

CELMR Research Digest



What is CELMR?

CELMR is the Centre for European Labour Market Research and is made up of ten faculty from the Economics Department at the University of Aberdeen plus associate members from across the world. The Centre prides itself on high quality, policy relevant research examining a whole range of labour market issues based primarily around five themes:

- Education, Skills and Labour Mobility
- Inequality in the Labour Market
- Health and Work
- Wage Determination and Employment
- Macroeconomic Policy, Globalisation and Labour Market Outcomes

More information about CELMR can be found on our website:

<http://www.abdn.ac.uk/business/research/celmr/index.php>

CELMR News Quick Hits

- **Welcome!** We are happy to welcome Dr **Nicole Andelic** as a Research Fellow as part of the ESRC grant described later in the *Digest*. Nicole, who holds a PhD in Psychology from Queen's University in Belfast, joined CELMR in October of 2019.
- **New Website.** Be sure to check out the newly redesigned website!
- **Hot off the Press** – recent publications by CELMR members
 - **Keith Bender**, C. Green and J. Heywood, "Performance Pay and Assortative Matching," forthcoming, *Scottish Journal of Political Economy*
 - **Harminder Battu** and **Keith Bender**, "Educational Mismatch in Developing Countries" in *Economics of Education: A Comprehensive Overview*, 2020.
 - **W. David McCausland**, F. Summerfield and **Ioannis Theodossiou**, "The effect of industry-level aggregate demand on earnings: evidence from the US," *Journal of Labor Research*, 2020.

Editors' Corner

Welcome to the ninth CELMR Research Digest! It has been several years since our last Digest and a lot has happened in the intervening years. We hope that you find it of interest and continue to welcome any feedback that you might have about this publication or the summaries contained here.

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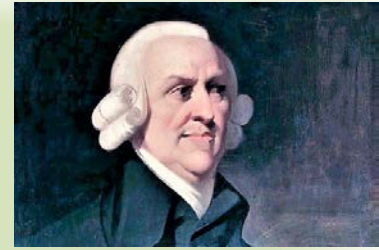
'Performance-related Pay and Stress:
An Interdisciplinary Study'

J. Allan, **Nicole Andelic**, **Keith A. Bender**, D. Powell and
Ioannis Theodossiou

ESRC funded grant 2019-2022

Project website:

<https://www.abdn.ac.uk/business/research/PRPH.php>



Adam Smith
18th Century Economist

In his book, *The Wealth of Nations*, Adam Smith observed, 'Men....when liberally paid by the piece, are very apt to overwork themselves, and to ruin their health and constitution in a few years'. This observation from more than 250 years ago suggests that there is a relationship between how people are paid and their overall health.

This observation has spurred a number of papers (some by CELMR members) that have examined the link between performance-related pay (PRP) and health. Based mostly on survey data of workers or case studies of individual occupations, this research has consistently found that PRP is associated with poor health outcomes.

However, there are a number of questions that remain in this literature. First, it is difficult to identify the mechanism that links PRP and poor health, though previous research suggests that stress may be a central factor. Second, survey data has the potential problem of sample selection, making it difficult to determine causation. Third, health is often measured subjectively.

These led CELMR researchers, working with health psychologists in the University's Medical School, to design a series of economics experiments to address these shortcomings, focusing on a likely mechanism for ill health – namely stress induced by PRP contracts. Initially funded by the Scottish Economic Society and then by the ESRC, the project investigates whether PRP generates increased stress measured subjectively through self-assessment, but also through the measurement of salivary cortisol. When introduced to stress, the body naturally produces cortisol. Widely used in

health psychology to measure stress effects, this will be one of the first uses of such a physiological measure of stress in economics.

While lockdowns forced by the pandemic have slowed the research on this project, the preliminary results from the first set of experiments are promising in establishing the link between PRP and stress. Future experiments in the project hope to shed light on such aspects of PRP as the quantity/quality trade-off and peer comparison and monitoring effects.

This interdisciplinary project will shed light on a key area of public health, business resilience and worker well-being. With a push towards ever more PRP related pay systems (such as in the 'gig' economy), understanding the link between PRP and stress can potentially avoid any unintended health consequences of such payment contracts.

(For further information please contact Dr Andelic at nicole.andelic@abdn.ac.uk, Professor Bender at kabender@abdn.ac.uk or Professor Theodossiou at theod@abdn.ac.uk.)

A podcast about the project was recorded as part of the University of Aberdeen's 2020 Explorathon Public Engagement initiative and can be found here:

<https://www.explorathon.co.uk/events/explorathon-lunch-bytes-performance-related-pay-the-good-the-bad-the-stressful/>



Dr Yu Aoki

'Speak Better, Do Better? Education and Health of Migrants in the UK'

Yu Aoki and L Santiago

Labour Economics
Vol. 52, 2018, pp. 1-17

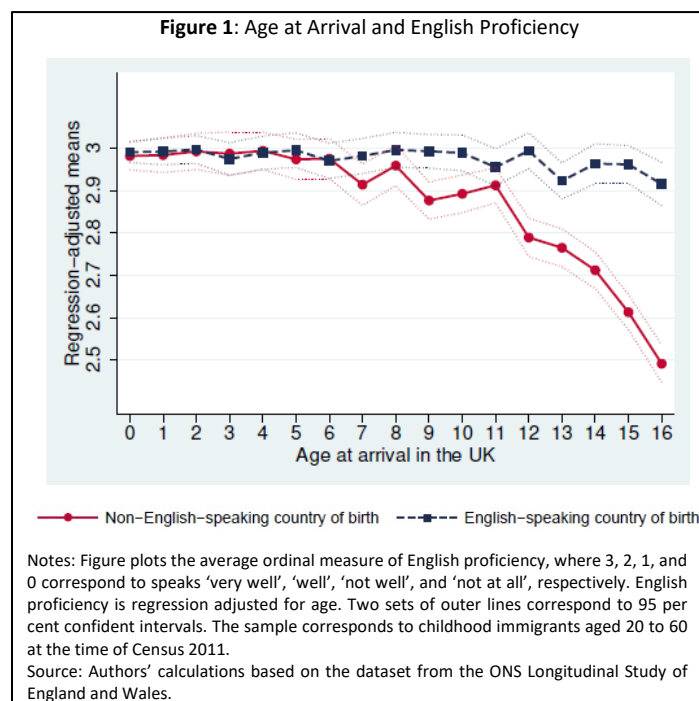
We live in an increasingly diverse society, and the social integration of immigrants is becoming important in the policy agenda. Although it is widely believed that proficiency in the language spoken in the host country is an important factor for promoting integration, there is limited knowledge on its causal impact on social outcomes of immigrants in the host country. Using a unique dataset, we add to this knowledge by investigating the effects of language skills on a variety of education, health and fertility outcomes of immigrants, which have not been studied before in the UK context.

To conduct an analysis, we use an estimation technique called the Instrumental Variable (IV) estimation, which allows us to estimate the

causal effect of English skills, as opposed to correlations. This estimation requires an instrument for English proficiency, which must be correlated with English skills. This paper uses the age at arrival in the UK to construct an instrument, because it is likely

to affect the English language skills of individuals.¹ More precisely, age at arrival in the UK would affect the English proficiency of immigrants arriving from countries where English is not spoken as a main language, because these immigrants would be exposed to English for first time upon arrival in the UK. Using the Office for National Statistics (ONS) Longitudinal Study

of England and Wales,² which is our primary dataset, Figure 1 plots the English proficiency when immigrants are adults against age at



¹ Cognitive science documents that if individuals are exposed to a new language at a critical age range (i.e., childhood), the individuals easily learn the language, whereas acquiring the new language is much harder outside this critical age range, referred to as the 'critical period hypothesis of language acquisition'.

² The ONS Longitudinal Study is a 1% sample of the population of England and Wales. It contains linked census and vital events data, beginning with a sample from the 1971 Census. Members are selected if their birthday falls on one of four designated dates in any year.

arrival for English- and non-English-speaking countries.

Our estimation results suggest that the educational achievement, self-reported health, and fertility behaviour of immigrants are influenced by their ability to speak English. Precisely, better English skills significantly raise the chance of having an academic degree and a post-compulsory qualification, and reduce that of having no qualifications. We also find that being proficient in English significantly improves self-reported adult health and decreases the chance of teenage childbearing, but has no effect on child health. Regarding mechanisms, supplementary analysis suggests that higher educational attainment as a result of better English skills is a possible channel through which English proficiency improves self-reported health. In contrast, in the case of fertility behaviour, our supplementary analysis indicates that there are other mediators apart from education.

Our results contribute to the public debate on the integration of immigrants, providing some evidence against claims that the lack of integration of immigrants into the UK society is due to their social or cultural preferences. We have found that there is a constraint that immigrants face to integrate aside from possible cultural preferences; namely, proficiency in English, and that alleviating this constraint could be a successful way to help immigrants better integrate into the UK society.



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Disclaimer

The permission of the Office for National Statistics to use the Longitudinal Study is gratefully acknowledged, as is the help provided by staff of the Centre for Longitudinal Study Information & User Support (CeLSIUS). CeLSIUS is supported by the ESRC Census of Population Programme (Award Ref: ES/V003488/1). The authors alone are responsible for the interpretation of the data.

This work contains statistical data from ONS which is Crown Copyright. The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce National Statistics aggregates.

(For further information about this paper, please contact Dr Aoki: y.aoki@abdn.ac.uk.)

Using a unique UK dataset, we find that being proficient in English significantly improves self-reported adult health and decreases the chance of teenage childbearing, but has no effect on child health.

'A Reflection on Sir Thomas Jaffrey'

Keith A. Bender
SIRE Professor of Economics



ABDUA:31987, Portrait of Sir Thomas Jaffrey, 1942, by David Foggie. Courtesy of University of Aberdeen.

In 2020, the University of Aberdeen celebrated its 525th anniversary. The Economics Department also celebrated an anniversary—the 100th anniversary of the Jaffrey Chair in Political Economy. This chair established the Department of Political Economy at Aberdeen and has seven people hold the chair since then – with the last three (Professors Sloane, Barmby and Montagna) involved in CELMR. Over the last year, I have been researching Sir Thomas Jaffrey who endowed the chair and the seven holders of the chair. Here, I give a very brief summary of this research, though a more expansive discussion of will be summarised in a chapter in a new book on the history of the university, *525 Years in the Pursuit of Truth - A New History of The University of Aberdeen*.

Thomas Jaffrey was born in Aberdeen on 6 February 1855. He left school to become an accountant at the North of Scotland Bank in 1877. He was successful in his vocational calling, becoming the Actuary of the Aberdeen Savings Bank. Under his leadership it became the 5th largest UK savings bank and opened a new headquarters on Union Terrace in 1896.

Jaffrey was also known for his philanthropy in his home city. In addition to his generous donation to the University to establish the chair, he made significant donations to several charities around the city including the Joint Hospitals Campaign that eventually became Aberdeen Royal Infirmary. In

addition, he was chairman of the Art Gallery Committee for over 20 years, overseeing a big expansion of the buildings and collections there.

The seven people who have held the chair are:

- Sir Alexander Gray (1921-34) – known for his research on the history of economic thought and Adam Smith, he was also internationally known for his poetry.
- Lindley Fraser (1935-1945) – also known for his research on economic thought, but also served as the head of the German language arm of the BBC during World War II.
- Henry Hamilton (1945-65) – an economic historian who oversaw a significant increase in the size of the department.
- Maxwell Gaskin (1965-84) – an expert in banking who wrote the first economic analyses of the effect of North Sea oil on Aberdeen and Scotland.
- Peter Sloane (1984-2002) – a labour and sports economist with over 170 publications in journals and books.
- Tim Barmby (2004-16) – a labour economist known for his work on absenteeism and tournament theory.
- Catia Montagna (2018-present) – a labour and international economist and a Fellow of the Academy of Social Sciences.

(For further information, please contact Prof Bender: kabender@abdn.ac.uk)

Prof Bender has given a public lecture on the life of Sir Thomas Jaffrey and the seven Chairs in Political Economy as part of the University's Little Lecture series which can be found here:

<https://www.youtube.com/watch?v=vUGAYqa2um0>