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How does immigration affect anti-immigrant sentiment, and who is affected most? A longitudinal analysis of the UK and Japan cases

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Abstract

Does increasing immigration affect natives' attitudes towards immigrants? A significant volume of research has been conducted in Western contexts to explore this question. However, we know little about whether findings observed in Western societies translate to non-Western contexts. At the same time, there is a paucity of research into whether increasing immigration exerts differential-effects among different groups of individuals. Using Japanese and British longitudinal data, this study firstly compares and contrasts how immigrant-share in an environment affects anti-immigrant sentiment in Japan and Great Britain. Secondly, it explores two potential drivers of heterogeneity in the impact of immigration across individuals: (a) perceived financial situation, and (b) views towards the role government should play in issues of support for the vulnerable. Applying fixed-effects panel data modelling, the results show increasing immigration harms attitudes towards immigrants. Furthermore, these negative effects are stronger for those who perceive their financial situation is worse, and among those who lean further to the left on the role of government. Interestingly, these results are highly similar in Japan and the UK. Thus, these findings support similar mechanisms of the group-threat theory operating among natives in two distinct contexts.

Keywords: Immigrant group size, Group-threat theory, Intergroup contact theory, Japan, UK

Introduction

Does an increase in the size of immigrants in an environment affect natives' attitudes towards immigrants? Two important theories on intergroup relations developed in Western societies, the group-threat and intergroup contact theories, have posited competing negative- and positive-consequences for how immigration affects anti-immigrant sentiment (e.g., Pottie-Sherman and Wilkes 2017; Quillian 1995). To test these competing models, extensive research has been conducted from various perspectives, applying different measurements (e.g., of immigration, anti-immigrant attitudes, etc.), different geographic units of analysis, and different statistical models (Pottie-

Sherman and Wilkes 2017). While the evidence-base is mixed, studies suggest that the weight of findings tends towards threat-responses as immigration increases (e.g., Ford 2011; Kaufmann and Goodwin 2018).

Despite this range of approaches and volume of work, a key limitation of previous studies is that they have almost exclusively focused on these processes occurring in Western contexts, leading to a paucity of comparative perspectives between non-Western and Western societies. This has two key implications: firstly, we know little about how immigration affects the attitudes of natives in non-Western contexts; and secondly, it poses a challenge to the generalisability of current theories outside of Western environments. In this study, we compare the effects of immigration between Japan and the UK. These two countries are similar in respect of their highly developed economies and geographic situations (island nations), while distinctive in respect of the immigrant situation. Comparing these two distinctive contexts in immigration-histories and -environments, we test whether patterns of attitudinal-formation in response to immigration operate similarly or differently.

We also identify two further issues that pose a challenge to our understanding of how immigration impacts anti-immigrant sentiment in any context. The first is that previous studies have mainly used cross-sectional data (e.g., Quillian 1995), which does not take account of within-person changes over time. The risk of bias from unobserved heterogeneity or selection-effects is potentially much greater among such cross-sectional work. To address this, we apply longitudinal fixed-effects modelling of panel data collected in Japan and the UK. Secondly, most current work in the field explores the overall relationship between immigrant-share and anti-immigrant attitudes among all individuals, assuming all natives respond the same way to immigration. However, both the group-threat theory and intergroup contact theory predict that immigration-share could have different effects for different groups of individuals: for example, Quillian (1995) showed that economically vulnerable persons are more sensitive to immigration-share. Yet, these heterogeneous effects are rarely tested. To remedy this, using our panel data, we explore sources of heterogeneity in how immigration affects different types of individuals. In particular, we focus on the potential moderating roles of perceived financial situation and an individual's left-right position on the role government should play in issues of support for the vulnerable.¹ Both these features have important relationships with outgroup/immigration attitudes and could thus feasibly affect how individuals respond to immigration (Ceobanu and Escandell 2010). Performing such tests for heterogeneity in both the UK and Japan will provide further opportunities to explore how far different societal contexts may condition responses to immigration.

Theoretical framework

The group-threat and intergroup contact theories

Two distinctive theories, the group-threat and intergroup contact theories, propose competing consequences for how the proportion of immigrants in an environment will be related to natives' attitudes towards immigrants. First, the group-threat theory

¹Although, in reality, immigrants are not always a vulnerable group, natives tend to perceive them to be economically disadvantaged (e.g., Scheve & Slaughter, 2001).

argues that natives perceive that out-group members pose a threat to their resources or status, and, in turn, reactively form negative attitudes towards such out-group members (Blumer 1958). Traditional threat studies have proposed two types of threats: economic (e.g., income, wages, financial situations, welfare) and cultural (e.g., compatibility of values between groups) threats (e.g., Sniderman and Hagendoorn 2007). As a result of the larger size of immigrants, natives perceive heightened competitions over resources and culture, and thus they form more negative attitudes towards immigrants (e.g., Quillian 1995). On the other hand, the intergroup contact theory posits that contact with members of an out-group can result in favourable attitudes towards the entire out-group (Allport 1954; Pettigrew and Tropp 2006). Intergroup contact likely increases when natives and immigrants have more opportunities to encounter one another (Savelkoul et al. 2015). Accordingly, higher immigration in an environment should provide natives with chances to experience contact with immigrants, thus reducing natives' negative attitudes towards immigrants.

The threat and contact hypotheses thus make competing predictions as to how increasing proportions of immigrants in an environment will affect attitudes towards immigrants. However, the current evidence for how the share of immigrants is associated with native attitudes toward them remains relatively mixed (e.g., Quillian 1995; Wagner et al. 2006). Several reviews of the literature, drawing together current findings, suggest that, on the whole, the evidence is generally quite balanced for both contact and threat effects, although some note the weight of evidence tends towards threat processes; especially when studies focus on the amount of recent change in immigration (Kaufmann and Goodwin 2018; Pottie-Sherman and Wilkes 2017).

Immigration and immigration-attitudes in Western and non-Western contexts: the case of Japan and the UK

Despite the well-established theories and rich findings of previous studies, a key limitation of the current field is its predominant focus on the processes linking immigration to anti-immigrant sentiment in more Western contexts (e.g. North America, Europe, Australia). Far less attention has been paid to non-Western societies. This is not a particular tendency for studies into the impact of migration, but a general tendency that social science largely conducts large-sample survey research based on samples drawn from more Western-contexts and assume that these are “standard subjects”; although such patterns are beginning to shift (Henrich et al. 2010, p. 61). This predominant focus on Western societies poses a key problem for our understanding of how immigration may impact anti-immigrant sentiment. Firstly, we currently know very little about how immigration into non-Western societies affects attitudes (*although see* Nagayoshi 2009), despite the fact that many are growing as new destinations for immigrants (e.g., China, South Korea, and Japan). Secondly, it raises questions as to how ‘universal’ the current theoretical framework on immigration-effects is outside of Western contexts. The tendency is to assume processes occurring across more Western contexts will translate to newer-destination societies. However, due to the small number of studies (e.g., Nagayoshi 2009), it is still not known whether the theories developed in Western societies are equally applicable to newer destinations, and how comparable processes are between Western and non-Western societies.

To shed light on these questions we aim to compare processes of immigrant-share/anti-immigrant sentiment in Japan and the UK. On one hand, both societies share key economic and geopolitical similarities. To summarise this, King (2009, p. 64) outlines the historical similarities of these two island nations, in which “through trade and conquest, these islands have generated global economic and cultural power, and an insular autonomy and hegemony that are the very antithesis of the vulnerability so often regarded as typical of islands”. Yet, Japan and the UK have significant differences across experiences of immigrants and immigration, which could play a key role in how natives experience changing immigration in their societies today.

Japan has not accommodated a large number of immigrants thus far. Only 2.1% of the total population has a foreign nationality, and even in Tokyo, the prefecture (the largest local government subdivision) that accommodates the largest proportion of immigrants, immigrants only account for 3.82% of the total population (Ministry of Internal Affairs and Communications 2018). These numbers are, however, the highest in Japan’s contemporary history of immigration, and importantly, the relative increase has been rapid since 1990s. The UK, however, has a much larger immigrant population (14%) and has experienced significant waves of immigration since the post-World War Two era (Hirota et al. 2019). Another issue is that, in Japan, immigrant integration policies and multiculturalism have not been well organised and are rarely debated in the public or political sphere, while immigration as an issue is far less salient in popular and political discourse (Banting and Kymlicka 2013; Huddleston et al. 2015). In the UK, with significant migration, alongside policy debates over multiculturalism, the rise of further-right parties, and terrorism by second-generation immigrants, the immigration-issue has been highly salient (e.g., Ford 2011; Koopmans 2013; Ossewaarde 2014). These events are continuously covered in mass-media and widely shared among UK citizens, strengthening the salience of the immigration-issue in the UK (for review, see Eberl et al. 2018).

Across these dimensions of immigration-context, Japan and the UK represent relatively distinct cases. How, then, do we imagine these contexts might be influential in conditioning immigration-attitude formation under conditions of increasing immigration? On one hand, it is possible that increasing immigration will have an impact on natives’ attitudes in the UK, while not in Japan. Hopkins (2011) showed that when immigration-issues are not salient, immigrants tend not to be perceived as threats, given people need salient frames that “define what the problem is and how to think about it” (Kinder 1998, p. 170). At the same time, the much larger immigrant population in the UK could, in theory, trigger a greater threat-response, compared to lower levels in Japan. On the other hand, there are reasons to think effects may be greater in Japan. A lack of integration policies may leave migrants more isolated and separated. This, coupled with the absence of narratives on the positive role of immigration, may leave space for negative discourses to flourish, without positive, countervailing elite discourses among politicians/media (Shibuichi 2016). However, a third possibility is that, despite such immigration-context differences, an increase in immigrants may affect natives in both countries in a similar way, given the theoretical mechanisms are similarly applicable to both of the countries. Indeed, previous studies conducted in Japan reported that the intergroup contact theory (e.g., Ohtsuki 2006) and the group-threat theory (e.g., Nagayoshi 2009) both appear to operate, as has been observed in the UK.

These results may naturally lead us to expect that the immigrant-group size will affect anti-immigrant sentiment in a similar manner in Japan and the UK.

Sources of heterogeneity in how immigration impacts natives

The second potential issue with the current literature is that most work has largely explored how immigration impacts the attitudes of all people. This assumes that people will generally respond in the same way to shifting ethnic demographics. However, both the group-threat and intergroup contact theories naturally lead to expectations of heterogeneous effects of immigrant-share on anti-immigrant sentiment; yet, these effects are rarely tested. First, in an examination of the group-threat theory, Quillian (1995) showed that the negative effects of immigrant-proportion on attitudes is strongest among those with less income, because they are the most vulnerable citizens for competition over economic-resources against immigrants. Yet, since this study, the moderating-effects of income, or financial status in general (either perceived or actual), are rarely explored. A second observed moderator is liberal/conservative political-attitudes. Here, the expectation is that those with more conservative views (across a range of issues) are more sensitive to a growing immigrant-population as they tend to have higher levels of in-group preferences (Graham et al. 2009). Such preferences can, in turn, strengthen perceived-group categorisations and attachment to in-group values. As a result, such individuals may be more sensitive to perceiving 'cultural threats' posed by immigrants, and in response, form more negative attitudes (Gravelle 2016). Regarding intergroup contact, more conservative political attitudes could hinder positive outgroup attitude formation under experiences of contact. For example, Homola and Tavits (2018) showed that intergroup contact with immigrants resulted in more positive attitudes among liberals, while more negative (although insignificant based on traditional criteria) attitudes among conservatives. They argue that conservative voters have pre-existing negative attitudes towards immigrants, and as such, intergroup contact, which can generate positive outgroup experiences, creates dissonant situations for them. As a result, more conservative-orientated individuals attempt to reduce dissonance by strengthening their pre-existing negative attitudes towards immigrants.

Taken together, little work explores drivers of heterogeneity in the impact of immigration. However, drawing on current studies, we expect immigration may have a stronger negative impact among the financially less secure and those with more conservative political views. Whether this heterogeneity will exist in both Japan and the UK will provide a further interesting test of consistencies/differences in different contexts.

Immigrant-share, anti-immigrant sentiment and causality

To test the effects of immigrant group size on intergroup relations, much of the current literature has drawn on cross-sectional data (see reviews Kaufmann and Goodwin 2018, Pottie-Sherman and Wilkes 2017). These studies mainly examine how the level of immigration in an environment is associated with a respondent's level of positivity/negativity towards immigrants. However, both the group-threat and intergroup contact theories expect dynamic changes within a person (e.g., Lancee and Pardos-Prado 2013), and thus previous studies can be strengthened through analysis of longitudinal data. Furthermore, statistically, applying individual fixed-effects to longitudinal data helps

address concerns that cross-sectional relationships may be driven by sources of time-invariant unobserved heterogeneity (e.g. personality traits) that could feasibly account for observed cross-sectional immigrant-share/anti-immigrant sentiment relationships. In addition, a significant concern in any study of contextual-effects analysis is that apparent relationships could be a product of selection-effects e.g., individuals who are more comfortable with cultural difference choosing to live in areas with more immigrants, or immigrants moving into areas where anti-immigrant sentiment is already higher (often due to limited residential choices from weaker economic resources). To address these issues, in this study we employ longitudinal data and fixed-effect models to compare the direct and moderating effects of immigrant group size in the Japanese and UK contexts.

Data and methods

Data

This study mobilises two sets of longitudinal data. In Japan, we use the 2007-present Japanese Life Course Panel Survey (JLPS). The survey contained an initial nationally-representative, random-sample of young people (20–34 years-old), and a nationally-representative random sample of middle-aged individuals (35–40 years-old). Wave 1 response was 37% for the youth-sample ($n = 3367$ respondents) and 40% for the middle-aged-sample ($n = 1433$ respondents).² Individuals were then followed up and re-surveyed yearly. In 2011, two refreshment-samples were introduced. Given the availability of the study outcomes across different years, we use the 2008, 2010, 2012, and 2014 waves of the study. Attrition occurred within the sample, and between 2007 (first wave) and 2014 (final wave under analysis) the response rate was 62%. The full analytical sample for the JLPS analysis is $n = 8762$ observations nested within $n = 3105$ individuals (with individuals present in an average of 2.8 waves); although differences in when key-questions were asked between waves can change this sample-size. This longitudinal component of the JLPS provides a key opportunity to overcome the issues highlighted above associated with cross-sectional analysis. Respondents in the JLPS can only be matched to the prefectures they live in (average population: 5.5 million). Therefore, the contextual-level of the Japanese analysis, at which we measure the characteristics of respondent's spatial environments, is the prefecture. During the period from 2007 to 2014, immigrant-share is relatively stable (1.68% in 2007 and 1.67% in 2014), although within the period, immigrant group size temporarily decreased due to the financial crisis and the great East Japan earthquake. Despite the stability, there is variance in immigrant-share over time during this period across areas, both increasing and decreasing.

In the UK, the only available comparable data set to the JLPS, containing repeated measures of attitudes towards immigration among the same sample of individuals over time, is the British Election Survey Internet Panel (BESIP) (Fieldhouse et al. 2018). The BESIP draws respondents from an existing internet panel of respondents (YouGov), topping up samples at each wave, while also following individuals over time. We draw on four waves of the BESIP, between 2014 and 2017: wave 1 (collected 20/2/2014 to 9/3/2014), wave 4 (collected 4/3/2015 to 30/3/2015), wave 7 (collected 14/4/2016 to 4/5/2016), and wave 11 (collected 24/4/2017 to 3/5/2017). The full analytic sample consists

²As discussed further, weights are applied to test for bias due to lower response-rates.

of $n = 92,351$ observations, nested within $n = 45,093$ individuals (with individuals appearing, on average, in two-waves); although, given differences in the waves in which certain key variables were asked this issue can change the analytic sample size between models. The contextual-level at which we measure immigrant-share is the UK Local Authority. These are government administrative areas with an average population of around $n = 130,000$ residents.

The analysis of the UK has several limitations relative to the Japanese analysis. Firstly, the BESIP does not contain an extensive range of repeated individual-level controls that we can mobilise in the analysis that are measured at the same time-points as immigration-attitudes. Secondly, detailed yearly contextual-level information is not available at the Local Authority-level in the UK, limiting the number of contextual-level controls we can include in the analysis. Another potential limitation is the period across which the BESIP data was collected. Covering the period 2014–2017, the BEISP data overlaps with the build-up and occurrence of the EU-Referendum, a period during which issues surrounding immigration became increasingly salient, although the immigrant-share is relatively stable (changed from 13.0% to 14.4%). Again, however, each region has heterogeneous trends of changes in immigrant-share. Potentially, therefore, any negative impacts of increasing immigration observed over this period might be tied, in part, to negative political-/media-narratives during this period. However, despite these limitations, the longitudinal component of the BESIP makes it a critical data source to provide, where possible, as close a comparison to the analysis of Japan (we discuss these limitations in more detail below).

Key variables

Dependent variables: attitudes towards immigration

Our main outcome in the Japanese analysis is: “It would be good to have more foreigners coming to Japan to settle down” [translated]. Respondents were asked to respond on a 5-option Likert scale of (1) ‘Strongly Disagree’ to (5) ‘Strongly Agree’ (University of Tokyo 2008). In the UK analysis, due to survey differences, we use a different set of measures which tap individuals’ perceived-threat towards immigrants across three dimensions (known to be critical drivers of attitudes towards immigration in general). Firstly, this includes two indicators of realistic group-threat. A measure of perceived threats to the UK economy: “Do you think immigration is good or bad for Britain’s economy?” (7-point scale: Bad for the economy (1) Good for economy (7)), and a measure of perceived-threats to welfare: “Immigrants are a burden on the welfare state” (5-point scale: strongly disagree (1) to strongly agree (5), reverse coded). The data also contains a measure tapping cultural-threat: “... And do you think that immigration undermines or enriches Britain’s cultural life?” (7-point scale: Undermines cultural life (1) to Enriches cultural life (7)). Responses to these questions are highly correlated and factor analysis demonstrates that they strongly load on to a single latent dimension of perceived immigrant-threat (factor loadings above .4; Eigen value above 1; alpha above .7). For the UK analysis, we therefore create an average score of individuals’ perceived-threat across these three variables.³ Given our measure of immigrant-share in the UK is yearly, and that these immigration-attitude questions were often asked

³We elected to construct an average score over an index to minimise potential issues associated with measurement invariance that can accompany creating indices over time. However, using a factor score produced highly similar findings (results available on request).

multiple times per year, we create average yearly scores of our dependent variables, where: 2014 data is based on waves 1–3 of the BESIP; 2015 data is based on wave 4; 2016 data is based on waves 7, 8 and 10; and 2017 data is based on waves 11 and 13.

Key independent variable: immigrant-share

Our main independent variable is the proportion of immigrants in an area. In Japan, this is defined as individuals who do not have Japanese nationality and have been in Japan more than three months. For the JLPS longitudinal analysis we use annual statistics on the size of the foreign-born population in prefectures, corresponding to the waves of JLPS data under analysis (biannually 2008–14) (Ministry of Justice). Previous work has demonstrated that prefectural characteristics are salient areas for residents' attitudes towards immigration (e.g., Nagayoshi 2009). In the UK analysis, we use yearly estimates of the non-UK born resident population, derived from the Annual Population Survey (ONS 2019), measured at the Local Authority level.

Key moderators: perceived financial situation and position on government support and intervention

We examine two potential characteristics of individuals which, as discussed, may moderate the effect of increasing immigration on attitudes towards immigration. The first driver is perceived financial situation. In the JLPS data, this is measured with the question: "How do you evaluate your household's current standard of living?" (5-point scale) of 'Wealthy' (1) to 'Poor' (5). To maximise the n of categories we condense the variable into the following categories: 'wealthy/Somewhat wealthy', 'average', and 'Somewhat poor/poor'. In the UK, the best comparable measure available over the necessary waves of analysis is: "How does the *financial situation of your household* now compare with what it was 12 months ago?" (5-point scale) of 'Got a lot worse' to (1) 'Got a lot better' (5), where the mid-point is 'stayed the same' (3). To maximise the n of categories we similarly condense the variable into the following categories: 'Got a lot/a little worse', 'stayed the same', and 'got a little/a lot better'.

The second driver of heterogeneity is one's attitudes towards the role government should play in issues of welfare, intervention and the redistribution of wealth. In the JLPS data, we use four questions to tap respondents' left-right position on these issues.⁴ Respondents were asked how far they agree/disagree with the following, using a 5-point Likert scale of 'Agree' (1) to 'Disagree' (5). The statements were: 'It is the government's responsibility to reduce income disparity'; 'It is necessary to secure rural and regional employment through public works'; 'income disparity in Japan is too big'; and 'Improvement of social welfare like pension and elderly medical care should be supported even under difficult financial situations.' These questions load on to a single index tapping a shared dimension of left-right position of the role of government (factor loadings above .4; eigen value above 1; alpha above .7). Given their strength of association, we create an average score of one's left-right political position across these four variables.⁵ As the

⁴Previous studies conducted in Japan show that welfare attitudes are associated with his/her support for Liberal Democratic Party, the dominant right party in Japan (e.g., Matsutani 2019). Although the strength of associations between welfare attitudes and party support is recently declining in the UK, the associations still hold (Evans and Tilley 2012).

⁵As mentioned, average scores were created due to potential issues of constructing indices in panel data over time (although using a factor score produced highly similar findings – results available on request).

variables are coded 1 to 5, individuals who score 3 are at the mid-point, those who score above 3 are left leaning and those scoring below 3 are right leaning. In the UK data, again we face limitations in available questions which were asked during the same waves as the immigration questions. There are two questions available which aim to tap similar views as in Japan. The first aims to tap left-right attitudes towards welfare: 'Do you think that the amount of money families on welfare receive is too high or too low?' (5-point Likert scale of 'Much too high' (1) to 'Much too low' (5)). The second question aims to tap people's views on redistribution of wealth: 'Some people feel that government should make much greater efforts to make people's incomes more equal. Other people feel that government should be much less concerned about how equal people's incomes are. Where would you place yourself on this scale?' (on an 11-point scale of 'Government should try to make incomes equal' (0) to 'Government should be less concerned about equal incomes' (10)). While we believe these questions tap similar dimensions of left-right position as the JLPS data the questions do not load together on a single dimension (factor analysis) as in the Japan analysis.⁶ Therefore, in the UK analysis, we test the moderating role of these variables separately.

Covariates

Given we are taking a fixed-effect panel data approach, such models implicitly adjust for all time-invariant covariates (e.g., gender, personality-traits, highest-qualification). In addition, the Japanese analysis adjusts for several potential individual-level covariates, including: employment status (including manual/non-manual classification); subjective social status; marital status; and housing-tenure. At the prefectural-level, we include prefectural unemployment rate and a prefecture's financial capability index (financial revenues divided by standard financial needs; higher scores represent better conditions),⁷ as both are related to residents' immigration attitudes (Nagayoshi 2009). We also include persons and households assisted by livelihood protection per 1000, social welfare spending per capita, ratio of expenditure for livelihood protection, and murder rate (murders per 100,000 people). Tests did not reveal multi-collinearity between these measures; thus, we include them separately. For the JLPS analysis, these are measured at synchronous time-points as the JLPS waves. As discussed, due to the nature of the BESIP, we can only control for employment-status and perceived-financial situation among BESIP participants. Furthermore, the lack of detailed, yearly contextual-level information at the Local Authority level means we can only adjust our models for percentage unemployed and average annual earnings. Despite capturing these potentially key confounders, the overall lack of individual-level covariates is a limitation to the UK analysis (although testing demonstrated the inclusion/exclusion of individual-level covariates did not substantively change the Japan findings). All models contain survey-period dummies to adjust for common trends in the data.

⁶Factor loading: above .5; Eigen value: .54.

⁷We also tested an indicator of the average housing land prices in a prefecture as an alternative measure of prefectural status. However, this is highly correlated with financial capability ($r = .83$), and yielded highly similar findings when included in the models.

Methodology and analytical approach

To overcome potential biases under cross-sectional analysis, we utilize the longitudinal components of our data and apply fixed-effects panel data modelling to examine within-individual change over time.⁸ In doing so, this adjusts for all individual-level unobserved heterogeneity through a process of time-demeaning variables (subtracting the within-person means from the observed values at each time point) (Allison 2009). This removes all between-subject variability. In doing so, we therefore know that any within-person variability in, say, immigration, is stemming from a change occurring around them. Similarly, any within-person variability in our outcome is stemming from an individuals' attitudes changing. Taken together, we are thus modelling the association between a change in immigration and a change in individuals' attitudes. In addition, we also restrict our models to 'staying periods'; that is, periods where individuals were in the same area over two or more time-points. This helps additionally account for time-invariant contextual-level unobserved heterogeneity (although transitions between areas are relatively low in the data) (Laurence and Bentley 2016). Bias may exist in our analyses due to attrition over time in the samples. Given the conservative nature of fixed-effects analyses we report all models based on the full available samples in our data. However, additional robustness tests were run using inverse probability weights (which restrict samples to those present in every wave) (substantively similar findings were returned). Our analysis will begin by studying the core case under scrutiny: Japan. We will then aim to explore whether similar or different processes are operating in the UK. In both the JLPS and BESIP, some key variables were asked less frequently than others, resulting in a substantial drop in n of observations when analyzing those variables. Therefore, our models are run on the maximum n possible for each specific variable, and we do not restrict the sample to the same observations in each model, leading to different sample sizes across models.

Results

Immigration and attitudes towards immigration in Japan

The first stage involves testing whether increasing immigration is associated with more negative attitudes towards immigrants and immigration in Japan. Table 1 shows the impact of percent-immigrant in Japanese prefectures on attitudes towards immigration in a series of fixed-effects longitudinal models. As noted above, it thus tests whether a change in immigrant-share is associated with a change in attitudes towards immigration. We begin by looking at the direct effect of immigrant-share on attitudes towards immigration (Model 1, Table 1). This shows us that individuals in prefectures experiencing a larger increase in immigrant-share become increasingly more anti-immigration in their views. Figure 1 plots predicted scores of respondents' attitudes towards immigration, based on Model 1, showing how increasing immigration generates more negative attitudes towards immigration.

Increasing immigration thus appears to elicit greater aversion towards further immigration in Japan. However, as outlined, we want to explore whether this effect may differ across different individuals. We begin by testing whether immigration's impact is

⁸Individuals are clustered within prefectures, which could, in theory, bias standard errors. However, such clustering is less problematic for fixed-effects analyses among individuals who do not move between waves (Laurence and Bentley 2016). We did experiment with running hybrid models, in which one can cluster observations within both individuals and prefectures but these returned substantively identical results.

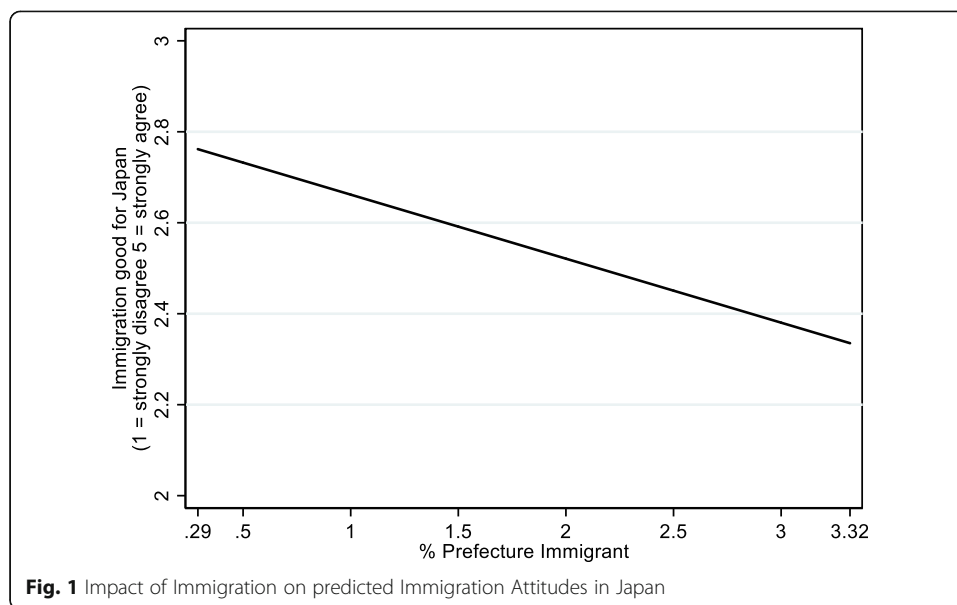
Table 1 Longitudinal associations between percent-immigrant on immigration attitudes and its moderators (Japan; JLPS) – fixed-effects modelling

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Immigration Attitudes	Immigration Attitudes	Immigration Attitudes	Immigration Attitudes	Immigration Attitudes	Immigration Attitudes
Prefectural-level Variables						
Financial capability index	0.113 (0.218)	0.117 (0.218)	0.128 (0.219)	-0.174 (0.216)	0.017 (0.244)	0.035 (0.244)
Unemployment Rate	-0.028 (0.038)	-0.030 (0.038)	-0.030 (0.038)	0.015 (0.044)	-0.007 (0.045)	-0.005 (0.045)
Assistance Livelihood Rate	-0.023** (0.008)	-0.023** (0.008)	-0.023** (0.008)	-0.025** (0.009)	-0.021* (0.010)	-0.021* (0.010)
Violent crime rate	0.014 (-0.185)	-0.064 (0.185)	-0.004 (0.185)	-0.001 (0.021)	-0.122 (0.213)	-0.014 (0.212)
% Immigrant	-0.141* (0.068)	-0.140* (0.068)	-0.128+ (0.069)	-0.127+ (0.068)	0.152 (0.134)	0.158 (0.135)
Individual-level Moderators						
baseline: average perceived financial status						
Poor/somewhat poor		-0.070* (0.035)	0.11 (0.082)			0.048 (0.094)
Wealthy/Somewhat wealthy		0.029 (0.034)	0.029 (0.078)			0.029 (0.089)
% Immigrant * Poor/somewhat poor			-0.102* (0.041)			-0.082+ (0.047)
% Immigrant * Wealthy/somewhat wealthy			-0.001 (0.038)			-0.010 (0.043)
Left leaning attitude to government support				0.044+	0.190**	0.187**

Table 1 Longitudinal associations between percent-immigrant on immigration attitudes and its moderators (Japan; JLPS) – fixed-effects modelling (Continued)

	Model 1 Immigration Attitudes	Model 2 Immigration Attitudes	Model 3 Immigration Attitudes	Model 4 Immigration Attitudes	Model 5 Immigration Attitudes	Model 6 Immigration Attitudes
% Immigrant * Left leaning attitude to government support				(0.028)	(0.062)	(0.062)
					-0.078*	-0.076*
					(0.03)	(0.030)
Constant	2.906*** (0.244)	2.959*** (0.245)	2.925*** (0.246)	1.71*** (0.442)	1.700*** (0.444)	1.822*** (0.441)
N	8762	8746	8746	7996	7996	6658

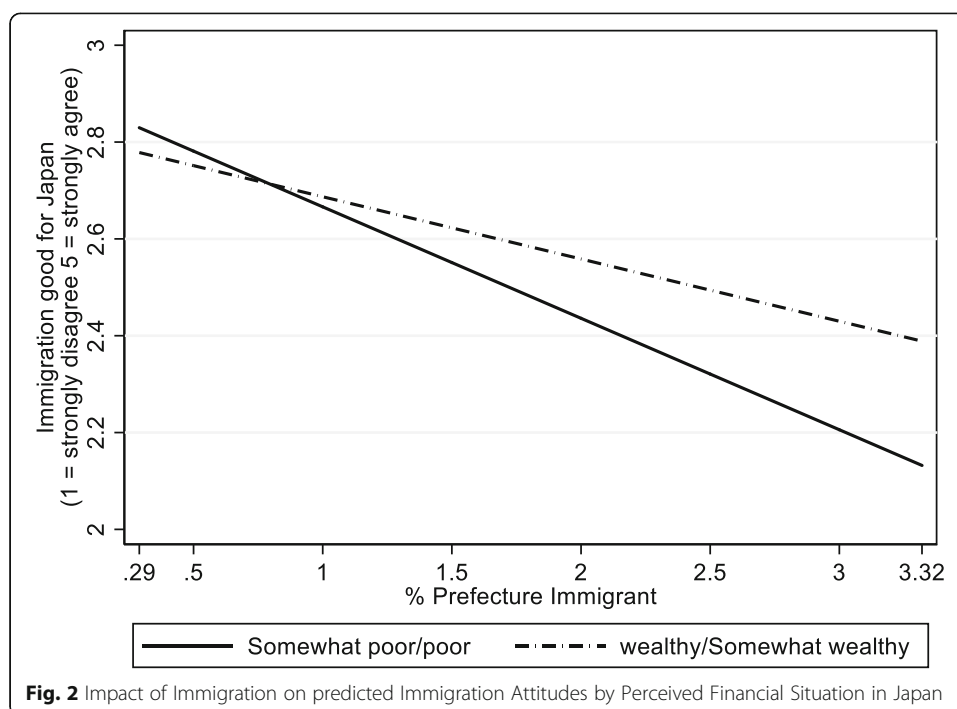
Notes: Significance levels: + 0.1; * 0.05; ** 0.01; *** 0.001; models contain all individual-level variables (although not shown)



conditional on whether an individual's perceived household financial standard of living has also changed over the same period. The direct effect of financial-insecurity is shown in Model 2, demonstrating that individuals perceiving a worse situation reported more negative attitudes. To test the conditioning effect, Model 3 includes an interaction term between immigrant-share and perceived standard of living. We observe that the interaction term between those individuals who reported becoming 'poor/somewhat poor' (compared to those who reported 'average') is significant and negative, suggesting that the effect of living in a prefecture experiencing increased immigration on one's attitudes depends on how one perceives their financial situation: the effect being more negative on those whose perceptions have changed to see their financial situation becoming worse. To understand what this interaction means for people's attitudes towards immigration we generate a series of predicted immigration-attitude scores, across levels of prefectural immigration, but subdivide this based on whether an individual perceives their financial situation as having become 'poor/somewhat poor' compared to 'wealthy/somewhat wealthy' (Fig. 2, derived from Model 2).

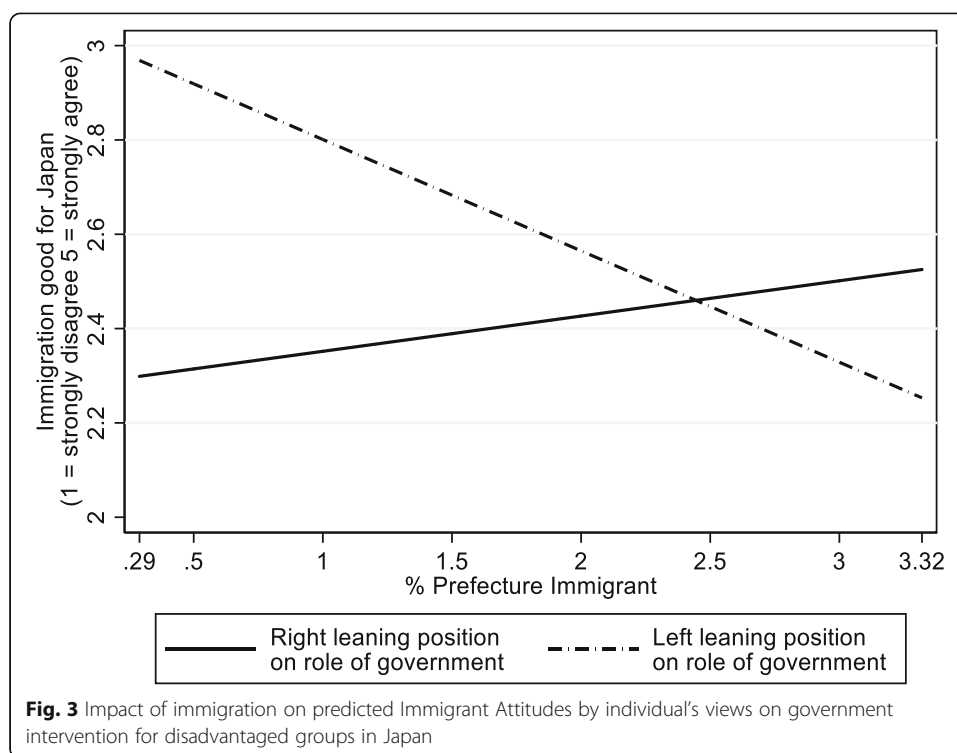
We derive several key takeaways from the findings of Model 3 and Fig. 2. Firstly, as we would expect, on average, individuals who perceive their financial situation to have become worse report more negative attitudes towards immigration, although only marginally so (predicted scores based on Model 3: 'Somewhat poor/poor' report an average of 2.5 outcome score and 'Somewhat wealthy/wealthy' report an average of 2.7 outcome score). Secondly, the predicted scores (Fig. 2) show that in prefectures with low levels of immigration, residents with high/low perceived financial status report equal levels of support for immigration. However, increasing immigrant-share has a stronger negative impact on one's attitudes towards immigration among those whose perceived financial situation became worse, compared to those whose perceived financial situation became better. Worsening perceived-financial situations thus appears to negatively-charge the effect of living amongst more immigrants.

We next move on to testing whether the impact of immigrant-share also depends on an individual's left-right position on the government's role in supporting more



vulnerable groups. Model 4 shows the direct effect of left-right position, demonstrating that becoming more left-wing has a weak but positive association with attitudes towards immigration. To test the conditioning effect, Model 5 includes an interaction-term between prefectural immigrant-share and one's left-right score (where higher values signify a more left-leaning position on these matters over time). We observe that the interaction-term is significant and negative. In other words, increasing immigration has a stronger negative effect on individuals who move further left in their attitudes towards government support. We again generate a series of predicted immigration-attitude scores, across levels of prefectural immigration, but subdivide this based on whether an individual moved further left ('strongly agree' in government intervention) or further right ('strongly disagree' in government involvement) in their left-right attitudes i.e. the extremes of each position (Fig. 3, derived from Model 5).

We can derive several key takeaways from Model 5 and Fig. 3. Firstly, on average, in line with prior work and theoretical expectations, individuals who move further left in their attitudes towards government redistribution see a positive change in their attitudes towards immigration (a 0.05-point increase in immigration attitudes for every 1-point change on the 5-point government redistribution attitude scale – based on Model 4, Table 1). Secondly, from Fig. 3, we see that increasing immigration essentially has very little effect on immigration-attitudes among those with more right-leaning attitudes. Their attitudes remain broadly the same (and relatively negative) in both high and low immigration environments. On the other hand, as immigration increases, left-leaning attitudes become increasingly more anti-immigrant. As such, it is only really those with left-leaning attitudes who experience a negative effect of immigration. However, this appears to be because those with right-leaning attitudes tend to have more hostile attitudes regardless of the level of immigration. What immigration appears to do is push those with left-



leaning political attitudes to become more like those on the right as they are exposed to greater immigration.

Lastly, in Model 6, we include both sets of interactions together in the same model to explore whether one is potentially driving the other. We observe that both sets of interactions remain significant, although the conditioning role of financial-situation is reduced to $p < .1$ significance. This, however, is driven more by the declining sample size rather than its association with left-/right-position.

Results: immigration and attitudes towards immigration in the UK

The next stage of analysis will explore the extent to which these relationships are also operating in the UK context (Table 2). As in the Japan analysis, we begin by exploring how changing immigrant-share in an individual's wider spatial environment (local authority) affects attitudes towards immigration (our composite measure of perceived-threat). Model 1 demonstrates that as the proportion of immigrants increases people perceive immigrants as more of a threat (where lower scores of the perceived-threat variable translate into greater threat). However, while significant, this effect is relatively small, with the differences between Local Authorities with the lowest % immigrant (1%) and highest % immigrant (37%) being 0.15-points on the threat-scale of 1 to 6. Figure 4 plots predicted scores of respondents' perceived-threat, based on Model 1 (Table 2). It demonstrates how immigration generates slightly more hostile attitudes towards immigration.

We next turn to exploring whether, as in the Japan case, the negative impact of immigration is conditional on people's left-right position on government support for the less well off or their perceived financial situation. The first test examines if an

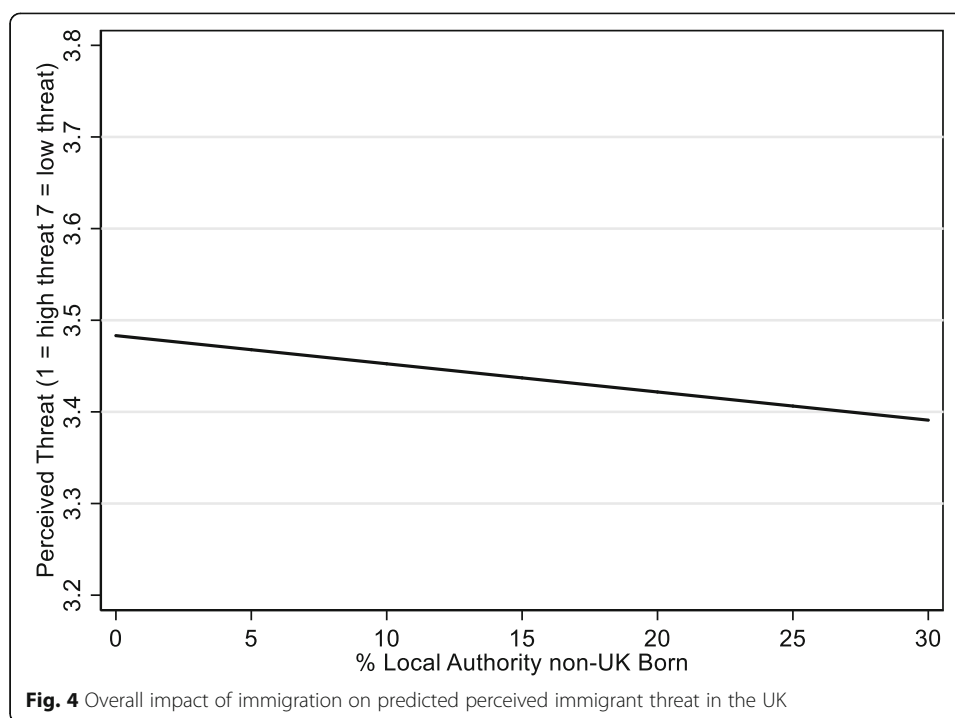
Table 2 Longitudinal associations between percent-immigrant on immigration attitudes and its moderators (UK; BESIP) – fixed-effects modelling

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
	Perceived-Threat	Perceived-Threat	Perceived-Threat	Perceived-Threat	Perceived-Threat	Perceived-Threat	Perceived-Threat	Perceived-Threat	Perceived-Threat
Local Authority-level									
Mean earnings	-0.073 (0.063)	0.080 (0.149)	0.125 (0.154)	0.012 (0.072)	0.011 (0.072)	-0.028 (0.069)	-0.027 (0.069)	0.111 (0.156)	0.022 (0.072)
% Unemployed	0.007 (0.004)	0.011 (0.009)	0.012 (0.009)	0.007 (0.004)	0.007 (0.004)	0.006 (0.004)	0.007 (0.004)	0.016+ (0.009)	0.004 (0.004)
% non-UK born	-0.003* (0.001)	-0.005+ (0.003)	0.003 (0.005)	-0.003* (0.002)	-0.005** (0.002)	-0.003+ (0.002)	-0.004* (0.002)	0.004 (0.005)	-0.005** (0.002)
Individual-level Moderators									
Welfare too low		0.058*** (0.010)	0.086*** (0.015)					0.084*** (0.016)	
% non-UK born * Welfare too low			-0.003* (0.001)					-0.004** (0.001)	
Government should not reduce inequality									-0.007** (0.002)
% non-UK born * Government should not reduce inequality									0.000+ (0.000)
baseline: financial situation stayed the same									
Got worse						0.004 (0.007)	-0.003 (0.011)	-0.011 (0.026)	-0.002 (0.011)
Got better						0.012+ (0.007)	-0.009 (0.012)	-0.002 (0.028)	-0.008 (0.013)
% non-UK Born * got worse							0.001	0.002	0.001

Table 2 Longitudinal associations between percent-immigrant on immigration attitudes and its moderators (UK; BESIP) – fixed-effects modelling (Continued)

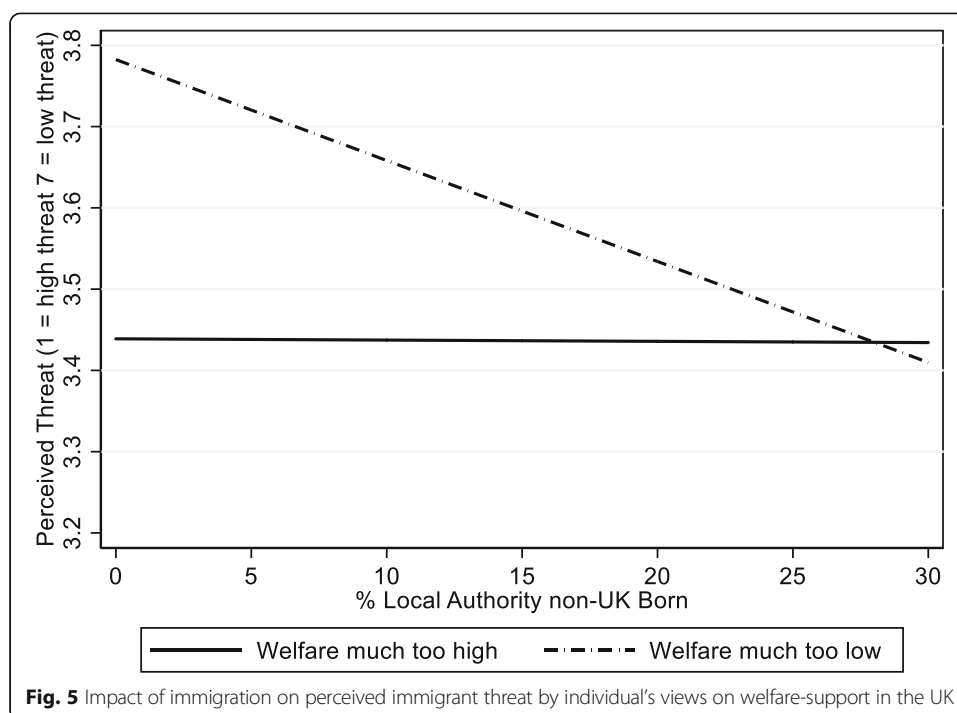
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
	Perceived-Threat	Perceived-Threat	Perceived-Threat	Perceived-Threat	Perceived-Threat	Perceived-Threat	Perceived-Threat	Perceived-Threat	Perceived-Threat
% non-UK Born									
Constant	3.971*** (0.658)	2.094 (1.553)	1.589 (1.603)	3.087*** (0.745)	3.111*** (0.745)	3.453*** (0.718)	3.449*** (0.718)	1.697 (1.627)	2.994*** (0.748)
N	107,433	34,163	33,531	84,141	84,141	90,776	90,776	32,694	83,286

Notes: Significance levels: + 0.1; * 0.05; ** 0.01; *** 0.001; models contain all individual-level variables (although not shown)



individual's views on whether welfare is too high or too low moderates the effect of immigration on one's perceived-threat. Model 2 tests the direct effect of welfare-attitudes, demonstrating that individuals who believe welfare is too low report lower threat towards immigration. To test the conditioning effect of welfare attitudes, Model 3 (Table 2) includes an interaction-term between immigrant-share and attitudes towards welfare-support (where increasing values are related to an increasing belief that welfare support is too low). We observe that the interaction-term is significant and negative. In other words, the negative effect of changes in immigration on attitudes towards immigrants is significantly stronger among individuals whose attitudes are more supportive of welfare. To understand what this interaction means for people's perceived-threat we again generate a series of predicted perceived immigrant-threat scores, subdivided by whether someone has the maximum positive or negative attitudes towards welfare, presented in Fig. 5, derived from Model 3.

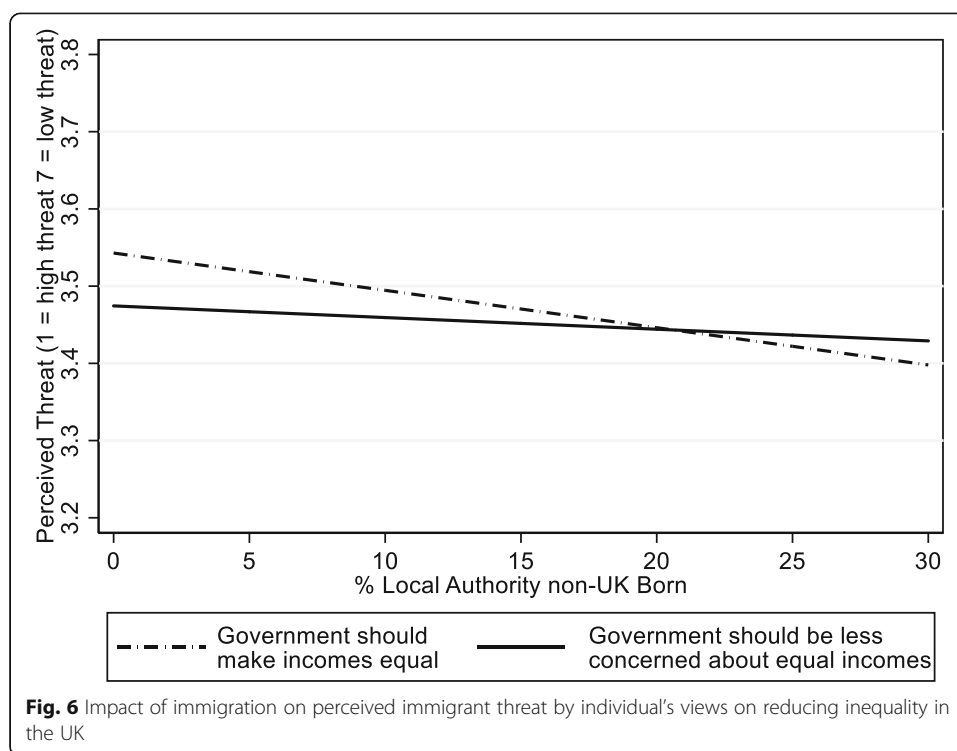
Model 3 and Fig. 5 produce several key insights. Firstly, as we would expect, on average, individuals who become more left-wing in their views towards government welfare support report increasingly less perceived-threat. Secondly, the results show that among right-leaning individuals, increasing immigrant-share has essentially no effect on their attitudes towards immigration, which remain comparatively worse (again, where lower scores equal greater threat) across all levels of immigrant-share. In Local Authorities experiencing low levels of immigration, left-leaning individuals report substantially more positive attitudes than right-leaning individuals at equal levels of low immigration. However, increasing immigrant-share has a strong negative impact on their immigration attitudes, and at the highest-levels of immigration, those more supportive of welfare report just as much perceived-threat as right-leaning individuals. In other words, as in the Japan case, the non-effect of immigration on right-leaning individuals is that they tend to evince more threat regardless of how much immigration is



occurring. It is amongst the left-leaning where the negative impact is concentrated, which shifts left-leaners to catch-up with the comparatively more negative attitudes of right leaning individuals.

As discussed, the left-right political position variables do not load on to a single indicator in the UK. We therefore next test our second indicator of left-right position: individuals' attitudes towards whether the government should redistribute wealth to reduce inequality. We begin by testing the direct effect of attitudes towards redistribution, demonstrating that individuals who increasingly believe governments should not reduce inequality (further right on this issue) report increasingly more perceived-threat (Model 4). To test the conditioning effect, Model 5 (Table 2) includes an interaction-term between immigrant-share and attitudes towards redistribution (where higher values signify a belief that the government should be less concerned with redistributing wealth i.e. further politically right). Results show the interaction-term is significant and positive. In other words, changing immigration has a more negative impact on individuals whose attitudes move towards feeling the government *should* try to make incomes more equal (that is, further left). Thus, as above, immigration again appears to have a more negative impact on individuals with more left-leaning political attitudes towards government support for the less well off. We again generate a series of predicted immigration-attitude scores in Fig. 6, derived from Model 5, setting redistribution attitudes to their maximum and minimum.

Model 5 and Fig. 6 demonstrate several key findings. Firstly, again as expected, on average, individuals who become more left-wing in their views towards government redistribution of wealth report increasingly less perceived-threat. Secondly, we see once more that immigration has a weaker-effect on individuals whose attitudes are more right-leaning on redistribution (although the difference in effect sizes is far smaller than for those with high/low welfare-support attitudes). Right-leaning individuals' attitudes



remain broadly the same in both high- and low-immigrant environments. We again see that people with more left-leaning attitudes have more positive views of immigration in areas with low levels of immigration. However, as immigration increases, their attitudes become increasingly more anti-immigrant. Furthermore, as in Japan, at the highest levels of immigration, their attitudes towards immigration are slightly more hostile than individuals positioned further right.⁹

The last moderation we test is whether, as in Japan, immigration has different effects depending on a respondent's perceived financial situation in the UK. We begin testing the direct effect of perceived financial situation, which shows a small effect of perceiving things have got better on reducing perceived threat. To test the conditioning effect,

⁹Some may wonder whether the effects of political ideology are time-variant or invariant, and the extent to which, over time, people's views on issues towards supporting those in need necessarily shift. Among the Japanese sample, 21.88% did not change their left-right scores (averaged across four questions) across years. Among the UK sample, the proportion who did not change their welfare attitude (5-option Likert scale) is 72.61%, while those did not change their views on inequality (11-option value scale) is 32.45%. To try and capture the impact of immigration on those respondents who do not change their attitudes across waves in our analysis, we re-run another fixed-effects specification for the Japanese and UK samples to test the interaction between immigrant-share and political ideology variables but during which we treat political ideology as a time-invariant variable based on an individual's left-right position at wave-1. We then include an interaction-term between immigrant-share and time-invariant left-right position. In this sense, we test whether a change in immigration (given we are running fixed-effects models) has a stronger/weaker effect among individuals with a higher/lower level on the left-right position score. The interaction term for the Japanese sample operates in the same direction as before but becomes non-significant, while the interaction terms remained significant for the UK sample. The consistency across specifications is reassuring for the UK analysis. The lack of significance for the Japan analysis (when left-right is treated as time-invariant) raises some questions. However, given the concern that the use of time-invariant specifications of left-right position does not account for unobserved heterogeneity, we suggest that our findings show that previous studies relying on cross-sectional data might contain some bias (e.g., Homola and Tavits 2018). Furthermore, our results suggest we can at least be relatively confident that shifts in one's position on the left-right scale (a change in left-right position) does itself condition how individuals respond to immigration in both Japan and the UK, (even when focusing on the level of one's position in Japan returns more mixed results).

Model 7 (Table 2) includes an interaction-term between % immigrant and perceived financial-situation where 'situation stayed the same' in the excluded baseline category. The results show a significant interaction between % immigrant and perceiving one's financial situation got better (compared to perceiving it stayed the same). These results suggest that, as in the Japan case, for those perceiving better financial situations, the effect of increased immigration on one's immigration attitudes is more positive. We again generate a series of predicted outcome scores (Fig. 7, derived from Model 7).

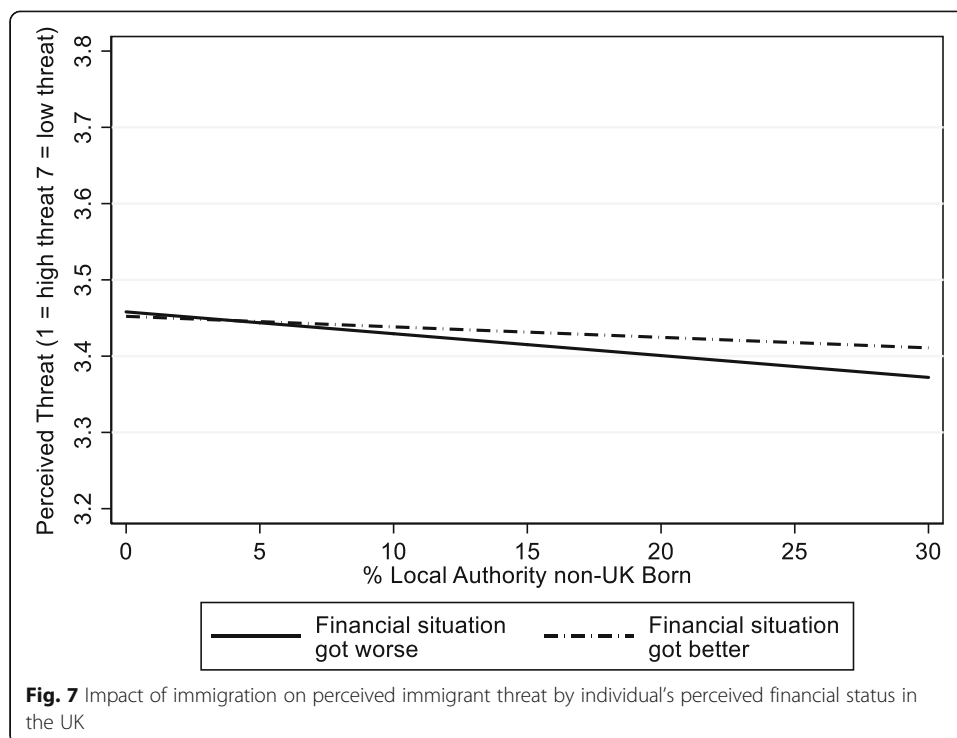
The results of Model 7, and the scores from Fig. 7, demonstrate several key findings. Firstly, on average, individuals who change their views to perceive their financial situation to have become better in the last 12 months report somewhat less perceived-threat than those who viewed their situation as staying the same or having gotten worse. Secondly, the findings show that in areas with low levels of immigration, residents with high/low perceived financial status report equally lower levels of perceived-threat. However, increasing immigrant-share has a stronger negative impact on one's perceived threat if they changed their views to perceive that their financial situation became worse in the last 12 months, compared to those whose perceived it got better.

Lastly, we again test whether the conditioning effect of left-/right-position and perceived financial situation may, in fact, be picking up the effect of one another. To test this, we include the perceived financial situation interaction alongside the welfare attitudes interaction (Model 8). While the conditioning effect of welfare attitudes remains significant the perceived financial situation interaction does not. However, again, this is driven more by the reduction in sample size.¹⁰ In Model 9 we include the financial-situation and attitudes towards inequality interactions. Here, both remain significant.

Discussion and conclusion

The impacts of immigration on anti-immigrant sentiment have been a theoretically and empirically controversial topic in sociology. This study aimed to contribute to the literature in a threefold manner: a comparison of the effects of immigration in an immigrant-salient (UK) and non-salient (Japan) context; the use of longitudinal data to more robustly test the causal assumptions of how immigration affects individuals; and an investigation into drivers of heterogeneity in immigration's impacts (including financial status and left-right position on the role of government in society). Henrich et al. (2010) warned the community of social science that much work largely relies on subjects from Western societies. A decade later, it is difficult to conclude that this situation has improved, and studies conducted in non-Western societies are oftentimes required to justify the choice of the context and its generalisability to other regions of the world (mostly to Western societies). This situation is also applicable to migrant studies: for example, Pottie-Sherman and Wilkes (2017) reviewed studies on the impact of immigration; however, almost all the studies were conducted in Western contexts. As such, we still know little about whether natives in more Western and non-Western societies react differently/similarly to immigration into their societies, and thus how far theoretical perspectives developed in Western contexts are applicable to non-Western societies.

¹⁰If we solely test the conditioning-effect of financial situation but restrict the model only to observations that also answered the 'welfare attitudes' question the interaction is still not significant.



To remedy this deficiency, this study compared Japan and the UK, which while similar in several respects (e.g., economic development, geopolitics), have several key differences in experiences of immigration and immigrant policies (e.g., size and recency of immigration, integration debates and saliency of immigration-issues). On the whole, despite the differences in immigration-context between the countries, increases in the size of the immigrant-group appears to impact natives' attitudes towards immigration in a similar manner.

The first key finding is that short-term changes in immigration appear to lead to a synchronous worsening of attitudes towards immigration in both contexts (at least at larger geographical units). This provides support for the group-threat theory in Japan and the UK. While the available measures of immigration and anti-immigrant sentiment differ between studies, the overall-effect of immigration on attitudes does appear stronger in Japan i.e., processes of threat may be more active in the Japanese context. This may stem, for example, from those outlined differences in immigration-context: for example, the relatively rapid change in immigration,¹¹ over a short period, where processes of 'acculturation' may be lagging behind the change, which could be driving this stronger negative impact. Alternatively, levels of segregation may differ between countries, which can cause more negative effects for the group size in Japan than the UK (e.g., Laurence et al. 2019).

The second key finding is that, in both Japan and the UK, drivers of heterogeneity also appear strikingly similar. Those who perceive their financial situation as being worse or worsening experience a stronger negative effect of immigration, while those

¹¹Although the changes in immigrant-share during the period of analysis are not sufficiently large, the size of immigrants double since around 1990 to 2007.

who perceive themselves are being more financially secure experience a weaker (or absent) effect. Furthermore, and somewhat surprisingly, those who lean further left on their attitudes towards government intervention (employment and inequality) and support for the disadvantaged (e.g. welfare-support) experience a stronger negative reaction to a growth in immigration, while right-leaning individuals have stable attitudes against an increase in immigrant. This is again present in both Japan and the UK.

On one hand, the stronger negative impact of immigration among the more financially insecure is consistent with the group-threat theory, arguing that a larger immigrant-group size is perceived as a threat to in-groups' resources, and those perceiving they have fewer resources are more likely to experience such threat (as previously suggested e.g., Quillian 1995). Thus, this study demonstrates this relationship longitudinally, robustly supporting the economic competition mechanisms, filling the theoretical and empirical gaps that most studies relying on cross-sectional dataset left. On the other hand, contrary to previous work (e.g., Graham et al. 2009), we observe that it is individuals with more left-leaning views towards a government's role in society who experience a stronger negative effect of immigration on their attitudes, while right-leaning individuals hold relatively stable attitudes towards immigrants. Yet, this finding is present in both the UK and Japan and exists across several indicators of left-right position on government attitudes. Thus, this point requires further scrutiny.

While immigration does have a stronger impact on left-leaning individuals, a key point of note is that what this does is take the more pro-immigration attitudes of left-leaning individuals in low-immigration environments and reduce them to attitudes similar to right-leaning individuals in high-immigration environments. Right-leaning individuals, however, are more anti-immigration across all levels of immigration. Potentially, these results could be related to floor-effects i.e., conservatives are already more negative towards immigrants, and thus the rise of immigrant group size does not change their attitudes. In contrast, the threat-effects of immigration are only related to those left-leaning individuals who, tend to be positive towards immigrants, but when proximity increases, experience increased perceptions of threats, resulting in the stronger negative effect of immigration.

An alternative possibility, however, is that, on the whole, liberal-leaning individuals tend to value care, pro-sociality, structural reasons for disadvantage, and fairness, which can result in more support for groups that they perceive are in need, or as experiencing structural disadvantage (Graham et al. 2009). Accordingly, more left-leaning individuals may include immigrants within the ambit of whom they consider disadvantaged, and thus deserving of government support, welfare, and policies designed to improve their situations. This may result in more left-leaning individuals being more supportive of immigration. However, when left-leaning individuals actually experience an increasing share of immigrants in their environment, processes of in-group/out-group boundary-definition may increase and begin to align more along ethnic/cultural lines, as per 'social identity perspectives' (Hornsey 2008; Tajfel and Turner 1979). Here, when difference is encountered, ingroup identities can strengthen and natives tend to emphasise ethnic differences between their own cultures and immigrants' culture. Prior to encountering immigrants in large numbers, more left-leaning individuals may be more likely to categorise immigrants based on their socio-political status, as an often disadvantaged and discriminated against group, falling within the parameters of other social-

groups in need to support. However, when encounters with immigrants occur on a large enough scale, such social identity processes may enhance the salience of their ethnic/cultural identity over their socio-political status. As such, who left-leaning individuals consider 'people like themselves' (within their in-group), who are thus deserving of support, may shift from being inclusive of immigrants to being increasingly exclusive. In the UK, for example, it is only individuals who believe 'the amount of money families on welfare receive is much too low' who increasingly perceive that 'immigrants are a burden on the welfare state' under conditions of increasing immigration. Yet, if exposure to immigration triggers stronger in-group identities among left-leaning individuals, this may evoke welfare-threats for liberal-leaning individuals, such as when immigrants are perceived to benefit from the governmental redistribution more than they pay-in. This, in turn, may shift liberal individuals towards more negative immigration-attitudes in these contexts. In essence, immigration does not shift individuals further right on these government-issues (confirmed through further testing¹²) but instead appears to decouple the link between left-leaning position and pro-immigration attitudes.

Such findings are not entirely unknown. Czymara (2020), for example, found an increase in foreigner-flow across Europe had stronger negative impacts on attitudes towards refugees on those with a greater willingness to help refugees. However, our posited explanation needs to be clarified in future work. Yet, given we observe these effects in both countries, across several indicators of left-right position, such heterogeneous effects by views towards the role of government could be observed more widely.

We did not find consistent evidence with the intergroup contact theory, possibly because of suppressing effects. Numerous previous studies have shown that the a larger immigrant-share provides intergroup contact between natives and immigrants (e.g., Pottie-Sherman and Wilkes 2017). In Japan and UK, it is possible that increases in immigrant-share increase contact opportunities. However, a larger immigrant-share also increases perceived threats among natives, and the threat effects may be stronger than the contact effects on attitudes towards immigrants. Consequently, we observe significant threatening effects. These speculations indicate that the negative effects of increased immigrant size could be larger if there was no intergroup contact.

This study attempts to explore the impacts of immigrant-share with novel datasets in two contexts, but future studies could benefit from incorporating a new longitudinal datasets. For example, future studies may be required to incorporate different geographical levels (not only prefectures but cities and district) and test threats and contact explicitly across different levels. Because the available longitudinal data do not contain threat/contact measurements, future projects could also include these variables. Questionnaires in such projects may contain, unlike this study, the same wording measurements across different countries, to test the generalizability of theories across further under studied contexts. In addition, ideally, the larger number of countries in different regions (e.g., Europe, Asia, South America) in a longitudinal style can further provide rigorous supports for the effects of immigrant-share on immigrant attitudes.

¹²Importantly, increasing proximity to immigrants does not appear to shift individuals more towards the right on these governmental issues e.g., they do not necessarily become less supportive of welfare for the disadvantaged. We tested this by running our models but using left-right position as the outcome, observing no relationship between increasing immigration and changes in governmental attitudes.

In sum, the similarity of results in both Japan and the UK is quite striking. These results indicate that the group-threat theory appears applicable to both of the contexts in similar ways, indicating a high-generalisability of the theory across different contexts (although effects may be stronger in the Japanese context). We thus see that, instead of exclusively focusing on contextual differences, which is often seen in social science studies, we may benefit from paying more attentions to similarity of findings across different contexts. To be sure, the negative findings observed may, in part, be tied to the prevailing media-/political-narratives occurring at the time (e.g. Hopkins 2011). In the UK in particular, the period of analysis covers the build-up to the 2016 EU Referendum, during which immigration issues became increasingly salient. Thus, further research, testing these findings across other periods, and potentially other countries, is required to examine how contextually-dependent they might be.

The paper's innovative approach makes key contributions to the literature. In particular, the longitudinal, fixed-effects approach significantly strengthens our confidence that other processes (e.g., selection) do not account for our findings. In addition, demonstrating longitudinally that immigration exerts different effects for different individuals makes a strong claim that future work needs to account for such heterogeneity for understanding how immigration impacts attitudes towards immigration in society.

Authors' contributions

The authors declare that they shared equally in the development of this manuscript. All authors read and approved the final manuscript.

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Availability of data and materials

JLPS is archived in Social Science Japan Data Archive, and of the University of Tokyo, and available upon request for the archive. BESIP is publicly available.

Competing interests

The authors declare that they have no competing interests related to this study or its findings.

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References

- Allison, P. D. (2009). *Fixed effects regression models*. Thousand Oaks: SAGE.
- Allport, G. W. (1954). *The nature of prejudice*. Reading: Addison-Wesley.
- Banting, K., & Kymlicka, W. (2013). Is there really a retreat from multiculturalism policies? New evidence from the multiculturalism policy index. *Comparative European Politics*, 11(5), 577–598.
- Blumer, H. (1958). Race prejudice as a sense of group position. *The Pacific Sociological Review*, 1(1), 3–7.
- Ceobanu, A. M., & Escandell, X. (2010). Comparative analyses of public attitudes toward immigrants and immigration using multinational survey data: a review of theories and research. *Annual Review of Sociology*, 36, 309–328.
- Czymara, C. S. (2020). Attitudes toward refugees in contemporary Europe: A longitudinal perspective on cross-national differences. *Social Forces*, 9(3), 1306–1333.
- Eberl, J. M., Meltzer, C. E., Heidenreich, T., Herrero, B., Theorin, N., Lind, F., ... Strömbäck, J. (2018). The European media discourse on immigration and its effects: a literature review. *Annals of the International Communication Association*, 42(3), 207–223.
- Evans, G., & Tilley, J. (2012). The depoliticization of inequality and redistribution: explaining the decline of class voting. *Journal of Politics*, 74(4), 963–976.
- Fieldhouse, E., Green, J., Evans, G., Schmitt, H., van der Eijk, C., Mellon, J., & Prosser, C. (2018). *British election study internet panel waves*. Manchester.
- Ford, R. (2011). Acceptable and unacceptable immigrants: how opposition to immigration in Britain is affected by migrants' region of origin. *Journal of Ethnic and Migration Studies*, 37(7), 1017–1037.

- Graham, J., Haidt, J., & Nosek, B. A. (2009). Liberals and conservatives rely on different sets of moral foundations. *Journal of Personality and Social Psychology*, 96(5), 1029–1046.
- Gravelle, T. B. (2016). Party identification, contact, contexts, and public attitudes toward illegal immigration. *Public Opinion Quarterly*, 80(1), 1–25.
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences*, 33(2–3), 61–83.
- Hirota, H., Sigona, N., & Nagai, N. (2019). *Migration to and from Japan and Great Britain to 1945* (IRIS Working Paper Series, no. 33/2019). Birmingham: Institute for Research into Superdiversity.
- Homola, J., & Tavits, M. (2018). Contact reduces immigration-related fears for leftist but not for rightist voters. *Comparative Political Studies*, 51(13), 1789–1820.
- Hopkins, D. J. (2011). National debates, local responses: the origins of local concern about immigration in Britain and the United States. *British Journal of Political Science*, 41(3), 499–524.
- Hornsey, M. J. (2008). Social identity theory and self-categorization theory: a historical review. *Social and Personality Psychology Compass*, 2, 204–222.
- Huddleston, T., Bilgili, Ö., Joki, A., & Vankova, Z. (2015). *Migrant Integration Policy Index 2015*. Barcelona/ Brussels: CIDOB and MPG.
- Kaufmann, E., & Goodwin, M. J. (2018). The diversity wave: a meta-analysis of the native-born white response to ethnic diversity. *Social Science Research*, 76, 120–131.
- Kinder, D. R. (1998). Communication and opinion. *Annual Review of Political Science*, 1(1), 167–197.
- King, R. (2009). Geography, islands and migration in an era of global mobility. *Island Studies Journal*, 4(1), 53–84.
- Koopmans, R. (2013). Multiculturalism and immigration: a contested field in cross-national comparison. *Annual Review of Sociology*, 39, 147–169.
- Lancee, B., & Pardos-Prado, S. (2013). Group conflict theory in a longitudinal perspective: analyzing the dynamic side of ethnic competition. *International Migration Review*, 47(1), 106–131.
- Laurence, J., & Bentley, L. (2016). Does ethnic diversity have a negative effect on attitudes towards the community? A longitudinal analysis of the causal claims within the ethnic diversity and social cohesion debate. *European Sociological Review*, 32(1), 54–67.
- Laurence, J., Schmid, K., Rae, J. R., & Hewstone, M. (2019). Prejudice, contact, and threat at the diversity-segregation nexus: a cross-sectional and longitudinal analysis of how ethnic out-group size and segregation interrelate for inter-group relations. *Social Forces*, 97(3), 1029–1066.
- Matsutani, M. (2019). Youth: what is the reality of the rightward shift? In S. Tanabe (Ed.), *Have Japanese swung to the right?* (pp. 227–246). Tokyo: Keiso Shobo.
- Ministry of Internal Affairs and Communications. (2018). *Population, demographics and number of households based on the basic resident register*. Retrieved from https://www.soumu.go.jp/main_content/000563135.pdf. Accessed 3 Aug 2019.
- Nagayoshi, K. (2009). Whose size counts? Multilevel analysis of Japanese anti-immigrant attitudes based on JGSS-2006. *JGSS Research Series*, 9, 157–174.
- Ohtsuki, S. (2006). Contact with foreigners and attitude toward them: Rethinking of contact theory from JGSS-2003 data. *JGSS Research Series*, 2, 149–159.
- ONS (2019). *Local area migration indicators suite QMI*. London: Office for National Statistics.
- Ossewaarde, M. (2014). The national identities of the 'death of multiculturalism' discourse in Western Europe. *Journal of Multicultural Discourses*, 9(3), 173–189.
- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, 90(5), 751–783.
- Pottie-Sherman, Y., & Wilkes, R. (2017). Does size really matter? On the relationship between immigrant group size and anti-immigrant prejudice. *International Migration Review*, 51(1), 218–250.
- Quillian, L. (1995). Prejudice as a response to perceived group-threat: Population composition and anti-immigrant and racial prejudice in Europe. *American Sociological Review*, 60(4), 586–611.
- Savelkoul, M., Tolsma, J., & Scheepers, P. (2015). Explaining natives' interethnic friendship and contact with colleagues in European regions. *Journal of Ethnic and Migration Studies*, 41(5), 683–709.
- Scheve, K. F., & Slaughter, M. J. (2001). Labor market competition and individual preferences over immigration policy. *Review of Economics and Statistics*, 83(1), 133–145.
- Shibuichi, D. (2016). The struggle against hate groups in Japan: the invisible civil society, leftist elites and anti-racism groups. *Social Science Japan Journal*, 19(1), 71–83.
- Sniderman, P. M., & Hagendoorn, L. (2007). *When ways of life collide: Multiculturalism and its discontents in the Netherlands*. Princeton: Princeton University Press.
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin, & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 7–24). Monterey: Brooks/Cole.
- University of Tokyo (2008). *Japanese life course panel survey questionnaire (translation)*. Tokyo: University of Tokyo, Institute for Social Science.
- Wagner, U., Christ, O., Pettigrew, T. F., Stellmacher, J., & Wolf, C. (2006). Prejudice and minority proportion: contact instead of threat effects. *Social Psychology Quarterly*, 69(4), 380–390.

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