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A taste for deprivation? Fish, chips and leaving the European Union

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ABSTRACT

This paper explores the relationship between food culture and political behaviour through the lens of the United Kingdom's referendum on leaving the European Union. It finds a significant relationship between the prevalence of fish and chip shops in a given area and voting patterns in the Brexit referendum, demonstrating that constituencies with higher proportions of fish and chip shops tended to show stronger support for Brexit. Conversely, areas with greater culinary diversity or a higher prevalence of Japanese restaurants exhibited the opposite trend, aligning with more cosmopolitan and pro-Remain tendencies. Using constituency-level data, the study situates fish and chip shop density within broader socio-economic and cultural frameworks, including industrial legacies, educational attainment, employment patterns, and demographic factors. These findings reinforce narratives such as the "left behind" and "let down" frameworks, while highlighting the value of culinary landscapes as proxies for political behaviour. By examining the geopolitics of food, this research sheds light on the interplay between social inequality, cultural identity, and electoral outcomes in modern British society.

1. Introduction

Jean Anthelme Brillat-Savarin claimed that if we told him what we eat, he would tell us who we are (Brillat-Savarin, 1848, 1). Such goals are beyond the scope of this paper. Nor will this paper infer how people *vote* based on what they eat. Instead, it will explore how behavioural trends, as reflected in the proportion of fish and chip shops relative to other types of restaurant, are linked to political outcomes. Specifically, it examines the significant relationship between fish and chip shops and the 2016 referendum on leaving the European Union.

Much has been written on the politics leading to Brexit (see, for example, Shipman (2016); Clarke et al. (2017); Habermann (2020); Sobolewska and Ford (2020); Horton (2021)). Existing research has linked Brexit to numerous factors, including age (Hobolt (2016); Liberini et al. (2017)), education (Calvert Jump and Michell, 2020), gender and occupation (Matti and Zhou (2017)), national identity (Henderson et al., 2017), immigration (Arnorsson and Zoega, 2018); immobility (Lee et al., 2018); income (Arnorsson and Zoega, 2018), and even smartphones (Alabrese et al., 2019). However, no study has examined the relationship between Brexit and fish and chips, despite their strong association with British identity and working-class communities. This is perhaps unsurprising, as while existing work on Brexit voting finds economic models to be lacking, few inroads have been made into the cultural factors

which are assumed to be Brexit foundations. Cultural grievances are often seen as little more than anti-immigration attitudes, but there is more to them than this. Fish and chips are one way to unlock these cultural issues.

While there has been serious behavioural research on the intersection of eating, drinking, and political factors (see, for instance, Schlosser (2001) on fast food in the US, or Bolet (2021) on the radical right and pub closures), this paper offers a novel perspective by investigating fish and chips in the context of Brexit.

Structural issues undoubtedly influenced the Brexit referendum, as Jennings and Lodge (2019) and others have shown. Yet behavioural explanations also provide insights into support for Brexit, particularly the narratives of being *left behind*, *let down*, or *invisible* (see Ford and Goodwin (2014); Goodwin and Heath (2016); McKenzie (2017); Sykes (2018); Watson (2018); Isakjee and Lorne (2019); Nurse and Sykes (2019); Richards and Heath (2021)). Other studies have highlighted links between Brexit and inequality (Bachmann and Sidaway (2016); Dorling (2018)), deprivation (Chan et al. (2020)), and cosmopolitanism (Andreouli and Howarth (2019); Beech (2021)).

This paper aligns with these broader framings but aims to contribute uniquely to the literature by demonstrating that *key factors associated with Brexit also correlate with a higher proportion of fish and chip shops*. Conversely, other types of cuisine, such as Japanese restaurants, often

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exhibit opposite tendencies. Restaurants are thus framed as behavioural proxies, reflecting broader cultural and political contexts.

The focus in this manuscript will chiefly be on fish and chips. However, to better understand what fish and chips represent, it will be necessary to look at the places where we do not find fish and chips. As such, comparisons with other food types will help to better understand the fish and chip-Brexit nexus.

2. Fish and chips: *sui generis*?

The EU and its pre-cursors have long been described as *sui generis* (Heath, 1988). A similar case can be made for fish and chips. Fish and chips are deeply entwined with British identity, both domestically and internationally. Reflecting on this culinary emblem, Stephen (1933, 399) asks whether there is anything “so national in character as the fried-fish trade.” For him, there is nothing so British as fish and chips:

Fish landed by British ships, manned by British fishermen, searching the seas from close inshore to the Arctic regions, in fair weather and foul; potatoes grown on our home farms, dripping from home cattle, ranges made by British labour in British factories, and the fuel, coal, or gas, from British mines (Stephen, 1933, 399).

Fish and chips, then, sit atop an industry and ecosystem which enables them. They evoke the notion of Britain as a “gallant seafaring nation whose little ships do battle with the elements and the foreign enemy to feed and protect the people” (Walton, 1992, 1). The cultural prominence of fish and chips resonates with nostalgic narratives of Brexit today, emphasising a return to traditional British values and a simpler, self-sufficient national identity. Winston Churchill, dubbing fish and chips “the good companions,” famously ensured they were not rationed during World War II. In practice, however, wartime economics, including danger pay for fishermen and shortages of quality cooking fat, led to a reduction in both supply and demand (Ministry of Agriculture and Fisheries, 1946).

In celebrating Magna Carta’s legacy, the then Prime Minister David Cameron declared values like freedom and tolerance to be “as British as the Union Flag, as football, as fish and chips” (Cameron, 2014). Indeed, fish and chips have long been emblematic of the UK. As Baker (1994, 194) notes, “[i]f motherhood and apple pie somehow represent something mythically essential about the United States, fish and chips similarly are important for Great Britain” (see also Matheson (2017)). Comparisons abound, from music to Mo Farah (Barlow, 1943; Black, 2016). Yet as British as fish and chips may be, their distribution across the sceptered isle is uneven. This was always the case during their industrial heyday, and today their presence gives us a historical snapshot, which continues to influence modern behavioural patterns. This snapshot is chiefly one of industrial legacy.

2.1. The geopolitics of fish and chips: an industrial staple

At the dawn of the 20th century, fish and chips were a dietary cornerstone in industrial regions. Elizabeth Sloan Chesser’s account of “half-timers” – 12- and 13-year-old children splitting their days between factory work and school – illustrates this link. In 1909, 34,306 children nationwide were identified as half-timers, with 20,302 in the industrial heartland of Lancashire alone. After gruelling factory shifts, children returned home to meals from the fish and chip shop, “which it is safe to say is far from being the ideal meal for a growing child working beyond his strength” (Chesser, 1909, 406–407). Such conditions left children “generally dull or languid, or nervous and irritable, subject to habit spasms, to chorea, or St. Vitus’ dance” (Chesser, 1909, 407).

Further accounts reveal stark realities for industrial families. Kemp (1914, 135) describes Lancashire mothers dosing infants with “soothing syrup” in the morning, feeding them raw tripe, pickled herrings, or fish and chips for tea, and administering another dose of syrup at night to secure rest for themselves. Despite such grim depictions, fish and chips

were lauded in Westminster debates as a healthy option “for those who would be otherwise eating unhealthy food,” especially in the industrial north. In a 1936 House of Commons debate on Sunday trading laws, Pierson expressed dismay that Lancashire’s cotton workers holidaying in Blackpool might be denied their “healthy meal of fish and chips” on Sundays (Deb, 1936, 1307).

Fish and chips, then, were historically tied to industrial Britain. While the UK economy has evolved, fish and chip shops persist, their uneven distribution reflecting an enduring industrial legacy. This pattern echoes broader economic disparities outlined by McCann (2016), who highlights how regional economic imbalances and weak connections to global and European supply chains contributed to frustration in many Leave-voting areas. Chen et al. (2018) extend this by demonstrating that economic exposure to Brexit varied significantly, with regions deeply integrated into EU economies showing stronger Remain support. This uneven economic geography reflects not only disparities in development but also the ways in which industrial heritage continues to shape local identities and voting patterns.

This paper therefore argues that areas with a high density of fish and chip shops are more likely to exhibit pro-Brexit tendencies. This correlation is not due to any intrinsic property of fish and chips but to what their prevalence signifies: industrial heritage, less cosmopolitanism, and limited external influences. Historically, such areas have been working-class enclaves that have seen fewer tangible benefits from EU membership, making them more likely to support Brexit. Although the number of fish and chip shops has declined, their distribution continues to capture these socio-economic and cultural patterns.

3. Hypotheses

Hypothesis 1. (H1) Areas with a greater proportion of fish and chip shops will have a higher level of support for leaving the European Union.

Fish and chip shops, as discussed in previous sections, are emblematic of Britain’s working-class heritage and industrial legacy. It is anticipated that these establishments are more concentrated in areas with higher proportions of working-class or economically disadvantaged populations. These socio-economic factors align with Brexit narratives centred on communities feeling *left behind* or *let down* (Goodwin and Heath, 2016; Watson, 2018), although it should be noted that these framings are not without critique (Antonucci et al., 2017; Nurse and Sykes, 2019; Richards et al., 2020). Additionally, fish and chips’ strong association with British national identity further supports the hypothesis that constituencies with higher proportions of fish and chip shops, relative to other restaurant types, would also exhibit higher Brexit support.

Hypothesis 2. (H2) Areas with greater restaurant diversity will have a lower level of support for leaving the European Union.

If H1 is valid, its inverse must hold: areas with fewer fish and chip shops will have lower Brexit support. This raises the question of what replaces fish and chips in such constituencies. Greater culinary diversity—measured by a wider range of restaurant types—may indicate higher levels of cultural and demographic diversity. Constituencies with diverse food options are often markers of cosmopolitanism and openness to different cultures, factors strongly associated with support for remaining in the EU. Therefore, this hypothesis suggests that constituencies without a single dominant food culture, but instead characterised by diverse culinary options, are more likely to exhibit pro-Remain tendencies.

4. Research design

Before the above hypotheses can be tested, it is necessary to find out where all the fish and chip shops, and every other type of restaurant, are located in the UK. The starting point for creating a restaurant data set

was Yell (yell.com), the online version of the UK Yellow Pages. Other websites, such as Deliveroo and Just Eat, were considered but not chosen due to their emphasis on home delivery. Home delivery introduces a bias toward metropolitan areas and younger demographics which are more likely to use such services. In larger, rural constituencies, these sites often underrepresent restaurant availability. Yell was therefore selected as it provides the most representative sample of restaurants across the UK.

The main dependent variable is the Brexit vote. Given that British politics is structured around Westminster parliamentary constituencies, the constituencies form the unit of analysis. However, the 2016 referendum on EU membership did not report results at the constituency level. To address this, the areally interpolated dataset from Hanretty (2017) was used to estimate constituency-level results. Constituency-level census and election data were primarily drawn from Odell (2017).

4.1. Operationalisation

A script was developed to search Yell for all instances of “restaurant,” based on postcode. This search yielded 57 subcategories of restaurants as recognised by Yell, which are listed in Table 1. As is seen in the Table, fish and chip shops rank third in frequency, behind fast food and Indian restaurants. While fish and chip shops are no longer the most popular, they remain culturally significant. It is worth noting that fast food restaurants may now share some socio-economic characteristics historically associated with fish and chip shops. Similarly, the high number of Indian restaurants highlights areas of substantial immigration, which may affect voting dynamics. These relationships are explored further in the analysis section. It should be noted here that there is overlap between some of Yell’s 57 restaurant subcategories (e.g., ‘Italian’ and ‘Pizzerias’). This reflects their classification system and does not impact the analysis, as the focus in this paper on fish and chips (and Japanese restaurants) is unaffected.

5. Results and analysis

Replication data and code are available on the Harvard Dataverse, at <https://doi.org/10.7910/DVN/2EFUTU>. To give an idea of the spatial distribution of dominant restaurant types, the 57 types of restaurant identified in Table 1 were organised on a constituency basis. On the left of Fig. 1, the single most dominant restaurant type in each of the 650 UK constituencies is shown. Although 57 different types of restaurant can be found on Yell, only six (fast food, fish and chip shops, Indian, pubs, Italian, and traditional) are most dominant in any UK constituency. Restricting this to just London, as shown on the right of Fig. 1, reduces this to three (fast food, Indian, and Italian). These maps highlight key regional trends.

The right-hand panel of Fig. 1 shows that the nation’s political capital is not its fish and chip capital. This does not imply the absence of fish and chip shops in London but rather that they are not the most dominant type of restaurant in any of London’s 73 constituencies. Fast food dominates in 38 constituencies, followed by Indian (26) and Italian (9). Beyond those nine London constituencies, Italian restaurants are most dominant in only four others: Edinburgh East, Edinburgh North and Leith, Edinburgh South West, and Newcastle upon Tyne East.

In London, the distribution of the three most dominant restaurant types is almost radial, with Italian restaurants in the centre, Indian restaurants forming an almost uninterrupted ring around the capital (reminiscent of the M25 orbital motorway), and fast food filling in the gaps.

To locate fish and chip shop territory, one must leave London. In the south of England, fish and chip shops are most dominant in coastal constituencies (as might be expected; see Finlay et al. (2019) on seaside towns and Brexit). In Wales, areas around the capital, such as Cardiff North and Cardiff West, show dominance, with Indian restaurants leading in the other Cardiff constituencies. In Northern Ireland, fish and

Table 1
Subcategories of restaurant on Yell

Rank	Type	Count	Rank	Type	Count
1	Fast Food Restaurants	199,864	30	Vegetarian Restaurants	6,782
2	Indian Restaurants	194,580	31	Middle Eastern Restaurants	5,483
3	Fish and Chip Shops and Restaurants	189,545	32	Pizza Delivery and Takeaway	5,371
4	Pub Restaurants	147,548	33	Nepalese Restaurants	4,907
5	Italian Restaurants	106,898	34	Bangladeshi Restaurants	3,814
6	Chinese Restaurants	75,788	35	Vietnamese Restaurants	3,799
7	English Restaurants	46,939	36	Scottish Restaurants	3,748
8	Traditional Restaurants	41,028	37	Korean Restaurants	2,864
9	American Restaurants	36,160	38	Persian Restaurants	2,673
10	Speciality Restaurants	32,203	39	Polish Restaurants	2,239
11	Thai Restaurants	31,317	40	Moroccan Restaurants	1,641
12	Japanese Restaurants	22,048	41	Malaysian Restaurants	1,340
13	Turkish Restaurants	20,895	42	Indian Takeaways	1,302
14	Pizzerias	20,205	43	Indonesian Restaurants	739
15	European Restaurants	19,429	44	Chinese Takeaways	633
16	Mediterranean Restaurants	16,549	45	Irish Restaurants	525
17	Mexican Restaurants	15,907	46	Welsh Restaurants	467
18	Steakhouse Restaurants	15,648	47	Kurdish Restaurants	411
19	French Restaurants	15,028	48	Fast Food Takeaways	385
20	Modern Cuisine Restaurants	13,389	49	Tapas Restaurants	384
21	Caribbean Restaurants	12,020	50	Belgian Restaurants	322
22	Spanish Restaurants	12,009	51	Russian Restaurants	322
23	Portuguese Restaurants	11,536	52	Mongolian Restaurants	282
24	Seafood Restaurants	11,369	53	Pizzas	75
25	Greek Restaurants	9,747	54	Austrian Restaurants	69
26	Hotel Restaurants	8,239	55	Italian Takeaways	69
27	Bistros	8,117	56	Armenian Restaurants	68
28	African Restaurants	8,060	57	Chinese Buffets	33
29	Lebanese Restaurants	7,569			

chips are most dominant in Belfast East, while fast food and ‘traditional’ (a euphemism for ‘pub’) dominate elsewhere. In Scotland, fish and chip dominance is seen on the edges of the central belt but not in any Edinburgh or Glasgow constituencies.

Fig. 2 provides a clearer view of fish and chip shop dominance. While the “red wall” of constituencies has been discussed extensively (see Mattinson (2020); Ford et al. (2021)), Fig. 2 highlights a distinct “fish and chip wall.” This contiguous region, running from Southport to Scarborough and Whitby, demonstrates strong fish and chip dominance. Although gaps exist, it is possible to traverse this area without leaving what could be called Fish-and-Chip-Land.

Moving beyond a first-past-the-post system of determining dominant restaurant types, Fig. 3 illustrates the proportion of fish and chip shops across regions, counties, and constituencies. The maps reveal greater proportions of fish and chip shops in northern England and Wales, with London showing the lowest proportions. These regional trends are quantified in Table 2, which orders regions by fish and chip shop proportions and includes Brexit vote shares. A moderate correlation ($r = 0.52$) exists between the two variables, though caution is advised given

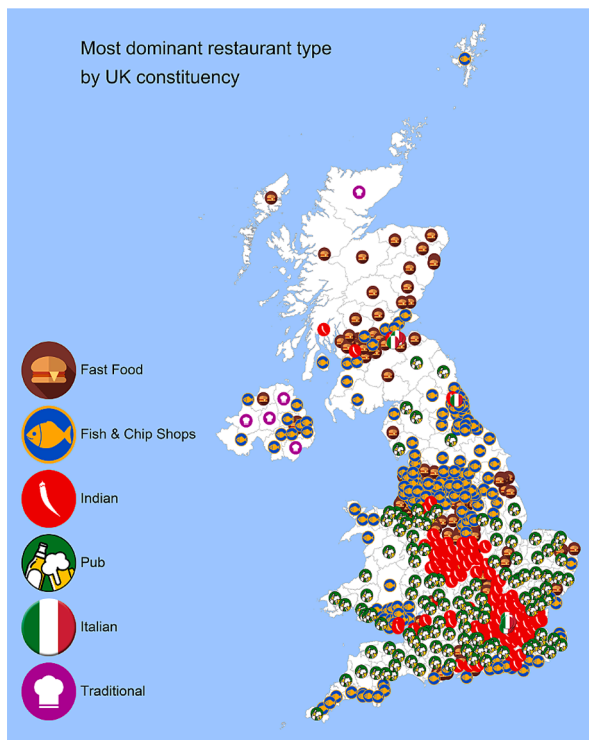


Fig. 1. The geopolitics of food: most dominant restaurant type by constituency in the UK and London.

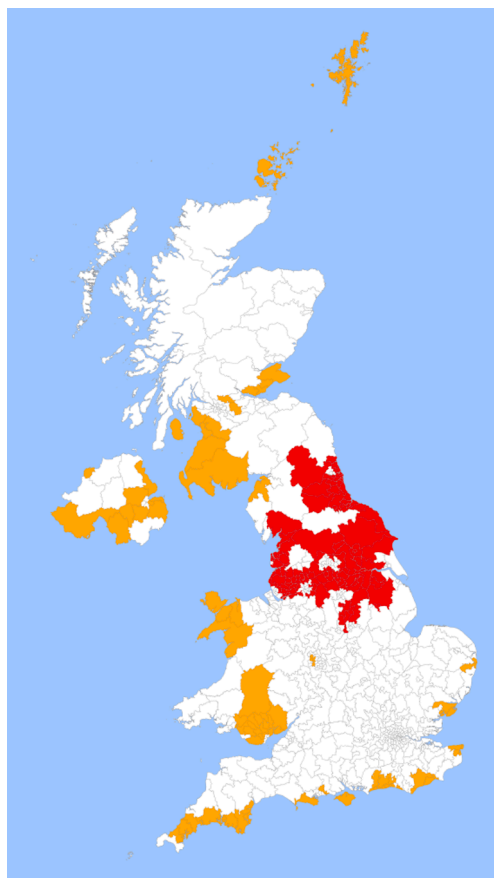


Fig. 2. The "fish and chip wall": constituencies where fish and chip shops are most dominant. Red highlights the northern fish and chip wall of contiguous fish and chip dominance.

the scale of analysis.

For reasons of space, the full table of fish and chip shops by counties and constituencies is omitted here. However, it is notable that the ten constituencies with the lowest proportion of fish and chip shops are all located in central London.

5.1. Results

Now that a comparative overview of the defining characteristics of Brexit and fish and chip constituencies has been made, it is possible to test the hypotheses. Due to data availability issues, all subsequent analyses are based on the 632 parliamentary constituencies in Great Britain (so the 18 Northern Ireland constituencies are excluded from the regression analyses).

5.1.1. H1: Areas with a greater proportion of fish and chip shops will have a higher level of support for leaving the European Union

Table 3 presents the results of regressions examining the relationship between the percentage of fish and chip shops in a constituency, relative to all other restaurants, and Brexit support. Across the first seven models, fish and chips are a significant positive predictor, even after controlling for key socio-economic and demographic factors.

In the first model, without any controls, constituencies with a higher percentage of fish and chip shops show a significantly higher percentage of Brexit vote. Even in Model 7, which controls for class, age, immigration, religion and education, fish and chip shops remain positive and significant. Model 8 introduces an interaction term between the percentage of fish and chip shops and education. The significant positive interaction indicates that fish and chip density has a stronger relationship with Brexit support in areas with lower levels of educational attainment. This suggests that fish and chip shops act as markers of cultural and industrial heritage, resonating strongly with constituencies that supported Brexit.

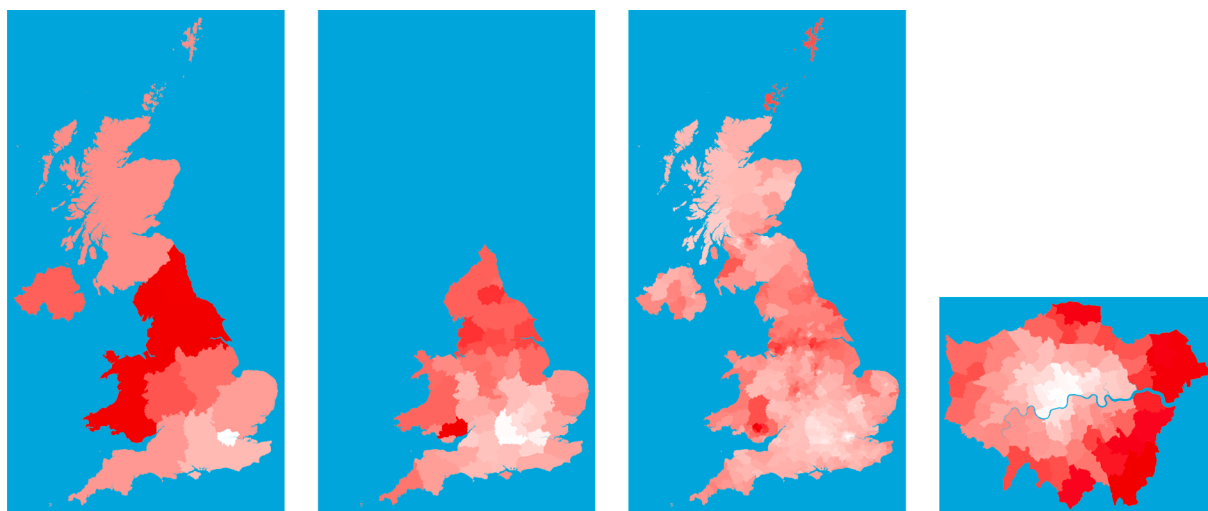


Fig. 3. Proportion of fish and chip shops by region, county, UK constituency, and London constituency. White indicates low proportions; red indicates high proportions.

Table 2
Proportion of fish and chip shops by region.

Region	Fish & Chips Proportion	Brexit Share
Yorkshire and The Humber	0.196	0.58
North West	0.194	0.54
Wales	0.191	0.53
North East	0.189	0.58
West Midlands	0.157	0.59
Northern Ireland	0.152	0.44
East Midlands	0.143	0.59
Scotland	0.130	0.38
South West	0.125	0.53
East of England	0.124	0.57
South East	0.108	0.52
London	0.073	0.40

5.1.2. H2: Areas with greater restaurant diversity will have a lower level of support for leaving the European Union

H2 is, in some ways, the mirror image of H1, but it extends beyond

Table 3
Regression models of share of Brexit vote in GB constituencies, with percentage of fish and chip shops as the main independent variable.

	Dependent variable:							
	Brexit vote (%)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Fish and chips (%)	1.168*** (0.067)	0.682*** (0.079)	0.408*** (0.089)	0.266*** (0.089)	0.191** (0.086)	0.239*** (0.086)	0.241*** (0.088)	-0.419*** (0.127)
Routine work (%)		1.239*** (0.123)	1.230*** (0.120)	1.379*** (0.118)	1.512*** (0.115)	1.486*** (0.114)	1.472*** (0.150)	1.860*** (0.155)
Born in UK (%)			0.225*** (0.038)	-0.031 (0.052)	-0.164*** (0.054)	-0.120** (0.055)	-0.123** (0.059)	-0.202*** (0.058)
Retired (%)				1.045*** (0.152)	0.797*** (0.150)	0.530*** (0.169)	0.525*** (0.174)	0.556*** (0.168)
Christian (%)					0.349*** (0.048)	0.305*** (0.050)	0.308*** (0.052)	0.288*** (0.050)
Age 18 to 24 (%)						-0.372*** (0.112)	-0.372*** (0.112)	-0.492*** (0.110)
Degree (%)							-0.009 (0.060)	-0.409*** (0.082)
Int(Fish and chips * degree)								0.050*** (0.007)
Constant	35.379*** (1.020)	28.181*** (1.189)	12.330*** (2.904)	20.349*** (3.036)	14.470*** (3.030)	20.029*** (3.443)	20.506*** (4.835)	30.922*** (4.896)
Observations	632	632	632	632	632	632	632	632
R ²	0.329	0.421	0.452	0.491	0.530	0.538	0.538	0.571
Adjusted R ²	0.328	0.420	0.450	0.487	0.526	0.534	0.533	0.566

*p<0.1; **p<0.05; ***p<0.01

Table 4

Regression models of share of Brexit vote in GB constituencies, with restaurant diversity as the main independent variable.

	Dependent variable:							
	Brexit vote (%)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Restaurant diversity (%)	-4.591*** (0.342)	-2.671*** (0.325)	-2.574*** (0.304)	-2.427*** (0.291)	-2.079*** (0.288)	-2.064*** (0.287)	-2.084*** (0.287)	-1.697*** (0.532)
Routine work (%)		1.539*** (0.107)	1.178*** (0.106)	1.248*** (0.102)	1.362*** (0.101)	1.371*** (0.101)	1.444*** (0.127)	1.496*** (0.141)
Born in UK (%)			0.306*** (0.031)	0.011 (0.049)	-0.111** (0.051)	-0.071 (0.053)	-0.052 (0.057)	-0.054 (0.057)
Retired (%)				1.072*** (0.142)	0.848*** (0.142)	0.642*** (0.158)	0.670*** (0.162)	0.675*** (0.162)
Christian (%)					0.297*** (0.047)	0.264*** (0.048)	0.248*** (0.051)	0.249*** (0.051)
Age 18 to 24 (%)						-0.307*** (0.107)	-0.309*** (0.107)	-0.310*** (0.107)
Degree (%)							0.054 (0.058)	0.196 (0.175)
Int(Restaurant diversity * degree)								-0.021 (0.024)
Constant	76.583*** (1.869)	48.761*** (2.527)	25.378*** (3.355)	34.456*** (3.430)	27.668*** (3.498)	31.740*** (3.758)	29.073*** (4.726)	26.071*** (5.867)
Observations	632	632	632	632	632	632	632	632
R ²	0.223	0.415	0.492	0.535	0.563	0.568	0.569	0.569
Adjusted R ²	0.222	0.413	0.490	0.532	0.559	0.564	0.564	0.564
Note:	*p<0.1; **p<0.05; ***p<0.01							

5.1.3. *Cosmopolitanism*

Also as a test of cosmopolitanism, Table 5 evaluates the relationship between the percentage of Japanese restaurants and Brexit support. Similar to restaurant diversity, the percentage of Japanese restaurants is a significant negative predictor of Leave voting. In Model 1, constituencies with a higher percentage of Japanese restaurants exhibit lower Brexit support. Even in Model 7, the relationship remains significant. As was the case with fish and chips, the inclusion of an interaction between Japanese restaurants and university degree in Model 8 adds nuance: in this case, Japanese restaurants lose significance, but the interaction is strongly negatively significant. Japanese restaurants may serve as a cultural counterpoint to fish and chips, symbolising cosmopolitanism

and global connectedness, which align with pro-Remain constituencies.

5.2. *Comparison: fish and chips, restaurant diversity, Japanese restaurants and Brexit*

Together, fish and chip shop density, restaurant diversity, and Japanese restaurants paint a picture of the cultural and socio-political dynamics underlying Brexit. While fish and chips symbolise industrial heritage and tradition, diversity and Japanese restaurants reflect cosmopolitanism and multiculturalism. These opposing cultural markers highlight the polarised nature of the Brexit vote, with Leave support rooted in nostalgic traditionalism and Remain support linked to global

Table 5

Regression models of share of Brexit vote in GB constituencies, with percentage of Japanese restaurants as the main independent variable.

	Dependent variable:							
	Brexit vote (%)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Japanese restaurants (%)	-5.458*** (0.296)	-3.670*** (0.305)	-2.908*** (0.379)	-2.341*** (0.379)	-2.281*** (0.363)	-2.327*** (0.361)	-2.556*** (0.374)	-0.345 (0.697)
Routine work (%)		1.285*** (0.106)	1.252*** (0.105)	1.348*** (0.104)	1.435*** (0.100)	1.438*** (0.099)	1.605*** (0.123)	1.776*** (0.130)
Born in UK (%)			0.132*** (0.040)	-0.089* (0.052)	-0.231*** (0.053)	-0.188*** (0.055)	-0.149*** (0.057)	-0.169*** (0.057)
Retired (%)				0.932*** (0.149)	0.655*** (0.147)	0.416** (0.164)	0.466*** (0.165)	0.597*** (0.167)
Christian (%)					0.355*** (0.047)	0.318*** (0.048)	0.279*** (0.051)	0.281*** (0.050)
Age 18 to 24 (%)						-0.348*** (0.108)	-0.356*** (0.108)	-0.380*** (0.107)
Degree (%)							0.134** (0.060)	0.321*** (0.077)
Int(Japanese restaurants * degree)								-0.074*** (0.020)
Constant	59.133*** (0.532)	42.145*** (1.478)	29.919*** (3.952)	34.258*** (3.899)	28.555*** (3.807)	33.621*** (4.093)	28.215*** (4.738)	22.580*** (4.925)
Observations	632	632	632	632	632	632	632	632
R ²	0.350	0.473	0.482	0.513	0.554	0.562	0.565	0.575
Adjusted R ²	0.349	0.472	0.480	0.510	0.551	0.557	0.560	0.569
Note:	*p<0.1; **p<0.05; ***p<0.01							

integration.

6. Robustness checks

For most of this article, the way people voted at the 2016 referendum on EU membership has been the dependent variable. To test whether fish and chip shops, and other types of restaurant, can really tell us anything about political opinion, an alternative dependent variable will be presented as a robustness check: the 2017 petition to “Prevent Donald Trump from making a State Visit to the United Kingdom.” The UK Parliament allows petitions to remain open for six months; however, within two days of opening on 28 January 2017, the anti-Trump petition had reached one million signatories. Data for these first million signatories were downloaded from the UK Parliament Petition website at the constituency level. The expectation was that there should be an inverse relationship: the greater the number of anti-Trump-visit signatories in a constituency, the lower the support for Brexit and the lower the proportion of fish and chip shops. Conversely, the greater the number of anti-Trump visit signatories, the higher the proportion of Japanese restaurants.

Table 6 presents the regression results. The relationship between fish and chip density and anti-Trump petition support is significant and negative in simpler models. In Model 1, constituencies with greater fish and chip density have lower levels of anti-Trump petition support. However, this relationship weakens as controls are added, becoming insignificant in more fully specified models.

Education emerges as a strong positive predictor of anti-Trump petition support in fully specified models. This aligns with broader findings on the relationship between education and progressive political attitudes. The interaction term in Model 8 reveals a significant and negative relationship, indicating that fish and chip density is more strongly associated with lower anti-Trump petition support in constituencies with lower levels of education.

Control variables behave as expected. Constituencies with higher proportions of routine workers, retired populations, and Christians show lower levels of anti-Trump petition support. Conversely, constituencies with younger populations and higher educational attainment exhibit greater support.

The results for restaurant diversity and Japanese restaurants are not presented here but are recorded in the replication code as Tables A1 and

A2. These can be found on the Harvard Dataverse, at <https://doi.org/10.7910/DVN/2EFUTU>. In them, restaurant diversity and Japanese restaurants are positively significant with anti-Trump signatories across all models.

The results align with the theoretical framework proposed in this article. Fish and chip density, as a marker of cultural traditionalism, is negatively associated with anti-Trump petition support, mirroring its positive association with Brexit support. The role of education is also consistent across both analyses, reinforcing its importance as a predictor of liberal and cosmopolitan political attitudes. The inclusion of this alternative dependent variable provides additional evidence for the cultural and socio-political dimensions captured by fish and chip shops, restaurant diversity and Japanese restaurants.

7. Conclusion

Brillat-Savarin (1848, 1) claimed that the destiny of nations depended on how they nourished themselves. While this article cannot claim that fish and chips led to Brexit, it does provide evidence that the cultural and socio-economic patterns reflected in culinary landscapes are closely tied to political outcomes. This study has not sought to demonstrate that fish and chips, or any other food, directly influences voting behaviour. Instead, it has shown that at the constituency level, Brexit is associated with a range of key factors, including education, age, nationality, ethnicity, health, and employment. The proportion of fish and chip shops mirrors these same factors, acting as a proxy for broader socio-economic and cultural dynamics. Culinary landscapes, imbued with nostalgia, reflect broader socio-economic and cultural dynamics tied to Brexit.

The findings are consistent with narratives developed in the “left behind,” “let down,” and “not existing” theories, as well as those centred on inequality, deprivation, and cosmopolitanism. However, as Nurse and Sykes (2019, 602) caution, there are limits to one-size-fits-all explanations. Brexit is inherently multivariate, as Matti and Zhou, 2017, 1133 emphasise, shaped by factors such as age, gender, education, occupation, EU-born population proportions, mono-ethnic households, and changes in ethnic and religious concentrations.

What this study offers is a straightforward yet compelling insight: if you are seeking a cultural indicator of Brexit, the geopolitics of fish and chip shops is an effective starting point. Across a broad range of

Table 6
Regression models of number of anti-Trump visit signatures in GB constituencies, with percentage of fish and chip shops as the main independent variable.

	Dependent variable:							
	(1)	(2)	(3)	Anti-Trump vote (%)		(6)	(7)	(8)
				(4)	(5)			
Fish and chips (%)	-0.086*** (0.005)	-0.046*** (0.005)	-0.023*** (0.006)	-0.010* (0.006)	-0.005 (0.005)	-0.009 (0.005)	-0.019*** (0.005)	0.011 (0.008)
Routine work (%)		-0.101*** (0.008)	-0.100*** (0.008)	-0.113*** (0.008)	-0.122*** (0.007)	-0.120*** (0.007)	-0.060*** (0.009)	-0.078*** (0.009)
Born in UK (%)			-0.019*** (0.003)	0.003 (0.003)	0.012*** (0.003)	0.009** (0.003)	0.022*** (0.003)	0.026*** (0.003)
Retired (%)				-0.093*** (0.010)	-0.077*** (0.010)	-0.057*** (0.011)	-0.032*** (0.010)	-0.033*** (0.010)
Christian (%)					-0.023*** (0.003)	-0.019*** (0.003)	-0.029*** (0.003)	-0.028*** (0.003)
Age 18 to 24 (%)						0.028*** (0.007)	0.029*** (0.007)	0.035*** (0.007)
Degree (%)							0.037*** (0.004)	0.056*** (0.005)
Int(Fish and chips * degree)								-0.002*** (0.0004)
Constant	2.744*** (0.071)	3.329*** (0.080)	4.694*** (0.192)	3.978*** (0.194)	4.360*** (0.193)	3.936*** (0.219)	1.835*** (0.283)	1.355*** (0.291)
Observations	632	632	632	632	632	632	632	632
R ²	0.356	0.478	0.524	0.585	0.618	0.627	0.684	0.698
Adjusted R ²	0.355	0.476	0.521	0.582	0.615	0.623	0.680	0.694

*p<0.1; **p<0.05; ***p<0.01

variables—employment status, occupation, qualifications, industry, ethnicity, country of birth, passports, language, and religion—fish and chip shop density correlates strongly with Brexit support. Conversely, the prevalence of Japanese restaurants often demonstrates the opposite relationship. These findings suggest that the geopolitics of food offers a unique and valuable lens through which to understand social inequality and its political implications.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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