

**FROM GOUGING OUT EYES TO THE MARK OF THE BEAST:
AN EXPLORATORY INVESTIGATION INTO CONSUMER CONCERNS ABOUT IDENTIFICATION
TECHNOLOGY**

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ABSTRACT

The use of technology to identify consumers has been discussed extensively in both the popular press (c.f. Krim, 2004; Jones, 2004; Vijayan, 2004) and in the general academic literature (c.f. Alterman, 2003; Peyravian et. al., 2000; Rejman-Greene, 2001). However, scant attention has been afforded to these technologies in the marketing literature. This is surprising, since biometric devices such as fingerprint and iris scanners, as well as smart card identification systems, continue to grow in popularity (Channel Business, 2002). Such technologies are finding use not only in settings requiring high security (e.g. airports and nuclear facilities), but are increasingly used for reasons unrelated to security, such as providing convenience to the consumer and information to the marketing entity (Brass, 2003; Capizzi, Ferguson, and Cuthbertson, 2004; Stock, 2004). Biometrics and radio frequency identification devices (RFIDs), in particular, offer a number of benefits over traditional identification methods. For instance, there is no password for the consumer to remember and no identification card to lose. Further, transaction times are generally faster, identification accuracy rates are higher, and it is harder for consumers to disavow legitimate purchases (Rossi, 2004).

Although new identification methods offer a variety of benefits, few new technologies have generated more controversy; the issue of collecting unsolicited data using these technologies will clearly be debated well into the future. For instance, groups espousing strong religious beliefs feel that the radio frequency identification technology firm Verichip Corporation offers a product that will serve as a catalyst for an apocalyptic showdown between the forces of good and evil (Scheeres, 2002).

Further, biometrics and RFIDs have been criticized for setting a rather dark precedent, conditioning students at a young age to embrace the idea of Big Brother-style biometric tracking. According to the associate director of the Electronic Privacy Information Center, "If ever there was a generation that would not oppose a government system for universal ID, it's this one (Graziano, 2003)." Others have expressed concerns that increases in screening and surveillance technologies will make the whole world look like one giant airport (Emery, 2004). If technology firms don't allay these fears, escalating public resentment may effectively ban valuable implementations of the technology (Cline, 2004).

Clearly, numerous concerns have been expressed regarding identification technology. However, perhaps because of the novelty of the topic, no academic research has been devoted to uncovering dimensions underlying consumer concerns about these technologies. The focus of this research is to identify dimensions of consumer apprehension regarding identification technologies. Further, the authors seek to determine whether consumers' concerns can be used to predict the likelihood of their acceptance of various biometric and RFID technologies.

This two-phase study seeks to uncover consumer concerns regarding various identification technologies that may be encountered in present and future retail environments. In the study's first phase, 170 subjects were asked to describe, in writing, concerns that they might have regarding six identification technologies: keychain tags, retina (eye) scanning, facial scanning, voice recognition, fingerprint scanning, and computer chip implants. Approximately two thousand concerns were examined. Based on this information, a scaled survey instrument was created to quantify the previously identified concerns. Using factor analysis, five dimensions of consumer concern emerged: privacy, ethical, health, humanity, and complexity. Consumers' willingness to adopt the various technologies was measured and a prediction model was developed using the factor analysis scores. All five factors were highly significant predictors ($p < .001$) of consumer willingness to adopt and/or recommend a specific identification technology. The general prediction model, describing willingness to adopt identification technology as a function of privacy, ethical, health, humanity, and complexity concerns, is as follows:

$$Y = 3.025 - .555X_{\text{privacy}} - .401X_{\text{ethics}} - .602X_{\text{health}} - .595X_{\text{humanity}} - .359X_{\text{complexity}}$$

References available upon request