Consumer Data Research Centre

An ESRC Data Investment

Analysis of Click & Collect Services

Hai Nguyen, Les Dolega and Alex Singleton
University of Liverpool

Impacts

- Provides evidence of the temporal dynamics of click and collect interactions.
- Establishes relationships between workplace populations and sales.
- Provides an understanding of relationships between Internet usage characteristics and click and collect interactions.
- Informs the optimisation of retailer click and collect strategies, such as the planning of future collection points.

Project Background

Click and collect has experienced a boom in recent years, becoming a prominent fixture for many multichannel retailers. This service, whereby online orders are picked up from a physical location rather than delivered to the purchaser's home, has provided consumers with additional convenience, wealth of choice in selection and flexibility in collection, either from a store or third-party location. In addition, click and collect has been shown to increase physical store interactions and sales. However, there is limited evidence on the spatial and temporal dynamics of this popular channel and research is needed in order to optimise services for both consumers and retailers.

Data produced as a by-product of retail activities can be utilised to understand a broad range of consumer behaviours. Working in collaboration with a major UK high street retailer, this research sought to utilise consumer data to further understand click and collect interactions across the UK. Firstly, spatial and temporal analyses are presented that aimed to explore store collection activities within the context of their local populations. Secondly, this work presents the development of a bespoke classification of click and collect users by integrating the data with the Internet User Classification (IUC; Singleton et al., 2016). This aimed to better understand the characteristics of consumers interacting with the service, based on Internet engagement levels and population characteristics. Such insights may aid retailers in optimising click and collect strategies, for example, by understanding the most convenient locations in which to place collection points to maximise engagement.

Data and Methods

Click and collect data were provided by a major UK high street retailer, representing a two year period (2012-2014) and covering an expansive national network of stores. Locations offering click and collect services ranged from larger stores in urban areas to smaller stores in rural or local areas. Further data acquired for the analysis included workplace zone (WZ) population data, workplace origin-destination flow data from the 2011 Census, and the Internet User Classification, which provided a classification of consumer Internet usage and engagement.

Initial temporal analyses were conducted of click and collect sales patterns (see Figure 1). This demonstrated that collection times were higher during weekdays in the early morning (getting to work), lunchtimes and late afternoon (finishing work), indicating that methods should utilise workplace population geographies rather than night-time derived metrics such as Output Areas.

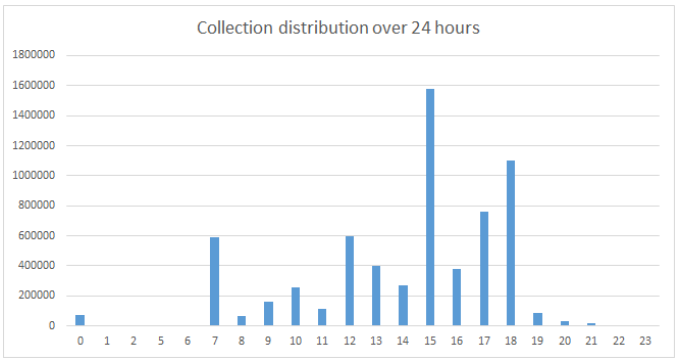

Figure 1. Temporal distributions of order collections over a 24 hour period.

To create an extended IUC classification integrating the click and collect data, stores were first categorised into 5 groups by click and collect volume (groups 1 and 2 - smaller stores, group 3 – mixed and groups 4 and 5 – larger stores). As the IUC is derived from residential Census data, the next stage required shifting populations from residential to workplace areas. This was achieved using the Census flow data (between workplace and usual residence). Data were assigned to the workplace populations within a 10 minute walking radius of each store location, as linkage of workplace population estimates and click and collect volumes indicated that sales in this area (including order

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count and value) were proportional to the daytime population within this radius.

Super-groups from the IUC are defined as E-unengaged (low levels of engagement with Internet applications, significantly skewed towards the elderly), E-professionals and Students (very high levels of engagement with Internet applications, typically accessed using multiple devices), Typical Trends (levels of engagement that are the closest to the national average), and E-rural and Fringe (typically rural areas with higher than average use of online applications, yet typically constrained infrastructure). These groups were used to understand differing levels of Internet engagement of the click and collect customers. Five novel group classifications were created from the integrated IUC and click and collect data.

Key Findings

Linking the IUC with the click and collect data produced a number of key findings regarding the classification of customers engaging with the service. Figure 2 illustrates the click and collect classification groups across the different store types. Figure 3 shows the spatial distribution of these classifications across Work Zones in Liverpool.

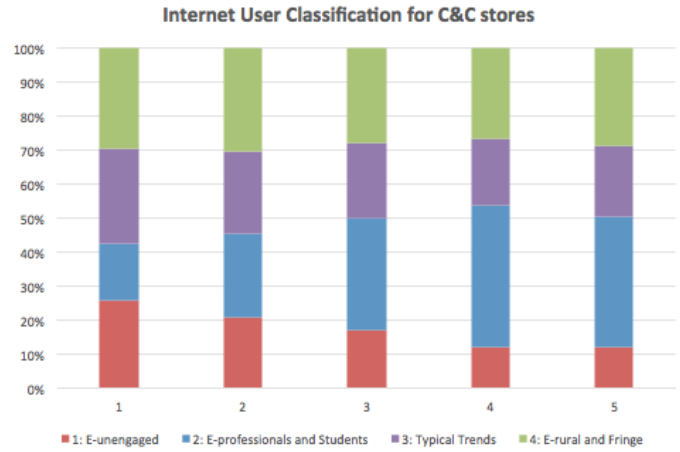

Figure 2. Internet User Classifications for Click and Collect Stores.

The most prolific engagers with click and collect and most active shoppers were the E-professionals and Students and the E-rural and Fringe groups. Contrasting effects can be seen for the E-unengaged group. Further trends showed that E-unengaged and Typical Trends/casual users interacting with the service tended to collect more in local and smaller stores, whereas E-professional and Students tended to collect in bigger stores and more urban areas.

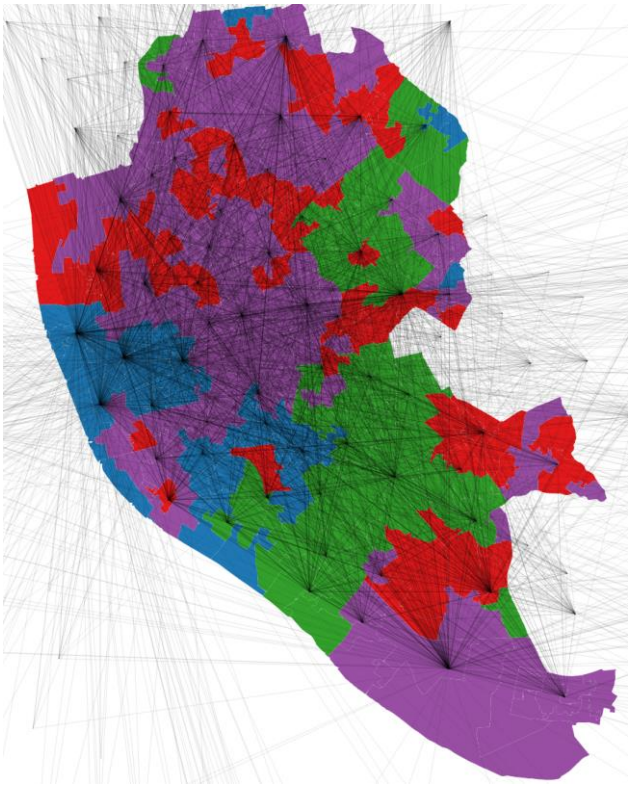

Figure 3. The spatial distribution of classifications across Work Zones in Liverpool. Lines demonstrate residential to Work Zone flows derived from the Census flow data.

E-rural and Fringe users tended to collect in all store types and contributed to about 30% of all collection volumes. This methodology is able to highlight small areas that may have the most/least-connected members of the daytime population (see Figure 3).

Future Directions

Future research aims to integrate additional retailer data to extend these classification results. On-going work is investigating the potential influence of competitors (both direct and general competitors) on click and collect interactions, specifically those located within the 10-minute walking radius of stores. Finally, analyses will aim to better understand potential geographical patterns of click and collect engagement on a retail centre level.