AppTest: Assessing the Usability and Performance Efficiency of BOSESKO for Digital Participation

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Abstract—Software systems need a proper evaluation to avoid errors and problems. This research aims to showcase an evaluation method to test an integrated mobile and web application for gathering valuable feedback from Filipinos nationwide. This application, named "BOSESKO: Building on Opinions and Sentiments for Sustainability and Knowledge Opportunities" – a multilingual, inclusive, deliberative, synoptic, digital participatory toolkit, is intended to act as a central hub to solicit insights on both existing and upcoming policies in the Philippines. AppTest pertains to a comprehensive evaluation of the BosesKo software system. This research hopes to identify the strengths and weaknesses of BOSESKO and improve it, which would serve as a tool to potentially enhance civic engagement in the country by actively involving the general public in policy-making. This study employed a mixed-method approach that seamlessly integrates manual and automated testing techniques. The assessment of BOSESKO is aligned with the ISO 25010 standard, focusing on evaluating usability and performance efficiency. To delve into the usability of BOSESKO, a usability survey was administered to gauge user perspectives on (a) learnability, (b) appropriateness, (c) recognizability, (d) operability, (e) error protection, (f) user interface aesthetics, and (g) accessibility. Additionally, in-depth performance evaluations were conducted using various automated tools, including WebPageTest, PageSpeed Insight, Google Lighthouse, Yellow Lab, and Pingdom. This combination of manual and computerized methodologies provided a robust and thorough analysis of BOSESKO and, in turn, offered valuable insights into the functionality and efficiency of the developed system. As of the time of this writing, about 10,500 users across the Philippines have already engaged with BOSESKO. Initial assessment results of BOSESKO revealed an acceptable user rating with an average weighted mean of 4.36 in terms of usability. Meanwhile, the applied automated tests yielded positive performance scores of 89% and 76% for the web and mobile platforms. However, the evaluation results suggest image and search engine optimization. Overall, these results underscore the robust foundation established by BOSESKO, indicating its considerable potential and strong starting point.

Keyword—usability test, efficiency test, automated testing, ISO25010, software performance

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