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Abstract

Private pensions constitute the largest component of household wealth in the UK, and the vast majority of employees are automatically enrolled into workplace pension plans. Drawing on employer-reported pension data matched with the population census, we document that Bangladeshi and Pakistani employees are around twice as likely to opt out of their workplace pension as those from other ethnic backgrounds. Employees opting out do not receive their employer's contribution to their private pension plan or the tax subsidies given to private pension saving. The financial implications of this can be substantial: we estimate that a typical Pakistani or Bangladeshi employee who consistently opts out of their private pension would have retirement income around 60% higher by saving in that pension. These higher opt-out rates exist within-firm and cannot be explained by economic differences across ethnic groups; instead, we present a set of evidence pointing to the importance of Islamic religious beliefs in driving the higher opt-out rates, consistent with Islamic teachings on savings.

Keywords: retirement saving; ethnic inequalities
JEL classification: H2, H3

Acknowledgements

1 Introduction

In many countries around the world there are substantial financial incentives to save in private pensions, both from the tax system and from employers. Tax subsidies for private pension saving are worth over \$100bn and £45bn (\$55bn)[1] annually in the US and the UK, respectively (Friedman, 2017; Adam et al., 2023). Employers typically provide significant contributions to their employees' private pensions for those who are enrolled, and often increase their contribution if the employee increases the amount they are contributing. Consequently, those who save less in private pensions benefit less from these tax subsidies and may receive lower total compensation from their employer.

In this paper, we show that employees in England and Wales from a Pakistani or Bangladeshi ethnic background are less likely to save in private pension plans than those from other ethnic groups. We provide evidence suggesting that the principal drivers of these differences are religious beliefs and norms associated with religion, consistent with Islamic teachings on saving, rather than differences in economic factors between ethnic groups or differences in employers worked for. The financial implications of this are substantial: we estimate that a typical employee from a Pakistani or Bangladeshi background who saves in a non-pension saving account throughout their career would enjoy a 61% increase in retirement income if they instead saved the same amount in a private pension.

The UK setting has many advantages for analysing ethnic differences in saving decisions and the effect these have on wealth inequalities. First, the UK is especially reliant on individuals saving privately for retirement, as the UK public pension provides a low replacement rate for most individuals compared to many other countries (OECD, 2021). Second, private pension saving is not compulsory in the UK, unlike in countries such as Australia and Switzerland; rather, the UK government encourages private saving through a mixture of financial incentives and behavioural "nudges". Between 2012 and 2018, the UK government rolled out a nationwide policy of automatic enrolment into workplace private pensions. As a result, the vast majority of employees are offered a pension plan by their employer, are automatically enrolled into this plan, and receive a contribution to this plan from their employer as long as they do not opt out. Therefore, by restricting our analysis to employees subject to automatic enrolment, we can be sure that differences

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[1]At the time of writing, market exchange rates were £1 ≈ \$1.30.

in participation in workplace private pensions are driven by differences in the active decision to opt out of pension plans. Finally, the UK is an ethnically and religiously diverse country: according to the 2021 nationwide census, over 9% of the population of England and Wales is from an Asian ethnic group, around 4% is Black, and 6.5% is Muslim.

In this paper, we show that there are significant differences in participation rates in workplace private pensions by ethnicity using employer-reported data on savings and earnings matched with the nationwide census. Using these data sources means we avoid issues with differential measurement error in responses to household surveys for ethnic minorities documented in Meyer et al. (2024). The gaps in participation rates exist among employees who are automatically enrolled into plans by their employer, implying they are due to significant differences in opt-out rates. In particular, the proportion opting out among the Pakistani and Bangladeshi group, 19%, is over twice the proportion opting out among the white ethnic group, 9%. Other ethnic groups have much more similar opt-out rates to the white ethnic group.

We demonstrate that these differences in opt-out rates cannot be explained by a wide variety of economic factors such as differences in earnings, age or education levels, and do not disappear even after controlling for employer fixed effects. In other words, employees from a Pakistani or Bangladeshi background are around twice as likely to opt out of workplace private pensions as employees from other ethnic groups who have similar observable characteristics and work for the same employer. These patterns hold even when focusing on several different subgroups of employees from the Pakistani and Bangladeshi ethnic groups.

We then present evidence that these differences in private pension opt-out rates are principally driven by religious beliefs and norms associated with Islam. This is particularly plausible given that Islamic teaching generally prohibits investments in bonds and other interest-bearing assets, as well as investments in several industries, such as the alcohol and tobacco industries (Rahman, 2017). Many employers automatically enrol their employees into pensions that invest in corporate and/or government bonds as part of their portfolio.

We show that Muslims who are not of Pakistani or Bangladeshi origin also have significantly lower opt-out rates. Using household survey data, we demonstrate that opt-out rates are particularly high (25%) among those Muslims who report that their religious

beliefs make a great difference to their life and that the majority of Muslims report that their religious beliefs affect their saving and investment decisions. Consistent with Islamic teaching, we find that Muslims tend to hold less wealth in interest-bearing financial assets and more wealth in non-interest-bearing financial assets and property. We also show that Muslims do not have statistically significantly different expectations about the return or riskiness of investing in workplace pensions compared to other religious groups, further suggesting that the differences are driven by religious beliefs and norms rather than differences in financial expectations.

To illustrate the quantitative importance of these differences in opt-out rates, we perform a simulation exercise for a typical employee from a Pakistani or Bangladeshi ethnic background. We take the average employee pension contribution rate among employees of a Pakistani or Bangladeshi background who are saving in a pension, and assume that the typical employee who opts out saves this proportion of their earnings in a non-pension savings account. Assuming the same rate of return for pensions and non-pension saving, we calculate that the employee who consistently opts out of their pension would have a retirement income around 60% higher had they instead saved the same amount in a private pension throughout their career. This is made up of a 3% increase due to tax subsidies on the employee's contribution, a 40% increase due to the employer's contribution, and an 18% increase due to tax subsidies on the employer's contribution.

1.1 Related literature

This paper contributes to several different strands of literature. First, we contribute to an extensive literature seeking to document and explain racial differences in wealth. Much of the existing literature has focused on gaps between Black, White and Hispanic individuals in the US (Kuhn et al., 2020; Hou and Sanzenbacher, 2020), with Derenoncourt et al. (2023) highlighting the importance of portfolio differences between races in the US for the evolution of the gaps over the past three decades. There has, however, been much less research on racial gaps in wealth in other high income countries, where the size and composition of different ethnic groups, the historical pattern of immigration and the relations between ethnic groups are often very different to the US. Average wealth holdings differ substantially by ethnicity in the UK; for example, median wealth for households with a white British household head is over £300,000, compared to under

£70,000 for those with a Black African or Bangladeshi household head (Office for National Statistics, 2020). Karagiannaki (2023) documents that there are large differences in the asset portfolios of different ethnic groups in the UK, which can only partly be explained by differences in observable characteristics, although her data do not contain information on pension wealth, the largest component of household wealth in the UK (Office for National Statistics, 2022). Our contribution is to provide evidence that differences in religious beliefs and norms can drive asset portfolio differences between ethnic groups and to show that these portfolio differences can have significant implications for wealth accumulation.

Second, we contribute to a related branch of literature concerned with how institutions and policies can have differential impacts by ethnicity. Various types of policies have been examined, including unemployment insurance (Skandalis et al., 2022), property tax assessments (Avenancio-León and Howard, 2022) and mortgage access (Bhutta and Hizmo, 2020). Most closely related to this paper, Choukhmane et al. (2024) document that White workers benefit from financial incentives for retirement savings in the US more than Black and Hispanic workers due to differences in individual contributions to defined contribution accounts. Our contribution is to document a similar phenomenon in the UK, although for different groups and for rather different reasons. Whereas Choukhmane et al. (2024) highlight the importance of differences in liquidity needs between different ethnic groups for explaining patterns in the US, we instead uncover the role played by religious beliefs and norms for Muslim groups in the UK. Given Muslims make up over 5% of the population of many other Western European countries, our work has important implications for several other developed economies.

This third strand of literature to which our paper contributes is that concerning the effects of religion and culture on economic preferences and behaviours, particularly those related to saving decisions. Benjamin et al. (2016) use a laboratory experiment to measure the effect of religious identity on discount rates and risk preferences. While they find little differences in these preferences between Catholics and Protestants, they do not look at the preferences of Muslims. Outside of the laboratory, Carroll et al. (1994) analyse whether culture affects saving rates in Canada by comparing the saving rates of immigrants from different countries and find little differences. Their identification strategy rests on the assumption that these different immigrants face a common economic and institutional

environment. This might not hold if, for example, immigrants from different countries work for different types of employers, who might offer retirement plans of varying levels of generosity. Our contribution is to build on the epidemiological identification strategy of Carroll et al. (1994) while controlling for employer fixed effects, allowing us to compare the saving decisions of employees of different ethnic groups working for the same employer. By analysing a larger set of ethnic and religious groups than Benjamin et al. (2016) in a real-world setting, we provide more evidence on the effects of religion and ethnicity on saving decisions with important policy implications.

Finally, a large amount of academic research and policy effort seeks to understand how to best encourage individuals to save for retirement. While tax subsidies for retirement saving are generally found to have minor effects on overall saving (Chetty et al., 2014; Friedman, 2017), in the past two decades attention has shifted towards the effect of behavioural "nudges", in particular automatic enrolment (Thaler and Benartzi, 2004). Several countries have introduced nationwide automatic enrolment policies, including the UK and New Zealand, and from 2025 almost all new 401(k) and 403(b) plans in the US will also have to automatically enrol employees. These policies are motivated by a large body of research showing that automatic enrolment leads to large increases in private pension saving in the short run, including in the US (Madrian and Shea, 2001; Choi et al., 2006) and the UK (Cribb and Emmerson, 2020); however, recent studies have raised doubts about the extent to which these increases in private pension saving are persistent (Choi et al., 2024). Despite this large body of research, to date there is a limited understanding of why a small minority of automatically enrolled workers then opt out of plans. We contribute to this literature by documenting and explaining differences in opt-out rates by ethnicity.

The remainder of this paper is organised as follows. Section 2 describes the institutional context of the UK pension system and Islamic teaching on savings. Section 3 outlines the data sources we use in our analysis, together with our methodological approach. Section 4 then contains our main empirical results, while Section 5 quantifies the importance of private pension saving decisions for wealth accumulation. Section 6 concludes by discussing the implications of the empirical results.

2 Institutional Background

2.1 The UK pension system

The current UK state pension provides nearly all older individuals with a flat-rate benefit, irrespective of their earnings, worth 30% of median full-time earnings (£11,500 per year in 2024-25). Most individuals must make additional savings to smooth their living standards from working life into retirement. Private pensions are a particularly common and, as explained in Section 2.2, high-return way to do this additional saving and make up 42% of UK household wealth (Office for National Statistics, 2022).

Although these private pensions can be arranged by individuals, the vast majority of employees' private pensions are facilitated by employers.[2] For public-sector employees these pensions are typically 'defined benefit' (DB) while for private-sector employees, they are now predominantly 'defined contribution' (DC) plans.

In response to concerns about low private saving for retirement, particularly among private-sector employees, the UK government implemented a policy of automatic enrolment into workplace pensions between 2012 and 2018. The policy was rolled out by employer size, starting with the largest employers in 2012. Once an employer reached their deadline for implementing automatic enrolment, they had to automatically enrol all 'targeted' employees into a workplace pension with (at least) minimum levels of contributions, some coming from the employer. Targeted employees are those earning more than the "earnings trigger" (set at £10,000 annually in nominal terms since April 2014), aged between 22 and the "state pension age" (that is, the minimum age at which someone can claim a public pension), and, in practice, with a job tenure of at least three months.[3] We refer to targeted employees who work for an employer that has reached their deadline for implementing automatic enrolment as employees who are 'eligible' for automatic enrolment (or "AE-eligible").

Employers can choose the default contribution rates at which they enrol their employees, subject to minimum rates. These minimum default contribution rates were 2% of qualifying pay initially (with at least 1% of pay coming from the employer), but in

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[2]According to the Family Resources Survey, only 5% of employees saved in a private pension that was not facilitated by their employer in 2021-22. See https://www.gov.uk/government/statistics/family-resources-survey-financial-year-2021-to-2022.

[3]Employers can, and often do, postpone automatically enrolling new employees for up to three months.

April 2018 increased to 5% of qualifying pay (with at least 2% coming from the employer) and in April 2019 to 8% of qualifying pay (with at least 3% coming from the employer). Average employee and employer contributions are higher than these minimums, at 5% and almost 10% of total pay, respectively. See Cribb and Emmerson (2020) and Cribb and Emmerson (2021) for more information on the policy of automatic enrolment as introduced in the UK. Automatic enrolment substantially increased workplace pension participation in the private sector from only 44% in 2005 to around 80% in 2019 (O'Brien, 2023).

Throughout, we restrict our analysis to years from 2018 onwards, to focus on a policy environment where all AE-eligible employees are automatically enrolled in a workplace pension, and therefore any differences in pension participation rates are due to differences in active opt-out decisions between groups.

2.2   Financial incentives for private pension saving

There are substantial financial incentives to save in a private pension, coming from both employers and the tax system. First, due to automatic enrolment, employers are now obliged to offer an employer pension contribution for all AE-eligible employees except those who opt out of pension saving. Although this employer pension contribution only had to be at least 2% of qualifying pay in April 2018 (the time of our analysis), in practice many employers offered a pension contribution that was significantly more generous than this (Cribb and Emmerson, 2020). Indeed, many public sector employers have very generous defined benefit pensions. Any employee who opts out of these pensions would lose a substantial part of their remuneration (worth at least 20% of their earnings in most cases).

Second, many employers offer matching arrangements, whereby the employer pension contribution increases for higher levels of employee pension contributions. There is no data on how common these arrangements are in aggregate in the UK (although there is data showing they are widespread in the US (Choukhmane et al., 2024)).

The UK income tax system treats private pension savings as deferred earnings. This means that contributions to private pension plans are exempt from income tax, as are returns within the fund, but income tax must be paid on withdrawals from private pension plans in retirement. There are three additional tax incentives for private pension saving

in the UK. First, individuals can take 25% of their pot tax-free when accessing their pension. As pension contributions are exempt from income tax (as are any investment returns), this means that 25% of income put into a pension is never subject to income tax.

The second way that private pensions are subsidised is that employer pension contributions are not subject to National Insurance contributions (a payroll tax) either when invested or accessed. There are also tax advantages for pension pots bequeathed at death. Overall, Adam et al. (2023) estimate that these tax advantages are a tax subsidy worth around £4.4 billion per year compared to a system where income contributed to private pensions is not taxed upfront, the returns are not taxed, but all income is taxed when withdrawn (sometimes referred to as EET taxation). Relative to a system where income contributed to pensions is taxed upfront, but no tax is paid on the returns or upon withdrawal (sometimes referred to as TEE taxation), the current pension tax system subsidises pension saving at a rate of £46 billion per year.[4]

2.3 Islam and saving

Islamic teaching provides instructions on the types of investment that are not compliant with Sharia Law. Although there are slight differences in interpretation, broadly Sharia compliant investing must satisfy the following three criteria. First, no interest income may be received. This means, for example, that investing in bonds is not compliant with Sharia Law. Second, investments must not be made in "unethical" companies or industries. This would rule out holding shares in alcohol or tobacco companies, for example. Third, investments must be "transparent". As a result, Sharia compliant funds should avoid complex investment methods such as derivatives. For a more detailed explanation of the principles of Islamic finance, see Visser (2019), or see Rahman (2017) for a more concise summary. Of course, not all Muslims follow all tenets of Sharia Law. In addition, there are exceptions made for "unavoidable" transgressions of Sharia Law due to living in a western country, although given private pension saving is not mandatory in the UK it is typically not viewed as "unavoidable".

Whether private pensions in the UK are Sharia compliant is a matter of debate, and can depend on the type of pension plan in question. Simple online guides tend to advise

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[4]See Adam et al. (2023) for more information on the tax treatment of private pensions in the UK.

that defined benefit pensions are Sharia compliant.[5] However, there is some disagreement among scholars on this point,[6] particularly around funded defined benefit pensions, as these tend to invest primarily in bonds.[7] Whether DC plans are Sharia compliant depends on what the pension is invested in. Individuals can typically choose their private pension investments, and nowadays many major pension providers offer Sharia compliant funds. However, default funds typically are not Sharia compliant (as they are often invested at least partly in bonds and do not avoid "unethical" industries).

3   Data and Methodology

3.1   Data

We use three sources of data for our analysis. The main dataset we use is the Annual Survey of Hours and Earnings (ASHE), which has been matched to the 2011 Census in England and Wales. The ASHE is an annual survey, completed by employers, that contains information on characteristics of employees and their jobs, including their earnings and workplace pension saving information. As the information is employer-reported it is regarded to be the most accurate comprehensive source of labour market data for employees in the UK (Gregg et al. (2014)). The ASHE has a large sample size of approximately 180,000 individuals per year. Employees are selected to be part of the survey based on the last two digits of their National Insurance number (social security number). The digits used for selection to be part of the survey are the same in each year, meaning that the ASHE can be used for longitudinal analysis. As filling out the survey is a statutory requirement for employers, levels of non-response are relatively low compared to other surveys.

The 2011 ASHE data has been matched to the 2011 England and Wales Census. There is no common identifying number in the two datasets, so the matching was done

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[5]See, for example, https://www.islamicfinanceguru.com/articles/is-my-pension-halal-a-really-really-simple-guide-ifg and https://www.qardus.com/news/halal-pension-uk

[6]For example https://www.islamicfinanceguru.com/articles/are-pensions-halal

[7]Note that the advisory board of the Local Government Pension Scheme (LGPS), a funded defined benefit pensions that is one of the largest pension providers in the UK, commissioned a legal report assessing the risk of a successful claim for discrimination from a Muslim employee complaining that their employer did not provide a Sharia-compliant pension. As part of this report, Adam (2023) concluded that the LGPS is Sharia-compliant, although the final legal advice noted that there are many differing views on this issue.

on variables such as name, address and employer. As a result, the match is not perfect: around 74% of ASHE employees living in England and Wales in 2011 have a match with the census. Research by the Wage and Employment Dynamics Team, who performed the match, suggests that the matched sample is fairly representative of the entire ASHE sample in England and Wales.[8] Due to the longitudinal nature of the dataset, we can therefore observe the ethnicity, religion and education of employees in the ASHE in 2018 who were also in the ASHE dataset in 2011 and were matched successfully to the census, under the assumption that these characteristics do not change over time. We restrict our analysis to 2018 ASHE data, which is the latest year we have access to this data for, and is after virtually all employers have reached their staging date for automatic enrolment.

Our main analysis sample includes employees in the 2018 ASHE aged between 22 and 59 who are eligible for automatic enrolment, that is, earning at least £10,000 per year and with a job tenure of at least three months. Table 1 shows summary statistics for this sample, in particular splitting this out by ethnicity. This table shows that slightly under half of AE-eligible employees in the ASHE in 2018 were matched to the 2011 Census. Clearly, the vast majority of our matched sample is white, consistent with the ethnic mix of the England and Wales population; however, we do have several hundred observations of each of the other, disaggregated, ethnic groups.

Table 1 also highlights there are observable differences in characteristics between different ethnic groups in our sample. In particular, the Pakistani and Bangladeshi ethnic groups are younger on average and are less likely to be female. The Black Caribbean and white ethnic groups are the least likely to have a university degree. The Indian ethnic group has, on average, the highest levels of earnings among the sample, although the earnings differences are not particularly stark, partly because the sample only includes employees earning at least £10,000 per year. Around 90% of the Pakistani and Bangladeshi individuals in our sample are Muslim, although we do have a significant number of Muslims from other ethnic groups, including the Black African, Indian, other Asian and "Other" ethnic groups. Note that we use e.g. "Bangladeshi employees" to refer to employees who self-report that their ethnic group is "Bangladeshi". This can include first-generation immigrants to the UK who are not British citizens, first-generation immigrants to the UK who have acquired British citizenship, and second (or further)

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[8]https://www.wagedynamics.com/wp-content/uploads/2023/01/ASHE-CEW11-User-Guide-Version-2.1-Drop-2.pdf

generation immigrants.

Table 1: Sample Summary Statistics

Group	Obs	Age	Female	Public sector	Degree	Earnings	Muslim
All	125,438	40.5	0.46	0.25		27,836	
White	52,914	44.0	0.46	0.28	0.41	29,897	0.00
Mixed	671	40.6	0.51	0.34	0.42	29,897	0.04
Black African	621	44.1	0.49	0.40	0.63	31,733	0.11
Black Caribbean	605	47.2	0.58	0.38	0.37	29,207	
Indian	1,422	42.8	0.47	0.33	0.64	33,413	0.09
Pakistani	525	39.5	0.37	0.30	0.55	29,691	0.93
Bangladeshi	175	36.9	0.36	0.38	0.47	30,190	0.89
Other Asian	889	43.9	0.53	0.34	0.60	32,949	0.08
Other	401	44.3	0.40	0.28	0.50	29,538	0.25
Not linked to Census	67,215	37.6	0.46	0.21		26,049	

Notes: This table shows the characteristics of our main analysis sample, split by ethnicity. The analysis sample contains 22- to 59-year-old employees in the Annual Survey of Hours and Earnings in 2018 who are eligible for automatic enrolment, that is, earning at least £10,000 and with a job tenure of at least three months. The Annual Survey of Hours and Earnings in 2018 contains a link to the 2011 England and Wales Census for 46.4% of employees; for these employees we have information on their ethnicity, religion, and whether they have a university degree.

In addition to the matched ASHE-census dataset, we also make use of two household survey datasets: Understanding Society and the Wealth and Assets Survey. Understanding Society is a longitudinal survey containing approximately 40,000 UK households. It contains detailed information on individual, household and work characteristics, including on workplace pension saving. It is particularly useful for our analysis as it oversamples individuals from ethnic minority groups, and also includes questions on ethnic identity and religious beliefs for a smaller subsample of respondents. The Wealth and Assets Survey is a household survey of individuals in Great Britain and contains detailed information on the financial situation of respondents, including their wealth and incomes, as well as information on demographics (including ethnicity).

3.2 Methodology

Our main outcome of interest is whether an individual opts out of saving in a workplace pension. We wish to estimate how these opt-out rates differ by ethnicity, and the extent to which these differences can be explained by a variety of explanatory variables. To achieve this, we estimate linear probability models of the following form:

$$y_i = \alpha + \beta ethnicity_i + X_i'\delta + \epsilon_i, \tag{1}$$

where y_i is a binary variable equal to 1 if employee i opts out of their workplace pension, and zero otherwise, $ethnicity_i$ is a categorical variable for employee i's ethnicity,[9] and X_i is a set of observable characteristics. We measure each ethnic group's pension participation relative to the white group (which is excluded from the categorical variable). The ethnic groups we consider are outlined in Table 1, although sometimes we aggregate ethnic groups due to concerns about low sample size.

We add in the observable characteristics progressively over several regression specifications as follows. First, we control for age (in five-year bands) and the employee's earnings decile within their age band. Then, we add in controls for "individual"-level variables, including the individual's education status (in three different groups) interacted linearly with age, region (9 groups), sex and a binary variable indicating if the individual was born in the UK or not. Next, we control for "job"-level variables, such as the sector the employee works in (i.e. public or private), whether they work part-time, their industry, their occupation, and their banded employer size. In the next step, we then include employer fixed effects in the estimation to focus on within-employer differences in pension participation rates.

To examine whether there are any heterogeneous effects for different subgroups of employees, we estimate linear probability models of the following form:

$$y_i = \sum_{s \in S} \left(\gamma_s \mathbb{1}\{s_i = s\} + \rho_s \mathbb{1}\{s_i = s\} \times ethnicity_i \right) + X_i'\delta + \epsilon_i, \tag{2}$$

where s_i denotes the variable by which we want to estimate heterogeneity. The coefficients of interest are then ρ_s. For example, when estimating differences in opt out rates for men and women, we have $s_i = 0$ for men and $s_i = 1$ for women (so $S = \{0, 1\}$ in this case), and ρ_0 is a vector containing the estimated difference in opt-out rates for male employees from ethnic minority groups compared to white male employees (and ρ_1 contains the estimated differences for women).

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[9]We include employees in the 2018 ASHE who are not matched to the Census in the regression sample and set their ethnicity equal to a separate value denoting "Not matched to Census". Our empirical results are very similar if we instead restrict our sample only to those matched to the Census.

4 Empirical results

We first document that there are significant differences in the shares of different ethnic groups opting out of their workplace pension in Figure 1. We find 16% of Pakistani and 24% of Bangladeshi AE-eligible employees opt out of their pension, compared to around 10% for all other other ethnic groups.

Figure 1: Private pension opt-out rates by ethnicity in 2018 among AE-eligible employees
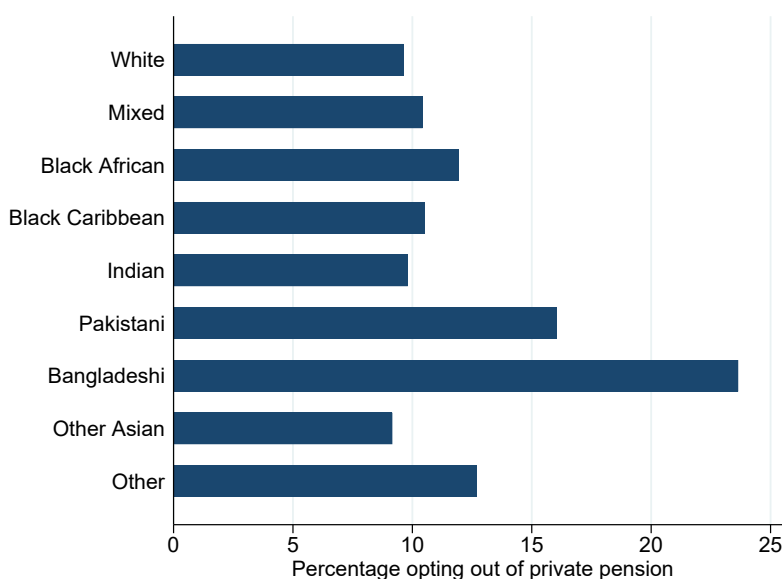
Notes: This figure shows the share of AE-eligible employees in our linked ASHE-Census sample in 2018 who are not participating in a workplace pension, separately by ethnic group. AE-eligible employees are those earning over £10,000 per year and with at least 3 months' job tenure.

Of course, there could be a variety of potential reasons why Pakistani and Bangladeshi employees are more likely to opt out of their workplace pension than other ethnic groups. As Table 1 highlighted, there are notable differences in observable characteristics between the ethnic groups in our sample, some of which could be driving differences in opt-out rates.

Table 2 investigates the extent to which observable characteristics can explain the gaps in opt-out rates by estimating linear probability model regressions, sequentially controlling for more and more observable characteristics as set out in Equation 1. The first column shows the estimated gaps without adding in any controls, mirroring the results in Figure 1. For example, it shows that, compared to the white ethnic group (the baseline), Pakistani AE-eligible employees are more likely to opt out of their workplace

pension by 6 percentage points, statistically significant at the 1% level. For Bangladeshis, the gap is larger at around 14 percentage points unconditionally. There are, however, no statistically significant gaps for other ethnic groups compared to the white majority.

Column (2) shows that, although Pakistani and Bangladeshi employees are younger on average than other ethnic groups, this age difference does not explain the differences in participation rates. Neither can differences in earnings. Column (3) adds in controls for individual level variables such as education level, sex, region, and whether the individual was born in the UK. This does cause the gaps for Pakistanis and Bangladeshis to shrink slightly; however, they are still large and statistically significant. Additionally controlling for job-level variables such as sector, industry, occupation and employer size, as in Column (4), if anything leads the gaps for these ethnic groups to grow slightly.

Column (5) adds in employer fixed effects. Again, this causes the gaps to shrink, but only slightly, implying that the vast majority of the ethnic gaps we observe occur within employer. Importantly, this implies that the differences in opt-out rates are not principally driven by differences in the types of employers that Pakistanis and Bangladeshis work for.

Column (6) of Table 2 does show that the gaps shrink after we additionally include dummy variables for eight different religious groups in X_i. In Section 4.1, we provide evidence that religion, or norms associated with religious beliefs, appear to be associated with lower rates of pension participation for Pakistani and Bangladeshi employees.

Table 2: Ethnic differences in private pension opt outs among AE-eligible employees

	(1)	(2)	(3)	(4)	(5)	(6)
Mixed	0.011	0.012	0.006	0.014	0.013	0.012
	(0.012)	(0.012)	(0.012)	(0.012)	(0.011)	(0.011)
Black African	0.020	0.025*	0.018	0.033**	0.026**	0.022*
	(0.014)	(0.014)	(0.014)	(0.014)	(0.013)	(0.013)
Black Caribbean	0.011	0.013	0.001	0.013	0.013	0.014
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.012)
Indian	0.001	0.005	0.001	0.008	0.000	-0.003
	(0.009)	(0.009)	(0.009)	(0.009)	(0.007)	(0.013)
Pakistani	0.063***	0.061***	0.054***	0.068***	0.048***	0.005
	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.022)
Bangladeshi	0.141***	0.139***	0.121***	0.146***	0.131***	0.090**
	(0.037)	(0.037)	(0.037)	(0.038)	(0.033)	(0.037)
Other Asian	-0.004	-0.000	-0.003	0.002	0.006	0.002
	(0.010)	(0.010)	(0.011)	(0.010)	(0.009)	(0.010)
Other	0.023	0.022	0.013	0.023	0.011	0.000
	(0.017)	(0.017)	(0.017)	(0.016)	(0.015)	(0.015)
Observations	125405	125405	125405	125376	92701	92701
R2	0.004	0.016	0.022	0.059	0.435	0.435
Controls	None	Age and earn	Indiv vars	Job vars	Firm FE	Religion

Notes: This table shows estimated differences in the proportion of different ethnic groups who opt out of their workplace pension, relative to the white reference group, and how this differs after controlling for a set of individual and job characteristics. The dependent variable for all regressions is an indicator variable equal to one if the employee is opted out of their workplace pension. The regression is estimated on our sample of AE-eligible employees in 2018 in the ASHE using a linear probability model as in Equation 1. The controls are added progressively and are as follows. Age and earnings: five-year age groups and within-age-group earnings decile. Individual variables: education (interacted linearly with age), region, sex, indicator variable for whether born in the UK. Job variables: sector, indicator variable for whether working part-time, 1-digit industry, 1-digit occupation, employer size. Robust standard errors clustered at the employer level shown in parentheses. *, ** and *** denote significance at 0.10, 0.05 and 0.01 levels, respectively.

Appendix Table 8 repeats this analysis in the Understanding Society dataset with an expanded set of controls (although without employer fixed effects, which we do not observe in Understanding Society). Column (1) shows that the unconditional gaps in opt out rates are broadly similar in this dataset to in our main ASHE-Census analysis sample. Column (2) controls for the set of individual and job level characteristics we controlled for in column (4) of Table 2, and the estimated differences in opt-out rates are little changed. Columns (3), (4) and (5) then add in controls for characteristics of the employee's partner, controls aiming to measure liquidity needs for the employee,

and information on the occupations and education levels of the employee's parents. The estimated differences in opt-out rates for Pakistani and Bangladeshi employees again do not change substantially after adding in these controls. This suggests that our results are not driven by differences in liquidity needs or parental income and wealth, which Choukhmane et al. (2024) emphasise are important for explaining differences in retirement account contributions in the US between races.

Table 2 and Appendix Table 8 therefore suggest that differences in the composition of observable individual and job characteristics between the ethnic groups in our sample cannot on their own explain the differences in opt-out rate between ethnic groups. However, another possibility is that the association between different characteristics and opt-out rates differs for Pakistani and Bangladeshi AE-eligible employees and those from other ethnic groups. To test whether this is the case, we estimate a set of linear probability models similar to those in column (5) of Table 2, where we aggregate the Pakistani and Bangladeshi indicator variables to a single indicator and interact this with different indicator variables for other characteristics, following Equation 2. This analysis therefore compares the gaps for different subgroups of Pakistani and Bangladeshi AE-eligible employees compared to the same subgroup of white employees, controlling for differences in observable characteristics between the two ethnicities.

Figure 2 shows the estimated coefficients on the interaction between different characteristics and the Pakistani/Bangladeshi indicator variable, together with 95% confidence intervals. All the point estimates are positive, suggesting that no subgroup of Pakistani and Bangladeshi AE-eligible employees is less likely to opt out of their workplace pension than their white counterparts. There are three subgroups where we estimate a very small gap that is statistically insignificant from zero: those born abroad, those in the middle third of the earnings distribution, and older individuals. Importantly, the gaps are if anything slightly larger in the public sector than in the private sector, despite the fact that employer contributions to pensions are typically much more valuable in the public sector than in the private sector. We return to quantifying the importance of opting out of pension saving for lifetime wealth accumulation in Section 5.

Figure 2: Differences in private pension opt out rates between different subgroups of white and Pakistani and Bangladeshi employees
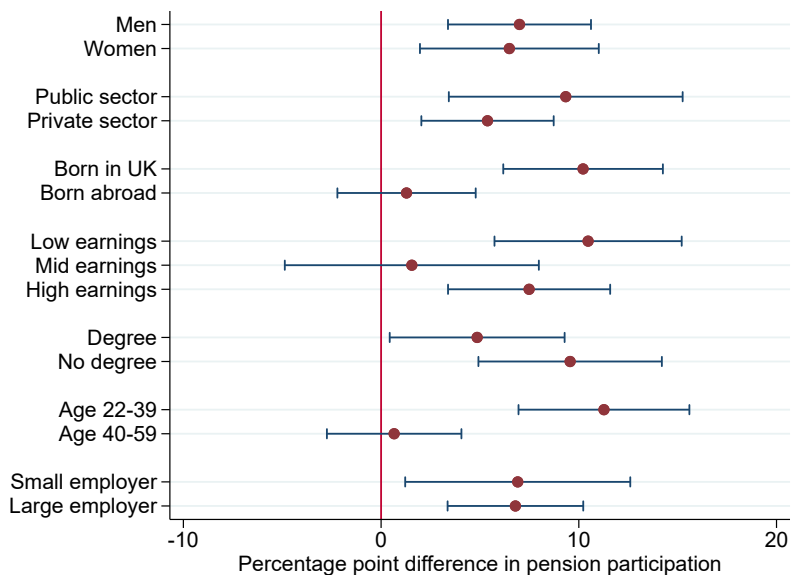
Notes: This figure shows differences in private pension opt out rates for Bangladeshi and Pakistani employees compared to white employees separately for different subgroups of employees. We plot the estimated coefficients and 95% confidence intervals on ρ_s^{PB} from estimating Equation 2 including controls for age, earnings, individual variables, job variables, and employer fixed effects. The regression sample includes AE-eligible employees in 2018 in the ASHE.

Before presenting evidence highlighting the importance of religion for the higher opt-out rates among Bangladeshi and Pakistani employees, it is worth highlighting other mechanisms for the gaps which Table 2 and Figure 2 suggest are unlikely to be particularly important. First, one possibility could be that Pakistani and Bangladeshi employees are more likely to not want to save in a private pension in the UK as more of them plan to emigrate from the UK later in life. Indeed, Zillessen (2022) shows that uncertainty about future residency causes migrants to hold significantly less wealth than natives in Germany. Around half of the Pakistani and Bangladeshi employees in our sample are born in the UK, but the gaps we observe are little changed by controlling for whether the individual is born in the UK or not. In addition, we see if anything smaller gaps for Bangladeshis and Pakistanis born outside the UK compared to those born in the UK. Since those born in the UK are presumably much less likely to want to move abroad than those born elsewhere, this indicates that differences in emigration plans are unlikely to be a large driver of the gaps in pension participation.

Another potential explanation is that the differences in pension participation we mea-

sure do not reflect differences in opt-out rates, but rather are the result of employer noncompliance with automatic enrolment legislation. In other words, it could be that Pakistani and Bangladeshi employees are more likely to work for employers that did not automatically enrol them into a workplace pension despite being legally required to do so. However, column (6) of Table 2 demonstrates that the differences in pension participation remain when comparing employees who work for the same employer, and Figure 2 shows that we see slightly larger gaps in participation when focusing on employees in the public sector, where employer noncompliance is very unlikely. The differences in pension participation therefore reflect differences in opt-out decisions by employees.

Finally, in Appendix Figure 6 we show that there is a higher degree of persistence in opting out among Pakistani and Bangladeshi AE-eligible employees than for other ethnic groups, suggesting that higher opt outs are associated with a permanent characteristic of these individuals. To do this, we restrict our ASHE-Census sample to employees who were AE-eligible in all years from 2015 to 2018 and then plot the share who opted out in 1 or 2, 3, or 4 of these years. 15% of Pakistani and Bangladeshi individuals in the sample opted out in at least three years, compared to less than 8% for all other ethnic groups.

4.1 The importance of religion for explaining the gaps

In this section, we present a set of evidence pointing towards the importance of religion for explaining the ethnic differences in workplace pension opt-out rates.

Muslims from other ethnic groups are also more likely to opt out of private pensions

First, Table 3 shows Muslims are more likely to opt out of their workplace pension than other religious groups, whether they are from a Pakistani and Bangladeshi background or not. This table repeats the estimates of Equation (1) with sequentially-added controls as in Table 2, but changing the main independent variable from a categorical variable for ethnicity to a categorical variable for the employee's religion, where we separate out Muslims who are Pakistani or Bangladeshi, Muslims from a different ethnic group, and also Pakistani and Bangladeshi employees who are not Muslim (although this is a very small group).

Table 3: Religious gaps in private pension participation among AE-eligible employees, splitting out Muslims of different ethnicities

	(1)	(2)	(3)	(4)	(5)
Christian	0.001	-0.002	0.001	0.001	-0.002
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Muslim not Pakistani/Bangladeshi	0.043**	0.042**	0.034*	0.044***	0.046***
	(0.017)	(0.017)	(0.017)	(0.017)	(0.016)
Muslim Pakistani/Bangladeshi	0.089***	0.085***	0.076***	0.092***	0.069***
	(0.017)	(0.017)	(0.017)	(0.017)	(0.016)
Non-Muslim Pakistani/Bangladeshi	-0.008	-0.004	-0.002	0.020	0.018
	(0.062)	(0.063)	(0.061)	(0.059)	(0.055)
Buddhist	0.025	0.020	0.019	0.016	0.009
	(0.023)	(0.022)	(0.022)	(0.022)	(0.020)
Hindu	0.001	0.005	0.000	0.002	-0.005
	(0.013)	(0.013)	(0.013)	(0.012)	(0.010)
Jewish	-0.013	-0.001	-0.004	-0.011	0.009
	(0.024)	(0.024)	(0.024)	(0.023)	(0.024)
Sikh	-0.014	-0.015	-0.018	-0.009	-0.008
	(0.014)	(0.014)	(0.014)	(0.013)	(0.011)
Observations	125405	125405	125405	125376	92701
R2	0.004	0.016	0.022	0.059	0.435
Controls	None	Age and earn	Indiv vars	Job vars	Firm FE

Notes: This table shows estimated differences in the proportion of different religious groups who opt out of their workplace pension relative to the non-religious reference group, and how this differs after controlling for a set of individual and job characteristics. The dependent variable for all regressions is an indicator variable equal to one if the employee is opted out of their workplace pension. The regression is estimated on our sample of AE-eligible employees in the 2018 ASHE using a linear probability model as in Equation 1. The controls are as follows. Age and earnings: five-year age groups and within-age-group earnings decile. Individual variables: education (interacted linearly with age), region, sex, indicator variable for whether born in the UK. Job variables: sector, indicator variable for whether working part-time, 1-digit industry, 1-digit occupation, employer size. Robust standard errors clustered at the employer level shown in parentheses. *, ** and *** denote significance at 0.10, 0.05 and 0.01 levels, respectively.

Overall, Muslims from the Pakistani and Bangladeshi ethnic group are around 9 percentage points more likely to opt out of their pension than non-religious people. This gap shrinks to around 7 percentage points after including the full set of controls. The differences are slightly less stark for Muslims from other ethnic groups, but they are still economically and statistically significant, at 4.7 percentage points, after adding in all controls.

Muslims who report that their religious beliefs make a great difference to their life are especially likely to opt out

Table 4 demonstrates that Muslims who are "more religious" are particularly likely to opt out of their workplace pension. For these results, we use Understanding Society data and, instead of splitting Muslims based on their ethnicity as in Table 3, we split them based on their response to the following question: "How much difference would you say religious beliefs make to your life?". We classify Muslims who respond that religious beliefs make a "great difference" as "more religious", and Muslims who respond that they make "some difference" or less as "less religious". Figure 5 in the Appendix shows that almost three quarters of Muslims report that religious beliefs make a "great difference" to their life. This share is similar for Muslims who are Pakistani or Bangladeshi and for Muslims of other ethnic groups, and is much higher than for all other religions.

We then repeat the same regressions as in Table 3 in Understanding Society for this new categorical religious variable, although without a specification including employer fixed effects as this is not feasible in the Understanding Society data.[10] Unconditionally, Muslims who are "less religious" are 5.4 percentage points more likely to opt out of their workplace pension than non-religious individuals, with this difference increasing to 13.6 percentage points for Muslims who are "more religious". Controlling for individual and job characteristics only decreases these differences slightly.

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[10]Appendix Figure 8 shows that we see broadly similar patterns in the shares opting out by ethnicity in Understanding Society as in our main linked ASHE-Census dataset.

Table 4: Religious gaps in private pension participation among AE-eligible employees, splitting out Muslims with different religious beliefs

	(1)	(2)	(3)	(4)
Christian	-0.002	-0.002	0.001	0.002
	(0.004)	(0.004)	(0.004)	(0.004)
Muslim - less religious	0.054**	0.051**	0.043*	0.049**
	(0.022)	(0.022)	(0.022)	(0.022)
Muslim - more religious	0.136***	0.127***	0.120***	0.124***
	(0.017)	(0.017)	(0.017)	(0.017)
Hindu	0.027*	0.029*	0.025	0.029*
	(0.016)	(0.016)	(0.017)	(0.017)
Jewish	0.050	0.063	0.055	0.046
	(0.045)	(0.045)	(0.046)	(0.045)
Sikh	0.011	0.014	0.011	0.011
	(0.017)	(0.017)	(0.017)	(0.017)
Buddhist	0.003	0.004	-0.000	-0.001
	(0.029)	(0.029)	(0.029)	(0.029)
Observations	20,092	20,092	20,092	20,092
R^2	0.011	0.023	0.029	0.042
Added controls	None	Age, year, earn	Indiv vars	Job vars

Notes: This table shows estimated differences in the proportion of different religious groups who opt out of their workplace pension relative to the non-religious reference group, and how this differs after controlling for a set of individual and job characteristics. The dependent variable for all regressions is an indicator variable equal to one if the employee is opted out of their workplace pension. The regression is estimated on our sample of AE-eligible employees between 2018 and 2022 who report that they were offered a workplace pension in Understanding Society using a linear probability model as in Equation 1. Muslims - less religious refers to Muslims who report that their religious beliefs do not make a great difference to their life. Muslims - more religious refers to Muslims who report that their religious beliefs do make a great difference to their life. The controls are as follows. Age and earnings: five-year age groups and within-age-group earnings decile. Individual variables: education (interacted with age group), region, sex, indicator variable for whether born in the UK. Job variables: sector, indicator variable for whether working part-time, 1-digit industry, 1-digit occupation, employer size. Robust standard errors clustered at the employer level shown in parentheses. *, ** and *** denote significance at 0.10, 0.05 and 0.01 levels, respectively.

Half of Muslims directly report that their religious beliefs affect their saving and investment decisions

These results therefore suggest that strength of religious belief is associated with a higher likelihood of opting out of their workplace pension for Muslims. The question then is whether it is the religious belief itself that is driving these extra opt outs, or another driver correlated with strength of religious belief.

Figure 3: How religious beliefs reportedly affect saving and investment decisions, by religion
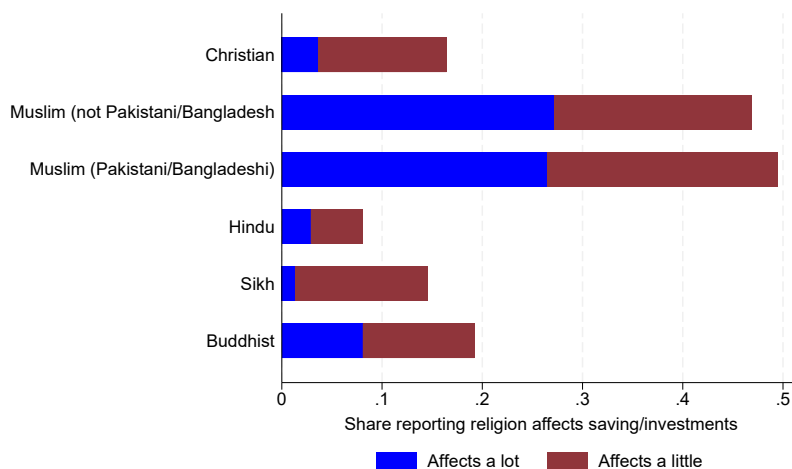
Notes: This figures shows how religious beliefs affect saving and investment decisions using self-reported data from wave 4 (2012-14) of Understanding Society. For this figure, the sample includes all respondents who were asked the "Extra Five Minutes" questions, which were principally related to ethnicity and migration research. The question asks "Which of the following statements applies to you? My religious beliefs affect my decisions related to investment and savings...". The blue bars show the share that respond "Yes, a lot", and the red bars show the share that respond "Yes, a little". Muslim (P/B) includes Muslims who are in the Pakistani or Bangladeshi ethnic group, while Muslim (not P/B) includes Muslims from other ethnic groups.

To shed light on this, Figure 3 shows that Muslims are particularly likely to self-report that their religious beliefs affect their savings and investment decisions. Again this figure is made using Understanding Society, where we plot the share of people who respond that their religious beliefs affect their decisions related to investment and savings either "a lot" or "a little", by religion.[11] Approximately half of Muslims report that their religious beliefs affect their savings and investment decisions, and a quarter report that they affect them "a lot", with these results being very similar for Muslims who are Pakistani or Bangladeshi and those who are from other ethnic groups. In contrast, a much lower share of all other religious groups report that their religious beliefs affect their saving and investment decisions.

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[11]This question was included only in Wave 4 (2012–14) of Understanding Society and was asked to a subset of the sample. Accordingly, we plot the responses to this question for all individuals in this subset during this wave.

Other aspects of Pakistani and Bangladeshi employees' wealth portfolios are consistent with Islamic teachings

As further evidence that religious teaching affects saving decisions of Pakistani and Bangladeshi Muslims, we show that Pakistani and Bangladeshi people and Muslims tend to hold less wealth in other non-pension assets that are forbidden under Sharia Law, and more wealth in assets that are permitted. To do this, we use the Wealth and Assets Survey, and regress the levels of three different types of assets on a categorical variable for ethnicity or religion, and a set of controls akin to in Column (4) of Tables 2, 3 and 4.

Figure 4 shows that Pakistani and Bangladeshi employees have about £10,000 less wealth held in interest-bearing financial assets than white employees (the base group), controlling for individual and job characteristics. This is consistent with the fact that income from interest is prohibited under Sharia Law. On the other hand, they have £17,000 more wealth held in non-interest bearing financial assets, although this coefficient is estimated imprecisely and statistically insignificant from zero. In addition, there is some evidence they hold more wealth in non-main properties, although the coefficient is statistically significant only at the 10% level. We see a similar pattern when looking at Muslims, where here the base group is non-religious people.

Figure 4: Comparison of wealth by ethnicity and religion

(a) By ethnicity
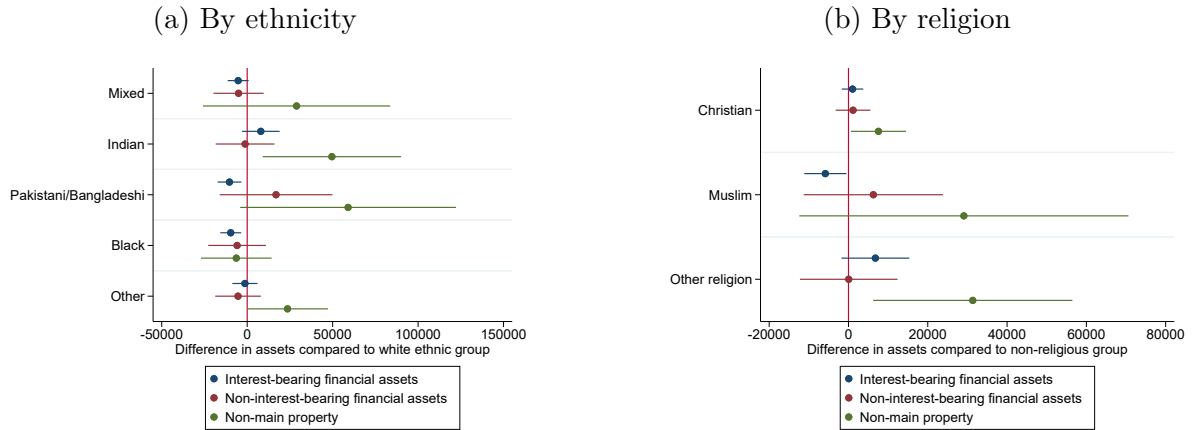
(b) By religion

Notes: This figure shows estimated differences in mean levels of interest-bearing financial assets, non-interest-bearing financial assets and non-main property assets, by ethnicity and religion, after controlling for a set of individual and job characteristics. Each dependent variable is winsorised at the 1st and 99th percentile. The regressions are estimated on the sample of 22- to 59-year-old AE-eligible employees in Round 7 (2018-20) of the Wealth and Assets Survey. Point estimates and 95% confidence intervals show differences in assets compared to (a) white employees and (b) non-religious employees. The controls are as follows. Age and earnings: five-year age groups and within-age-group earnings decile. Individual variables: education (interacted with age group), region, sex, indicator variable for whether born in the UK. Job variables: sector, indicator variable for whether working part-time, 1-digit industry, 1-digit occupation, employer size.

There is little evidence that Pakistani and Banglaedshi employees have different expected returns from investing in pensions vs. other assets

The patterns of saving we have documented, with Muslims being more likely to opt out of their workplace pension and to hold less wealth in interest-bearing financial assets and more wealth in non-interest-bearing financial assets and property, are consistent with at least some Muslims' investment decisions being affected by their religious beliefs. However, these patterns would also be consistent with Muslims having different expectations about the distribution of returns from investing in different types of assets.

To investigate this, we make use of self-reported attitudes towards different methods of saving for retirement in the Wealth and Assets Survey. Specifically, we focus on answers to two questions: "Which do you think would be the safest way to save for retirement?" and "Which do you think would make the most of your money?". Table 5 shows the shares who answer "paying into a pension scheme" or "investing in property" to these two questions, separately by ethnicity and religion. These are by far the two most common answers to both of these questions.

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Overall, Table 5 suggests that Pakistanis and Bangladeshis and Muslims have broadly similar perceptions to other ethnic and religious groups about the return and riskiness of saving in pensions vis-à-vis other forms of retirement saving. Pakistani and Bangladeshi employees are less likely to say that pension saving is the safest way to save for retirement compared to white employees, but have similar responses to mixed, Indian and the "other" ethnic group to this question. And 35% of Pakistani and Bangladeshi respondents report that pension saving is the highest return method of retirement saving, exactly the same proportion as for the white majority, and higher than nearly all other ethnic groups. We see a similar patterns when analysing responses by religion.

Table 5: Reported perception of the return and riskiness of different types of saving, by ethnicity and religion

| Group | Obs | Safest method of saving | | Highest return method of saving | |
		Pensions (%)	Property (%)	Pensions (%)	Property (%)
White	6896	64	22	35	42
Mixed	101	56	34	30	39
Indian	170	58	33	32	56
Pakistani/Bangladeshi	99	53	36	35	47
Black	148	68	21	37	45
Other	218	51	36	29	47
No religion	3257	64	22	34	43
Christian	3897	64	23	36	42
Muslim	204	56	34	38	42
Other religion	272	53	31	30	50

Notes: This table shows the proportion of different ethnic and religious groups who report that saving in pensions and investing in property is the safest and highest return method of saving for retirement. The sample is 22- to 59-year-old AE-eligible employees in Round 7 (2018-20) of the Wealth and Assets Survey. The underlying questions are "Which do you think would be the safest way to save for retirement?" and "Which do you think would make the most of your money". Respondents who choose "Paying into an employer pension scheme" or "Paying into a personal pension scheme" are aggregated into "Pensions", while the "Property" columns report the shares who answer "Investing in property".

In summary, this section has shown that Bangladeshi and Pakistani employees in the UK are significantly more likely to opt out of their workplace pension than other ethnic groups, and that this cannot be explained by observable differences in economic characteristics between ethnicities. Instead, we have provided evidence that religious beliefs are an important driver of these higher opt outs, with around 90% of Pakistanis and Bangladeshis being Muslim. We have shown that Muslims, particularly more religious Muslims, have higher pension opt-out rates than other religions, and over half of them

report that their religious beliefs impact their savings decisions. They also tend to hold less wealth in interest-bearing financial assets, consistent with the teachings of Sharia Law, and hold more wealth in non-interest-bearing financial assets and property. These patterns do not appear to be driven by differences in expected returns for different types of investments.

5   Quantifying the importance of opt outs

There are significant tax incentives for pension saving compared to other forms of saving in the UK, as discussed in Section 2.2. These come on top of financial incentives to contribute to a pension from employers. In this section, we illustrate the financial impact of missing out on employer pension contributions and tax subsidies to pension saving on future retirement incomes for those who opt out of pension saving for their entire working life. This is a relevant quantification given that Pakistani and Bangladeshi employees are not only more likely to opt out of their pension in a given year, but are also more likely to opt out persistently in all or most years we observe them (see Appendix Figure 6).

To do this, we simulate a simple lifetime earnings profile for a typical Bangladeshi or Pakistani employee who opts out of their pension. We then compare two scenarios: one where in all years of working life the employee saves into a savings account with no employer contribution and in which contributions are made out of post-tax earnings, and there is no tax on returns or upon withdrawal (referred to as "taxed-exempt-exempt" or "TEE" saving), and another where in all years of working life they save into a workplace pension. We assume that their disposable income during working life is unchanged whether they are saving in a pension or the TEE account, such that all differences in consumption appear only in retirement incomes, making for easier comparisons. We illustrate levels of retirement incomes in both cases under different assumptions about what share of income these individuals save, how much their employers would contribute if they were to save in a pension, and the exact tax incentives to pension saving, which can depend on how pension contributions are made.

We provide more detail on the simulation methodology in Section 5.1, before presenting the simulation results in Section 5.2 .

5.1 Simulation methodology

Estimating the earnings profile

To make the earnings profile, we take the average age (37) and annual earnings (£30,000) of Bangladeshi and Pakistani employees in our ASHE-Census sample who have opted out of pension saving. For simplicity, we assume that their (real) earnings grow at 1.8% per year,[12] starting at age 22 (when their earnings are around £23,000) and ending at age 67 (when there earnings are around £51,000). They work in all years from 22 to 67 and retire at age 68, which is the current legislated state pension age for someone currently aged 37 in the UK.

Estimating saving rates in different scenarios

For employees who opt out of pension saving, we have no information on the share of their income that they are saving, or that their employer would contribute. As a result, we show results for two different assumptions about the how much the individual saves, and their employer would save, into either the pension or the TEE account. In each case, we assume that disposable income during working life (and the employer's profit) is unchanged whether contributions are made into a pension or the TEE account. We also show results both assuming that employee pension contributions are made with and without using "salary sacrifice". Employee pension contributions made without using salary sacrifice are subject to employer and employee National Insurance contributions (a payroll tax), while under salary sacrifice employee contributions are exempt from Naitonal Insurance contributions. In 2019, around 40% of pension savers in the UK made employee pension contributions using salary sacrifice.

The first, more conservative, assumption on how much our representative individual saves is that they save the minimum employee and employer contribution rates under automatic enrolment policy.[13] An alternative assumption is that they would have the average employee and employer contribution rates for Pakistani and Bangladeshi employees

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[12]This is consistent with official estimates of economy-wide real earnings growth from the Office for Budget Responsibility, see https://obr.uk/supplementary-forecast-information-release-long-term-economic-determinants-march-2024/.

[13]This means that for the pension, the employer contribution is 3% of "qualifying earnings" (that is, earnings between £6,240 and £50,270) and the employee contribution is 5% of qualifying earnings without salary sacrifice and 6.87% with salary sacrifice. For the TEE savings account, the employer contribution is 1.746% of qualifying earnings and the employee contribution is 4%.

who are not opted out of their workplace pension.[14] These two scenarios are called "AE minimum contributions" and "average contributions" in Tables 6 and 7.

Calculating retirement incomes

We calculate total wealth accumulated by age 68 under the four different scenarios assuming a real rate of return of 3.3% per year.[15] We then assume that our representative employee buys an inflation-linked annuity with all their accumulated retirement wealth at age 68 and receives a full new state pension (where we assume that the annual value of the state pension, £11,502 in 2024, increases in line with economy-wide earnings growth, assumed to be 1.8% per year, over time).[16] Tables 6 and 7 present retirement incomes at age 68 for each scenario and saving vehicle.

5.2 Simulation results

Table 6 shows levels of total and private retirement incomes when investing into either the TEE savings account or a pension, with and without employer contributions, under different assumptions about saving rates and the way in which employee contributions to pensions are made. Table 7 then shows the percentage increase in retirement incomes due to employer contributions and pension tax advantages under the different assumptions.

The first panel of Table 6 represents our most conservative assumptions about the financial incentives to save in a pension. We assume that employee pension contributions would not be made by salary sacrifice, and that the amounts saved would reflect current minimum contributions under automatic enrolment. If the employee were to save into

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[14]This means that for the pension, the employer contribution is 9.07% of total earnings, and the employee contribution is 4.4% with salary sacrifice and 6.05% without. For the TEE savings account, the employer and employee contributions are 5.28% and 3.52% of total earnings, respectively.

[15]Our assumption on the real rate of return follows O'Brien et al. (2024) - see Appendix Section A.13 of this report. Table 5 provides little evidence that Pakistani and Bangladeshi employees have different expectations on the distribution of returns from saving in pensions compared to other ethnic groups. Indeed, investing in Sharia-compliant DC pensions can offer a particularly high rate of return: the Sharia fund offered by Nest, the UK's largest DC workplace pension provider, provided an annualised return of 17.4% over five years to June 2024, compared to a return of 7.5% for Nest's next highest return fund. See https://www.nestpensions.org.uk/schemeweb/nest/investing-your-pension/fund-choices/compare-fund-performance.html

[16]The annuity rate is assumed to be actuarially fair based on a real rate of return for annuity providers of 1.8% per year (O'Brien et al., 2024) and official estimated survival probabilities for an individual who is 37 in 2024. See https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/lifeexpectancies/bulletins/nationallifetablesunitedkingdom/2020to2022 for official survival probabilities.

the TEE account and not receive any employer pension contributions, their total annual retirement income would be £26,441, of which £6,443 is private retirement income. If they instead saved into a pension, but still received no employer contribution, total and private retirement income would rise to £27,215 and £7,215, respectively. If they saved into a TEE account, but did receive an employer contribution, total and private retirement income would be £29,253 and £9,256. Finally, if we assume they receive an employer contribution and save into a pension, their total and private retirement income would be £31,322 and £11,325, respectively.

Table 7 then shows that total retirement income is 18.5% higher in the fourth column compared to the first column, coming from a 2.9% increase due to pension saving subsidies on employee contributions, a 10.6% increase due to employer contributions, and a 4.9% increase due to pension saving subsidies on employer contributions. Private retirement income is a substantial 76% higher when saving into a pension with employer contributions compared to when saving into a TEE account without employer contributions under these assumptions.

Clearly, then, even under our most conservative assumptions, pension tax advantages and employer contributions can have a large impact on retirement incomes. Other assumptions lead to even larger increases in retirement incomes. The third panel of Table 6 shows our results under the assumption that those Pakistani and Bangladeshi employees who opt out would have the same employee and employer contributions as Pakistani and Bangladeshi employees who did not opt out of pension saving. This is reasonable given that opting out does not seem to be associated with firm size or sector, which are particularly correlated with pension contributions.

Table 6: Levels of retirement income from employee contributions, employer contributions and tax relief

| | No employer conts | | With employer conts | |
	Pure TEE	Pension	Pure TEE	Pension
No salary sacrifice, AE minimum contributions				
Including state pension	26,400	27,200	29,300	31,300
Not including state pension	6,400	7,200	9,300	11,300
Salary sacrifice, AE minimum contributions				
Including state pension	26,400	29,800	29,300	33,100
Not including state pension	6,400	9,800	9,300	13,100
No salary sacrifice, average contributions				
Including state pension	27,200	28,000	37,900	43,700
Not including state pension	7,200	8,000	17,900	23,700
Salary sacrifice, average contributions				
Including state pension	27,200	30,800	37,900	45,700
Not including state pension	7,200	10,800	17,900	25,700

Notes: This shows projected levels of retirement incomes for a representative Pakistani/Bangladeshi employee when saving in either a pure TEE account or a pension, with and without employer contributions, under four different assumptions. Details on the assumptions and methodology for the simulation contained in Section 5.1. The first column shows retirement income when employee contributions are made into a pure TEE account with no employer contributions. The second column shows retirement income when employee contributions are made into a pension with employer contributions. The third and fourth column show retirement incomes when employee and employer contributions are made into a pure TEE account and into a pension, respectively. The first two panels assume that employee and employer contributions are equal to minimum contribution rates under UK automatic enrolment legislation, while the bottom two panels assume that they are equal to average pension contribution rates made by Bangladeshi and Pakistani employees who have not opted out. The first and third panel assume that employee pension contributions are not made via salary sacrifice, while the second and fourth panel assume that these contributions are made via salary sacrifice. All figures are rounded to the nearest £100.

In this scenario, moving saving from the TEE account to a pension, and receiving an employer contribution, increases total retirement incomes from around £27,000 to almost £44,000, a 61% increase. Private retirement incomes increase by over 230%, from just over £7,000 to almost £24,000.

Overall, the exact impact of consistently opting out of a private pension, and saving elsewhere instead, can vary significantly depending on assumptions, particularly about employer contributions. Nevertheless, in all scenarios, saving in a pension and receiving an employer pension contribution leads to substantial increases in retirement incomes. This demonstrates that the extra, persistent, pension opt outs we observe for Pakistani

and Bangladeshi employees can have a large effect on retirement incomes.

Table 7: Percentage increase in retirement income from employer contributions and tax relief

	Tax relief	Employer conts	Interaction	Total
No salary sacrifice, AE minimum contributions				
Including state pension	2.9	10.6	4.9	18.5
Not including state pension	12.0	43.6	20.1	75.8
Salary sacrifice, AE minimum contributions				
Including state pension	12.6	10.6	2.0	25.3
Not including state pension	51.8	43.6	8.4	103.9
No salary sacrifice, AE average contributions				
Including state pension	3.0	39.5	18.2	60.8
Not including state pension	11.4	150.0	69.1	230.5
Salary sacrifice, AE average contributions				
Including state pension	13.5	39.5	15.1	68.2
Not including state pension	51.2	150.0	57.4	258.5

Notes: This table shows the percentage increase in retirement income from saving in a pension rather than a pure TEE account with no employer contribution, decomposed into the increase due to tax relief and employer contributions. Underlying levels of income are contained in Table 6. The first column shows the percentage increase in retirement income from moving from the first to the second column of Table 6. The second column shows the percentage increase in retirement income from moving from the first to the third column of Table 6. The fourth column shows the percentage increase in retirement income from moving from the first to the fourth column of Table 6. The third column then shows the difference between the fourth column and the sum of the first two columns, representing the increase in retirement income due to tax relief on employer contributions.

6   Conclusion

In this paper, we have documented that Pakistani and Bangladeshi employees in the UK are around twice as likely to opt out of workplace pensions compared to employees from other ethnic groups. These differences hold even when comparing employees with similar observable characteristics working for the same employer. We have provided evidence highlighting the importance of religious beliefs and norms in driving higher opt outs for these ethnic groups. Opt-out rates are particularly high among more religious Muslims and the majority of Muslims also directly report that their religious beliefs affect their saving and investment decisions. We also show that other aspects of Muslims' wealth portfolios are in line with Islamic teaching, and that there is little evidence these saving

patterns are driven by differences in the expected distributions of returns offered by different assets.

We have also performed a simulation exercise to quantify the potential implications of persistently opting out of pension saving, and instead saving in a less financially advantaged account, on future retirement incomes. For a typical Pakistani and Bangladeshi employee, we estimate that their future retirement income would be around 20% higher, under our most conservative assumptions, if they saved in a pension instead of a non-tax-advantaged TEE savings account without an employer contribution throughout their entire career. Under our preferred assumptions, saving in a pension would boost their retirement income by over 60%. The financial implications of opting out of workplace pension saving can therefore be significant due to the institutional structure of the UK pension saving system, whereby pensions are particularly tax advantaged and employers are obliged to offer a contribution to pensions for employees who do not opt out.

The findings in this paper have implications for pension saving policy, both in the UK and elsewhere. First, our results lend support to some of the conclusions from Choukhmane et al. (2024). They show that redistributing employer pension contributions and tax subsidies so that they no longer depend on employees' own contribution choices would close gaps in retirement income by race and parental income in the US. In the UK context, our results suggest that reducing tax subsidies for pension saving that are overly generous for high savers, as suggested by Adam et al. (2023), and making the minimum employer pension contribution specified under automatic enrolment universal and non-contingent on the employee making a contribution, as suggested by Cribb et al. (2024), would reduce ethnic gaps in retirement wealth accumulation.[17]

In addition, as mentioned in Section 2, workplace pension saving in the UK can often be compliant with Islamic teachings. We see high opt-out rates for employees saving in the public sector, who are nearly always offered a defined benefit pension, despite the fact that these pensions are typically viewed as Sharia compliant by Islamic finance scholars, as outlined in Section 2.3. Increasing awareness of this could be one way to increase pension participation for these employees, meaning fewer would miss out on an employer pension contribution. Employees who are offered defined contribution plans in the private

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[17]Note that Sharia Law makes exceptions for "unavoidable" transgressions due to living in a western country. Making the employer contribution non-contingent would mean that this aspect of pension saving would become unavoidable.

sector usually have the option of saving into a Sharia compliant fund, although this is very rarely the default. Reducing the costs of switching to the Sharia compliant fund and increasing awareness of this option could increase pension participation for these employees.

7 Appendix

Figure 5: Importance of religion to life, by religion
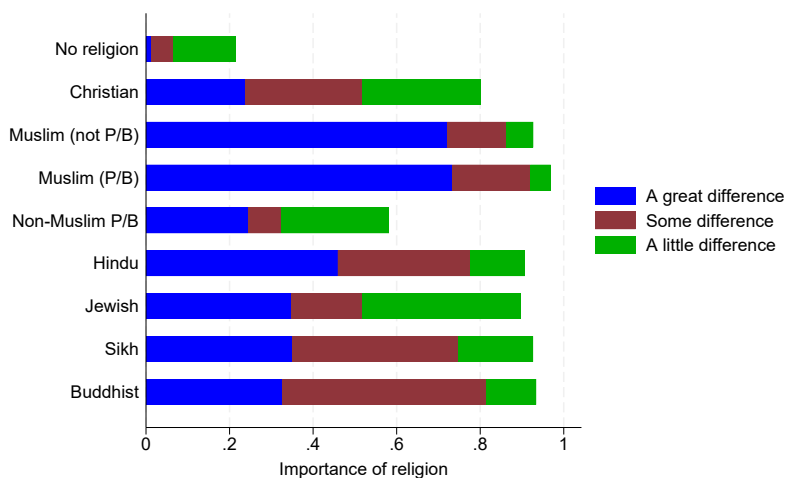
Notes: This figures shows the reported importance of religious beliefs to life for different religious groups. The sample includes 22- to 59-year-old AE-eligible employees in Understanding Society 2018-22 (waves 8, 10 and 12). We plot answers to the question "How much difference would you say religious beliefs make to your life?". Muslim (P/B) includes Muslims who are in the Pakistani or Bangladeshi ethnic group, Muslim (not P/B) includes Muslims from other ethnic groups, and Non-Muslim P/B includes Pakistani and Bangladeshi employees who are not Muslim (these are not included in any other group).

Figure 6: Persistence of opting out, by ethnicity
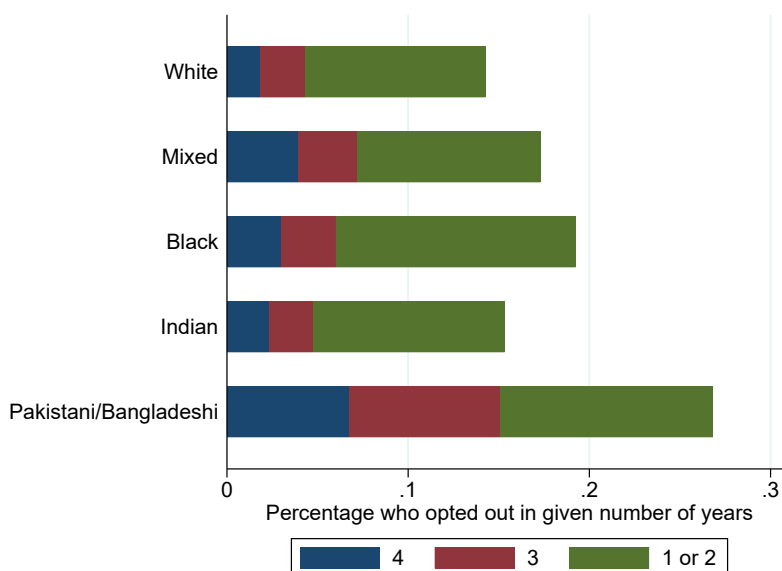
Notes: This figure shows the persistence of opting out of a workplace pension for four years, by ethnic group. The sample contains all 22- to 59-year-old employees who are AE-eligible in all years 2015 to 2018 in the matched ASHE-Census dataset. We then plot the share who are opted out of their workplace pension in 4, 3 and 1 or 2 years, by ethnic group.

Figure 7: Heterogeneity results without controls
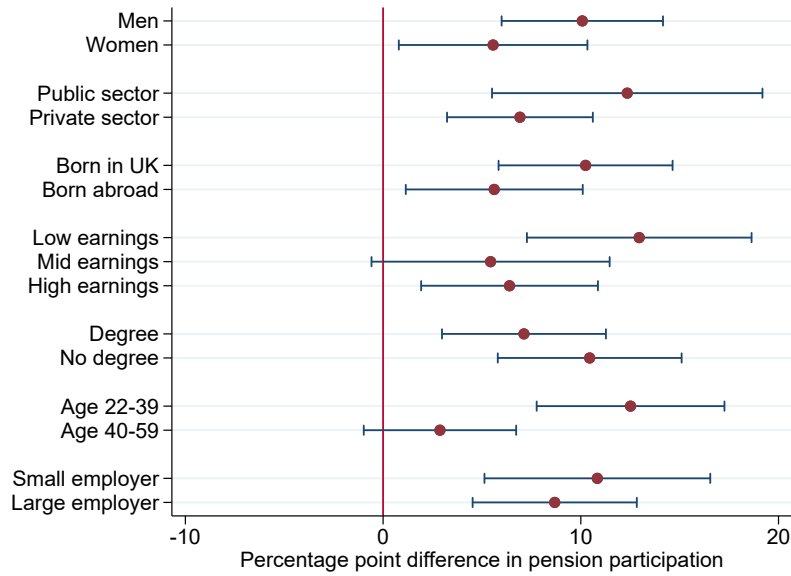
Notes: This figure shows differences in private pension opt out rates for Bangladeshi and Pakistani employees compared to white employees separately for different subgroups of employees. We plot the estimated coefficients and 95% confidence intervals on ρ_s^{PB} from estimating Equation 2 without including controls. The regression sample includes AE-eligible employees in 2018 in the ASHE.

Figure 8: Comparing opt-outs in ASHE-Census and Understanding Society datasets
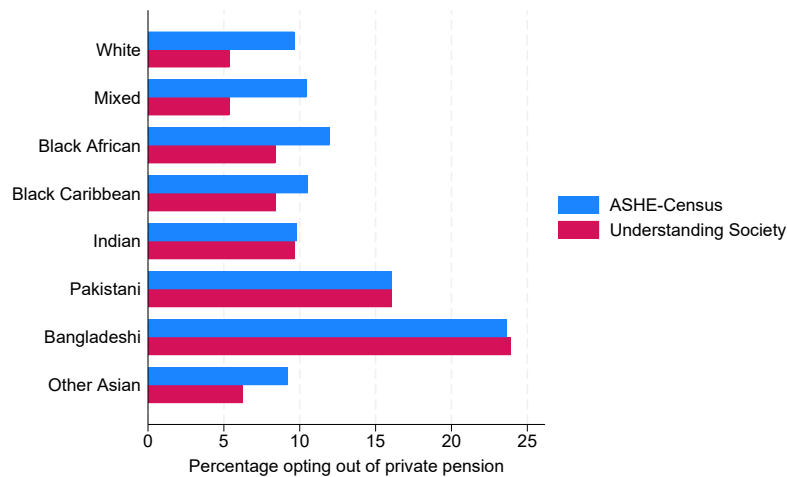
Notes: This figure shows the proportion of 22- to 59-year-old AE-eligible employees who have opted out of their workplace pension in the matched ASHE-Census dataset and in Understanding Society. The ASHE-Census sample contains observations from 2018 only. The Understanding Society sample contains observations from waves 8, 10 and 12 of Understanding Society between 2018 and 2022.

Table 8: Ethnic differences in private pension opt outs among AE-eligible employees - extra controls in Understanding Society

	(1)	(2)	(3)	(4)	(5)
Mixed	-0.000	0.004	0.002	0.001	-0.001
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Black African	0.030*	0.033*	0.030*	0.028	0.026
	(0.016)	(0.017)	(0.017)	(0.017)	(0.017)
Black Caribbean	0.031*	0.032*	0.028*	0.027*	0.024
	(0.016)	(0.017)	(0.017)	(0.017)	(0.017)
Indian	0.043***	0.047***	0.045***	0.045***	0.041***
	(0.011)	(0.012)	(0.012)	(0.012)	(0.012)
Pakistani	0.107***	0.103***	0.099***	0.100***	0.098***
	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)
Bangladeshi	0.185***	0.179***	0.177***	0.174***	0.166***
	(0.034)	(0.034)	(0.034)	(0.034)	(0.034)
Other Asian	0.009	0.024	0.021	0.019	0.018
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Observations	20,092	20,092	20,092	20,092	20,092
R^2	0.011	0.043	0.045	0.047	0.049
Added controls	None	Ind + job vars	Partner vars	Liquidity vars	Parent vars

Notes: This table shows estimated differences in the proportion of different ethnic groups who opt out of their workplace pension, relative to the white reference group, and how this differs after controlling for a set of individual and job characteristics. We estimate this on our 2018-22 Understanding Society analysis sample of AE-eligible employees who report being offered a workplace pension). The dependent variable for all regressions is an indicator variable equal to one if the employee is opted out of their workplace pension. The controls are as follows. Column (2): Five-year age groups, within-age-group earnings decile, education (interacted linearly with age), region, sex, indicator variable for whether born in the UK, sector, indicator variable for whether working part-time, 1-digit industry, 1-digit occupation, employer size. Column (3) additionally controls for marital status, partner's education and partner's earnings. Column (4) additionally controls for number of children, housing tenure, housing costs, level of liquid savings, health status, average earnings and coefficient of variation of earnings. Column (5) additionally controls for mother and father's occupations when 14 and mother and father's education levels. Robust standard errors clustered at the employer level shown in parentheses. *, ** and *** denote significance at 0.10, 0.05 and 0.01 levels, respectively.

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