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The Impact of Privacy Concerns Regarding Online Behavioral Advertising in The Context of Social Networking Sites

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Abstract

Advertising on social networking sites is a much more complicated phenomenon than on traditional broadcasting media. Recent advances in Web technologies have made it possible for advertisers to track users' online behaviors and browsing histories thus enabling advertisements to be customized and personalized for the individual. The growing privacy concerns have created a demand for providing users with choices and control related to online behavioral advertising (OBA). Research on privacy concerns related to OBA is still limited in IS literature. This research uses privacy calculus theory (PCT) to investigate the impact of users' privacy concerns on OBA. This study will help to establish a new viewpoint and a deeper understanding of factors influencing privacy concerns regarding OBA in the context of social networking sites. Results are expected to support previous IS research with perceived entertainment, perceived informativeness and perceive intrusiveness will have positive influences on SNSs users' acceptance-avoidance of OBA.

Keywords

Privacy concerns, Social Networking Sites (SNSs), Online Behavioral Advertising (OBA), Privacy Calculus Theory (PCT).

1. Introduction

Social Network advertisement can take many forms. These advertisements could be more explicit such as banner advertisements and promotional videos or implicit such as fan pages or company-related 'tweets' advertisements (Aghakhan et al., 2018; Taylor et al., 2011). As per Shareef et al. (2018), with the advent of technology and access to an increasing amount of personal data, companies are now using new techniques like online behavioral advertising (OBA) to reach their target audience through social networking sites (SNSs). OBA is an advertising strategy that uses data gathered from multiple sources such as internet browsing history and the online habits of potential customers to improve advertising campaigns (Ham, 2017; Boerman et al., 2017; Agarwal et al., 2013; Varnail, 2021). This information enables advertisers to generate advertisements tailored to the individual's preferences and desires that can be displayed on the web browser of that particular visitor. This strategy enables advertisers to deliver targeted promotional messages that are of most interest to the individual (Smith et al., 2008; Fjeldsoe et al., 2009; Danaher et al., 2011; Burton and Soboleva, 2011). Advertisers employ multiple methods (acquiring web search information, buying history data, etc.) to create complete user profiles that provide insights into what the

individual needs, avoids, and buys. Online information or data can be collected based on the consumers' surfing histories such as website visits, types of articles they read and types of videos they watched. With this data, advertisers devise messaging that suits the tastes and desires of a particular user while avoiding advertisements that they may find unattractive or irrelevant. A recent study by Ozcelik and Varnali (2019), found that online behavioral targeting is very effective and is far more concrete than any other advertising scheme. Also, targeted web-based ads have been found to dramatically improve ad click-through levels as opposed to un-targeted advertisements (Ur et al., 2012; Lian et al., 2019). The targeted focus on specific audiences for messages has significant benefits, not only for the advertiser but also for the consumer. However, these benefits also come with some potential risks (Alashoor et al., 2017; Ham, 2017; Fogel and Nehmad, 2009). According to a study by Aiolfi et al. (2021), collecting data from users' social networking activities can negatively impact users' privacy and security. In addition, it has been found that users often express privacy concerns related to OBA (Smit et al., 2014; Saura et al. 2021). Research by Federal Trade Commission (FTC) highlights growing privacy concerns among the users towards the OBA. In February 2020, the FTC released its annual consumer's privacy and security concern update where they discussed OBA at length and highlighted a record year for enforcement actions aimed at protecting consumer privacy and data security (FTC Releases 2019 Privacy and Data Security report, Zimmerle & Wall 2019). However, even with the apparent risks, marketing polls have shown that users prefer OBA even though most are aware that their non-personal and personal data are being used (Lendenmann, 2010; Varnali, 2021; Saura et al., 2021). However, OBA is a strategy that allows advertisers to provide adverts that better represent the user's interests based on the user's browsing history over time and across numerous websites. But there is no legislation or law specifically the use of OBA, major organizations are pushing for its adoption. Many ad agencies have already implemented the program, and individual advertisers are being encouraged to do so as well. Industry organizations are encouraged to participate in order to ensure and be transparent that their advertising adheres to users' privacy risks and benefits (Tsai et al., 2011; Boerman et al., 2021). Therefore, in this study, we will investigate the impact of users' privacy concerns regarding online behavioral advertising in the context of social networking sites using the privacy calculus theoretical (PCT) framework.

2. Social Networking Sites

Over the last few decades, social networking sites (SNSs) have emerged as a powerful communication medium. Sundararaj and Rejeesh (2021) defined SNSs as web-based platforms allowing users to create a public or semi-public profile within a defined context, where users can add other users to their list and share links with these added users, and access and explore their list of links within the computing system created by others.

The first noticeable social network website was launched in 1997 and named sixdegree.com (Boyd and Ellison, 2007) and by 2001 many SNSs had emerged. However, this early SNSs failed to gain traction in the market. After 2003, a new wave of SNSs emerged and it became a global phenomenon. This SNSs were classified into seven main forms (Ellison, 2007; Pelling and White, 2009). The first type of SNS is Social Connections. This type of SNS helps to establish connections with relatives and acquaintances (e.g., Facebook, Twitter, and Google+) (Sajid, 2016). The second type is Multimedia Sharing. This form of SNS allows online sharing of video and photo content (e.g., YouTube and Flickr) (Conti et al., 2010). The third form of SNS is Professional Connections. This form of SNS is built for the development of professional or job connections (e.g., LinkedIn and Classroom 2.0) (Chen and Bryer, 2012). The fourth type of SNS is Informative-Information. This SNSs are created for people who are seeking solutions to everyday problems (e.g., Super Green Me (an online platform for people interested in green living practices) and Do-It-Yourself Group (a tool in social media that enables enthusiasts to communicate with one another) (Gilmore, 2016; Li et al., 2021). Continuing, the fifth type is Educational-Interactive Educational networking sites. These sites are available to help students collaborate on projects with other students, perform school studies, or connect with teachers and mentors through classroom fora (e.g., The Student Room is a student group located in the UK and The Math Forum is a forum to connect students with an interest in math) (García-Peñalvo et al., 2018). The sixth type of SNSs is Hobbies. These SNSs link people interested in common personal activities (e.g., hobby oriented SNSs include Oh My Bloom (the platform for gardening aficionados) and My Place at Scrapbook.com (the platform for scrapbooking aficionados)). Finally, Academics is the last type of SNS. These networking sites help to connect academic researchers with peers to discuss their potential research areas and findings (e.g., Research Gate) (Ovadia, 2014; Al-Yafi et al.,

2018). With all of these platforms, some with very targeted audiences, the opportunity for advertisers to collect a vast amount of detailed personal data about individuals is growing.

However, as per World internet users' statistics (2019), there has been an explosive growth in the number of internet users in the last two decades. There are currently an estimated 4.5 billion internet users out of the estimated population of 7.7 billion in the world. With the increase in the number of internet users, there has also been an increase in active SNSs users. Since 2018, there has been a 9% increase in SNSs users with currently approximately 3.5 billion SNSs users (Kemp, 2019). Thus, with the rapid evolution of SNSs and more than 4.5 billion users worldwide, there are growing concerns regarding how users' private information is viewed and used (Datareportal, 2021). This research will provide much needed empirical evidence about the impact of privacy concerns on SNSs users' acceptance of OBA.

3. Theoretical background

Psychologists and sociologists joined the discussion in the late 1950s on the concept of privacy. Arendt (2013) set out some of the main concepts related to privacy in the essay "The Human Condition." Arendt postulated that privacy deals with psychological and social guarantees, including objects that cannot withstand other people's relentless intervention in the public scene (Schwartz, 1968). In addition, Westin (1967), in the late 1960s building on Arendt's original work, implemented a two-tier concept of privacy. Westin merged the personal and social aspects, consisting of four states (i.e., anonymity, reserve, isolation, and intimacy) and four roles (i.e., physical autonomy, emotional release, self-assessment, and minimal and confidential communication) of privacy. Privacy is the right of individuals to decide for themselves when, how and to what degree knowledge or information about them is transmitted (Warren and Brandeis, 1890; Westin 1967; Derlega and Chaikin, 1977).

In today's world, individuals exchange personal or intimate information online and are thus vulnerable to the possible jeopardies linked with the exposure of personal information. Perceptions of risk are critical indicators of social verdicts (Jørgensen, Bäckström, & Björklund, 2013; Krasnova et al., 2012). Perceptions of risk serve as a warning against possible adverse effects of action (Youn & Hall, 2008). Investigation with respect to perceived risk is very vital in the context of online privacy. Though there are possible risks of the disclosure of information without permission or control, the expectation that individuals are personally connected to the Internet (especially on SNSs) may reduce sensitivities of risk (Youn & Hall, 2008). Such contrary sets of beliefs or perceptions, and attitudes constitute the basis for the model of privacy calculus that Culnan and her colleagues first developed and debated (Culnan & Armstrong, 1999; Culnan & Bies, 2003).

3.1 Privacy Calculus Theory

Culnan and Armstrong (1999) conducted research in an e-commerce setting and found that when individuals were not told that their data would be handled with care, individuals with higher privacy concerns were less willing to disclose personal data. This tradeoff was termed "privacy calculus." Privacy calculus theory postulates that people will disclose personal information when the perceived benefits exceed the potential costs. Another important aspect that needs to be considered is the social media users' attitudes toward OBA. As per the theory of reasoned action, attitudes of an individual to take an action are affected by two factors: 1) the individual's beliefs about the behavioral outcome and 2) the evaluation of the future outcome (Fishbein & Ajzen, 1969). With the substantial growth of users of SNSs, OBA has become a creative means for advertisers to target users directly through means of personalized messages centred on their profile and details disclosed to SNSs providers. For the effective implementation of OBA, the willingness of SNSs users to reveal their personal information and preferences is crucial. While OBA enhances user experience through personalization, it does raise privacy concerns. To consider OBAs, therefore, it becomes necessary to understand how SNS users view the risks and benefits of OBA (Sun et al., 2021; Schomakers et al., 2021). Therefore, the research questions are: 1) what are the antecedents considered by SNS users as privacy risk or privacy benefit of OBA, and 2) how do SNSs users consider OBA after evaluating risk and benefits? This paper will examine the main components of risks and benefits to online behavioral advertisements in SNSs contexts. The premise is that both perceived risks and benefits affect the adoption of OBA by SNSs users.

4. Research Model and Hypotheses Development

Based on the proposed theoretical framework, the proposed hypotheses will be tested:

4.1 Entertainment
H1a: Perceived Entertainment positively related to individuals' perceived privacy risk towards OBA in SNSs context.
H1b: Perceived Entertainment positively related with individuals' perceived benefit towards OBA in SNSs context.

4.2 Informativeness
H2a: Perceived informativeness positively related with individuals' perceived privacy risk towards OBA in SNSs context.
H2b: Perceived informativeness positively related with individuals' perceived benefit towards OBA in SNSs context.

4.3 Intrusiveness
H3a: Perceived Intrusiveness positively related with individuals' perceived privacy risk towards OBA in SNS context.
H3b: Perceived Intrusiveness positively related with individuals' perceived benefit towards OBA in SNS context.

4.4 Education Level
H4a: Level of Education on perceived entertainment mediates the relationship between perceived entertainment and perceived risk/benefit towards OBA in SNSs context.
H4b: Level of Education on perceived informativeness mediates the relationship between perceived entertainment and perceived risk/benefit towards OBA in SNSs context.
H4c: Level of Education on perceived intrusiveness mediates the relationship between perceived entertainment and perceived risk/benefit towards OBA in SNSs context.

5. Research Methodology

This study will use a quantitative research framework. The instrument will be developed based on existing scales in the relevant literature. A set of questionnaires will be created using questions from previous literature that have shown high reliability. A five-point Likert-type scale for measuring the non-demographic variables will be employed ranging from 1 ("strongly disagree") to 5 ("strongly agree"). Data will be collected via crowdsourcing using Amazon's Mechanical Turk (M-Turk) platform. Data will be analyzed to determine the value of independent variables (perceived entertainment, perceived informativeness and perceive intrusiveness) in predicting the dependent variable (SNSs users' acceptance-avoidance of OBA) and the correlation test will be conducted to ensure the questions correlate with the variable being measured.

6. Expected Contributions

With the rapid development of SNSs, there have been current concerns about how individuals' personal information is used or viewed by third-party. This study will provide empirical evidence about privacy concerns regarding OBA in the context of SNSs. This study is expected to demonstrate that the PCT is a powerful theory postulated that people would disclose personal information when the perceived benefits exceed the potential risk. We are expecting that all the proposed hypotheses of this research will be statistically significant. The proposed theoretical model creates a useful framework to explain all the relationships. Overall, the results are expected to show and support of previous IS research with perceived entertainment, perceived informativeness and perceive intrusiveness will have positive impact on SNSs users' acceptance-avoidance of OBA. The findings of this study can also provide OBA companies with useful strategies and tactics to enhance SNSs users' acceptance depending on their level of privacy.

REFERENCES

Agarwal, L., Shrivastava, N., Jaiswal, S., & Panjwani, S. (2013, July). Do not embarrass: Re-examining user concerns for online tracking and advertising. *In Proceedings of the Ninth Symposium on Usable Privacy and Security* (pp. 1-13).

Aghakhani, N., Karimi, J., & Salehan, M. (2018). A unified model for the adoption of electronic word of mouth on social network sites: Facebook as the exemplar. *International Journal of Electronic Commerce*, 22(2), 202-231.

Aiolfi, S., Bellini, S., & Pellegrini, D. (2021). Data-driven digital advertising: benefits and risks of online behavioral advertising. *International Journal of Retail & Distribution Management*.

Alashoor, T., Han, S., & Joseph, R. C. (2017). Familiarity with big data, privacy concerns, and self-disclosure accuracy in social networking websites: An APCO model. *Communications of the Association for Information Systems*, 41(1), 4.

Al-Yafi, K., El-Masri, M., & Tsai, R. (2018). The effects of using social network sites on academic performance: the case of Qatar. *Journal of Enterprise Information Management*.

Arendt, H. (2013). The human condition. *University of Chicago Press*.

Boerman, S. C., Kruikemeier, S., & Zuiderveen Borgesius, F. J. (2017). Online behavioral advertising: A literature review and research agenda. *Journal of advertising*, 46(3), 363-376.

Boerman, S. C., Kruikemeier, S., & Zuiderveen Borgesius, F. J. (2021). Exploring motivations for online privacy protection behavior: Insights from panel data. Communication Research, 48(7), 953-977.

Burton, S., & Soboleva, A. (2011). Interactive or reactive? Marketing with Twitter. *Journal of consumer marketing*.

Chen, B., & Bryer, T. (2012). Investigating instructional strategies for using social media in formal and informal learning. *International Review of Research in Open and Distributed Learning*, 13(1), 87-104.

Chen, J., & Stallaert, J. (2014). An economic analysis of online advertising using behavioral targeting. *MIS Quarterly*, 38(2), 429-A7.

Conti, M., Giordano, S., May, M., & Passarella, A. (2010). From opportunistic networks to opportunistic computing. *IEEE Communications Magazine*, 48(9), 126-139.

Danaher, P. J., & Rossiter, J. R. (2011). Comparing perceptions of marketing communication channels. *European Journal of Marketing*.

Datareportal. (2021). Global Social Media Stats. *Datareportal*.

Derlega, V. J., & Chaikin, A. L. (1977). Privacy and self-disclosure in social relationships. *Journal of social issues*, 33(3), 102-115.

Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of computer-mediated Communication*, 13(1), 210-230.

Fogel, J., & Nehmad, E. (2009). Internet social network communities: Risk taking, trust, and privacy concerns. *Computers in human behavior*, 25(1), 153-160.

García-Peñalvo, F. J., Moreno López, L., & Sánchez-Gómez, M. (2018). Empirical evaluation of educational interactive systems. *Quality & Quantity*, 52(6), 2427-2434.

Gilmore, H. (2016). Case study of learning and instruction for members of an online reflex sympathetic dystrophy support group (Doctoral dissertation, Walden University).

Goldfarb, A., & Tucker, C. E. (2011). Online advertising, behavioral targeting, and privacy. *Communications of the ACM*, 54(5), 25-27.

Ham, C. D. (2017). Exploring how consumers cope with online behavioral advertising. *International Journal of Advertising*, 36(4), 632-658.

Kemp, S. (2019). Digital trends 2019: Every single stat you need to know about the internet. Retrieved October 8, 2019, from https://thenextweb.com/contributors/2019/01/30/digital-trends-2019-every-single-stat-you-need-to-know-about-the-internet/

Krasnova, H., Veltri, N. F., & Günther, O. (2012). Self-disclosure and privacy calculus on social networking sites: the role of culture. *Business & Information Systems Engineering*, 4(3), 127-135.

Li, L., Tian, J., Zhang, Q., & Zhou, J. (2021). Influence of content and creator characteristics on sharing disaster-related information on social media. *Information & Management*, 58(5), 103489.

Lian, S., Cha, T., & Xu, Y. (2019). Enhancing geotargeting with temporal targeting, behavioral targeting and promotion for comprehensive contextual targeting. *Decision Support Systems*, 117, 28-37.

Ozcelik, A. B., & Varnali, K. (2019). Effectiveness of online behavioral targeting: A psychological perspective. *Electronic Commerce Research and Applications*, 33, 100819.

Sajid, S. I. (2016). Social media and its role in marketing.

Saura, J. R., Palacios-Marqués, D., & Iturricha-Fernández, A. (2021). Ethical design in social media: Assessing the main performance measurements of user online behavior modification. *Journal of Business Research*, 129, 271-281.

Saura, J. R., Ribeiro-Soriano, D., & Palacios-Marqués, D. (2021). From user-generated data to data-driven innovation: A research agenda to understand user privacy in digital markets. *International Journal of Information Management*, 60, 102331.

Schomakers, E. M., Lidynia, C., & Ziefle, M. (2021). The Role of Privacy in the Acceptance of Smart Technologies: Applying the Privacy Calculus to Technology Acceptance. *International Journal of Human–Computer Interaction*, 1-14.

Shareef, M. A., Mukerji, B., Alryalat, M. A. A., Wright, A., & Dwivedi, Y. K. (2018). Advertisements on Facebook: Identifying the persuasive elements in the development of positive attitudes in consumers. *Journal of Retailing and Consumer Services*, *43*, 258-268.

Smit, E. G., Van Noort, G., & Voorveld, H. A. (2014). Understanding online behavioural advertising: User knowledge, privacy concerns and online coping behaviour in Europe. *Computers in Human Behavior*, 32, 15-22.

Smith, R. E., Chen, J., & Yang, X. (2008). The impact of advertising creativity on the hierarchy of effects. *Journal of advertising*, 37(4), 47-62.

Sun, Y., Wang, N., & Shen, X. L. (2021). Calculus interdependency, personality contingency, and causal asymmetry: Toward a configurational privacy calculus model of information disclosure. *Information & Management*, 58(8), 103556.

Sundararaj, V., & Rejeesh, M. R. (2021). A detailed behavioral analysis on consumer and customer changing behavior with respect to social networking sites. *Journal of Retailing and Consumer Services*, 58, 102190.

Tsai, J. Y., Egelman, S., Cranor, L., & Acquisti, A. (2011). The effect of online privacy information on purchasing behavior: An experimental study. Information systems research, 22(2), 254-268.

Varnali, K. (2021). Online behavioral advertising: An integrative review. *Journal of Marketing Communications*, 27(1), 93-114.

Warren, S. D., & Brandeis, L. D. (1890). Right to privacy. *Harv. L. Rev.*, 4, 193.

World Internet Users Statistics. (2019). World Internet Users Statistics and 2019 World Population Stats. Retrieved October 13, 2019, from https://www.internetworldstats.com/stats.htm