

Mapping and analysis of Open Source Software (OSS) usability for sustainable OSS product

ABSTRACT

The increase in the number of open source software (OSS) users have drawn attention to improving usability. Usability is a clear concept that encompassing both task and user characteristics as well as functionality. Usability is an essential factor that affects user acceptance and OSS sustainability, which is considered as the key to the success of the OSS. To some extent, usability is one concern of the larger issue of system acceptability and sustainability. Therefore, usability is an important factor that needs to be considered since the software that is not usable is not going to be sustainable. The objective of this paper is to review researchers' efforts to improve, investigate, and evaluate the usability factor that may affect the OSS acceptability and sustainability and map the research scenery from the articles into a comprehensible structured taxonomy, which would help the researchers to identify different research gaps of this field. A survey of the usability in OSS conducted and 6033 studies identified by a search in four scholarly databases using a query that includes the keywords (usability or learnability or efficiency or satisfaction) and (open source software or OSS). A total of 46 studies are selected. By manually searching in ACM, Springer, and Google Scholar five other studies identified, and thus a total of 51 studies were the final set that includes in this paper. Based on research topics, a taxonomy created and divided into four principal categories which improve OSS usability, analyze OSS usability, evaluate OSS usability, and select and adopt OSS. A comprehensive overview and synthesis of these categories are presented as well. This paper contributes to identifying the possible opportunities and gaps for enabling the participation of interested researchers in this research area. And give possibilities for extending the use of usability research and practices to create more sustainable software. Also, helps in selecting suitable OSS among the alternatives.

Keyword: Usability; Learnability; Efficiency; Satisfaction; Open source software; Sustainability