The Fast and the Studious? Ramadan Observance and Student Performance

Abstract

We investigate the impact on student performance of observance of the Ramadan fast. We exploit the timing of the high stakes end of secondary school exam in the Netherlands – which fell during Ramadan in 2018 and 2019 – and compare outcomes for pupils depending on their likelihood to fast during the Muslim holy month. Results indicate that average test grades of those most likely to comply drop significantly which in turn led to fewer passing the exam. This increased the gap in high school completion rate of these migration background students by almost 17\%. Since only part of the 2018 exam period overlapped with Ramadan, we check for drops in performance across exams (within students) that year which yields almost identical negative impact estimates as our group-year level strategy. Heterogeneity analysis reveals that grades are equally impacted for exams taken in the morning or the afternoon. It also shows that the effects are concentrated among students living closer to mosques and those in schools with a high number of peers also fasting. To check that Ramadan compliance drives our findings, we use a machine learning prediction model to assign Ramadan observance probability at the individual level. It confirms that higher fasting likelihood is linked to lower exam performance across the whole population. It also uncovers large variation in compliance probability among Muslim migration background students that again shows much stronger effects for those most likely to fast. Finally, placebo tests using two non-Muslim pupil groups - those of Dutch Caribbean background and those with high ML model probability of fasting - detect no negative Ramadan performance effects.

This paper is joint work with Kyra Hanemaaijer (EUR) and Marco Musumeci (EUR)

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