

Investigating shopping visits patterns across different store types: The case of a grocery retail chain

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Abstract

Consumers' behavior and expectations of service have changed dramatically in recent years, as they have become more demanding, regarding the quality of services and the needs to fill in. Many organizations have identified the importance to understand their shoppers' preferences, and satisfy their needs. As any other business, so do retailers, understanding their shoppers, and more specifically the reasons they enter stores has always been among their greatest aspirations. Many retailers face the questions of (a) *how shoppers visit their different retail stores*, (b) *what needs they need to satisfy in each store visit*, and (c) *how they can sense their shopping behavior* and thus their visiting patterns, with a view to offer them more efficient shopper oriented services.

At the same time, business analytics techniques that have been developed can combine and process large datasets to enable broader and deeper analysis than previously possible. Therefore, data-driven decision-making is widely adopted by managers, following the enthusiasm for the notion of Big Data. Big Data analytics now drive near every aspect of our modern society, including retail industry, financial services etc. Retailers have realized the importance of applying these new technological trends to sense their shoppers, support decision-making and offer them appropriate services to satisfy their needs. In essence, retailers seek to infer a wealth of consumer behavioral insights by extracting the knowledge hidden in the vast amount point-of-sale (POS) data they already have, and until recently have only been used for accounting purposes.

The investigation of related literature pointed out a major gap regarding the examination of retail chains based on the store dimension. So far, most studies handle retail chains as a bulk of stores, or they solely focus on a specific store. They do not examine different shopper behaviors per store type within the same retail chain. Furthermore, the existing studies focus on perceived data which do not always indicate the actual behavior of a shopper during his visits.

Motivated by the aforementioned, in our research we aim to examine how a grocery retail chain could benefit via analyzing its shoppers' visits patterns derived from actual data, across two different store types and extract useful insights by exploring the aforementioned questions. More specifically, we propose a data mining-based approach which investigates shopping visits patterns from POS data. The utility of this approach has been evaluated by applying it in real data provided by a major Greek retail chain. The proposed approach is useful from both an academic and business perspective. Our results indicate that shoppers' behavior diverges across different store types even within the same retail chain. The findings highlight the need of applying customized marketing actions to the different store types, in order to offer shoppers more efficient shopper oriented services.

Keywords: Retail Analytics, Data Mining, Shopping Visit Patterns