

Literature Review on Usability of Mobile Application

W.P.G.M. Weerasinghe¹, D.N. Wickramaarachchi²

Over the past few decades, mobile device penetration showed a significant growth. With the dawn of digitalization, the need to rely on mobile devices is becoming an essential component of modern-day community to improve their quality of life. This growth has motivated the development of millions of mobile software applications. In the mobile app market, there are numerous mobile applications featuring same functionalities. Therefore, to retain healthy in the mobile application market, it is essential to design mobile applications with enhanced usability and user experience. Catering specific user requirements and designing user friendly mobile applications while overcoming limitations of mobile devices are major challenges of mobile application development. There are only limited standards for mobile User Interface (UI) design patterns. Most of these designs are based on the desktop paradigms such as WIMP (Windows, Icons, Menus, Pointer) interface style. But mobile interface paradigm is based around widgets, touch, physical motion, and keyboards (physical and virtual). There are limited studies available in the literature which analyze mobile UI design patterns. Nonetheless, when it comes to UI components such as buttons and icons, considerable work is available. Moreover, recently researchers have begun to focus on software engineering issues for mobile apps. Some of the key findings indicates that further research are required for cross-platform development, identification of issues related to code reuse in mobile apps and testing mobile apps etc. Even though, a number of recent studies focused on the security of mobile apps, there are limited studies available focusing on aligning security and mobile usability. Since the screen sizes of mobile devices are limited, information has to be effectively organized in order to increase the user experience in navigating, searching and browsing. Moreover, our literature review indicates that limited attention has been given for future workforce (such as generation Z) who are born with the technology and how their user experience may differ in use of mobile applications. Therefore, studying generation Z characteristics and identifying usability challenges in mobile app development is an area which need further research. Information loading issues in different network types, how to deal with frequent interruption of network connections in mobile environment for the apps which need continuous connection to provide required information are some areas which need to be improved. For ease of the development and with the time constrains, developers use a single code base to develop mobile applications for different devices (smartphone, tablets etc.) and for different versions (such as android versions Lollipop, Marshmallow, Nougat etc.) Therefore, developers cannot gain the full use of different features and functionalities of each devices and versions. Therefore, studying the mobile platform and applying findings to the mobile application industry is also another research area. To sum up, our literature review identifies knowledge contributed in related to different usability aspects in mobile application. Further, collected information were analyzed and knowledge gaps were identified. These findings of the literature review can be used by researchers to continue their work to improve usability of mobile applications.

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¹ Department of Industrial Management, University of Kelaniya, Dalugama, Sri Lanka

² Department of Industrial Management, University of Kelaniya, Dalugama, Sri Lanka