



# Understanding privacy knowledge and skill in mobile communication



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## ABSTRACT

This study aims to examine mobile-based privacy literacy among young adults across characteristics of mobile use, basic mobile familiarity, and socio-demographic factors. We investigate privacy knowledge and skill among the African American young adults, adopting a mixed design of quantitative and qualitative inquiries. The results showed that less than half of the interviewed users possessed (1) basic information and locational privacy knowledge, (2) privacy skills, and (3) awareness of risk associated with commercial mobile environments. Interestingly, a high level of mobile familiarity did not translate into knowledge as the frequent daily mobile use was not associated with privacy knowledge and skill. In-depth interviews also indicated that functional confusion and misguided confidence confounded the low mobile knowledge and skills. These findings have implications for consumer policy and hint on the need that the FTC in its broader digital literacy initiative incorporates the information need of young adult users among underserved communities.

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## 1. Introduction

Mobile users face complicated privacy decisions. Revealing personal information early in their adult lives without proper knowledge of privacy issues can bring costly consequences. In fact, young users from various communities find themselves in a demanding information environment, with their mobile devices constantly connected to every aspect of their daily lives (Castells, Fernandez-Ardevol, Qiu, & Sey, 2007). Further, the ubiquitous mobile saturation can hinder abilities to manage digital traces of personal identities effectively.

Our study examines mobile-based information and locational privacy (1) knowledge and (2) skill among young adult mobile users, as well as various related social and technological determinants. To empower the young mobile users, it is critical to investigate the various socio-technological factors that may contribute to or alleviate the acquisition of mobile-based privacy skill, as understanding those determinants can help policymakers design effective interventions targeted at the young populations from different communities. Theoretically, we aim to expand the notion

of digital literacy (Park, 2013a) in order to understand personal data protection skill and knowledge in the context of the mobile phone use. Since the mobile access rate has already outpaced Internet penetration, it is essential to recognize how differentiated patterns of mobile privacy literacy contribute to deepening social inequalities.

Recent efforts in privacy studies have been made to examine levels of user knowledge and behavior and a few advanced privacy-surveillance studies made systematic efforts to investigate people's perception and management of public-private boundaries as well as surveillance of mobile-based social network sites (Park, 2013a; Park, Campbell, & Kwak, 2012). Yet, in most mobile studies, surprisingly little has been done to empirically assess personal information skill, while it is critical to understand how users are informed and ready to response to increasing levels of private data collection that mobile devices enable (Campbell & Park, 2008). In this vein, our study addresses three key research questions:

- RQ1. How well equipped are young adults in making privacy decisions in mobile use?
- RQ2. What are the determinants of mobile-based privacy knowledge and skill?
- RQ3. How can policymakers devise effective interventions aimed at the mobile users?

We have a particular interest in the African-American community in which the mobile access is diffused more widely than any

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other digital devices (Pew Internet, 2010). This is to understand the mobile uses among the young adults but through the lens of a particular community with vested interests in mobile technologies. Given the broadband penetration among African Americans still lags behind other communities, the mobile devices may carry a symbolic significance as they function as primary sites of cultural production and consumption. In other words, the mobile use can provide alternative venues through which young African Americans might gain online access and actively engage in informational activities (Brown, Campbell, & Ling, 2011).

Analytically, by investigating multifaceted influences of (1) mobile access and use, (2) socio-demographics, and (3) basic mobile familiarity, it is possible to examine whether mobile-based skill variation remains systematically related to certain social factors within a particular community as we focus on the young adults from a marginalized community. Qualitative in-depth interviews in triangulation enable us to capture the equipment of privacy skill and knowledge in more open-ended and naturalistic settings.

### 1.1. Policy background

Mobile devices have become ubiquitous and their use is common among young adults. A Pew survey (2010) found that 93% of the young adults aged 18–29 now own a cell phone. Yet such ubiquity contrasts with the regulatory void in establishing meaningful protection of personalized information data. Recent Federal Communication Commission (FCC) policy initiatives failed to address the protection of private data and location related privacy violation in mobile devices. As early as 2002, the FCC refused to create a wireless protection law that requires explicit consent over the use of personal data by third parties (FCC order, 2002). Although the Federal Trade Commission (FTC, 2010; 2011) recently weighed different proposals concerning location-tracking, its continued stance on non-intervention remains de facto in void of effective mobile-based privacy protection.

It is in fact widespread that marketers not only collect the personal data, such as locational whereabouts or/and clickstream activities, from mobile platforms, but also appropriate those data to feed into various products and advertising in such mobile app services as Google map or Foursquare. One report suggests that while Internet access in mobile platforms is expected to overtake fixed access by 2014, as much as 29% of the mobile users are willing to release data for discount coupons or similar reward options (Bosomworth, 2013). Although such benefits from individually-tailored marketing are perceivable, those who do not understand and cannot effectively manage mobile-related information surveillance remain potentially vulnerable to egregious violations of privacy.

In 1998, U.S. Congress established the Children Online Privacy Protection Act (COPPA) to limit the data collection of online users under the age of 13. The age-based provision under the COPPA, however, precludes adequate control by adult users to curb data abuses. Further, the COPPA that mandates verifiable parental consent in online transactions does not apply to the third party access to mobile-apps that are essential to personalized digital lives. Despite some implication of the COPPA for mobile apps, current legal protection of personal identities and location related application is limited as the details of possible legislations remain unclear (Cottrill, 2011; Franken, 2011). In this regard, the highly publicized recent update of the COPPA clarified that geo-location information, photographs, and videos cannot be collected without parental notice and consent (FTC, 2011). Yet no clear oversight mechanism by the FTC effectively means its continuous reliance

on self-regulatory 'notice and choice' provision by third party mobile apps providers.

## 2. Related studies

### 2.1. Importance of mobile literacy

The rise of interactive mobile technologies in particular is likely to encourage public sharing of personal data and there is strong evidence for Twitter users revealing locational whereabouts in mundane everyday practices (Humphreys, Gill, Krishnamurthy, & Newbury, 2010). In fact, highly wired young users are not necessarily sophisticated in their Internet uses and skills. For example, there are findings that indicate few college students were engaged in creative online activities as this was manifest only among those with higher parental education level (Hargittai & Hinnant, 2008). Supporting this concern, a series of recent U.S. national sample studies (Park, 2013a) found the lack of knowledge about basic marketing surveillance practices among most consumers. Other studies also reported inadequate levels of privacy awareness among college students in their uses of social network site such as the Facebook (Acquisti & Gross, 2006; Fogel & Nehmad, 2008). Collectively, these suggest that there exist strong reasons for social and policy concerns about the young population effectively responding to digitalization of personalized data in mobile-based platforms.

To understand the levels of privacy knowledge and skill among young mobile users, we put forth a new measure of digital literacy that focuses on mobile privacy-related skills and knowledge. Here the notion of mobile privacy literacy describes individual knowledge and skill regarding privacy-related functions in the mobile phone. In explicating the notion, we turn to the notion of "the second-level digital divide" (Hargittai, 2002; Hargittai & Hinnant, 2008). That is, there exist the differences in people's knowledge and skills of new technologies beyond the binary distinction of the 'haves' and the 'have-nots' (Park, 2013a). Put it differently, there are many levels of differences in terms of access, the first level, as well as skill and knowledge, the second level. While this understanding is applicable to any new media technologies, we posit that the level of mobile privacy literacy is an essential component of the effective digital participation in mobile phone use as some research suggests that different levels of expertise can promote or inhibit users in specific domains, such as personalized data use and control.

In fact, strong empirical findings in various domains of Internet uses suggest that users remain different at their skill and knowledge levels and particular segments of population are consistently left out from benefits of new technology because there are those who could not fully utilize the technology (DiMaggio, Hargittai, Neuman, & Robinson, 2001; Park, 2013a; Park, 2013b). In this context, it is important to delineate nuanced measures of people's protective ability in order to understand how the benefits or risks from new technology, such as the mobile phone, become manifest in particular social segments. Nevertheless, there has been the conspicuous absence of empirical endeavors that systemically examine mobile-related knowledge and skill, and an underserved community in specific domains of privacy and information evaluation has never been investigated.

Replicated in much of the earlier mobile studies is the question of cell phone access rate. For instance, the binary mobile-ownership variable was the central locus of inquiry as age, race, and gender (Charski, 2004) disparities persisted at the levels of adoption. However, this approach may suggest that gaining access to the mobile obliterates any potential skill underdevelopment that may result from lack of access to the new medium. That is, people's capacities to best utilize and understand new technology are

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