Abstracts usually contain four kinds of information:

- purpose or rationale of study (why they did it)
- methodology (how they did it)
- results (what they found)
- conclusion (what it means)

PAST PAPER SOLVED

Read the abstract below and answer the questions that follow: [8 marks]

Abstract A: The trustworthiness of research results is a growing concern in many empirical disciplines. The goals of this paper are to assess how much the trustworthiness of results reported in software engineering experiments is affected by researcher and publication bias, given typical statistical power and significance levels, and to suggest improved research practices. First, we conducted a small-scale survey to document the presence of researcher and publication biases in software engineering experiments. Then, we built a model that estimates the proportion of correct results for different levels of researcher and publication bias. A review of 150 randomly selected software engineering experiments published in the period 2002–2013 was conducted to provide input to the model. The survey indicates that researcher and publication bias is quite common. This finding is supported by the observation that the actual proportion of statistically significant results reported in the reviewed papers was about twice as high as the one expected assuming no researcher and publication bias. Our models suggest a high proportion of incorrect results even with quite conservative assumptions. Research practices must improve to increase the trustworthiness of software engineering experiments. A key to this improvement is to avoid conducting studies with unsatisfactory low statistical power.

1. What is the purpose of the study?
2. How data was collected for the study?
3. Identify the recommendations provided in the study?
4. What are the findings of the study?

Answers:

1. The purpose of the study is to assess the impact of researcher and publication bias on the trustworthiness of results reported in software engineering experiments and to suggest improved research practices.
2. Data was collected through a small-scale survey to document the presence of researcher and publication biases in software engineering experiments, and a review of 150 randomly selected software engineering experiments published in the period 2002-2013 to provide input to the model.
3. The study recommends improving research practices to increase the trustworthiness of software engineering experiments. The key to this improvement is to avoid conducting studies with unsatisfactory low statistical power.
4. The study found that researcher and publication bias is quite common in software engineering experiments, as indicated by the actual proportion of statistically significant

results reported in the reviewed papers being about twice as high as the one expected assuming no researcher and publication bias. The models developed in the study suggest a high proportion of incorrect results even with conservative assumptions.