Consumer Data Research Centre

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Modelling Multi-Channel Adoption at Sainsbury's

Thomas Albery[1], Charlotte Price[1] and Tim Rains[2]
[1]University of Warwick, [2]Sainsbury's

Project Background

There is a substantial body of previous research which shows that customers who shop across multiple channels are good for business. For example, those who shop online and in-store are understood to be more profitable, more satisfied and more loyal than those who shop through only one channel. It is thought that this is due to the increased levels of convenience provided by multiple channels, as well as the more sophisticated set of interactions between business and customer enabled through multiple contact points. To this extent, strategic approaches to retailing no longer focus on maximising the value of a customer's next transaction, but on increasing the lifetime value of customers by encouraging them to shop across multiple channels (Chu & Pike, 2014).

Given the acknowledged benefits of multi-channel usage among customers, knowledge of factors driving multi-channel adoption, as well the ability to predict customers' future channel choices are important considerations. This research project was undertaken for J Sainsbury plc (Sainsbury's) and was designed to investigate multi-channel shopping behaviour within Sainsbury's grocery business. Sainsbury's currently sells grocery products through over 700 convenience stores and 600 supermarkets, as well as taking an average of 215,000 online orders per week (J Sainsbury plc, 2015). The project aimed to investigate multi-channel shopping behaviour with dual aims of:

- Developing a statistical model to predict single-channel customers with a high likelihood of adopting multiple channels.
- Explaining the main drivers of multi-channel adoption among Sainsbury's customers.

Data and Methods

While a number of studies have investigated multi-channel adoption by surveying customers, this study aimed to do so using a sample of Sainsbury's customer data. The sample used for the analysis was made up of 150,012 active Nectar Card users. These were customers who had signed-up to Sainsbury's Nectar Card loyalty scheme. Data was drawn from two consecutive years of transaction history, allowing for an assessment of change in behaviour over time. Logistic regression was used to model the data, allowing for both the key drivers of multi-channel adoption to be identified and probabilities of multi-channel adoption to be derived at the customer level. Variables selected as potential predictors were based on a review of previous research. They included: a number of geodemographic indicators, some of which were drawn from open data sources, such as Office for National Statistics (ONS) data; distance variables, which provided information on levels of customer access to Sainsbury's stores; and variables derived from transaction histories, such as the value and frequency of transactions.

Key Findings

The findings of the research show that it is possible to predict multi-channel adoption with increased levels of accuracy in comparison to a random model, offering the possibility of more effective targeting of offers and communications aimed at encouraging new channel adoption. In terms of the key drivers, the study finds evidence that a customer's previous channel is the most important factor, with convenience customers having increased odds of adoption and online customers having reduced odds, when compared to supermarket customers. The study finds evidence of neighbourhood effects, whereby larger numbers of neighbouring customers shopping in all three channels increases the odds of a given single-channel customer adopting multiple channels. Evidence is also provided that there are increased odds of adoption in areas with higher than average levels of non-white ethnic groups.