. Multistage Cluster Sampling Natural groups (clusters) are sampled initially, with the members of each selected group being supposable afterward. Sampling error: The degree of error that is to he expected in probability sampling.

Can be calculated using three doctors: the parameter, the sample size, and the standard error, Confidence interval: the range of values within which a population parameter is estimated to lie. Confidence level: The estimated probability that a population parameter lies thin a given confidence interval (We might be confident that of students voted for Candidate X). Respondent: the person providing data for analysis by responding to a survey questionnaire. Questionnaire: Document of questions and other items designed to solicit information appropriate for data analysis.

Item: Individual prompt designed to solicit specific response from a respondent. Scales: Standardized response options or summarize groupings Of items. TYPES OF SCALES Thermonuclear Comprised of multiple statements about a particular issue, where respondents judge each statement numerically. A mean score is computed, indicating relative attitude. Liker Scale A composite measure that uses the sum of responses (often 5-point SD-? AS) on several items. Contingency questions: questions intended for a guessable Of the population: used to help minimize extraneous response.

Characteristics for (Y) Question Responses 1. Exhaustiveness (or inclusiveness) 2. Exclusiveness 3. Balancing categories i. E. When response categories have some Weigh-love characteristics, there should be the same number of response alternatives on each side. 5 Types of CNN Content Behavior (what they do) Beliefs (True/Paisa) Knowledge (Respondents understanding) Attitudes (Good/Bad) Attributes (respondent characteristics) 5 Guiding Sans Simple language Double-barreled? Leading? Ambiguous? TOO precise?

Week 4: Longitudinal Research 2-tailed hypothesis (non-directional/non-relational) Hypotheses that assert a relationship between variables, but do not assert the direction of influence the independent variable(s) will have on dependent variable(s). 1 -tailed hypothesis (directional) Hypothesis that asserts a relationship between variables, and asserts the expected direction of the influence the independent variable(s) will have on dependent variable(s). GOAL OF SCIENCE IS NOT VERIFICATION, BUT FALSIFICATION. Null hypothesis: suggests that there is no relationship among variables under study.

Reject the null: evidence suggests the null hypothesis is not as good of a description as the alternate hypothesis, and suggests that the hypothesis is probably true Fail to reject the null: there is insufficient evidence to say that the null hypothesis is not as good of a description as the alternate hypothesis. GOOD HYPOTHESIS ARE.. I _ Based on sound reasoning/theory: should follow from previous research. 2. Simple: contain one independent and one dependent variable. 3. Testable: the ability to test the relationship among variables must be clear. 4.

Useful: should provide new insights and/or help to solve some problem. 3 criteria for monotheistic causal relationships 1. Variables are correlated i. E. Describes statistical relationship between 2 2. The cause takes place before the effect (post hoc ergo proper hoc) 3. The relationship between variables is non-spurious Monotheistic explanation is probabilistic in nature and is usually incomplete. Exceptions do not disprove a demonstrated monotheistic causal relationships, Causal relationships can exist even if they do not apply to the majority of cases.

Longitudinal Studies Cross-sectional Studies Observations taken at single point in time. Explanation occurs by examining differences across the units of analysis (hopefully representative of population). Less expensive, but harder to establish cause and effect. Observations are taken more than once. Explanation occurs by examining differences across trine. More expensive, but easier to provide sense of cause and effect. Trend Studies Examines changes in a population across time. Investigator samples randomly from a population over time, with different individuals constituting each sample.

Hard to understand WHY change occurred s participants differ. Cohort Studies A type of longitudinal research where an investigator randomly samples from a population selected on the basis of specific characteristics. More detail than trend, but cause and effect still hard to show as survey change. Cohort Analysis: Any study in Which some characteristic Of one or more cohorts is measured at two or more times. Cohort: a group of people who are linked by some common characteristic Of life event. Panel Studies A longitudinal study that examines changes in individuals across time.

Panel studies provide the opportunity for more in-depth analysis. Each study collects data from the same individuals, Longitudinal panel studies are expensive but informative forms of research. One must account for attrition as each ' i, eave" of data is collected from the panel. Reduce attrition by preparation and persistence. Disadvantages of Longitudinal Studies I _ By the time the study is complete, the original measures will have become outmoded, and the overall social context will have changed.

Critics will question if the findings are relevant. 2. Longitudinal researchers have to accept postponed gratification. 3. Difficult to secure funding for longitudinal studies because ending bodies Often press for measures relevant for cross-sectional questions, rather than longitudinal analysis. 4. Because of their expense, it will always be necessary to plan for multiple uses, and this carries the danger Of not addressing any question thoroughly. 5. Attrition over time is an ever-present hazard.

Advantages of Longitudinal Studies 1. They allow an accurate time ordering of events to better address monotheistic causation. 2. They allow the study of within-individual change -? a more powerful causal analyses than cross-sectional surveys. 3. Because these are ultimate data points, they provide a better leverage on the handling tot missing data Week Experimental Design I I Goth and 20th century classical experimentation Practice of holding everything constant except the one variable under consideration.

NOW CIA Not controlling all potential variables, but rather manipulating levels Of selected independent variables in order to examine their influence on dependent variables. Control: experimental design controls background variability so that systematic effects of treatments can be observed. 1. Control by matching Some sources of variation may be eliminated by matching, which limits inerrability However matching is only possible on known and observable characteristics and perfect matching is never possible 2.

Control by randomization Converts of all irrelevant sources of possible systematic variability into unsystematic variability (random error) Like life

insurance, a precaution against disturbances that may or may not occur and that may or may not be serious if they do occur 3. Control by statistical adjustment Uses statistical relations to simulate matching and increase precision. Week 6: Experimental Design 2 Design: Total experimental plan or Structure Of experimental research. Pre-test: The initial observation of DVD among subjects (prior to IV).