

7.10: Goals of Data Analysis

Learning Objectives

- Recognize the goals of market basket analysis, targeting promotions, and assortment planning



Market basket analysis gives clues as to what a customer might have bought if the idea had occurred or been suggested to them. Other terms used are “impulse purchasing” or “cross selling” to describe this consumer purchasing behavior.

The availability of detailed information on customer transactions has led to the development of techniques that automatically look for associations between items that are stored in the database. An example is data collected using bar-code scanners in supermarkets. Such ‘market basket’ databases consist of a large number of transaction records. Each record lists all items bought by a customer on a single purchase transaction. Managers would be interested to know if certain groups of items are consistently purchased together. They could use this data for store layouts to place items optimally with respect to each other, they could use such information for cross-selling, for promotions, for catalog design, and to identify customer segments based on buying patterns.

Market basket analysis can be used as a first step in deciding the location and promotion of goods inside a store or on a web page. If, as has been observed, purchasers of Barbie dolls are more likely to buy candy, then high-margin candy can be placed near to the Barbie doll display. Customers who would have bought candy online might be tempted with Barbie doll images popping up on web page margins. The infamous “would you like fries with that” phrase is an example of the association between products that market basket analysis can reveal.

The computational complexity involved in calculating the results of market basket analysis is a challenge met only with DW and data mining techniques. With data warehouses storing billions of transaction lines, so-called “big data” tools are needed to draw meaningful conclusions. Special techniques involving filtering or aggregating parts of the transaction database are commonly used to create performance algorithms to allow some level of interactivity, such as what-if queries and scenario creation in business intelligence applications.

Market basket analysis is a strong tool in the retailers’ arsenal to increase sales using the latest data analysis techniques. Once out of reach, sifting through mountains of data to draw empirical conclusions can lead to effective assortment plans—determining the appropriate product mix—and promotional opportunities to cross-sell.

Practice Questions

<https://assessments.lumenlearning.co...sessments/9214>

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