Discussion:

Collecting and reporting data in software engineering studies that involve human subjects

Research Seminar: Advanced Software Engineering Topics

2016

inspired by a joint work of: Moritz Beller, Alexey Zagalsky, Georgios Gousios, Andy Zaidman, Margaret-Anne Storey, Arie van Deursen

Mary Shaw's evaluation of all submitted and accepted papers at the ICSE 2002 revealed that **only 2%** of the accepted papers had an evaluation.

In a broader analysis of all published papers at premier Software Engineering venues from 1993 to 2002, Dag Sjberg *et al.* confirmed this result, reporting that **only 1.9%** of the analysed papers contained an empirical evaluation.

A 2015 study by Siegmund *et al.* showed that in the three major Software Engineering venues ICSE, ESEC/FSE and EMSE from 2011 to 2013, the **vast majority** of accepted papers had an empirical evaluation (94%)

What challenges did you experience when **collecting data/recruiting** studies involving human subjects?

What is your **process** when designing the data collection phase?

What issues did you see in **reporting** studies involving human subjects?

From the paper that you've examined, how was it reported?

Research *methodology* and *method*

Number of *participants*

Type of participants (students, expert developers, etc...)

Recruitment method and *response rate*

Were there any other details? Are the important?

“We present the results of an exploratory study in three companies and an online survey with 394 participants.

Thus, we collected 47 sketches drawn by 13 different developers of companies A and B and interviewed them about certain properties of their sketches. We prepared two questionnaires, one for each developer and one for each collected sketch.

As we could not interview employees of company A, we recruited two developers from company C to be interviewed.”

“Our goal was to involve developers who do and do not use Twitter. In previous work [13], we were able to recruit such participants from GitHub. GitHub is also a popular code hosting site with a large user base that could provide a relatively diverse pool of potential participants.

For these reasons, we used GitHub in our recruiting efforts. First, we sent an online survey with open questions to 1,160 GitHub users. In this exploratory survey, we asked about their reasons for reading and posting on Twitter, benefits and challenges of Twitter use, as well as the process for discovering and following users. We included a section targeting non-adopters, asking them about their reasons for not using the service. The questions in the exploratory survey were open-ended, and we received 271 responses.”

Can we come up with some sort of **guidelines** or **recommendations**?

Recommended reading

Preliminary guidelines for empirical research in software engineering
B.A. Kitchenham, S.L. Pfleeger, L.M. Pickard, P.W. Jones, D.C. Hoaglin, K. El Emam, J. Rosenberg, Software Engineering, IEEE Transactions on 28(8), 721 (2002)

Guidelines for conducting and reporting case study research in software engineering
P. Runeson, M. Höst, Empirical software engineering 14(2), 131 (2009)

Writing good software engineering research papers: minitutorial
M. Shaw, in Proceedings of the 25th international conference on software engineering
(IEEE Computer Society, 2003), pp. 726–736