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MINING APP REVIEWS FOR SECURITY AND PRIVACY RESEARCH

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ABSTRACT

Information systems security and privacy researchers are interested in drivers of security and privacy application adoption. We contend that an overlooked opportunity exists to examine user-generated reviews of mobile applications to better understand users’ adoption of security- and privacy-related applications. As we discuss, mobile app reviews are rich with opinions, attitudes, expectations, beliefs, and intentions.

Keywords

Security, privacy, mobile app (mApp) reviews, text-mining

EXTENDED ABSTRACT

Information systems (IS) researchers are interested in individuals’ adoptions of security and privacy related technologies and applications. For example, prior research has examined the use of anti-spyware applications (Johnston & Warkentin 2010), as well as password managers and two-factor authentication (Mattson et al. 2022). The implication is that these technologies are beneficial and consistent with an enhanced information security and privacy posture for the individuals. That said, questions remain about these applications and their adoption, especially in mobile environments. This is important because today individuals rely on mobile devices (e.g., smartphones and tablets) more than any other computing platform.

We believe a potentially complementary source of information about security and privacy application adoption exists within mobile app (mApp) reviews. Although these reviews lack quantitative controls, they can be a rich source of information for researchers to mine for users’ opinions, attitudes, expectations, beliefs, and intentions. For example, on January 14, 2023, three of the top ten productivity apps in the iOS store (by downloads) were security and/or privacy related apps. 1

Searching on the google play store for privacy applications shows a variety of applications designed to help users preserve their privacy in mobile environments. These apps include encrypted messengers, VPNs, web browsers, and locking photo storage apps. These privacy-related apps have millions of user-generated reviews. 2

Although the average review might not be insightful beyond its star rating and sentiment, with so many reviews available, a large number will provide additional information. For example, consider the following review for a password manager app:

“Great app. Like most other people I now have too many passwords to maintain at work, let alone private ones as well. … this syncs across all my devices … Also love the password generator, replacing all my passwords with a generated one. Much more secure, if one account gets hacked, only that one not all. …” [emphasis added].

Based on reviews like this, future research could investigate the role of password volume in password manager app adoption. The number of devices an individual uses might also play a role. Finally, the review also points to fear (hacking) as a motivator.

As described, this work is early-stage, exploratory research. We believe that future research should consider text-mining tools such as Latent Dirichlet Allocation (LDA), one of the most popular topic modelling algorithms (Palese & Piccoli 2020), to assist in the analysis of mApp reviews. We believe topic extraction can complement traditional research methods.

REFERENCES


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