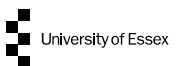


TITLE

Taking the Long View 2017-2018
Institute for Social and Economic Research



**THE QUEEN'S
ANNIVERSARY PRIZES**
FOR HIGHER AND FURTHER EDUCATION
2017



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Winner of the Queen's Anniversary Prize

This year the University of Essex was awarded the Queen's Anniversary Prize for the work of ISER. The Prizes are part of the honours system and are awarded every two years by the Queen on the Prime Minister's advice.

Commending the University, the Royal honour cites ISER's "authoritative social and economic research to inform the policies of governments for the improvement of people's lives."

The Queen's Anniversary Prize is a tremendous honour for the University of Essex, and remarkable recognition of ISER's reputation as a world-leader in social and economic research.



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About ISER

Originally established in 1989 at the University of Essex to house the British Household Panel Survey (BHPS), ISER has grown into a leading interdisciplinary research centre.

ISER encompasses the highly-respected ESRC Research Centre on Micro-Social Change and the successor to the BHPS, Understanding Society, the innovative UK Household Longitudinal Study. ISER houses an internationally-renowned Microsimulation Unit, producing EUROMOD, the tax-benefit microsimulation model and a growing number of spin-off models for countries across the world.

ISER also hosts unrivalled postgraduate study opportunities and a thriving visitor and fellowship programme.

ISER receives financial support from the University of Essex, the Economic and Social Research Council and from a large number of trusts, charities and other partners.

For more information on ISER's work, to sign up for our newsletters or to find out more about fellowships and our visitor programme please see www.iser.essex.ac.uk



It has been a delight to lead ISER during this exciting and important year in its long history.

EMILY GRUNDY
DIRECTOR



From the Director

This has been an incredibly rewarding year for ISER. Shortly after I joined ISER as Director, we heard that the University of Essex had been awarded the prestigious Queen's Anniversary Prize for our work, recognising almost three decades of outstanding and pioneering research that has informed governments nationally and internationally as they embark upon difficult policy decision-making.

The Prize also reflects on three decades of continuous and significant financial investment from our main funders: the Economic and Social Research Council, and the University of Essex. Both have been steadfast supporters of our innovations and ideas, as ISER has grown into a world-leading institute for the production and analysis of longitudinal data and the design and use of microsimulation models.

This year marked an important milestone for our longitudinal studies as we harmonised data from our previous longitudinal study, the British Household Panel Survey (BHPS), to join with Understanding Society to provide researchers with an unparalleled source of evidence on social and economic change following the same households over 25 years. We are also proud to host the second international Methodology of Longitudinal Studies conference here at the University of Essex this summer, showcasing our own expertise, as well as the exciting new work in developing and improving panel and cohort studies from around the world.

It has also been a year of success for our microsimulation team. Following eight years of financial support to the University of Essex for the maintenance and development of EUROMOD, the tax-benefit microsimulation model for the European Union, the European Commission will take over responsibility for carrying out the annual update and release of the EU-wide model. We have now begun a sustained period of close collaboration and intensive knowledge exchange between the team at Essex and the Joint Research Centre (JRC-Seville) and Eurostat, the Commission institutions that will take over joint responsibility. This is a reflection of the Commission's commitment to EUROMOD's long term future and its high value to the policy-making process across the Europe. Analysis using EUROMOD has again been a feature of the European Commission's annual process for monitoring economic policy across the Member States, and by the World Bank in a major report on inequality in Europe. Dr Paola De Agostini received the award for Best UK Public Policy Impact in the University of Essex's 2018 Celebrating Research Impact Awards for her work helping the Scottish Parliament use EUROMOD to answer MSPs' questions, and our far-reaching work adapting EUROMOD software for developing countries was beautifully illustrated by our latest version for Ecuador where we jointly hosted a conference on income distribution with the United Nations University World Institute for Development Economics Research.

The work of our flagship ESRC Research Centre on Micro-Social Change (MiSoC) continues to provide important new evidence on how our world is changing and this year has been especially productive: examples in this annual review include new findings on the impact of racial harassment after Brexit, factors to reduce deaths in childbirth, drop-out rates in higher education, and our high profile work for the Equalities and Human Rights Commission on pay gaps. This wide-ranging portfolio of work continues to have impact at the highest levels of policymaking in the UK, as well as with the devolved governments, local government and internationally, and our researchers have become adept at sharing findings with practitioners and the public, to change policy and practice for the better.

It has been a delight to lead ISER during this exciting and important year in its long history and I am very grateful to my predecessor, Professor Nick Buck, for his years as Director of ISER, as the Principal Investigator of both BHPS and Understanding Society, and as Professor of Sociology at the University of Essex and we wish him a very happy retirement after a long career in which he has made a huge contribution to UK social science.

RACIAL HARASSMENT

has damaging impact on

MENTAL HEALTH



There's been a reported surge in racist abuse and attacks since the Brexit referendum. A timely research project, funded by the ESRC and led by **Dr Alita Nandi** and **Dr Renee Luthra**, has uncovered more about where and how often this abuse happens and how this impacts on the mental health of the abused

A research team from ISER analysed data from Understanding Society, the UK Household Longitudinal Study, to present an overview of the prevalence, intensity and persistence of ethnic and racial harassment and its health impact in British society today.

The evidence will be useful for law enforcement in identifying high risk places and making public spaces accessible to all, and for mental health professionals by considering ethnic and racial harassment as an additional factor in mental health issues experienced by ethnic minorities in Britain.

The study found that ethnic and racial harassment is experienced by the broad population of ethnic minorities, and damages mental health, even among those who do not directly experience it.

The study also found around 4-10% of men and women of most ethnic minority groups report experiencing ethnic and racial harassment in the past year. This proportion is higher, around 15%, for Chinese men and women, Pakistani men, Indian-Sikh men, Indian-Muslim men and Bangladeshi women.

Ethnic minorities are less likely to experience ethnic and racial harassment if they live in areas with a higher proportion of their own ethnic group members. They are also more likely to experience it in these types of places: areas of high white concentration, areas with higher proportion of UK Independence Party or British National Party voters, more deprived areas (net of ethnic composition). But surprisingly, this risk is not related to other types of crime.

Individuals reporting ethnic and racial harassment are not necessarily the most disadvantaged. This risk is higher for ethnic minorities who are younger, more highly educated and male. The reported harassment is predicated on being in public places and possibly having the confidence to identify and report it.

For most ethnic minority groups, more people anticipate or fear harassment than actually experience it, with the exception of black Caribbean and black African groups. As women are more likely than men to feel unsafe and avoid places, that is one possible explanation for why women are less likely to experiencing this type of harassment.

There is a substantial association of ethnic and racial harassment with worse mental health. Those experiencing ethnic and racial harassment were more stressed and anxious.

There is some evidence that ethnic ties such as ethnic identity and proportion of co-ethnic friends are resilience or protective factors (that is, they reduce the impact of harassment on mental health for UK born ethnic minorities). For foreign born ethnic minorities other factors such as number of close friends are more protective.

There are widespread ripple effects of ethnic and racial harassment as reflected through its persistence over time and spillover effects to other family members and the community, especially for UK born ethnic minorities.

The study findings were presented to policy makers, third sector organisations, law enforcement and health sector organisations in London in November 2017. In addition to disseminating the research findings to practitioners and stakeholders, this event helped identify knowledge gaps and generated requests to provide bespoke training to specific groups. Understanding the complexity and realities of racial abuse in the UK could help improve practice and policy. As a result, workshops were conducted for investigators working at the Independent Office for Police Conduct (IOPC) in London, for health practitioners, police and third sector organisations in Yorkshire, and more are being planned in other regions. The research findings were also presented to international academic audiences and to students of sixth form colleges and universities and have been included in evidence given to recent select committee inquiries.

UNDERSTANDING NEETS

Why are young women most likely to be economically inactive?

Professor Susan Harkness, Associate Director of the Understanding Society Policy Unit, describes how their new initiative to help charities analyse data from Understanding Society has revealed important policy insights for government

This year saw the publication of the first set of findings from the Understanding Society Policy Unit's research voucher scheme. By allowing those in the third sector to access findings from the rich social data produced by Understanding Society, the UK Household Longitudinal Study, this scheme aims to produce robust evidence to help inform policy and practice.

The research conducted by the Policy Unit for the Young Women's Trust highlights how the study can support the sector. The Young Women's Trust identified an important evidence gap that data from Understanding Society could help fill. In particular, they were concerned that high levels of economic inactivity among young women may mean that young people were being cut off from services that could help them move into work and lead to long-term disengagement from the labour market.

As the Young Women's Trust argue, the problem of young people who are 'NEET' (not in education, employment or training) has been a subject of considerable policy interest for many years. What has been less widely considered is the question of why young women are so much more likely than young men to be considered economically inactive: 7.9% of women aged 16-24 are economically inactive compared to 3.6% of young men. Young men that are NEET are much more likely than women to be considered unemployed or job seekers. Young women who are NEET are, on the other hand, much more likely to be economically inactive and assumed to be either not wanting, or unwilling, to work and to receive little support to ensure they remained engaged with the labour market.

The Young Women's Trust wanted to understand *why* young women were so likely to be economically inactive. The large samples, and longitudinal design, of Understanding Society meant that this question could be addressed to produce robust evidence on the problem. A key finding was that becoming a mother made a substantial difference to the risk of becoming economically inactive, raising the odds seventeen-fold. For young men, on the other hand, fatherhood had no influence on the risk of economic inactivity.

Perhaps even more strikingly, the results showed that education made virtually no difference to the risk of economic inactivity for those who become mothers before the age of 25: those with a degree had the same risk of economic inactivity as those with no qualifications. The lack of protection that education provides to young mothers highlights just how large the barriers are for those wanting to work, particularly when they are young. However, these were not the only risk factors for economic inactivity, with poor mental health and disability particularly likely to push young men and young women into being economically inactive. Finally, the report highlighted the very different school-to-work transitions that young men and women face. In particular, it reports very low rates of transition to full-time work among young women who finish school or undertake vocational courses.

The report for the Young Women's Trust highlights crucial differences in the pathways young men and women take as they enter adulthood, and in the gendered nature of the support that is provided. If women are to be better connected with the labour market in their adult lives, interventions to ensure that they receive more appropriate support to move into work, and to care for children, will be essential for their long term economic wellbeing.

Further details on the project with the Young Women's Trust can be found at: <https://www.understandingsociety.ac.uk/research/projects/young-female-and-forgotten>

The 2016/17 voucher scheme also supported projects for the Child Poverty Action Group, The Children's Society and Barnardos. Further details are available at: <https://www.understandingsociety.ac.uk/2017/01/12/four-charities>.

This year, the Policy Unit will be working with MIND to support their research on mental health and housing, and with the Family and Childcare Trust to investigate the influence of childcare costs on women's employment.



The consequences of occupational decline – will robots and offshoring leave workers unemployable?

Dr Bernhard Schmidpeter from ISER and **Professor Rudolf Winter-Ebmer** from the University of Linz explore if unemployed individuals, who used to work in occupations with a relative large number of tasks which can be automated (“routine workers”) or offshored, have a lower probability of finding re-employment and if active labour market policies can do anything against that.

Over the past decade, labour markets in most developed economies have experienced tremendous changes. Recent technological progress, such as the introduction of the self-service supermarket and bank tills, has made it easier for firms to replace workers conducting repetitive and simple tasks with machines, leading to automation of some jobs. At the same time, increasing opportunities to off-shore certain employment have allowed employers to perform relatively unproductive jobs elsewhere, mainly overseas.

On the one hand, these developments have lowered the demand for workers in occupations with high automation potential and risk of offshoring. Unemployed individuals might have difficulties in finding new employment and recent changes might affect their search behaviour as well as their re-employment wages and stability. On the other hand, technological progress can also create new opportunities for workers if they find re-employment in better and more productive jobs. Here, active labour market policies might play a particularly important role in bringing unemployed workers back to work and helping them to accumulate skills necessary for the transition. Despite the growing interest in automation and offshoreability of jobs surprisingly little is known about the individual consequences.

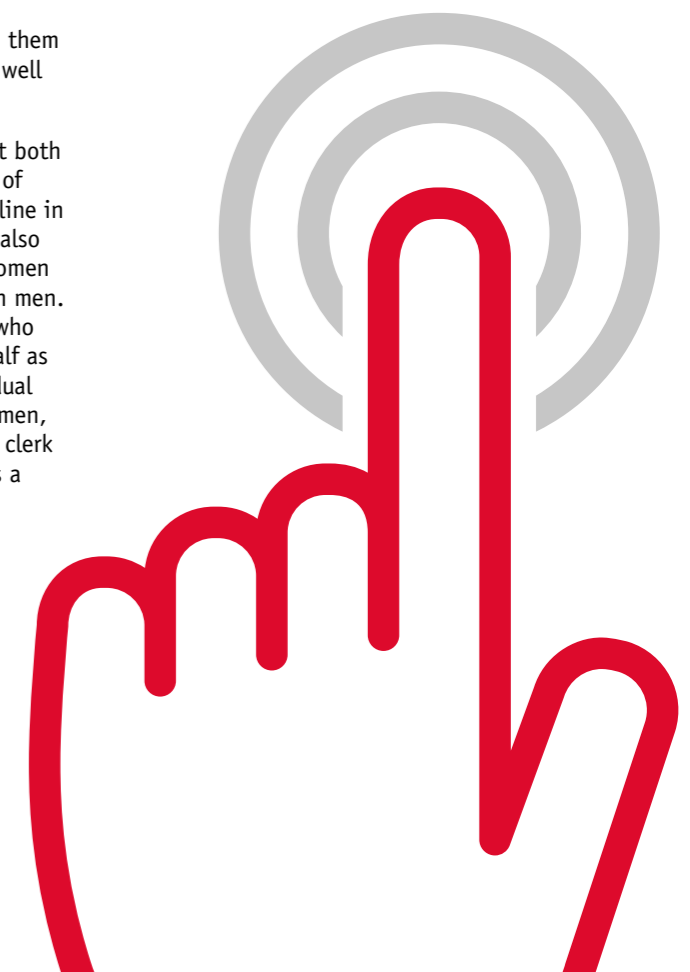
The forthcoming study *How do Automation and Offshorability Influence Unemployment Duration and Subsequent Job Quality?*, presented at this year’s Royal Economic Society conference, sheds more light on the impact of automation and offshoreability on the re-employment possibilities and future careers of unemployed workers. The researchers use a rich administrative data set from Austria which allowed them to follow the careers of unemployed individuals as well as training received.

Schmidpeter’s and Winter-Ebmer’s results show that both a higher potential of automation and a higher risk of offshoreability is associated with a substantial decline in the re-employment probability. Interestingly, they also estimate substantial differences by gender, with women being more affected by technological progress than men. For example, the results imply that a male worker who used to be employed as an office clerk is almost half as likely to find re-employment as an identical individual who used to be employed as a salesperson. For women, this difference is even greater with a female office clerk only 20 per cent as likely to find re-employment as a female sale person.

Evaluating the effectiveness of training assignment, their results show that training is predominantly assigned to persons most affected by automation and the risk of offshoreability, implying that case workers are aware of the negative consequences. Schmidpeter and Winter-Ebmer also find that unemployment training generally increases the likelihood of re-employment, but that the effectiveness of these training programmes could be improved.

Looking beyond unemployment duration and evaluating the effects of automation and offshoreability on future wages and employment stability, their results show that a higher risk of offshoring increases re-employment wages and stability in the new job. In contrast, automation is in general associated with poorer post-unemployment outcomes.

The results from the study show that automation and offshoreability can have a considerable impact on the labour market career of individuals, with the potential of increasing economic inequality.



THE TICKING CLOCK

Dr Nicola Barban, Reader and Co-Director of the ESRC Research Centre on Micro-Social Change, is at the forefront of new research combining the study of genetics with social science.

In many industrialised societies, first-time parents are considerably older than decades before, which in turn has consequences for the number of children they can have. Since the 1970s, there has been a rapid postponement by around 4-6 years in the mean age at first birth of women having their first child at around 24 years in 1970 to 29 years now in many industrialised societies. There has not only been postponement, but also significant increases in the levels in childlessness, with around 20-25% of women born in 1965-69 in Southern and Western European countries having no children.

The biological ability to conceive a child starts to decline steeply for some women as of age 25, with almost 50% of women being sterile by the age of 40. This means that a growing number of women start to have their first and subsequent children exactly at the time that their ability to conceive starts to decrease. Not surprisingly, this delay has led to an unprecedented growth in involuntary infertility, which affects between 10-15% of couples in Western countries. An estimated 48 million couples worldwide are infertile, with a large part of it, particularly in men, remaining unexplained.

Reproductive behaviour has been largely explained by social scientists by focusing on individual and couple characteristics and social structural or institutional factors. Birth postponement and a lower number of children has been largely attributed to social, economic and cultural environmental factors (i.e., individual and partner characteristics, socioeconomic status), with virtually no attention paid to the genetic or biological underpinnings of this behaviour.

However, a growing number of studies based on twins have shown a genetic component underlying fertility traits such as number of children, age at first birth and age at first sexual intercourse.

Our recent study isolated twelve genetic variants associated with age at first birth and number of children (Barban et al. 2016) based on 300,000 individuals from 62 studies from all around the world. The study, published in *Nature Genetics*, allows for the first time to include a genetic variable or predictor of reproductive behaviour in our social science research. Given that human reproduction is a complex behavioural outcome, results show that it is not possible to use only one candidate gene to predict fertility outcomes. Rather, most genetic effects are too small and scattered all across the DNA. For this reason, the myriad of genetic variants is compiled into a comprehensive polygenic score that can be interpreted as a single quantitative measure of genetic predisposition. By looking at the genetics of an individual, it is possible to attribute to each person her/his predisposition for age at first birth or number of children.

The magnitude of the effect is not big. On average, one standard deviation (SD) variation on the polygenic score for age at first birth is associated with an increase of 175 days of age at first birth for women and 120 days for men, while the polygenic risk score for number of children is associated with an increase of 0.04 children on average. While these numbers seem 'extremely small', these results represent a first step in understanding the biological causes of involuntary infertility.

Importantly, by examining the function of the 12 DNA regions and the genes in these regions in detail, our research team has identified 24 genes that are likely to be responsible for variation in reproductive behaviour. Some of these genes were already known to influence infertility, while others have not yet been studied. An improved understanding of the function of these genes may provide new insights for infertility treatments.

Genetics play only a minor role in those traits that are mostly determined by personal choice and social factors, but these results may be very important at a population level to understand the interplay between biology and social sciences in explaining fertility outcomes and childlessness. For example, our results demonstrate a fascinating underlying genetic link with the shifting of the entire reproductive window for certain individuals. The polygenic score for age at first birth is clearly linked to development and the reproductive window. Those having a genetic propensity to later birth also have a later genetic propensity for the onset of menarche and menopause.

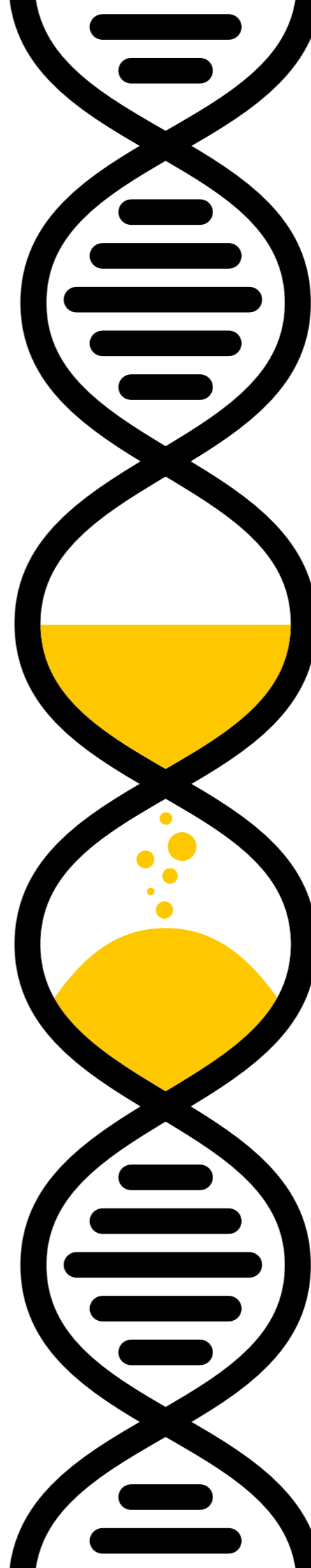
Also, polygenic scores can be used in conjunction with social factors to understand gene-environment interactions, meaning that the social environment may have different effects on people that are genetically different. This may affect the way we think about social policy, since social interventions may not have the same effect on all individuals.

It is moreover important to investigate the effect of genetics throughout the entire life course to understand at which age genetics play the most important role in shaping fertility outcomes. This can be done using surveys that collect information from the same individuals longitudinally such as Understanding Society, the UK Household Longitudinal Study, collecting genomic data from a subsample of the study.

We made all the results publicly available and we are collaborating with numerous studies to provide polygenic scores for researchers. For social scientists who study reproductive behaviour, we offer and provide an entirely new variable and way of theoretically thinking about and measuring human reproductive behaviour. These polygenic scores for age at first birth and number of children will also be easily usable in publicly available datasets, which will allow researchers to include these predictors in their biosocial research.

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Beyond Shelter:

The role of home in health and wellbeing

Over 15 million people in Europe live in precarious housing, and over a quarter of UK children are growing up in private rented accommodation. **Dr Amy Clair** has been looking at the impact of insecurity at home on our health and wellbeing.

Housing policy is enjoying a period of increased interest. Even in social policy circles, the importance of housing has been debated, famously described as a ‘wobbly pillar’ of the welfare state. However, dramatic changes to housing in the UK and beyond, linked to the role of housing in the recent recession, have made it harder to ignore.

The role of housing in the welfare state is changing. Governments in recent decades have focused on homeownership, and the financial benefits that this tenure can bring. They have encouraged the accumulation of wealth through housing with the idea that this

wealth could be used to meet welfare costs, particularly in older age, resulting in reduced need for government support (asset-based welfare). However, the idea of using housing wealth to meet the costs of social care is, politicians are discovering, very unpopular.

One of the consequences of encouraging homeownership was rising housing prices. With increasing prices comes increasing inaccessibility for those not yet on the ‘housing ladder’. This poor affordability is one of the main reasons that owner occupation is at a 30-year low.

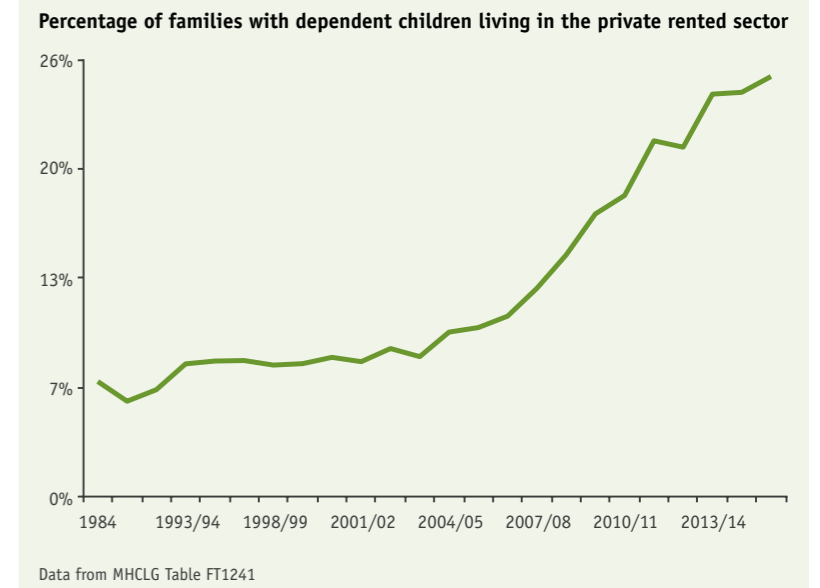
With fewer people able to access home ownership, and the residualisation of the social rented sector, in no small part due to another policy designed to encourage home ownership – the Right to Buy – increasing numbers of households are forced to live for extended periods in the private rented sector.

Costs are higher in the private rented sector, and private sector rents take up a higher proportion of income, on average, than social rent or mortgage payments. The high prices mean that increasing numbers of private renters must rely on housing benefit to meet their housing costs. But in 2011 the Coalition government cut housing benefit, reducing the amount allowed from the area median to the 30th percentile. One consequence of this reduction, averaging at around £1,200 per household per year, was a statistically significant increase in mental health problems among those affected by the policy change (Reeves, Clair et al., 2016).

Clearly then, housing policies have consequences beyond immediate housing situations. Housing plays a central role in our lives, and when it becomes unaffordable or creates financial strain this can have significant consequences on our health and wellbeing. In a study of housing payment arrears it was found that moving into housing arrears was as bad for health as becoming unemployed (Clair et al., 2016a).

On average, renters were found to suffer more when facing housing payment difficulties, but international variation in the effect of tenure suggests that this may depend on housing policies (Clair et al., 2016b).

This difference in housing policy approaches has significant implications for how people experience housing. Our recent comparative study of housing precariousness (published in the Journal of European Social Policy) found that, for example, approximately 75% of people in Norway experienced no elements of housing precariousness (affordability, security, quality and facilities, access to essential services), compared to just over 20% of people living in Cyprus. Exposure to precarious



housing likely has important consequences for health (McKee et al., 2017).

While we know a lot about how housing affects the health and wellbeing of adults, one area that has not received adequate attention in the housing literature is the effect of housing on children’s wellbeing. A recent review (Clair, 2018) highlighted the lack of evidence surrounding the effects of housing problems on children’s lives. Research to date has focused heavily on the impact of housing on children’s educational outcomes and behavioural difficulties, neglecting their broader wellbeing.

The numbers of children growing up in the private rented sector have increased dramatically. In the UK the proportion of households with children in the UK living in private rented homes has increased from 8% in 1996/97 to over 25% in 2015/16, suggesting a significant shift in children’s housing experiences as they grow up.

Organisations such as Shelter have already raised concerns about the impact that growing up in the private rented sector may have on children, pointing to issues such as increased school moves, loss of friendships, stigma and health issues. Research is needed to understand what this new housing market means for children and their wellbeing, and what can be done to ensure the best possible outcomes. High

quality longitudinal data, including that available from Understanding Society, means that this research is possible.

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STICKING WITH THE COURSE

What explains differences in university drop-out rates and why do some ethnic minorities perform less well at university? Students who arrive at university with vocational alternatives to A-levels are more likely to drop out of university or graduate with a lower class degree according to new research by **Dr Angus Holford** and **Professor Emilia Del Bono**.

The study of students' performance and survival in the UK higher education system analysed 167,000 students' records (a 10 per cent random extract of the population of students starting undergraduate degrees at UK universities between 2007 and 2014) and found that students who had studied BTECs were typically twice as likely to drop out of university as students with 'equivalent' A-Level results, as measured by the tariff score that students apply to university with.

This difference matters in explaining why some ethnic minorities perform less well at university. Black British students are three times more likely than white students to arrive at university having studied BTECs (16.7% of black students have studied BTECs compared with just 5.8% of white students).

BTECs clearly play an important role in widening participation at university, particularly for black students. But these results suggest these qualifications, and the way they are assessed, develop different skills to A-Levels, which the majority of university courses are still built

around. One important take-home message is that universities could do more to recognise these differences and provide more support to help students transition from vocational to academic study. Schools have a role to play too, mainly in providing information to pupils about the paths that taking an A-Level will open and those that will be made easier.

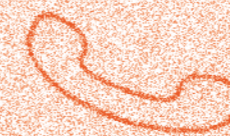
Choices made at secondary school have persistent effects in other ways. Asian students' A-Level subject choices – which are heavily skewed towards STEM subjects such as Maths, Physics and Chemistry – prepare them especially well for university. The authors found these subjects to be key in helping students pass their first year modules and obtain the top degree class. However, Asian British students are then highly overrepresented in fields of study such as pharmacy and pharmacology, clinical medicine, and IT and computer sciences. All these courses see relatively high drop-out rates, in contrast with subjects such as geography, or design

and creative arts, which few Asian students choose to do. This means that although they should perform well compared to white students on the basis of their secondary school choices and performance, Asian students are 13% more likely to drop out while at university and 40% more likely to leave with a lower second class degree at best.

Finally, the study showed that the gap by which students with professional parents outperform those from lower socio-economic backgrounds was almost entirely accounted for by prior performance and A-level subject choices. For privately educated pupils these factors were found to more than explain the raw gap, meaning that given these advantages they are doing less well than expected at university. Those from state schools with similarly high A-Level results may arrive at university more used to independent study.

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to the University or College

POLITICAL

Empowering women

LEADS TO A DECLINE IN DEATHS SURROUNDING CHILDBIRTH

A new study by **Professor Sonia Bhalotra** and co-authors has found that raising women's political participation has a dramatic effect on a neglected aspect of women's health – fewer women die within 42 days of childbirth.

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Maternal mortality remains a looming global health problem well into the twenty-first century. It is estimated to account for 830 deaths per day, and more than 216 deaths per 100,000 live births globally. Maternal mortality is only the tip of the iceberg, the mass of which is maternal morbidity. In sub-Saharan Africa, the maternal mortality ratio exceeds the rate in developed countries a century ago.

Although maternal mortality has declined rapidly in the last two decades, it was a late start, and there was massive variation in rates of decline. In the 25 years since 1990, when the maternal mortality rate has exhibited an unprecedented decline of 44 per cent, the share of women in parliament has also exhibited an unprecedented increase, from under 10 per cent to more than 20 per cent. We investigated if these trends are causally related. The hypothesis is that political will plays a significant role in prioritising among competing policy options, and that women have greater political will for maternal mortality reduction.

Our study identified a causal relationship. It found that the introduction of quotas for women in parliament results in a 9-12 per cent decline in maternal mortality. Countries with a gender quota also saw a 8-11 per cent increase in skilled birth attendance and a 6-11 per cent increase in the share of women attending prenatal checks.

The paper, published by the United Nations University World Institute for Development Economics Research provides new evidence for policy makers worldwide looking to reduce maternal mortality rates.

Since 99 per cent of maternal mortality occurs in developing countries, a natural question is whether income has been a significant constraint to progress. While income has a positive association with each of female and male life expectancy, it exhibits only a weak relationship with the ratio of female to male life expectancy, a crude proxy for excess deaths of women associated with reproduction.

This suggests other factors at play, so we investigated gendered policy preferences.

Since the share of women in parliament has been rising fairly smoothly, it can be hard to isolate its effects from those of other gradually evolving trends. We addressed this problem by exploiting the abrupt legislation of parliamentary gender quotas sweeping through developing countries since 1990.

We merged country-year quota implementation data with the first annualised estimates of deaths in childbirth across countries, released in 2016, and estimated event study style regressions showing conditional trends in deaths in childbirth pre- and post-quota adoption. We conditioned upon country and year fixed effects, income, and indicators for the quality of democracy. We scrutinized the assumption that quota implementation is quasi-random.

Our estimates show that passage of parliamentary gender quotas leads to an immediate 5-6 percentage-point (55-66 per cent) increase in the share of parliamentary seats held by women, and a 9-12 per cent decrease in maternal deaths. These estimates are conditional on income and democracy, and not significantly modified by these controls. The effects of quotas are increasing in the share of seats reserved, and in time since implementation.

The new evidence we provide, documenting that women's involvement in policy-making can effect more rapid maternal mortality decline, has implications for the recently launched Global Health 2035 report, and the United Nations' ambitious Sustainable Development Goals. The SDG target is more ambitious than the previous Millennium Development Goal (MDG) target and, as the MDG target was not met, we clearly need some policy innovation.

In fact this paper shows that the goal for reducing maternal mortality is complementary to another SDG target which is to raise the share of women in parliament.

Given recent evidence from analysis of close elections in India which shows that replacing male legislators with women legislators would incur no cost in terms of compromised economic growth, gender quotas may be both a powerful and low-cost means to modifying public health priorities and improving maternal health. Despite significant progress, especially since 2000, preventable maternal mortality remains high.

The lifetime risk of maternal mortality is 1 in 41 women in low-income countries. Despite a wave of gender quota implementation, 130 countries in the world have none. These facts illustrate the scope for further improvements in both targets, and our work identifies how pursuit of the second will spontaneously deliver the first.



HEALTH MESSAGES CAN SAVE LIVES AND MONEY

Dr Paul Fisher describes his new study on the impact of a personalised blood pressure warning on health behaviours and outcomes co-authored with **Professor Sonia Bhalotra**, **Professor Adeline Delavande** and **Dr Jonathan James**

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Hypertension is, alongside diabetes, heart disease and cancer, often asymptomatic. In the Health Survey of England, 16% of men and 10% of women have hypertension that is undiagnosed (Health Survey for England 2013). This highlights the potential relevance of introducing population-level screening, but there is limited systematic evidence of how successful screening programmes are.

We investigated this using longitudinal survey data from Understanding Society, the UK Household Longitudinal Study, for almost 19,000 individuals in the UK, followed from 2009-2015. The survey contains rich information on health-related behaviours and chronic health conditions including hypertension. So as to isolate causal effects from correlations driven by common factors, we leverage the fact that, phased across 2011 and 2012, survey respondents received a home visit from a nurse who took their blood pressure. Importantly, the nurse provided them with information on whether they were hypertensive or not, and with a recommendation to see their GP in a stated time frame if they were. Our research assesses the impacts of being diagnosed as hypertensive in the nurse home visit on behavioural changes pertaining to lifestyle and diet, and on the chances of having a clinical chronic disease diagnosis.

We found that receiving information that one is hypertensive (when it was previously undiagnosed) during the nurse visit is associated with a large subsequent decline in smoking. There is no discernible change in alcohol consumption or exercise levels. Potentially related to the observed improvements in smoking and possibly diet, we find a statistically significant decrease in the probabilities of having received a clinical diagnosis of congestive heart failure and coronary heart disease respectively, despite a increase in the chances of reporting poor general or physical health.

The process is that, individuals assessed by the nurse as hypertensive tend to follow the nurse's recommendation to visit a GP. Although GP visits in the UK incur no monetary cost, some people incur opportunity costs or psychic costs. The nurse assessment provides information and an explicit nudge, and also makes the matter salient and, as a result, triggers a GP visit. Although we do not have data on visits, in our sample we see a seven per cent increase in GP-diagnosed hypertension for those at risk of untreated hypertension. The protocol is that contact with the GP results in a more careful and prolonged assessment and, for individuals for whom a clinical condition is confirmed, the GP advises lifestyle and dietary changes and offers regular monitoring and follow-up. Our results suggest that this has meaningfully large impacts on behaviour and chronic disease.

In addition to the pain and suffering associated with cardiovascular morbidities and other smoking-related diseases, they lead to lower economic productivity and place an enormous financial burden on the NHS. While a cost-benefit analysis is beyond the scope of our study, our research demonstrates the benefits of screening programmes such as the NHS Health Check which has a national take-up rate of less than 50%. Given that previous research shows that the probability of false negative reporting (individuals not reporting chronic hypertension when in fact they have it) is much higher for individuals living in low income households, our findings suggest that health screening may reduce health inequalities.

BASIC INCOME

– testing of a fascinating policy change

Iva Tasseva looks at why ISER's tax-benefit microsimulation model EUROMOD is essential for analysing the morning-after effects of tax and benefit reforms, and how new studies using the model have tested out the controversial and increasingly politically fascinating idea of a Basic Income

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Find out more about EUROMOD and training to use the model at www.euromod.ac.uk

Basic Income, sometimes called Citizen's Basic Income or Universal Basic Income, broadly refers to a state transfer given to each individual no matter their circumstances. It's a policy proposal for alleviating inequality, attracting a lot of attention in policy circles around the world.

Some of the main questions that form the debate around Basic Income are: what should be the level of Basic Income; how should a Basic Income policy interact with the rest of the tax-benefit system; how can it be paid for; what would be its impact on the income distribution; and would it discourage individuals to work? How to answer these questions brings us to how analysis using ISER's state-of-the-art microsimulation model EUROMOD can help.

EUROMOD is the tax-benefit microsimulation model for the countries in the European Union. Year- and country-specific tax-benefit rules that are coded in the model are applied on household survey micro-data.¹ EUROMOD identifies first, who is entitled to receive a benefit/liable to pay a tax and social insurance contributions (SIC). It then calculates how much the benefit entitlement and tax/SIC liability should amount to. And finally, it calculates for each household in the micro-data their net income which is the sum of reported gross market incomes and simulated cash benefits, net of simulated direct taxes and SIC. Using the model, researchers can study the first-order effects of both actual and hypothetical policy reforms on the income distribution. What makes EUROMOD an essential tool for this type of analysis is that it takes into account the large heterogeneity of household circumstances and the complexity in the interactions between tax and benefit policies. In addition, EUROMOD is fit for analysing the impact of reforms on work incentives that can inform a separate analysis of labour supply responses to policy changes. Furthermore, the harmonisation of

policy simulations and micro-data across countries enables consistent cross-country comparisons within the EU. Last but not least, EUROMOD is publicly available for research purposes, which makes it the only existing model of its kind for many EU countries.

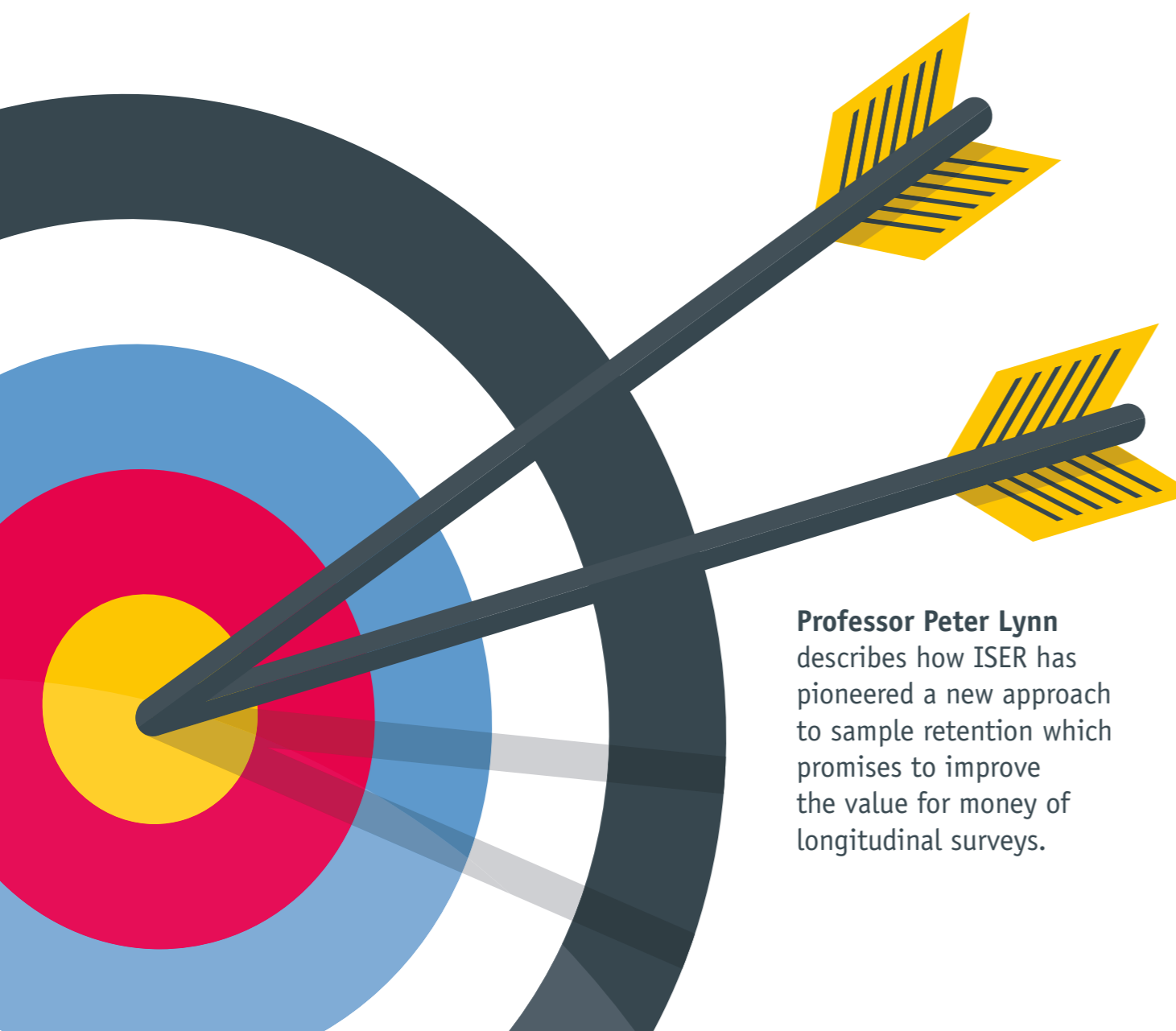
Recent papers by *Atkinson et al. (2017)*, *Browne & Immervoll (2017)* and *Torry (2017)* take on the challenge and use EUROMOD to study how a Basic Income scheme could look and what would be its direct impact on the income distribution. There are several distinct differences in the motivation and starting points of the three papers that lead the authors to draw different conclusions about the impact of a Basic Income scheme. *Atkinson et al. (2017)*, who build on the tax-benefit policy proposals from *Atkinson (2015)*, set out to tackle two main issues in the UK – that of increased relative government spending and families' dependency on means-tested benefits and of rising income inequality levels. The return to a universal Child Benefit, that acts as a Basic Income for children; the substantial increases in tax rates, that make them much higher than current levels but not high by historical standards; and the Basic Income designed to only partially replace the current benefit system are some of the main policy choices that guide their analysis. Although *Torry (2017)* shares many similarities with respect to the design of a partial Basic Income and universal Child Benefit, he imposes restrictions on the increase of tax and National Insurance rates. In contrast, the cross-country comparative analysis by *Browne & Immervoll (2017)* is guided by very different principles of implementing a Basic Income that fully replaces a range of non-elderly benefits and of abolishing the zero income tax bands without raising tax rates any further.

Both *Atkinson et al. (2017)* and *Torry (2017)* show that substantial reductions in the levels of income poverty and inequality can be achieved with a Basic Income policy and yet, the effects on inequality are twice as large in the former compared to latter analysis. *Atkinson et al. (2017)* show that the large income gains from BI especially at the bottom but also middle of the income distribution will result in substantial income losses for the richest. In comparison, the results by *Torry (2017)* reveal half the size of income losses for the richest households, arguably making his Basic Income scheme more politically feasible. In the UK, *Browne & Immervoll (2017)* show in contrast that the scheme will lead to a higher number of individuals in income poverty as some lower-income households receive less state support under their Basic Income scheme. Studying the impact of the reforms on work incentives in the UK, *Atkinson et al. (2017)* conclude that incentives to enter the labour market for the poorest 60%/70% of the population will improve substantially with the Basic Income scheme while *Torry (2017)* and *Browne & Immervoll (2017)* draw a picture of more mixed results.

In summary, a benefit provided to everyone regardless of their circumstances may seem simple to operationalise. But designing how such a scheme would interact with the existing tax-benefit policies is a complex task and differences in the guiding principles can lead to very different conclusions about its impact on people's circumstances. Tax-benefit models, such as EUROMOD, are vital for understanding what happens after policy choices and thus, crucial for informing the debate on policy reforms.

¹ The data are from the European Union Statistics on Income and Living Conditions (EU-SILC). For the UK the data are from the Family Resources Survey.

INNOVATIONS IN SURVEYS: THE PIONEERS OF TARGETED DESIGN



Professor Peter Lynn describes how ISER has pioneered a new approach to sample retention which promises to improve the value for money of longitudinal surveys.

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The kind of valuable longitudinal research summarised in *Taking the Long View* requires large samples of people interviewed repeatedly, year after year. This in turn requires Understanding Society to achieve the highest possible response rates, so that almost all the people interviewed one year are interviewed again the next year. ISER researchers have been at the forefront of research into maximising retention rates for longitudinal surveys, for more than two decades.

ISER research into methods for improving longitudinal survey response rates has addressed many topics, including the use of respondent incentives, modes of data collection, inter-wave mailings, different schedules of reminders, and interviewer continuity. Like other research on design features affecting retention, the aim was often to identify the treatment that produces the highest retention rate. The recommendation would then be to adopt that treatment and apply it to all members of a survey sample.

But several studies found that effects differ between types of sample members. Increasing the value of an incentive may have a positive effect on response rate for one group, but not another. Offering the option of online survey completion may be helpful for one type of person, but not another. And so on. And we can often predict quite well the way in which effects will differ between groups, as they seem to be quite stable across studies.

These insights led to the idea that smarter survey design might involve using design features in different ways for different subgroups of respondents. This approach became known as targeted design, the theory and principles of which have been developed at ISER. A targeted design involves identifying an effective variant of a design feature for each of a number of sample subgroups. A particular focus is on finding the most effective variant for subgroups with low retention rates. A more expensive treatment may be used for subgroups whose retention rate particularly needs improvement. Furthermore, several different design features can be targeted simultaneously.

Targeting design features in this way provides researchers with the tools to achieve a better balance between survey costs and survey outcomes. Surveys can become more cost effective and provide better value for money. For example, it might be more effective to send two extra reminder letters to the 20% of sample members for whom this is likely to have a positive effect rather than to send one extra letter to all sample members. As well as being more effective, this targeted approach would cost considerably less, as fewer than half as many letters need to be sent.

As well as developing the general methods of targeted design, ISER researchers have carried out a series of randomised experiments with respondent communications, including between-wave mailings and advance letters. These have produced positive findings and have received a lot of attention at international conferences and amongst other longitudinal surveys around the world. Recently, ISER researchers were asked to help design an experiment with targeted design features on the Danish National Health and Morbidity Survey. And closer to home, such features are of course also now being incorporated into Understanding Society.

ISER is one of the world's leading academic centres for survey methodology. It is the only place in Europe and one of only four in the world to offer both an MSc and a PhD in Survey Methodology. It also houses a team of specialist survey methods researchers whose publications span the range of survey methods topics and contributed to the top rankings achieved by Essex in the most recent Research Excellence Framework.

TOO MANY GAPS IN UK PAY

Pay inequalities in the UK have come under close political and public scrutiny recently, following evidence from three new ISER studies commissioned by the Equalities and Human Rights Commission on pay differences and gender, disability and ethnicity.

An increasing focus in recent years has been on the inequalities in the labour market, in particular on pay gaps across groups defined by gender, ethnicity, and so on. In the case of gender, the government now requires employers with more than 250 employees to publish reports on pay gaps between men and women (although this figure includes people doing different types of jobs). Research for the Equality and Human Rights Commission (EHRC) by Dr Malcolm Brynin in ISER and Dr Simonetta Longhi (now at the University of Reading) has contributed to this debate, using the Labour Force Survey, not only through a detailed examination of the gender pay gap but of pay gaps based on ethnicity and disability.

The research found that the gender pay gap fell from about 71% to 85% of men's pay between 1993 and 2014. A significant part of this gap is not within occupations, however. Women are often segregated into poorly paid jobs that men tend not to do and so the overall comparison of average female and male pay has little meaning. While equalising pay where men and women do the same jobs is necessary, it is important not to lose sight of the fact that too many women end up in highly feminised work – cleaning, caring, catering – with low pay and poor career prospects. A major policy objective should therefore be to create greater opportunities for women to move out of these low paid areas of work. However, we also note that the pay gap within occupations is increasing as a proportion of the overall pay gap as the gap itself lessens, which means that this needs to go hand in hand with measures to ensure equal pay for equal work.

Ethnic pay gaps are more complex. Men from most ethnic minorities earn less than white British men, with Pakistani and even more Bangladeshi men way below, but it is not the case that women from minorities generally earn less than white British women. In fact, many groups earn more – with Pakistani and Bangladeshi women being the exceptions. Often, gender pay gaps remain within ethnic minorities, although these are not always statistically significant.

Most importantly, for both men and women the position of ethnic minority workers who are born in the UK is significantly better than the position of ethnic minority workers who are born abroad (i.e. are immigrants), although for some UK born groups significant gaps still remain.

The study could detect a pay hierarchy formed by white British (and some minority) men at the top, most ethnic minority men and women – as well as white British women – coming next. At the bottom come Pakistani and Bangladeshi immigrant men and women (though only a relatively small proportion of Pakistani and Bangladeshi women work).

This leaves the question of whether gender and ethnic inequalities reinforce each other. Brynin and Longhi have studied this in detail with Wouter Zwysen from the Sociology department at the University of Essex. They found little reinforcement. Only Indian women earn significantly less than both Indian men and white British women, therefore in a sense doubling their inequality. However, even this double effect has declined over time. Women from ethnic minorities are therefore likely to earn either less than the equivalent men or, less commonly, white British women, but not both. However, if we take a different comparison – the gap between ethnic minority women and white British men – these are substantial. The ethnic-gender picture is therefore complex. Increasing diversity is making the distribution of inequality itself more complex and diverse.

Studying pay gaps on disability is more difficult, first, because disability can appear at different stages in life, worsen or improve over time, second because of the small numbers of people with disabilities who are in work – which may indeed be the core problem. However, Simonetta Longhi did find consistent gaps, which are larger for people with a mental compared to a physical disability. A large proportion of these gaps seems to be explained by concentration in part-time jobs (which, on average, pay less per hour than full-time jobs), lack of high-level qualifications, and concentration in low-pay occupations. Similarly to the case of ethnicity, disability pay gaps seem smaller among women than among men.

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