

Abstract No: SO-07

Grey Literature usage in Software Engineering undergraduate research

P. H. D. Diyasena^{1*}, W. A. P. S. Wickramarachchi¹ and S. N. M. N. D. K. Arambepola¹

¹Software Engineering Teaching Unit, Faculty of Science, University of Kelaniya, Sri Lanka
deshanjalidiyasena@gmail.com*

The Grey Literature (GL) is a common and popular information source among the Software Engineering (SE) research community. The exponential growth of SE practitioners has led to a rapid increase in GL availability. However, the contribution of GL to SE research is still a little-known fact. In this study, we analysed how SE undergraduates of a Sri Lankan state university use GL in their final year research project. For example, awareness of GL, purposes of using GL, types of GL that they use, and pros and cons related to GL were investigated in this study. An online questionnaire was distributed among SE undergraduates who had recently completed their final year research. Students were asked to complete 12 close-ended questions about GL usage. For further analysis, a convenience sample of 70 responses from final-year SE undergraduates was selected. A quantitative data analysis approach was followed to analyse the responses. To our knowledge, this is the first study considering undergraduate GL usage in the SE community. As per the responses collected, they have conducted various types of research, e.g., original research (52.9%) and systematic literature reviews (14.3%). However, most of them have utilized GL while unaware of the term “Grey Literature.” Since this study specifically focuses on the students who have accessed GL, 45 responses were taken for further analysis. Among those, 44.3% of students cited more than five GL sources as references. According to the results, we identified that web articles were the most used type of GL (82.2%) and the least used GL type was News articles or magazines (28.8%). Apart from that, popular platforms such as Medium Blogs and YouTube have been used as the main sources of GL. Among the respondents, GL was mainly used to find related studies (73.3%) and to create the research problem (62.2%). Further, we identified ease to access (86.7%) as a significant benefit and unreliability (60%) as a major challenge when using GL. These results indicate that, GL plays an important role in acquiring knowledge about current SE challenges and technologies for SE researchers due to the rapid change in technology and the lack of updated publications. The findings of our study provide better insights into the usage and significance of GL in undergraduate SE research while contributing to the SE research community.

Keywords: Data mining, Evidence-based software engineering, Grey literature, Software engineering research, Survey