Experimental Research Methods

"Validity in Experimental Psychology Research"

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ABSTRAK

The experimental method is one of the main approaches in psychological research that allows for causal inference. In experiments, researchers examine human behavior from various aspects, such as cognitive, personality, and motivation. The validity of experimental research is a measure of the extent to which the research is precise and reliable in measuring what it is intended to measure. Validity is concerned with the correctness of the inference that results from the research. This article discusses validity in psychology experimental research, including the definition, function, and types of validity. Internal validity indicates the extent to which the cause-and-effect relationship observed in the experiment corresponds to the treatment given, while external validity evaluates the extent to which the results of the study can be generalized to a wider population. Factors such as sample peculiarities and test reactivity affect external validity. Understanding validity in experimental research is important to ensure the accuracy and reliability of the research results as well as their generalizability to different contexts and populations.

Keyword : Experimental Research Methods, Validity Testing, Experimental Psychology.

INTRODUCTION

One of the main methods in psychological research is the experimental method. The experimental method, which is a systematic and controlled quantitative approach, provides the foundation for in-depth studies of psychological phenomena. Using the experimental approach, researchers can test causal hypotheses involving cause and effect, rather than simply charting correlations between observed variables. Experimental research in psychology focuses on examining human behavior from various dimensions, including cognitive, personality, motivation, and other psychological aspects.

In conducting experimental research, a researcher is required to have a deep understanding of the validity of the research he conducts. Validity is a crucial factor that determines how precise and reliable the data obtained from the research is. Validity refers to the extent to which the measurement instrument or method used is able to measure the desired phenomenon precisely and accurately. The higher the validity and reliability of an instrument, the stronger the inferential basis for concluding findings that match the reality of the observed phenomenon.

In other words, validity ensures that what the researcher is measuring actually reflects what is actually happening in the research context.

With a solid understanding of validity, researchers can ensure that the conclusions resulting from their research are true to life and can be relied upon to inform theory and practice in the field of psychology. Therefore, paying attention to validity is an aspect that cannot be ignored in the design and conduct of experimental research.

DISCUSSION

A. Defintion of Validity

According to Cook & Campbell in (Hastjarjo, 2011), experimental validity indicates the estimation of the truthfulness of an inference. This is because once something is declared valid, it will lead to an assessment of the extent to which relevant evidence can support the truth or error of the inference about that thing (Hastjarjo, 2011).

According to Shadish, et al in (Hastjarjo, 2011) validity is an estimate of the truth of an inference because in psychological experiments absolute truth does not exist, so the use of the terms "valid" or "true" and "invalid" or "false" is always understood by using the additional word "tentative" or "approximately".

Shadish, et al in (Hastjarjo, 2011) emphasized that validity is a property of inference, not a property of experimental design or method because the same design may have more valid or less valid inference depending on the situation. Validity is closely related to causal truth.

From some of the above opinions, it can be concluded that validity in experimental research is an estimate of the accuracy or truth in an experimental study as well as a hypothesis or estimate that occurs in the object.

B. Types of Validity in Experimental Research

Experimental research allows researchers as early as possible to control independent variables and other variables, so that the level of certainty of answers to research results is much more controlled. The cause and effect relationship can be traced clearly in terms of internal validity and external validity.

According to Azwar (2017) in experimental procedures consists of two kinds of validity, namely external validity and internal validity, in full explanation is as follows:

a. Internal Validity

An experimental result can be said to have high internal validity if the changes that occur in the dependent variable observed are really caused only by the treatment or intervention given in the experiment, not due to chance factors or caused by other irrelevant factors. Internal validity is an absolute feature that every experimental research should strive for and should achieve. Without high internal validity, the hypothesized causal relationship cannot be supported. Achieving high internal validity requires an experimental design that allows the control of various things in such a way that the influence of the independent variable whose effect is to be measured on the dependent variable is not contaminated by other unwanted factors.

The following are factors that hinder internal validity:

a) Events that occur and take place in the environment during the experiment and are related to the treatment.

b) Maturity. Maturity is a process that takes place naturally in accordance with the pattern of growth and development and a person's developmental tasks, which conditions will affect the development of a person's respondents.

c) Instrumentation. Instruments that lack validity and reliability often lead to inaccurate results.

d) Testing. Changes occur as a result of the effect of the first test on subsequent tests.Statistical regression. In the conduct of research, groups of respondents are often selected on the basis of extreme scores (high and low) and when this procedure is carried out, statistical regression often occurs and causes errors in the treatment effect.

e) *Experimental Mortality. Literally speaking, experimental mortality refers to the*

death, disappearance, or displacement of respondents during the experimental time. This occurs due to the relatively long research time and socio-cultural conditions that cause respondents to move elsewhere.

f) Selection. How to select respondents in determining groups also determines the results of the study. If there is bias in determining the respondents of the experimental group and the control group, then this action will cause an imbalance in the control group and the experimental group.

g) Interaction between selection and maturity; between selection and events that take place during the experiment or a combination of them.

b. External Validity

Experimental results are said to have high external validity if the conclusions about the treatment effect obtained can be generalized to other populations, to other treatment variables, and other measurement variables.

External validity is an inductive conclusion that can never be fulfilled absolutely.

Here are the things that affect external validity:

i. Sample representativeness. In order for the research to get not only the results of the research itself, but also so that the research can be generalized to a wider population. So that not only internal validity is used, but also the sample used should be representative (representative) of the population by using a random sample. (random)

ii. Reactive testing, which can be caused by several things:

1. Reactive and interactive effects of testing. Administering a pretest at the beginning of the study may increase or decrease the sensitivity or responsiveness of the experimental subjects (respondents).

2. Interactive effects of improper selection. If the sample taken

does not represent a broad population, it is very difficult to generalize the findings to the population due to selection bias.

3. Reactive effects of experimental settings. Inappropriate arrangements in terms of observation or in using tools in testing will limit the generalizability of the research results to subjects not included in the experiment, as these weaknesses have a strong influence on the results.

c. Function and Usefulness of Validity

Internal validity refers to the level of validity, accuracy, or accuracy of research conclusions as a result of treatment (Yusuf, 2015). Fraenkel and Wallen in (Yusuf, 2015) state that internal validity is: "The degree to which observed differences on the dependent variable are directly related to the independent variable, not to some others (uncontrolled variables)."

Validitas eksternal mengacu kepada kadar ketepatan kepada siapa hasil penelitian dapat digeneralisasikan; atau diaplikasikan; baik kepada kelompok maupun lingkungan di luar setting penelitian. Campbell dan Stanley dalam (Yusuf, 2015) menyatakan*: Extermal validity asks the question of generalizability*. *To what populations, settings, treatment variable, and mesurement variable can this effect be generalized*.

CONCLUSIONS

Validity consists of two types, namely (a) internal validity, which is an absolute characteristic that every experimental research must strive for and must achieve. Factors that hinder internal validity; Event, maturity, instrumentation, testing, statistical regression, experimental mortality, selection, interaction between selection and maturity. And (b) external, which is an inductive conclusion that can never be fulfilled absolutely. The following things affect external validity; sample representativeness & reactive testing which can be caused by; reactive and interactive effects of testing, interactive effects of improper selection & reactive effects of experimental settings.

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