Identifying the Next Non-Stop Flying Destination with a Big Data Approach

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Attracting more visitors and managing them effectively are one of the major responsibilities of destinations’ Destination Marketing Organizations (DMOs). A series of literature on attracting more visitors have used the segmentation method to identify the potential customers and pinpoint the target markets using various criteria (Andereck & Caldwell, 1994; Dolnicar, 2007; Jang, Morrison, & O'Leary, 2002; Müller, & Hamm, 2014; Smith, 1956; Tkaczynski, Rundle-Thiele, & Beaumont, 2009). However, as every person has unique characteristics and interests, categorizing the customers using some demographic or behavioral variables can be a coarse method.

This paper introduces multiple gravity models based on both travelers’ interests and actual visitation; it tries to find the regions that are most likely to have a significant increase in visitor volume to the destination if non-stop flight route were to open. The gravity model includes direct flight availability as its key component. The model specifically includes the availability of direct flight as one of the deciding factors for choosing a destination (Tveteras & Roll, 2014), related studies are lacking.

The interest is measured using the web traffic at the destination’s Convention and Visitors Bureau (CVB) website. Although interest in the destination at an individual level is hard to observe, interest at a regional level can be quite accurately estimated with the emergence of big data. The web traffic at a CVB can be considered as a proxy for potential interests, as tourists are most likely to search information online prior to visiting a city and a CVB’s website are more likely to turn up on the top as the authoritative information source. Hence, it is possible to target markets that have keen interest in the destination and increase the number of visitors via creating direct flight routes.

The paper provides a theoretical framework that based gravity models, the push-pull model of Crompton (1979), and the purchase funnel theory. The theoretical framework is able to calculate each region’s magnitude of potential to travel, explain why some regions that have high potential are not travelling as much as expected, and find the most prominent potential markets for the next non-stop route. The first part is done using the gravity model and the latter parts are done using web traffic and direct flight data.

With this theoretical framework and the flight passenger data and web traffic flow between Charleston and 216 MSA’s, the paper empirically locates the cities that have high interest in Charleston and have great potential to travel but are not visiting it as much as they would if there were direct flights.

From the regression results, the paper was able to validate that the availability of non-stop route clearly impacts the number of visitors via air. However, there is also a high possibility that greater number of passengers could have been a trigger for the creation of non-stop flight route. Further study is needed to prove the causality relationship from the direct flight to the number of passengers.