

Research methods and analysis in psychology

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Research Methods & Analysis in Psychology RESEARCH METHODS & ANALYSIS IN PSYCHOLOGY A variable refers to what is being measured, being collected information on, or being formed groups for to conduct the study and give answers to questions. A variable is something whose value can be different in the research subject and differ from constants in that constants always have the same values. Since the constant remains the same for all, it is more important to define the variables since they are the things being investigated in the research. There are three main types of variables; independent variables, dependent variables, and confound variables. A failure in controlled experiments to isolate the variables could seriously compromise the experimental design's internal validity. Oversight could lead to confounding variables coming in to ruin the experiment, wasting resources and time, and damaging the reputation of the researcher. It is important to realise that a particular variable could be an IV, a DV, or a confound variable depending on what one is researching. For example, smoking can be an IV when investigating the effects of smoking on memory. The number of cigarettes smoked could be varied, across different groups, to investigate the effect on memory retention. Smoking could also be a DV when investigating the effects of stress on smoking patterns. While the stress is the IV in this case, different levels of stress cause variations on smoking patterns. In another experiment to investigate the effects of stress on alcohol abuse, smoking could sneak in as a confounding variable since it is not being investigated for in the experiment. This is because increased stress levels could lead to changes in smoking patterns. Experimental design refers to the manner in which the participants are allocated their different and varying groups or conditions during the course of an experiment. On <https://assignbuster.com/research-methods-analysis-in-psychology/>

selecting the sample, the researcher, must decide on how to record the behavior. There are normally two or more independent variables and the researcher must decide how they allocate the samples to these groups (Langdridge & Hagger-Johnson, 2009). For example, given ten participants, all of them will take part in the conditions, that is repeated conditions, or they will be split in half and take part in only one condition. The commonest way to design a psychology experiment for the effects of classical music on memory is via the division of the participants into two groups. No music is the first group, then the classical music group. However, since other types of music could aid in memory retention, we could add a group for other music. For activity two, it is vital to allocate the participants randomly to the three conditions because we need to ascertain that all of them have chances of being allocated to the different groups, thus improve accuracy (Langdridge & Hagger-Johnson, 2009). Random allocation of participants to the three groups is also important when reducing bias, as well as reduce the effects of confound variables. There are three groups used for the experiment on the whether classical music improves memory. By randomly choosing who goes into each group, i. e. those listening to classical music, those not listening, and those listening to other music, we reduce the probability of the unobserved factors leading to the observed differences between the three groups. This problem is especially prevalent when the observed factors are related to memory. When the subjects are randomly assigned to the three groups, the only difference among them averagely is whether they listen to classical music. The three groups are as similar as possible since the only distinguishing factor is chance. Therefore, differences among the three groups can be attributed to listening to classical music, not listening to

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classical music or listening to other music. Randomized assignment in research is a vital tool for coming up with valid inferences regarding cause and effect (Langdrige & Hagger-Johnson, 2009). Using randomized experimental design allows the researcher a degree of certainty that the findings reflect the effects of classical music on memory and not one or more underlying variables, or confound variables. In this experiment, we are controlling for other factors that could lead to improved memory apart from classical music. The first group is the experimental group, and they listen to classical music. The second group is the control group and its participants do not listen to classical music. The experiment could find that those who listen to classical music score higher on the memory test, which could be an indicator that it does help. However, in order to be more certain that the classical music is indeed to thank, a third group is formed as a variation of the control group, where the participants listen to music but not classical music. The extra condition should point out the presence, or lack thereof, of other factors prevalent in the participants that could improve memory ratings, like smoking (Langdrige & Hagger-Johnson, 2009). References Langdrige, Darren. & Hagger-Johnson, Gareth. (2009). Introduction to research methods and data analysis in psychology. New York : Pearson Prentice Hall.