Individual Differences In Sensitivity to Privacy Violations Following Targeted Advertising

Sanjay Puligadda, puligsan@miamioh.edu

EXTENDED ABSTRACT

In an increasingly cyber driven marketplace, in which web-based advertising efforts are critical to advertiser-consumer interface, targeted advertising (TA) has been dubbed the "future of advertising," serving as one of the most important means of reaching targeted audiences (Boerman, Kruikemeier, and Borgesius, 2017). Firms using TA are estimated to potentially enjoy 5-6 percent higher productivity and profit gains than those that do not (Biesdorf, Court, and Willmott 2013; Martin, Borah, and Palmatier 2017). Approximately $36 billion are being allocated annually to the collection of personal data (Martin, Borah, and Palmatier 2017), of which a projected $2.6 billion is specific to targeted advertising efforts (Tam, Yan, and Ho 2006), to ensure consumers access relevant content whilst mitigating search costs (Chen and Stalleart 2010). TA is very valuable in creating top-of-mind-awareness, increasing content evaluations and reviews, and most importantly, increasing the probability the ad results in purchases (Aguirre et al. 2015; Tam, Yan, and Ho 2006). The key benefit provided by TA is the ability of the marketer to personalize the communication efforts and target audiences more precisely. Consumers also benefit from TA as they enjoy the convenience (Ansari, Asim, and Mela 2003) of more accurate preference matching (Vesanen 2007) and reduced cognitive overload (Ansari, Asim, and Mela 2003) resulting in higher satisfaction (Rust and Chung 2006) and higher loyalty (Ansari, Asim, and Mela 2003).

However, these same personalization efforts often leave some consumers feeling "creeped out". If consumers suspect their privacy has been violated (Tucker 2014, Stone 2010), the resulting reactance (Tucker 2014) may cause consumers to reject the ad in its entirety (White et al. 2008), rendering the ad ineffective as measured by click-through rates (Yan et al. 2009). Furthermore, consumers may erase their browser history and change their personal "cookie" settings, inhibiting the collection of valuable information (Aguirre et al. 2015; Martin, Borah, and Palmatier 2017) used by web-based advertising in creating their TA. Privacy is a valued construct (Martin, Borah, and Palmatier 2017) and its violation can lead to feelings of vulnerability, lack of control over personal freedom (Martin, Borah, and Palmatier 2017; Aguirre

et al. 2015), and restraint from any engagement with the given advertisement (White et al. 2008; Edwards 2002).

Such privacy concerns are significant, leading to considerable research on privacy concerns extensively and their effects on the effectiveness of TA (Tucker 2014; White et al. 2008). Despite the extensiveness of this research, the epistemology of this relationship seems limited, in that it implies that all consumers have similar privacy concerns and react similarly to firms' TA. The intriguing possibility that consumers may differ inherently in their sensitivity to targeted advertising online violation of privacy has received scant attention.

We build on Shaughnessy et al (2017) who show that social anxiety, and privacy concerns are important bases for individual differences in the amount of information adolescents are willing to provide. While (Shaughnessy et al 2017) investigated information sharing among adolescents, we extend this to the context of targeted advertising to show that there are individual differences among adult consumers in their concern for privacy in response to targeted advertising that, in turn, influence the effectiveness of the targeted advertising.

From a theoretical standpoint, this research fills a gap in extant literature on individual differences in reactance (Tucker, 2014) to targeted advertising. While several factors external to the consumer have been studied in the context of targeted advertising (Boerman, Kruikemeier, and Borgesius, 2017), the current research follows an inside out approach, investigating differences among individual consumers. From a managerial perspective, the learning from this research can be valuable – while consumers' sensitivity to privacy violations due to targeted advertising is potentially a significant hindrance to the effectiveness of targeted advertising (Boerman, Kruikemeier, and Borgesius 2017), there are individual differences in such sensitivity; by identifying consumers low in SOPV, marketers can aim the TA at such consumers to maximize its effectiveness.

Studies 1 and 2: Scale Development

To guide the item-generation stage, we conducted exploratory qualitative research with two focus groups (n = 10) and 10 in-depth interviews with undergraduate students from a large northeastern U.S. university. On the basis of this research and our conceptualization of the construct, we generated a set of 21 scale items, which we administered to an independent sample of 100 undergraduate students. In a second round of data collection, we tested the scale on an independent sample of 100 respondents using MTurk.

Study 1. We conducted an exploratory factor analysis (EFA; principle component with Proxmax rotation) on the data obtained from the 100 students in round 1. It initially yielded two factors with eigenvalues greater than 1 that explained 14% of the variance. 11 items—1 ("I prefer generic, non-targeted ads over ads that are specifically targeted at me"), 2 ("I am fine with ads that are very relevant and targeted towards me, it makes my life easier"), 5 ("In general, targeted ads are annoying "), 6 ("I am comfortable with targeting

technology because it helps marketers understand me better "),11 ("I am used to targeted ads"), 13("Targeted ads don't bother me as long as they are not in the center of the page"), 14("The larger the size of the targeted ad, the more it bothers me"), 15 ("I like ads that target me and my friends as a group rather than me specifically"), 16("The longer the time gap between my online activity and the ad based on it, the more it bothers me"), 18 ("Targeted ads turn me off the brand being advertised"), and 21("I don't trust the website/online platform that displays the targeted ad")—cross-loaded on the two factors. This lack of internal consistency among these cross-loading items suggests that they poorly reflect the constructs intended to measure, so we dropped them from further analysis. The EFA of the remaining items yielded a two-factor structure with an eigenvalue greater than 1 that explained 59% of the variance. The corrected item-to-total correlations of the remaining items were all satisfactory (>.50), as were the average inter-item correlations.

To confirm these results, we performed a confirmatory factor analysis (CFA) on the retained items, specifying a one-factor structure. The model fit was satisfactory ($[Symbol]^2_{(45)}$ = 879.361, root mean square error of approximation [RMSEA] = 0.134, confirmatory fit index [CFI] =0.926). The completely standardized solution showed satisfactory loadings for all items (> .55) except for item 4 ("In general, targeted ads are creepy", which achieved a loading of .35. Item 4 also was similar in content to items 7 ("Targeted ads make me uncomfortable about the amount of information companies have or could have about me"), and 8 ("Targeted ads make me uncomfortable about the level of detailed information companies have or could have about me"), so we deleted it and performed another CFA on the remaining items. The model fit improved further ($[Symbol]^2_{(36)}$ = 754.947, RMSEA =. 097, CFI = .97), though with a loss of 9 degrees of freedom. The completely standardized solution showed satisfactory loadings for all the items (> .55), and the composite reliability and Cronbach's alpha for the retained items were both .90. We finally retained a 9-item scale of SOPV with 2 factors. Factor 1 (6 items) is sensitivity to privacy violations and factor 2 (3 items) measures the consequence of the sensitivity on attitude towards brand and attitude towards the website.

Study 2. We administered our 9-item SOPV scale to an independent sample of 100 respondents using MTurk. The EFA (principle component with PROMAX rotation) on the SOPV yielded two factors with an eigenvalue greater than 1 that explained 56 % of the variance. The corrected item-to-total correlations of the items were all satisfactory (> .50), as were the average inter-item correlations. As confirmation, a CFA on the retained items, specifying a two-factor structure, also yielded a satisfactory model fit ($[Symbol]^2_{(36)}$ = 849.09, RMSEA = .11, CFI = .97). The completely standardized solution showed satisfactory loadings for all items (>.55), and the Cronbach's alpha for the items was .89, with a composite scale reliability of .90.

Convergent validity. As an indication of convergent validity, the item loadings all revealed highly significant t-values (>7.00) (Mathwick and Rigdon 2004). Finally, the average variance extracted (AVE) value of .55 satisfied Fornell and Larcker's (1981) criterion (>.5) for convergent validity.

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