

Article

Supermarket Store Locations as a Proxy for Neighbourhood Health, Wellbeing, and Wealth

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Abstract: The “Waitrose effect” captures the notion that the presence of stores operated by Waitrose, an upmarket UK grocer, increases the value of nearby real estate. This paper considers the broader relationship between Waitrose store locations and neighbourhood type by comparing the health and wealth of neighbourhoods with and without access to Waitrose stores in England. Whilst we do not seek to imply causality, we demonstrate better health, wellbeing, and wealth in neighbourhoods falling within a Waitrose store catchment. In those neighbourhoods, median home prices were almost 2.5 times higher (in urban neighbourhoods) compared to neighbourhoods served only by other major grocers, which formed our control groups. Neighbourhoods in Waitrose catchment areas fare better on indicators of health too. In urban neighbourhoods falling within a Waitrose store catchment (accounting for 98% of Waitrose catchment neighbourhoods), residents are more likely to self-report very good health than those in our largest control groups. The prevalence of mood and anxiety disorders is also significantly lower in those neighbourhoods than in the control groups. Our findings strongly suggest that the presence or absence of a specific retailer (in this case, Waitrose, a mature and well-established chain) could serve as a proxy for neighbourhood characteristics. This could supplement existing multivariate indicators of neighbourhood type. We recommend more research to identify the extent to which locations of a single retail chain—across a variety of sectors—can encode neighbourhood health, wellbeing, and wealth. If the patterns observed with Waitrose stores hold true for other retailers, then the mix of retail stores within a given locality could serve as a useful proxy for neighbourhood type, with the potential for the change in retail mix to highlight changes in neighbourhood characteristics or composition.

Keywords: ‘Waitrose effect’; UK grocery retailing; store location; neighbourhood health; wellbeing and wealth



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1. Introduction

The “Waitrose effect” suggests that (in a British context), the presence of stores operated by premium retailer Waitrose influences the value of nearby real estate [1–3]. Clark et al. [3] demonstrated that Waitrose and M&S stores (both of which the authors consider ‘premium’) had a significant positive impact on nearby residential rental prices. The effect remained after controlling for other potential contributing factors including the geodemographic composition of the neighbourhood, but did not hold true for non-premium retailers. Similarly, research by Lloyds Bank [1] found that homes located close to supermarkets (of any brand) generally have higher values, although it did not specify the definition of ‘closeness’ or which data were used in the research. According to the bank, proximity to a Waitrose store added £43,571 to the average home value, the largest premium among the ten retailers studied [1]. The premium for upmarket M&S came in second at £40,135. Lidl, Aldi, and ASDA (all discount retailers) had the smallest premiums of £5411, £2301, and £1487, respectively. This clearly suggests that the presence of grocery retailers—and specifically

their brand—has an impact on neighbourhood characteristics. However, little research has investigated the relationship between the presence of a single retailer and wider indicators of neighbourhood characteristics that extend beyond housing (and specifically house prices). We address two research questions:

- i. Does the ‘Waitrose effect’ hold true for indicators of neighbourhood wealth, health, and wellbeing?
- ii. Could the location of specific grocery stores serve as a novel proxy for neighbourhood type?

To address these questions, we used neighbourhood and retail store data for neighbourhoods in England. As our key contributions, we first establish that the ‘Waitrose effect’ extends beyond housing prices to include better neighbourhood health, wealth, and wellbeing, as captured by the range of indicators incorporated within our analysis. Secondly, our recommendations highlight the key theoretical impact of this work, noting the clear potential for further work to link area-based retail composition to neighbourhood type. We argue that this could act as a potential indicator of multivariate neighbourhood type or a barometer of neighbourhood change, with clear policy implications (outlined in Section 4). Waitrose, one of the more expensive major grocery retailers in the United Kingdom [4], with a market share of 4.9% at the time of analysis [5] is viewed by some as a class and status symbol [6,7], with stores often located in wealthy neighbourhoods in proximity to their target affluent clientele. Major grocery retailers commit considerable resources to planning their store networks, employing location-planning teams that use sophisticated spatial modelling to influence the site-selection process [8,9]. These seek to ensure that stores serve their target demographic [10] in order to maximise revenues and increase market shares in the highly competitive grocery market. We consider whether one could ‘reverse engineer’ that decision-making process and thus use the neighbourhood characteristics of the areas where the retailer has its presence to tell us something about the likely characteristics of neighbourhoods in proximity to those stores. This could be useful as a proxy for area type, especially if similar associations between store location and neighbourhood type hold true for other retailers, enabling the retail mix within an area to serve as a proxy for neighbourhood type or neighbourhood change.

Waitrose has a mature store network in England, with 265 large format supermarkets, and, with the exception of convenience stores on petrol station forecourts (operated in partnership with Shell), there were no plans for new store openings in the 2022/2023 financial year [11]. This makes Waitrose a particularly interesting example to test the extent to which a single established retailer can serve as a proxy for neighbourhood type. Most research on the relationship between retailers, and neighbourhood type is focused on the so-called ‘anti-social’ retailers such as bookmakers, pawn shops, and ‘unhealthy’ food stores, such as fast-food outlets [12]. The Access to Healthy Assets and Hazard index (AHAH) [13], for example, recognises that access to fast food outlets, pubs and off-licences, tobacconists, and gambling outlets are all features that generate neighbourhood environments that are poor for health. Adeniyi et al. [14] demonstrate that the concentration of gambling retailers is more concentrated in deprived areas than other forms of retailing, whilst Whysall [15] identified some 20 retailers, primarily discount stores, that had a higher than average propensity to locate in deprived neighbourhoods. This suggests that residents of certain neighbourhoods will have greater exposure to a mix of retail stores that could potentially be harmful to their health and wellbeing.

Specifically in relation to food retailers, much work has been conducted to understand the relationship between the food environment and health, with consistent evidence that relatively more deprived neighbourhoods have poorer access to food outlets selling healthy food choices and therefore poorer health and wellbeing. This includes a long-established body of research into food deserts—neighbourhoods with comparatively poor access to sources of fresh, healthy, and affordable food—typically associated with urban deprivation [16–18]. This implies that the inverse should be true. Residents of more affluent areas may have access to a more attractive pool of retailers that may positively influence their

diets, lifestyles, and health. Thus, the presence of certain types of retail services is typically associated with neighbourhood type and neighbourhood-level health. Therefore, it follows that we could use the presence of specific retail services—in this case, stores operated by one specific brand—to infer neighbourhood characteristics.

Indicators of health, income, and employment are an important part of the English Indices of Deprivation (IoD) [19], a composite indicator of neighbourhood-level disadvantage. One of the 39 input variables is population-weighted distance to the nearest general store or supermarket, reflecting that accessibility to core retail services is a driver of neighbourhood well-being, yet store sizes or brands are not taken into consideration [19]. Other neighbourhood-level indices capturing the presence of or accessibility to grocery retail facilities include the e-Food Desert Index [20,21] and the Priority Places for Food Index [22]. Although mixed opinions exist on how wealth and health are related inside neighbourhoods (for example, Luttmer [23] found that higher earnings of neighbours correlate with lower self-reported levels of happiness), the general consensus is that, at an individual level, higher incomes are related to better health [24,25] and so by extension, neighbourhoods with wealthier populations should also be healthier [26].

Little research has been devoted to establishing links between a single retailer, grocery or otherwise, and neighbourhood health and wellbeing. The presence of a high-end grocery retailer does, however, typically correlate with higher housing prices, as outlined above. Drawing on this relationship, the following sections assess the link between a single retail brand—Waitrose—and neighbourhood health, wellbeing, and wealth. Section 2 introduces our data and methods, with results presented and discussed in Section 3, followed by conclusions and recommendations for further work (Section 4).

2. Materials and Methods

Our study area comprises neighbourhoods served by major grocery retailers in England. As outlined in the following sub-sections, we have generated catchment areas around each grocery store and identified the neighbourhoods that fall within each retailer's catchment. Our analysis considers three types of catchment: (i) those served by a Waitrose store; (ii) those served by an M&S store; and (iii) those served by an alternative retailer. Those neighbourhoods served by M&S (a competitor also targeting the premium end of the market) or other competitors form our control groups, enabling us to establish whether the neighbourhood health, wellbeing, and wealth outcomes are better in neighbourhoods served by Waitrose as opposed to those neighbourhoods falling within our control groups. We begin by introducing our supply side data in Section 2.1.

2.1. Retail Supply Side

Locations of grocery retailers, including Waitrose and its competitors, were drawn from the Retail Points dataset supplied by Geolytix, current to November 2021 [27]. The dataset contained 17,171 grocery stores operated by 38 brands and 58 fascias (sub-brands). In addition to store name, brand, fascia, address, and geographic coordinates, each store is assigned one of four size bands based on the Competition and Markets Authority (CMA) definition of the grocery sector.

- Band A for stores under 3013 sq ft (280 sq m) and exempt from Sunday trading legislation in England and Wales;
- Band B for stores between 3013 and 15,069 sq ft (280 sq m to 1400 sq m);
- Band C for stores between 15,069 and 30,138 sq ft (1400 sq m to 2800 sq m);
- Band D for stores over 30,138 sq ft (2800 sq m).

The dataset contains 343 Waitrose stores in England, represented by four fascias: 'Waitrose' (larger format supermarkets), smaller convenience stores operated by Waitrose called 'Little Waitrose', franchised convenience stores at Shell petrol stations labelled 'Little Waitrose Shell', and stores in motorway service areas labelled 'Waitrose MSA'. Table 1 shows the number of stores belonging to each fascia and their typical (modal) store size band.

Table 1. Classification of Waitrose stores in England by fascia and size according to Geolytix [27] as of November 2021.

Fascia	Typical (Modal) Store Size Band (See Above)	Count of Stores (England)	Proportion of Stores (%)
Waitrose	C	265	77
Little Waitrose	B	41	12
Little Waitrose Shell	A	13	4
Waitrose MSA	B	24	7

Despite the official retailer website describing ‘Little Waitrose Shell’ stores as places where one can find “quality Waitrose ingredients for mid-week suppers, delicious ready meals with pizzas” [28], given their typically low floorspace and petrol station association, it is hard to treat them as local convenience stores, and as such they were excluded from the analysis. Similarly, the locations of Waitrose stores at motorway service areas were unlikely planned with local shoppers in mind, so those are also excluded from these analyses. Thus, only ‘Waitrose’ and ‘Little Waitrose’ fascias (306 stores), which account for 89% of all Waitrose stores in England, are used.

In addition to Waitrose stores, our analysis captures stores operated by all other major grocery retailers, including Tesco, Sainsbury’s, Asda, Morrisons, Aldi, Lidl, Co-op, Iceland, and M&S, together accounting for 97.9% of the grocery market share at the time of analysis [5,29]. Given that M&S positions itself as a premium grocery retailer that directly competes with Waitrose for middle-class shoppers [4,30], M&S forms an important control group ‘M&S’, with all other grocery retailers’ stores forming our ‘Other’ control group.

2.2. Incorporating the Demand Side—Delineating Store Catchments

Having established the locations of Waitrose and competitor (control) stores, we delineated the neighbourhoods served by each store. Catchment areas were determined based on geographic proximity and store size, capturing the interplay between store accessibility and store attractiveness. Python’s GeoPandas library was used to calculate straight-line distance catchment areas for Waitrose and the two control groups. Waddington et al. [31] used consumer loyalty card data to identify that traditional supermarkets (average store sizes of 38,000 sq ft) attracted the bulk of their trade from within 5 km of the store, and smaller convenience stores (average store sizes of 1800 sq ft) attracted around 80% of shoppers from within a 2-km radius. Given that larger stores have a greater attractiveness for shoppers and that straight-line distances are nearly always shorter than real journeys [32], our catchment areas were set at 3 km in straight-line distance for stores larger than 15,069 sq ft and 1.5 km for smaller stores, capturing the locally-derived trade around these stores.

Catchments were built from aggregations of Lower-layer super-output areas (LSOAs). These are akin to neighbourhoods and represent the most detailed small-area administrative geography for which the majority of the indicators (discussed in the following sub-section) are available. There were 32,844 LSOAs in England at the time of analysis (based on LSOAs created for the 2011 Census), each with a resident population of between 1000 and 3000 people (400 and 1200 households) [33]. The ONS distinguishes between rural and urban LSOAs and uses an 8-step scale to assign the degree of urbanisation to each neighbourhood [34]. The scale ranges from A1, denoting “Urban major conurbations”, to E2, for “Rural village and dispersed in a sparse setting”. Table 2 highlights the spread of LSOAs across the derived catchment areas for our three catchment groups and by urban-rural geography.

Table 2. Count and composition of LSOAs in store (Waitrose and control groups) catchments.

Rural Urban Classification (2011) of Lower Layer Super Output Areas	Count of LSOAs within Store Catchments by Group			Total
	Waitrose	M&S (Control)	Other (Control)	
Urban major conurbation (A1)	3508	4283	5948	13,739
Urban minor conurbation (B1)	119	348	841	1308
Urban city and town, including those in a sparse setting (C1, C2)	3623	3971	8042	15,636
Rural town and fringe, including those in a sparse setting (D1, D2)	144	51	1796	1991
Rural village and dispersed, including those in a sparse setting (E1, E2)	40	14	364	418
Total	7434	8667	16,991	33,092 ¹

¹ Note: This does not sum to the count of LSOAs in England (32,844), as a single LSOA can fall within the catchment of multiple groups (Waitrose, M&S, and others) or not fall within any of our defined catchments.

2.3. Indicators of Neighbourhood-Level Health, Wellbeing, and Wealth

The indicators used to determine neighbourhood health, wellbeing, and wealth characteristics are summarised in Table 3. They include the proportion of household residents in each LSOA self-reporting very good health, drawn from the 2011 Census, the most recent census for which these data were available at a neighbourhood level at the time of analysis. From the 2011 Census, we also captured the number of residents reporting that their day-to-day activities are limited by any health problem or disability expected to last for more than 12 months, including those associated with old age. We also capture more recent estimates of residents with acute morbidity and mood and anxiety disorders drawn from the 2019 English IoD [19].

Table 3. Summary of health, wellbeing, and wealth indicators of neighbourhood-level health and wealth.

Indicator	Source	Year(s)
Health and Wellbeing		
Percent of the population self-reporting very good health	Census	2011
Percent of the population self-reporting limited day-to-day activities	Census	2011
Acute morbidity—emergency admissions to the hospital related to this condition	Health and Social Care Information Centre via 2019 English Indices of deprivation	2015/16 to 2016/17
Prevalence of mood and anxiety disorders	Health and Social Care Information Centre; Department for Work and Pensions; Office for National Statistics via the 2019 Index of Multiple Deprivation	2013 to 2018
Percent of the population completing the 2021 Census online	Census	2021
Wealth		
Number of Universal Credit recipients per 100 residents	Department for Work and Pensions via Stat-Xplore	2022
Median home price	Office for National Statistics	2021
Percent of the population with no qualifications	Census	2011
Percent of the population with a university degree	Census	2011
Percent of the population renting social housing	Census	2011
Percent of households with no access to a car	Census	2011
Multivariate indicators of health, wellbeing, and wealth		
Overall Indices of Deprivation score (combined across all domains of deprivation)	2019 Indices of Deprivation	2019

There is no particular definition of neighbourhood wealth, and measures that include disposable income [35], deprivation [36], and housing prices [37] have been used within the literature. The census in England does not ask income questions, and there are no reliable sources of earnings data at the LSOA level. Alternative wealth indicators were considered, including median home price (despite the debate that household wealth is not “real” wealth [38]), social renting, and Universal Credit (benefit) recipients.

There is a strong positive correlation between educational attainment and income [39]. Walker and Zhu [40] estimated the earnings “premium” in the UK to be as high as 10 percent for each additional year of education; as such, the share of the population with no degree and the share of the population with a university degree are also included as proxy variables for neighbourhood wealth. Car ownership is linked to household income [41] and was also included, even though non-income-driven motivations for non-car ownership are becoming more common [42].

The 2019 English IoD score was also used, incorporating both neighbourhood health, wellbeing, and wealth characteristics. The share of respondents who completed the Census questionnaires online was also included and acts as a proxy for e-engagement and digital literacy, which are linked to better information access [43] and an increased sense of connectedness and satisfaction among the elderly [44], treated here as an indicator of health and wellbeing.

The selection of variables does not attempt to cover all aspects of neighbourhood wealth, health and wellbeing. These twelve variables were chosen because they are commonly used in similar studies, are readily available as open data, and are subject to ongoing updates, enabling repeatability and extension of this study, as discussed in Section 4.

2.4. Testing Associations for Statistical Significance

To compare the health, wellbeing, and wealth of LSOAs within Waitrose catchment areas with LSOAs from the two control groups (those in an M&S store catchment and those that fall within the catchment of another [non-premium] retailer), the ANOVA statistical test is used, performed in Python using `scipy`'s `f_oneway` function. ANOVA allows comparison of the mathematical means of two or more independent samples, estimating how likely it is that the differences between means are caused by chance alone [45]. It is an extension of the popular t-test, which is designed to compare only two samples. ANOVA is a popular technique to conduct experiments in the social sciences [46]. The null hypothesis is that the means of the indicators in the three samples—*Waitrose*, *M&S*, and *Other*—are equal. A *p*-value of 0.01 to reject the null hypothesis is used. In other words, only when the odds that the differences between samples arise by chance are less than 1 in 100 do we consider such differences “real”.

The characteristics of LSOAs that form the Waitrose store catchments and those that form the catchments of the control group stores are considered to be independent; we assume that location-planning teams at different retailers work autonomously, make independent decisions, and act in the interests of their business alone. ANOVA tests are performed on the three samples for five urban/rural classification groupings (Table 2) to test whether the association between retail stores and health, wellbeing, and wealth holds true across different area types.

3. Results

The results of the ANOVA statistical testing are presented in Table 4 for neighbourhoods within Waitrose and control group store catchments, broken down by urban-rural classification to uncover the impact of neighbourhood type.

Table 4. Means and statistical significance results for Waitrose and control group catchment areas. Indicators associated with higher neighbourhood health, wellbeing, and wealth within a Waitrose store catchment relative to control groups are underlined. Results that are not statistically significant are shown in grey.

Variable	Retailer	Rural Urban Classification Group				
		Urban Major Conurbation	Urban Minor Conurbation	Urban City and Town	Rural Town and Fringe	Rural Village and Dispersed
Health and wellbeing						
Percent of the population self-reporting very good health	Waitrose	<u>52.2</u>	<u>51.9</u>	<u>49.1</u>	<u>48.3</u>	<u>50.0</u>
	M&S control group	50.3	46.7	47.4	46.0	49.0
	Other control group	45.5	43.6	45.1	45.6	48.6
Percent of the population self-reporting limited day-to-day activities	Waitrose	<u>13.8</u>	<u>14.0</u>	<u>15.9</u>	<u>16.5</u>	<u>16.1</u>
	M&S control group	15.4	18.0	17.2	19.2	17.0
	Other control group	19.0	21.3	19.1	19.5	17.2
Acute Morbidity (lower value = lower prevalence)	Waitrose	<u>116.7</u>	133.8	<u>107.4</u>	<u>99.1</u>	<u>91.8</u>
	M&S control group	125.0	135.2	118.7	107.1	94.7
	Other control group	132.8	<u>130.8</u>	120.0	106.1	97.7
Mood and anxiety disorders (lower value = lower prevalence)	Waitrose	<u>−0.86</u>	<u>−0.41</u>	<u>−0.09</u>	<u>−0.15</u>	<u>−0.22</u>
	M&S control group	−0.56	0.13	0.13	0.06	0.07
	Other control group	0.01	0.52	0.28	0.21	−0.05
Percent of the population completing 2021 UK Census online	Waitrose	<u>95.1</u>	<u>91.2</u>	<u>91.2</u>	85.4	<u>93.9</u>
	M&S control group	93.7	87.2	89.9	<u>88.5</u>	90.6
	Other control group	90.0	85.7	87.1	87.9	93.2
Wealth						
Number of Universal Credit recipients per 100 residents	Waitrose	<u>8.6</u>	<u>7.1</u>	<u>7.1</u>	<u>5.5</u>	<u>3.6</u>
	M&S control group	9.9	10.0	9.1	6.6	5.5
	Other control group	11.0	9.2	8.6	6.3	4.5
Median home price	Waitrose	<u>£582,901</u>	<u>£181,838</u>	<u>£321,252</u>	<u>£335,700</u>	<u>£421,729</u>
	M&S control group	£466,120	£157,299	£259,078	£285,768	£324,621
	Other control group	£233,680	£161,507	£223,511	£254,263	£340,798
Percent of the population with no qualifications	Waitrose	<u>15.7</u>	<u>16.5</u>	<u>18.5</u>	<u>20.2</u>	<u>17.5</u>
	M&S control group	19.2	23.9	21.3	24.3	19.3
	Other control group	26.6	29.3	25.0	23.3	19.3
Percent of the population with a university degree	Waitrose	<u>33.4</u>	<u>27.8</u>	<u>20.6</u>	<u>17.8</u>	<u>20.8</u>
	M&S control group	28.0	17.7	18.2	14.2	18.8
	Other control group	13.8	10.9	11.7	14.4	18.4

Table 4. Cont.

Variable	Retailer	Rural Urban Classification Group				
		Urban Major Conurbation	Urban Minor Conurbation	Urban City and Town	Rural Town and Fringe	Rural Village and Dispersed
Percent of the population renting social housing	Waitrose	21.4	21.5	13.8	13.8	6.8
	M&S control group	22.5	20.7	15.5	16.3	7.1
	Other control group	20.2	18.8	15.3	12.4	7.6
Percent of households with no access to a car	Waitrose	39.2	45.0	21.9	14.3	7.7
	M&S control group	39.9	38.3	27.1	18.6	9.5
	Other control group	30.7	27.3	22.1	16.4	8.9
Multivariate indicators of health, wellbeing, and wealth						
Overall Indices of Deprivation score (lower = less deprived)	Waitrose	19.3	25.0	15.4	12.0	13.5
	M&S control group	24.3	29.1	21.6	16.2	17.1
	Other control group	28.4	26.7	22.1	15.5	14.5

Table 4 highlights that indicators of health, wellbeing, and wealth in neighbourhoods within Waitrose catchments are predominantly favourable (indicative of good health and wealth), and this holds true across neighbourhoods of different types (degree of urbanity). Similar trends are not always evident for neighbourhoods in our *M&S* and *Other* control groups, suggesting that this is a phenomenon associated with Waitrose stores. In those neighbourhoods classified as ‘Urban City and Town’ (accounting for almost half of the neighbourhoods falling within the catchment area of a Waitrose store), all 12 of the indicators are better for neighbourhoods within *Waitrose* catchment areas relative to the control groups, and all associations are statistically significant. Relative to our *M&S* and *Other* groups, neighbourhoods in our *Waitrose* group are associated with greater affluence and higher house prices, higher rates of car ownership, degree-level qualifications, e-engagement, a lower propensity to claim Universal Credit benefits or report poor health, and better-reported health.

While some differences between *Waitrose* and control groups in ‘Urban City and Town’ neighbourhoods are modest (for example, 49.1% of residents in *Waitrose* neighbourhoods report very good health, as opposed to 45.1% in the neighbourhoods served by *Other* supermarkets), some indicators are much more striking. Those living in *Waitrose* neighbourhoods are nearly twice as likely to hold a university degree (20.6% vs. 11.7% in *Other*), and their median home prices are over 40% higher. The prevalence of acute morbidity and mood/anxiety disorders are both better for *Waitrose* catchment neighbourhoods, even though it is hard to interpret the scale because both variables were normalised in their original source prior to being made public.

In those neighbourhoods associated with the greatest degree of urbanity (Urban major conurbation), accounting for almost half (47%) of neighbourhoods within *Waitrose* store catchments, 10 of the 12 most ‘favorable’ indicators (those associated with better health, wellbeing, or wealth) belong to the *Waitrose* sample (all statistically significant). These include house prices, which are nearly 2.5 times higher in those neighbourhoods that fall within the *Waitrose* catchment compared to the *Other* control group. In the *Waitrose* catchment, residents are more than twice as likely to have a university degree and 5 percentage points less likely to report an illness or disability affecting their day-to-day life. The predominance of ‘favorable’ indicators (associated with greater wealth or better health and wellbeing) belonging to neighbourhoods within the *Waitrose* group (as opposed to the control groups of *M&S* or *Other*) holds true across all area types, though comparatively few

neighbourhoods in a rural setting fall within Waitrose store catchments and some of the observed means are not statistically significant at this level.

The striking differences in house prices between Waitrose and the control groups hold true across all area types. These may, to some extent, be explained by the fact that many Waitrose stores are located in London and the South-east, which are typically characterised by some of the highest house prices in England. Nevertheless, our findings provide further support for the notion of the “Waitrose effect”, implying that their stores are associated with higher home values, which is in line with previous research [1,2]. However, these findings do not prove causation, and our findings do not imply that Waitrose stores are responsible for the increase in house prices or that prospective buyers offer to pay a premium to live close to a Waitrose.

The general pattern of better health, wellbeing, and wealth associated with neighbourhoods falling within a Waitrose store catchment holds true for variables beyond median home prices. The pattern holds true for health and wellbeing, including educational attainment and the deprivation score. As such, we have the evidence to interpret the “Waitrose effect” in its broader form: proximity to a Waitrose does indeed correlate with better neighbourhood health and wealth. Crucially, in the majority of ANOVA tests across both urban and rural neighbourhoods, those neighbourhoods in the M&S control group scored second to Waitrose, with the *other* control group generally faring worse across the range of indicators. This suggests that the ‘Waitrose effect’ may be partly an association with premium retailers. It may reflect self-selection towards certain location types by both premium retailers and individuals with characteristics or life chances/choices associated with better health, wellbeing, and wealth. Thus, we suggest that location planning teams at these retailers are targeting certain location types as their in-house intelligence and track record in these location types generate commercial benefits. Concurrently, individuals with attributes, attainment, and opportunities consistent with better health, wellbeing, and wealth—as captured by the indicators used within our study—show a propensity to live in neighbourhoods that fall within the catchment of a premium retailer. The attraction to those neighbourhoods may be driven by the housing type, area-type, or location-based attributes, which could include the availability of and proximity to services including transport links, recreation opportunities, or service provision, which may include the availability of premium grocery retailers. However, the stronger association for Waitrose than for premium competitor M&S may suggest that there is a specific relationship between Waitrose and neighbourhood type that is not fully captured by the traditional measures of neighbourhood health, wellbeing, and wealth captured in our analysis. We reflect on this further in the following section.

4. Discussion and Conclusions

Our analysis confirms an association between the location of existing Waitrose stores and selected indicators of neighbourhood-level health, wellbeing, and wealth. Neighbourhoods falling within the catchment area of a Waitrose store fare better on these indicators than neighbourhoods that only have access to other grocery retailers, including premium competitor M&S. These indicators include higher median home prices, better educational attainment, lower levels of morbidity and anxiety, higher percentages of the population self-reporting very good health, and fewer Universal Credit recipients. The pattern appears to hold true irrespective of area type (degree of urbanity), though we acknowledge that our associations were not statistically significant in the most rural neighbourhoods due to the low number of Waitrose (and competitor stores) serving these neighbourhood types. This provides further evidence for the existence of the ‘Waitrose effect’ in the UK, supporting the findings of Clark, Hood, and Birkin [3], alongside similar studies considering the impact of premium retailers in an international context [47].

Retail stores are strategically positioned by location-planning teams and are, in essence, the outputs of all the geodemographic inputs considered during the location planning process. As a well-established premium grocery retailer, Waitrose’s store network mirrors

the demographics of the retailer's target customer base and, as such, could serve as a proxy for neighbourhood health, wellbeing, and wealth. We do not suggest that Waitrose should specifically target these location types in future expansion plans, nor do we present any evidence to suggest that these neighbourhoods are optimal for store performance from the retailers' perspective. Waitrose reports very limited plans for expansion of its large format or convenience store network [11], and we do not intend or recommend that these findings be used in a commercial location-based decision-making context. Instead, they could act as a valuable proxy for area type.

The association between store location and neighbourhood health, wellbeing, and wealth is not as pronounced for premium competitor M&S, in keeping with research by Lloyds Bank [1]. We argue that our findings provide more evidence that there is a unique relationship between Waitrose store locations and neighbourhood type. This is in keeping with the wider recognition of the 'Waitrose effect', an association between the location of Waitrose stores and house prices that is more pronounced than the uplift in house prices associated with proximity to other grocers [1]. In its own right, we suggest that the location of Waitrose stores (current, past, and potentially future pipeline stores should Waitrose embark on further expansion) could serve as a novel proxy for neighbourhood type. Further work is required in order to understand the extent to which this proxy could extend beyond univariate indicators of house prices, wealth, or health status. The statistically significant lower levels of deprivation within Waitrose store catchments suggest that the presence of a store could serve as a proxy for more complex multivariate indicators of neighbourhood type. A 2022 consultation of users of the English IoD [48] recognised the need to identify potential new data sources that are capable of capturing multiple deprivations at the small area level. This is especially true given the publication of the Government Levelling-Up White Paper [49], with a renewed focus on spatial inequalities. The outcomes of that consultation [50] highlighted the importance of domains of deprivation related to income, health, and employment, which we demonstrate have a strong association with Waitrose store locations.

In a wider UK context, there is widespread interest by the Office for National Statistics (ONS), the UK's national statistical institute, in assessing the potential value of novel indicators of area type that could support the production of official statistics [51]. We do not suggest that the presence or absence of a Waitrose store alone is sufficient to derive meaningful indicators of neighbourhood type to supplement or replace existing national statistics. However, we recommend that further work could establish if similar relationships between store location and area type hold true for other retailers. These could include other grocers—treating discounters Aldi and Lidl in isolation (rather than as part of our broader control group)—or retailers in other sectors, which may include long-established brands or rapidly growing chains. Given that the literature has established that exposure to certain types of retail stores may be greater in more deprived areas, with implications for health (see Section 2), we anticipate that the association with health, wellbeing, and wealth will hold true for other retailers. If the association between store location and neighbourhood characteristics holds true across multiple retailers and sectors, then the range of retailers serving a given neighbourhood may serve as a useful proxy for area type, or the change in mix of retailers within a locality could serve to highlight changes in neighbourhood type.

We hope that the growing provision of open data capturing retail locations—including the Geolytix Retail Points data used within our analysis [27]—will permit further research in this area.

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