

Features of Quantitative Research

According to Coolican (1990), quantification can be defined as the process of measuring on some numerical basis.

Quantitative research tends to be numerical or categorical. This type of research aims to make predictions, establish facts and test hypothesis that have already been stated, that is, aims to find evidence which supports or does not support on existing hypothesis. Quantitative research normally involves large numbers of respondents, typically a hundred or more, and obtains results that are representative of the total population. Therefore, it is a form of research method that is considerably appropriate for generalization of descriptions.

There are several main types of approaches to quantitative research (shown as following) and these techniques are widely used in many substantive fields to study and explain individual differences and patterns of relationships among variables.

- *Correlational research* aims to find out whether there is a relationship between two or more variables (Gay & Airasian, 1999). In any case, if a relationship is found, then its degree is identified by a number between -1.00 and $+1.00$ and this number is known as a correlation coefficient. For instance, when one variable increases and the other also increases, then the correlation in this case would be positive. On the other hand, if a correlation is negative, that means, when one variable decreases, the other also decreases.
- *Survey research* targets to answer questions about current status of the subject of

study. This usually involves studying attitudes, practices or concerns of certain group of people. (Gay & Airasion, 1999).

- *Causal-comparative research* aims to find a cause-effect relationship between two or more different programs, methods, or groups. An example of this would be to find out if children watch violence programs on TV causes aggressive behaviours.

The main advantage of quantitative research is the results are statistically reliable and the results are able to be projected to the population. It has high reliability as different researchers, using the same measurement system are likely to come up at the same measurement for same subjects This method is appropriate for measuring both attitudes and behaviours and therefore quantitative research method is one of the traditional research method that many psychologists used in their approach to research design.

Differences in features in another basic type of research approach

When talking about the features of quantitative research, people often mention another basic research method – qualitative research as a comparison. In qualitative research, it involves emphasising meanings, experiences, descriptions and etc (Coolican, 1990). And it uses mainly non-numerical data such as observations and interviews, that is, it does not use numbers in its analysis. Data is usually in the form of words that have been recorded to represent observations. Also in contrast to quantitative research, qualitative research often requires small number of respondent.

The reason of why mentioned the features of qualitative research method is because this would add up to the disadvantages of quantitative research method to explain why I think many psychologist has become dissatisfied with the more traditional quantitative approach to research design, despite it is the most common type of approach in many psychological research.

Disadvantages of quantitative research

As one of the reasons for using quantitative research is to find out whether a group of people shares certain characteristic in common, the disadvantage of this method is that the resulting theory usually unable to take account of the unique characteristics of individual cases.

Another characteristic of results which generated from quantitative research is they tend to be very simple – in comparison to qualitative research, which is generally rich in information with detailed descriptions such as interview transcripts, personal comments and audio recordings, the results obtained from quantitative research are generally reduced to a few numerical statistics and summarised in a few short statements. In this sense, depth of understanding in qualitative research is therefore considerably superficial.

According to McCullough (1995), “the primary disadvantages of quantitative research is that issues are only measurement if they are known prior to the beginning of the survey (and therefore, have been incorporated into the questionnaire) and “quantitative research requires the advance formulation of specific hypothesis” by Huysamen (1997). With this characteristic in place, quantitative research is therefore

only appropriate when the issues to be tested are known. This research method would not be appropriate to use in situations such as an initial leaning phase or as a method to explore new ideas.

One disadvantage of quantitative research is that its study can be unreliable since this type of study is relied on statistical method of analyzing data, unless use large enough samples of respondents, otherwise it might not be able to provide accurate or meaningful results.

Some psychologists criticized that quantitative research usually takes place in artificial settings. And the way researchers create an artificial settings such as in laboratory in quantitative research is due to the attempt to control the variables in their studies. That is the reason of why some psychologists doubted whether the results obtained in these unnatural settings can apply in the real world. Thus, again, results from this research method can possibly be unreliable.

Summary

Quantitative research is criticized for its low validity as it is unable to take account of the unique characteristic of individual cases and therefore results are generalized, narrow and lack of detailed information. Also, as the settings of this type of research are often artificial, information or data obtained from these type of studies are likely unrealistic. For these reasons, many psychologist has become dissatisfied with this traditional research approach in research design.

Reference

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