EXAMINING THE RELATIONSHIP BETWEEN USER ENGAGEMENT AND E-COMMERCE REVENUE USING EXPLORATIVE DATA ANALYSIS ON WEB ANALYTICS DATA

Sonya Zhang, College of Business Administration, California State Polytechnic University, Pomona, California, U.S.A. xszhang@cpp.edu
Rohith Rajasekaran, College of Engineering, California State Polytechnic University, Pomona, California, U.S.A. rrajasekaran@cpp.edu

Abstract

Online businesses have been using Web analytics to track where visitors come from and how they interact with the website. Analyzing this information drives marketing and website design improvements and optimizes traffic and conversion, which means more sales revenue for e-commerce. To examine the relationship between user engagement and E-commerce revenue, we performed an exploratory data analysis on Google Analytics data for the online Google Merchandise Store. The result showed that user engagement KPIs, including Returning Visitors (i.e., Returning Users), Number of Visits (i.e., Sessions), Time on Site (i.e., Session Duration), Number of Pageviews, and Number of Hits, are positively associated with revenue. In contrast, bounce rates are negatively related to revenue. This study demonstrates an exploratory data analysis on Web analytics data to drive more valuable insights on user engagement and e-commerce revenue. It also provides a foundation for future predictive analysis and machine learning tasks.

Keywords: Exploratory Data Analysis. Web analytics, Google Analytics, user engagement, e-commerce, revenue