Supplementary material

Appendix

Table 1. Messages extracted from Facebook pages containing the term ‘Brexit’ in their title or description.

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>Period-specific data subset</th>
</tr>
</thead>
<tbody>
<tr>
<td>posts</td>
<td>84 578</td>
<td>204</td>
</tr>
<tr>
<td>comments</td>
<td>1 038 733</td>
<td>1671</td>
</tr>
<tr>
<td>replies</td>
<td>278 007</td>
<td>654</td>
</tr>
</tbody>
</table>

Table 2. Social actor categories involved in setting up Facebook pages containing the term ‘Brexit’ in their title or description.

<table>
<thead>
<tr>
<th>Social actors</th>
<th>Categories</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUPS (102 PAGES TOTAL)</td>
<td>location-based activist groups and local communities</td>
<td>brexit-supporting group for Milton Keynes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>people of the Granthem &amp; Stamford constituency supporting leaving the EU</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Warwick-based Brexit campaigners</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reading-based Brexit campaigners</td>
</tr>
<tr>
<td></td>
<td></td>
<td>residents from Bracknell campaigning to leave</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chesterfield &amp; North East Derbyshire Brexit Group campaigning for leave</td>
</tr>
<tr>
<td></td>
<td></td>
<td>student-run Cambridge pro-leave campaign</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lancaster students for Brexit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Leave voters from Scotland</td>
</tr>
<tr>
<td>politically-affiliated groups</td>
<td></td>
<td>Labour Members Against Brexit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labour Against Brexit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scottish labour against brexit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UKIP party in York</td>
</tr>
<tr>
<td>nationality-based groups</td>
<td></td>
<td>Polish community in Scotland</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Polish nationals in the uk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>international community in Hickory</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Asian &amp; Commonwealth citizens</td>
</tr>
<tr>
<td></td>
<td></td>
<td>European non british nationals</td>
</tr>
<tr>
<td>professionally &amp; institutionally</td>
<td></td>
<td>British National in France</td>
</tr>
<tr>
<td>affiliated groups</td>
<td></td>
<td>economists for brexit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brexitpreneurs (entrepreneurs willing to launch their enterprises around</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the time of Brexit)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>academics organising a brexit-related seminars series</td>
</tr>
</tbody>
</table>
### Groups with other common social attributes
- Women for Brexit
- Students against Brexit
- Students from Manchester University

### News website and blog authors
- London School of Economics blog
- Brexit Money (news website focused on the economic impact of Brexit)
- Brexit Alliance (Brexit Information Hub website set up by a think-tank)
- Farm Brexit (news website focused on monitoring the impact of Brexit on agriculture)

### Non-profit and non-governmental organisations
- Wales GO - NGO providing a case for Wales to leave
- Bollox to Brexit - non-profit organisation supporting anti-Brexit campaigns, protest groups and political parties

### Group centered around projects and initiatives
- Filmmakers; e.g. “Brexit the movie”, “Divided Kingdom Brexit Documentary”,
- Smart Brexit - movement campaigning to ensure secure jobs, fully funded NHS and fair immigration system after brexit
- Brexit negotiations simulation game run by MUN (Canada), the University of Surrey (UK) and Keele University (UK)

### Commercial companies
- Sales: clothes, alcoholic and non-alcoholic beverages, e.g. Brexitovka
- Consulting, legal and business advice; e.g. BREXIT Assistance

### Individuals (28 pages total)
- Blog author: for example: Brexit Border Blog
- Film director and producer: brexit short film
- Activist: Brexit Book Club- aiming to inspire meaningful debate
- Economic Analyst: German economic analyst from a trading network
- Photographer: linked to the photography project concerned with post-Brexit Britain

### Table 3. Languages used in posts, comments and replies extracted Facebook pages containing the term ‘Brexit’ in their title or description.

<table>
<thead>
<tr>
<th>Language</th>
<th>Number of pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>194</td>
</tr>
<tr>
<td>Italian</td>
<td>6</td>
</tr>
<tr>
<td>German</td>
<td>3</td>
</tr>
<tr>
<td>Polish</td>
<td>2</td>
</tr>
<tr>
<td>Dutch</td>
<td>1</td>
</tr>
<tr>
<td>French</td>
<td>1</td>
</tr>
<tr>
<td>Greek</td>
<td>1</td>
</tr>
<tr>
<td>Italian/English</td>
<td>1</td>
</tr>
<tr>
<td>Romanian</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 4. The Brexit Facebooksphere: social actors, motivations for setting up the pages and sentiment.

<table>
<thead>
<tr>
<th>Page category</th>
<th>Total pages</th>
<th>Social actor</th>
<th>Number</th>
<th>Sentiment</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campaigning</td>
<td>67</td>
<td>individual</td>
<td>5</td>
<td>remain</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>group</td>
<td>39</td>
<td>leave</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td></td>
<td>unidentified</td>
<td>23</td>
<td>neutral</td>
<td>5</td>
</tr>
<tr>
<td>News</td>
<td>52</td>
<td>individual</td>
<td>7</td>
<td>remain</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>group</td>
<td>28</td>
<td>leave</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>unidentified</td>
<td>17</td>
<td>neutral</td>
<td>42</td>
</tr>
<tr>
<td>Branding</td>
<td>28</td>
<td>individual</td>
<td>4</td>
<td>remain</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>group</td>
<td>22</td>
<td>leave</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>unidentified</td>
<td>2</td>
<td>neutral</td>
<td>19</td>
</tr>
<tr>
<td>Project</td>
<td>24</td>
<td>individual</td>
<td>3</td>
<td>remain</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>group</td>
<td>18</td>
<td>leave</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>unidentified</td>
<td>4</td>
<td>neutral</td>
<td>18</td>
</tr>
<tr>
<td>Forum</td>
<td>22</td>
<td>individual</td>
<td>5</td>
<td>remain</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>group</td>
<td>4</td>
<td>leave</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>unidentified</td>
<td>13</td>
<td>neutral</td>
<td>14</td>
</tr>
<tr>
<td>Humour</td>
<td>16</td>
<td>individual</td>
<td>4</td>
<td>remain</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>group</td>
<td>2</td>
<td>leave</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>unidentified</td>
<td>10</td>
<td>neutral</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 5. Examples of different kinds of pages containing the term 'Brexit' in their title or description, categorised based on the motivation for their set up. We include the metadata based on which the classification was developed.

<table>
<thead>
<tr>
<th>Category</th>
<th>Title of the page</th>
<th>Relevant metadata</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campaigning</td>
<td>No Brexit UK</td>
<td>About: &quot;Campaigning for the UK to remain in the EU by blocking Brexit via democratic and legal means&quot;</td>
</tr>
<tr>
<td>News</td>
<td>Brexit Alliance</td>
<td>About: &quot;Hub for valuable information about Brexit&quot;</td>
</tr>
<tr>
<td>Branding</td>
<td>Brexit Promotions</td>
<td>About: &quot;Placards, Tee Shirts, Magnetic Car Posters, Bumper Stickers, Window Decal and much more to show your support for the BREXIT marches, rallies and protests.&quot;</td>
</tr>
<tr>
<td>Project</td>
<td>Brexitsim</td>
<td>About: &quot;This is the Facebook page for the joint simulation game run by MUN (Canada), the University of Surrey (UK) and Keele University (UK) in autumn 2016&quot;</td>
</tr>
<tr>
<td>Forum</td>
<td>Discuss Brexit</td>
<td>Description: &quot;The goal of this page is to provide a place on Facebook where we can all debate and argue our points&quot;</td>
</tr>
<tr>
<td>Humour</td>
<td>Anti Brexit Cartoons</td>
<td>About: &quot;Original cartoons and humour against Brexit.&quot;</td>
</tr>
</tbody>
</table>
### Table 6. Topics of the Brexit Facebooksphere.

<table>
<thead>
<tr>
<th>Topic No.</th>
<th>Label</th>
<th>20 terms with highest value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>UK Stakeholders</td>
<td>Person, government, country, money, law, comment, right, parliament, party, scotland, decision, immigrant, pay, rule, course, cameron, matter, leave, hate, power</td>
</tr>
<tr>
<td>2</td>
<td>Ambiguous</td>
<td>Country, way, person, nothing, thank, point, day, reason, everyone, argument, war, politician, england, house, group, freedom, week, guy, kind, answer</td>
</tr>
<tr>
<td>3</td>
<td>Economy</td>
<td>World, something, change, trade, economy, trump, business, someone, labour, need, place, friend, market, power, mind, trade_deal, set, take, industry, pound</td>
</tr>
<tr>
<td>4</td>
<td>Pre-referendum evaluation: costs and benefits</td>
<td>Country, hope, racist, benefit, member, state, rest, end, debate, mate, cost, company, head, tax, please, help, care, research, talk, worker</td>
</tr>
<tr>
<td>5</td>
<td>The referendum voting process</td>
<td>Brexit, one, voting, support, result, truth, remain, ukip, election, union, example, referendum_term, single_market, mps, bill, terrorist, regulation, spot, self, poll</td>
</tr>
<tr>
<td>6</td>
<td>Negotiations with the EU</td>
<td>Time, year, part, deal, get, issue, see, english, https_www, citizen, chance, number, term, thought, brussel, brexiteer, fight, idiot, information, facebook_com</td>
</tr>
<tr>
<td>7</td>
<td>Pre-referendum evaluation: evidence and statistics</td>
<td>Europe, think, fact, job, remain, germany, news, voter, bit, migrant, medium, try, mean, religion, call, reality, line, crap, evidence, move</td>
</tr>
<tr>
<td>8</td>
<td>Mobility of people</td>
<td>Immigration, future, use, control, london, turkey, nobody, stuff, holiday, exit, british, turn, mention, gain, net, good_luck, great_britain, young_people, son, dave</td>
</tr>
<tr>
<td>9</td>
<td>The political aftermath of the referendum</td>
<td>Vote, referendum, http_www, majority, article, uk_news, view, policy, shame, trust, watch, nigel_farage, wish, theresa_may, response, independence, voted_leave, html, look, faith</td>
</tr>
<tr>
<td>10</td>
<td>Social welfare</td>
<td>Life, britain, woman, child, idea, question, family, hand, german, france, million, nhs, school, generation, bbc, dictatorship, option, half, brexiter, sure</td>
</tr>
<tr>
<td>11</td>
<td>Otherness and (in)security</td>
<td>Lot, work, man, opinion, side, other, muslim, page, today, respect, doubt, army, shame, land, trouble, list, risk, brit, project, hour</td>
</tr>
<tr>
<td>12</td>
<td>Post-referendum situation and sentiments</td>
<td>Nation, plan, tory, case, stay, campaign, choice, system, shit, show, area, sort, share, statement, leaver, john, remember, fear, difference, situation</td>
</tr>
<tr>
<td>13</td>
<td>Politicians</td>
<td>Thing, democracy, post, anyone, everything, politic, farage,</td>
</tr>
<tr>
<td>Topic No</td>
<td>Label</td>
<td>20 terms with highest value</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Cultural tension</td>
<td>Country, person, blood, time, fight, britannia, stop, halal_meat, year, cruelty, eec, someone, work, corbyn, europe, u_k, referendum, people, barbarian, brexit</td>
</tr>
<tr>
<td>2</td>
<td>Migration issues</td>
<td>Word, thing, country, child, person, muslim, english, argument, reason, sense, labour, language, brexiter, remainder, act, need, latin, race, migrants_issue, help_neighbour</td>
</tr>
<tr>
<td>3</td>
<td>Migratory regulation</td>
<td>Law, country, europe, time, person, muslim, status, hatred, work, european, brexit, ship, thier, evidence, money, kill, bias, freedom, sturgeon, birth*</td>
</tr>
<tr>
<td>4</td>
<td>Origins</td>
<td>Country, law, year, person, way, britain, france, food, dna, tribe, parent, child, slave, king, roman, history, church, england, order, anglo_saxon</td>
</tr>
<tr>
<td>5</td>
<td>Law and order, and cultural tension</td>
<td>Language, rape, please, rule, course, english, great_britain, law, field, way, shame, level, word, speaking, country, german, decision, islamisation, england, year</td>
</tr>
<tr>
<td>6</td>
<td>Identity</td>
<td>Culture, england, person, english, country, roman, norman, part, scotland, island, celt, world, jews, time, other, nothing, land, shit, family, money</td>
</tr>
<tr>
<td>7</td>
<td>Migration</td>
<td>Person, country, way, germany, immigrant, invader, place, result, voter, tradition, lot, vote, anybody, debate, world, mine, foot, price, today, german</td>
</tr>
<tr>
<td>8</td>
<td>International politics and security</td>
<td>Woman, meat, person, shall_slave, britain, way, country, god, girl, talk, denmark, community, anything, list, china, house, death, isis, century, gun</td>
</tr>
<tr>
<td>9</td>
<td>Social issues and threats</td>
<td>Person, name, terrorist, thought, celt, thing, value, way, education, nhs, bastard, hatred, mr_cameron, war, turkey, telling_us, comes_across, bit, evil, crusade</td>
</tr>
<tr>
<td>10</td>
<td>Nationalism</td>
<td>Time, nation, hell, person, country, world, way, share, righ, nazi,</td>
</tr>
<tr>
<td>Term</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>example, scum, thing, system, muslim, behaviour, period, state, day, post</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK politics and stakeholders</td>
<td>Government, person, lack_lustre, cameron, rule_wave, thank, migrant, year, country, method, hope, want, prime_minister, position, world, roman, pal, follower, meaning, flag</td>
<td></td>
</tr>
<tr>
<td>Mobility and the make-up of Britain</td>
<td>Scotland, country, barbarian, saxon, muslim, use, wall, point, money, empire, ancestor, immigrant, world, pound, sharium, start, year, hadrian, building, medium</td>
<td></td>
</tr>
<tr>
<td>Voting for leave</td>
<td>Person, europe, world, time, year, fact, way, vote_leave, country, something, money, banana, party, life, one, israel, anglo_saxon, britain, guess, vote</td>
<td></td>
</tr>
<tr>
<td>British pride and the empire</td>
<td>Rule_britannia, roman, country, wave, day, nothing, law, trade, i_think, rule, problem, europe, empire, job, house, rome, youtube_com, set, wall, century</td>
<td></td>
</tr>
<tr>
<td>Cultural and religious tension</td>
<td>Ed_u, vote, law, person, country, rome, racist, world, year, life, rule_britannia, sharia_law, halal, anyone, everyone, throat, rule, day, middle_age, war</td>
<td></td>
</tr>
<tr>
<td>Scotland and Brexit</td>
<td>Wall, england, viking, scot, government, lot, person, brexit, border, world, english, take, majority, britannia_rule, market, scotland, page, mate, religion, team</td>
<td></td>
</tr>
<tr>
<td>Religion and beliefs: Islam and Christianity</td>
<td>Islam, europe, man, religion, faith, muslim, ideology, citizen, camp, roman_empire, type, class, society, nothing, country, brexit, life, christian, try belief</td>
<td></td>
</tr>
<tr>
<td>Culture and customs</td>
<td>Animal, way, slaughter, history, culture, democracy, briton, roman, custom, lady, book, think, britain, time, invasion, mayor, nation, age, country, chimp</td>
<td></td>
</tr>
<tr>
<td>Referendum (ambiguous)</td>
<td>Religion, brexit, britannia, day, europe, group, country, kid, angle, referendum, mind, world, house, thing, name, eating, doubt, leave, time, kingdom</td>
<td></td>
</tr>
<tr>
<td>Ambiguous</td>
<td>Man, barbarism, barbaric_way, britain, culture, country, muslim_country, region, elite, person, remain, time, david_cameron, money, spirit, trouble, commonwealth, https_www, brexit, facebook_com</td>
<td></td>
</tr>
<tr>
<td>Freedom, security and control</td>
<td>Day, war, time, the_problem, country, year, freedom, nothing, barbarian, union, soldier, world, population, comment, van, self, corruption, society, internet, control</td>
<td></td>
</tr>
</tbody>
</table>

Table 8. Term frequencies calculated for the subset of posts, comments and replies extracted from Brexit-focused Facebook pages and containing period specific keywords.

Recurring 300 times
<table>
<thead>
<tr>
<th>Recurring 200 times</th>
</tr>
</thead>
<tbody>
<tr>
<td>islam, right, come, england, english, scotland, govern, year, remain, day, stop, european, hadrian, muslim</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recurring 100 times</th>
</tr>
</thead>
<tbody>
<tr>
<td>life, man, power, religion, rome, system, act, empir, money, pay, problem, referendum, stand, unit, support, french, name, state, trade, stay, union, chang, histori, war, culture, foreign, reason, work, border, franc, land, mediev, control, real, word, fight, believe, cameron, free, immigr, independ, polit, anim, slaughter, hope, old, norman, age, racist, german, ban</td>
</tr>
</tbody>
</table>

**Table 9. Term associations calculated for relevant terms recurring 300 times (0.30+ coefficient), as shown in Table 8.**

<table>
<thead>
<tr>
<th>roman</th>
</tr>
</thead>
<tbody>
<tr>
<td>ecbritain, kelt, unclog, xenofobia, rude, ecgreat, later, northwes, bretagn, inferior, jute, occupi, larg, habit, island, counti, background, soldier, conquer, discrimin, brit, racism, although, cathol, defend, victori, armi, real, coloni, english, part, logic, wale, argument, went, main</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>britannia</th>
</tr>
</thead>
<tbody>
<tr>
<td>rule, wavers matchless, stroke, slave, azur, dread, arous, briton, blast, crownd, genres, shall, charter, blest, haughti, majest, muse, neer, oak, shalt, thou, woe, thee, ever, bend, tame, repair, thi, never, envi, command, renown, coast, flame, strain, angel, heaven, guardian, sand, sky, flourish, tear, loud, guard, circl, happi, fall, isl, rural, thine, beauti, main, shine, nativ</td>
</tr>
</tbody>
</table>