

## How does competitor presence influence the performance of click and collect sites?

Alec Davies<sup>1</sup>, Dani Arribas-Bel<sup>1</sup> and Matthew Pratt<sup>2</sup>

<sup>1</sup>University of Liverpool, <sup>2</sup>Sainsbury's

### Project Background

Click and collect is a relatively new service in the supermarket industry. Sainsbury's have only offered the service for less than 2 years, with little known of the effect of competition, catchments and population characteristics on store performance. This study aimed to bring further understanding of performance and competition across click and collect services. Existing literature has demonstrated that as well as local competitor counts, geodemographic factors had strong links to customer loyalty and thus were also considered in the analysis.

### Data and Methods

This paper uses the empirically tested gravitational model of Huff (1963) in order to produce non-linear catchments for Sainsbury's grocery click and collect operation across England, following the methodology used by Dolega et al (2016). This project utilised open source software, notably R, used due to its open source nature of infinite refinability, along with QGIS for quick visualization. Catchment estimation required applying a methodology for retail centre catchments to Sainsbury's grocery click and collect points by using an attractiveness measure of store descriptives to generate store catchments – mainly store size and trade intensity based. Once the catchments were created, point in polygon analysis was used to derive competitor numbers. The study used two competition datasets, an in-house database and GeoLytx retail points. Both datasets were cleaned to only include major competitors offering similar product ranges. Geodemographic variables including the Index of Multiple Deprivation (IMD), the Internet User Classification, car or van availability, highest qualification (IUC), NS-Sec and Ethnicity were also aggregated to store level using weighting, mean and mode (variable dependent), and merged to store descriptives for further analysis.

### Key Findings

Point in polygon analysis of the catchments showed that Sainsbury's own dataset was very similar to GeoLytx retail points and thus could be considered accurate. Once cleaned to only include major competitors, the datasets were very similar in count and distribution, although the individual competitor counts had some

variance. Regression modelling was used to explore the effect of competition on demand. For both datasets greater competition increased demand. Store characteristics and geodemographic factors of catchments were used to further assess the extent of the effects of competition on performance. Store characteristics inclusion led to competition decreasing with demand, although the coefficient was insignificant and likely biased by the use of these factors in attractiveness. Geodemographic factors of IMD, IUC and census variables led to an almost doubling of the effect of competition and much more of the models explained demand (with increased r-squared values).

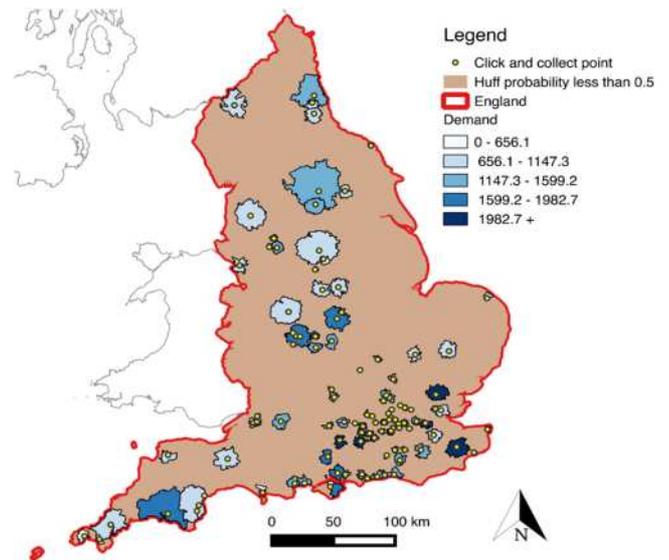


Figure 1. Huff catchments and store demand for click and collect points

### Value of the Research

The paper demonstrates a practical application of huff catchments at the national level for individual stores. The paper has real world application with planned use in the decision making process for the next 5 years of click and collect at Sainsbury's and also the selection of sites for the next 100 collection points, replacing linear catchment analysis. The study is of value not only to the sponsor but also to the wider online grocery market, showing easy application for more complex catchments and further consumer understanding.