

Exploring the Impact of Third-Party Web Tracking on Healthcare Providers' Business Value

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Anton Ivanov
SUNY at Buffalo
antoniva@buffalo.edu

Raj Sharman
SUNY at Buffalo
rsharman@buffalo.edu

Abstract

Organizations worldwide are widely utilizing Internet and networking technologies to reach out to potential customers and positively impact business outcomes. Indeed, hardly any organization does not have its online ecosystem established through a website or a social media account, and healthcare providers are no exception. By signaling its quality- and behavior-related characteristics to online users using various online tools, hospitals, for instance, are able to reduce information asymmetry and positively impact the hospital selection process. This is particularly important in the context of hospital new patient referrals, which are commonly regarded as proxies of healthcare providers' business value. To facilitate the signaling process and increase its influence, many typically rely on third-party web tracking (TPWT) technologies. These are generally represented by three types of trackers: behavior (e.g., ad networks), user engagement (e.g., social media or customer interactions), and website optimization (e.g., analytics) trackers. While providing tremendous value to the organizations in reaching out to others on the Internet, usage of web trackers is negatively associated with user privacy and therefore might have negative consequences for business. Since the literature addressing this issue is lacking, in this study we seek to answer whether the benefits of online engagement through TPWT are substantial enough to outweigh the potential risks.

To provide rationale of such a relationship and guide our hypothesis development, we adapt and employ the core propositions from the literature on information seeking behavior (ISB) and on signaling theory. To empirically test the hypothesized relationships, for a sample of cancer-treatment hospitals in the U.S. (N=900) we collect cross-sectional data from multiple publically available sources, such as Centers for Medicare and Medicaid Services (CMS), Ghostery, Alexa.com, and U.S. News and World Report. To correct for the endogeneity resulting from the omitted variable bias, we use a two-stage predictor substitution (2SPS) procedure that involves specification of the endogenous regressors through an auxiliary equation with instrumental variables.

Based on the preliminary¹ results, there exists a significant relationship between the number of trackers of different types and cancer-treatment hospitals' business value, proxied with the number of new patient referrals. The direction of the relationships, however, varies depending on the tracker type. Whereas the effect of usage of ad networks is negative (-18%), the effects of user engagement and website analytics are positive (55% and 25%, respectively).

The contribution of the study is twofold. Firstly, it contributes to the literature on the business value of healthcare providers by exploring the impact of third-party web tracking on hospitals' new patient referral rates. Secondly, it provides practical recommendations for healthcare professionals on smart investments in online engagement through web tracking in light of its potential negative consequences for business.

Keywords

Web tracking, business value, patient referrals, endogeneity, Poisson estimator

¹ Currently, we have collected data for 150 hospitals out of the projected 900.