

Identifying Variables in Qualitative and Quantitative Research Papers

Task 1

Paper Title: "Factors influencing the high performance of IT staff"

Source/Link: <https://pmc.ncbi.nlm.nih.gov/articles/PMC12215687/#Sec2>

Type of Research: Qualitative analysis, specifically an exploratory multi-case study

Variables Identified: Since this is a qualitative study, it does not follow the usual quantitative setup with dependent and independent variables. However, based on the goal of the research, 'high performance' is the result being studied, so it can be seen as the dependent variable. The independent variables are the five qualitative factors that affect this performance. These include:

- **Management/leadership**
- **Work environment**
- **Affective/emotional**
- **Work cognition**
- **Personality traits**

How were these variables measured or analyzed:

The variables were studied using a qualitative approach with an exploratory multi-case study. Data came from interviews with IT professionals. The interviews were transcribed, analyzed, and coded using software to find evidence for each factor. Two researchers coded the data separately and then agreed on the final results. The study also shows sample sentences from participants to explain the factors found.

Task 2

Paper Title: "Towards understanding the relation between citations and research quality in software engineering studies"

Source/Link: <https://pmc.ncbi.nlm.nih.gov/articles/PMC6267265/#Abs1>

Type of Research: Qualitative study design, aims to investigate the relationship between research quality and citation count.

Variables Identified: This study identifies both independent and a dependent variable:

- **Independent Variables: Rigor and Relevance.**
- **Dependent Variable: Scientific impact, which is represented by the normalized citation count.**

How were these variables measured or analyzed:

This study used data from 718 primary studies. The independent variables, rigor and relevance, were probably scored using a rubric, although the details were not given. The dependent variable, normalized citation count, was calculated for each study. The relationships between these variables were then analyzed using statistical methods such as cluster analysis, conditional inference trees, and correlation analysis.

Comparative Reflection

The two studies handle variables differently because they use different research approaches. In the first article, the variables are qualitative and focus on ideas like leadership and emotional factors. They are not measured with numbers but studied closely through interviews. The researchers organized and analyzed the information from the interviews to find patterns and understand what factors exist and how they affect performance from the participants' point of view.

The second article uses a quantitative approach where all variables are numbers and their relationships are studied with statistics. The variables are rigor, relevance, and citation count, which can all be measured. Rigor and relevance are probably scored using a set of criteria, while citation count is just a number. The study does more than list the variables it tests a hypothesis to see how they are related using computer-based analysis.

In short, the first study focuses on finding and describing factors, while the second study measures them and looks for statistical relationships. This shows the main difference between qualitative and quantitative research.