Validating the Usability of Online Physician Reviews using DSR

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The physician selection decision is a challenging and complicated process for patients. Recently, the use of physician review sites (PRS) such as Vitals, Healthgrades, and RateMDs has increased to more than 70% of PRS users use online reviews (Hedges and Couey 2020). Yet, usability research on PRS has found several shortcomings preventing its growth. First shortcoming is the number of online reviews for each physician is generally low, making the overall physician rating unreliable (McLennan 2019). Also, physician reviews are scattered across different PRSs. This requires them to visit and analyze reviews from various PRSs to determine the physicians' ratings (Kordzadeh 2019). Second challenge for PRS users is the number and complexity of quality metrics. In general, rating metrics are varied with no consistency, validity, or transparency on how the overall score is calculated by each PRS. Final limitation is the conflict between narrative comments and star ratings. The conflicts cause confusion leading to mistakes and bad decisions.

In this study, we aim to integrate and present physicians' online reviews from multiple PRSs through a systematic, analytics-driven process with an integrated dashboard system (IDS). A key contribution of this study is reduction from multiple metrics to a single metric thereby helping PRS users make better and quicker decisions. Our study provides answers to three research questions: (1) Can dimensionality reduction techniques reduce information overload for PRS users? (2) Can text mining techniques identify and address the inconsistencies between narrative comments and numeric star ratings in the PRS? (3) Does an integrated dashboard improve the usability of PRS and the quality of user decisions? We have successfully applied PCA to reduce the number of dimensions from seven to one dimension. The paired t-test analysis validates our sentiment analysis results identifying inconsistency between comment and star rating scores.

Our next step is to build an IDS artifact to display our results of single quality metric and sentiment score along with the original star ratings of the website for each doctor. This will allow users to quickly compare physician ratings from multiple sources and make better decisions quickly. Our IDS will be validated with a field study using design science research (DSR) methodology with PRS users. Using the seven DSR steps (Hevner et al. 2004), we will evaluate the integrated PRS dashboard and compare with the existing PRSs to test the usability and quality of our designed PRS artifact with a post-use survey.

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