Customer Visit Segmentation in an Online Retail Market

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Abstract

Every customer has a unique intent at the back of his mind when shopping in a retail store. It could be monthly stocking, food for an outdoor party or for organizing a children's picnic. Being able to understand and predict the items a customer is likely to choose, depending on his intent, could help online retail companies to gain competitive advantage via targeted advertisements. The extant literature in this field mainly deals with customer segmentation and basket association for products. Attempt to understand the intent of each customer visit is a relatively new area of study, which has been mainly restricted to physical retail stores. This study extends this idea for online retails, where data like customer views and add to carts are also available, allowing us to group each visit more effectively. We intend to identify the "shopping mission" behind every customer visit and hence we use the customer's interaction data with the products to group different visits via clustering. Previous attempts at clustering have mostly focussed on using widely used clustering algorithms like the K-Means clustering. However, we identify that this may not be the best suited method to exploit the binary matrix structure of the data. Hence, we further propose the use of a better suited clustering method like the rank order clustering that makes use of this binary data structure. We have chosen the open source data from Retail Rocket, an online retail company, to validate our propositions.

Keywords
Customer visit segmentation, Online retail business analytics, Clustering, Data mining

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