Religiosity and educational attainment among the Roma: Shedding an oppositional identity?

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ARTICLE INFO

JEL codes:
Z12
O15
D91

Keywords:
Religiosity
Education
Expectations
Identity
Roma
Europe

ABSTRACT

The Roma have faced poverty, discrimination and persecution since emigrating from India centuries ago. Persistent disparities between Roma and non-Roma throughout Europe have prompted many integration efforts. Using data from 12 Eastern European countries, we construct religiosity measures for the Roma and their non-Roma neighbors and use LASSO to explore predictors of religiosity in Muslim and Christian communities. We then estimate the effect of religiosity on educational attainment and expectations using lifetime parental exposure to communist-era religious restrictions as an instrument. Parental religiosity tends to increase educational attainment and expectations, but with differences by historical Ottoman Empire influence. A placebo test among non-Roma households reveals no similar religiosity effects on educational outcomes. These results are consistent with a model of religious engagement softening oppositional identities in favor of mainstream education norms and expectations. The role religious institutions may play in stagnant Roma integration efforts merits further attention.

1. Introduction

The history of the Roma is defined by exclusion and marginalization. The Roma have predominantly lived in poverty and been rejected by mainstream society — indeed, historically enslaved in places — ever since their centuries-long emigration from India to Europe, arriving in the 14th Century (Fraser, 1995). The Roma were specifically targeted and massacred by the Nazi regime during the Holocaust. As Europe’s largest ethnic minority, they continue to be stigmatized and socially excluded. Staggering disparities and systemic racism persist despite decades of integration efforts. Of the estimated 10 million Roma in Europe, 80% are at risk of poverty (compared to 17% for the total European population). Romani culture is distinctive and rich in history and tradition, but marginalization and exclusion have also led to the emergence of distinctive norms and expectations that sharply contrast with those of the mainstream societies in which they reside. These self-reinforcing and seemingly self-defeating norms are the essence of an oppositional identity that some Roma — in the face of exclusion — seem to blend with their ethnic and cultural heritage. For example, in many areas of Eastern Europe Roma girls tend to marry and have children at a very young age. Across Europe, educational expectations for boys and girls are much lower among Roma parents. Discrimination in a variety of forms limits housing and job prospects for the Roma, but this is further aggravated by such oppositional norms.

We explore how religious engagement affects educational outcomes among the Roma in Eastern Europe. While these outcomes are inherently important and can have important intergenerational dynamics, educational attainment can also signal adherence to mainstream norms and can thereby indicate the weakening of traditional norms that resist formal education. We conduct this empirical analysis using a cross-sectional survey that was conducted in 2011 by the United Nations Development Programme (UNDP) that sampled Roma households and their non-Roma neighbors from across 12 countries. We formulate an instrumental variables (IV) identification strategy to estimate the effect

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of parental religiosity on child educational attainment that exploits differential restrictions on religion under communism during much of the 20th Century.

Results suggest that increases in predicted parental religiosity raise educational attainment rates of children, an effect driven by impacts on primary school age children much more than on older kids, and elevates the educational expectations and attitudes of parents. We further find that Roma households with higher religiosity scores are also more integrated along several dimensions, including pride in one’s municipality, having a bank account and health insurance, and attitudes related to work and education. As a placebo test, we estimate the same specifications for non-Roma respondents, who by design lived nearby the Roma respondents, and find no similar effects of parental religiosity on the educational outcomes of non-Roma children.

Viewed through the lens of recent behavioral research on identity and aspirations, these results are consistent with religious engagement inducing the adoption of alternative norms and identities that might reduce the disparities between the Roma and broader society. While this insight may not provide direct policy levers for integration efforts, it suggests that engagement in local religious communities might be underappreciated as one path to greater integration – a path that ought not be discounted or dismissed. This path to integration and the behavioral dimensions of religiosity in contexts of discrimination and marginalization deserve more research attention.

2. The Roma of Eastern Europe

As Europe’s largest ethnic minority, the Roma are also among its most marginalized populations – an unenviable status that has persisted for centuries with exclusion and persecution, including enslavement in present day Romania between the 14th and 19th centuries. They endured genocide at the hands of Nazis, forced assimilation under communism and massive unemployment during the subsequent transition to a market economy in the 1990s (Ladánya & Szelenyi, 2006). Today, the majority of Roma live below national poverty lines and are isolated from mainstream society with low levels of socio-economic resources.

They also tend to live in enclaves on the periphery of cities and towns with much poorer infrastructure and sparse opportunities to engage meaningfully with non-Roma neighbors.

The lack of basic education is a major contributor to the cycles of poverty in the Roma community. Across Eastern Europe, the average literacy rate for the Roma was just 73% in 2006 compared to 96% for the Non-Roma. While 45% of non-Roma individuals attended nine to twelve years of school, fewer than 9% of Roma individuals achieved this level of secondary schooling (Ivanov et al., 2006). This education gap is partly explained by economic factors. Roma families may consider sending their children to work necessary, may not be able to afford shoes, clothing, and other supplies required at school (Ringold et al., 2005), and may migrate seasonally for work, disrupting school attendance. Roma parents may perceive the returns to education as low, either because they see little evidence in their own lives of education improving one’s opportunities (Friedman, Gallova Kriglerova, Kubanova, & Słościarik, 2009) or because Roma children are much more likely to be routed into schools for the mentally handicapped with limited subsequent educational and employment opportunities (Battaglia & Lebedinski, 2015). Cultural traits may also limit educational opportunities and thereby reinforce poverty. Many learn Romani as their native language and the majority language as a second language, which inhibits learning in school and communication in the workplace and reinforces discrimination and alienation. Cultural norms reinforce limited opportunities and low educational aspirations among Roma girls (Surdu & Surdu, 2006). For example, Roma girls are often expected to marry and have children as young as 13 or 14 years old, and Roma boys are often expected to work fulltime by that age.

Lack of education and skills coupled with outright discrimination present formidable barriers to economic growth in Roma communities throughout Eastern Europe. Roma experience higher unemployment than non-Roma. In Croatia, 25% of the majority population (age 15–55) was unemployed while 62% of the Roma population was unemployed (Ivanov et al., 2006). The majority of working age Roma reside on the marginalized periphery of society and outside mainstream labor markets. Many have simply given up looking for jobs as the demand for low or unskilled workers has weakened in the places where Roma reside (World Bank, 2008). Even educated Roma are often constrained to employment in short-term jobs with low wages, particularly for Roma women who tend to experience particularly low returns to education (Ivanov et al., 2006). This discrimination is a significant cause of persistent poverty among Roma (Bodewig & Sethi, 2005; Crowe, 1995; 2009). In Eastern Europe, 64% of working age Roma have experienced discrimination in hiring practices, 49% of whom were explicitly told that their ethnicity was the reason they were not hired (Hyde, 2006). Discrimination affects Roma in access to education or a job which could help them escape poverty, and even educated Roma are limited to professions which serve only other Roma people (Hyde, 2006). Such segregation among workers can perpetuate marginalization and stymie integration (Crowe, 1995).

In response to these harsh realities, the European Union has called for more purposeful national strategies for Roma integration. The “Decade of Roma Inclusion, an EU integration effort launched in 2005 and spanning the survey we use in this paper, requires annual reporting from countries in four key areas of integration: education, employment, healthcare, and housing. The most intensive reforms are being made in education, with measures such as free pre-school and kindergartens, programs aimed at preventing school drop out of Roma girls, and introducing Roma history into national curricula. Though the percentage of Roma children attending secondary school has increased, a report published Sept. 2019 found that 68% of Roma still leave education early and the absenteeism and early-school leaving rates of Roma are significantly higher than for other demographics (Jourova, 2019).

3. Related literature as a conceptual framework

This section reviews three strands of the behavioral literature as a conceptual framework for our analysis – to motivate our empirical approach and offer a lens through which to interpret the results. This framework encompasses several interrelated dimensions because religious engagement can potentially shape individual perceptions, behavior and wellbeing through several possible channels. While we apply this framework to our empirical analysis of the Roma, it applies similarly to marginalized populations in many contexts.

3.1. Oppositional identities

Building on earlier “culture of poverty” work (Lewis, 1966), Akerlof and Kranton (2000) incorporated insights from social identity theory into economics with a model that encompasses such oppositional identities by incorporating identity into utility functions as a socially embedded construct that reflects social differences and prescribes behaviors. Because identity can thereby constrain choice sets, the “choice of identity may be the most important “economic” decision people make” (p.717, Akerlof and Kranton). They observe that, “identity can explain behavior that appears detrimental...[as] people behave in ways that would be considered maladaptive or even self-destructive by those with other identities...to bolster a sense of self or to salvage a diminished self-image.” (p.717) Such investments in one’s sense of belonging to a
defined group (i.e., an identity) explain many laudable behaviors (e.g., patriotism, selflessness, etc.), but can also give rise to dysfunctional or oppositional identities. Those identifying with the majority see the majority as a valuable resource, whereas those identifying with the excluded minority see the majority as an effective barrier to entry for the poor, thereby reinforcing preexisting polarization.

3.2. Social interaction, norms and aspirations

Contact theory suggests many pathways for social interaction to change people’s perceptions of themselves and others – especially those with distinctly different identities (Emerson et al., 2002; Pettigrew, 1998; Pettigrew et al., 2011). Such interaction can itself be a valuable form of capital as “networks, norms, and social trust” (Putnam, 2000). While most social capital research considers this to be intrinsically good, some work considers the possibility of harmful effects of social capital (Solow, 1996; Loury, 1977) – norms that shape not only the formation of an oppositional identity but its persistence.6

Identity can be especially potent and are more likely to include oppositional identities. Those identifying with the majority see the majority as an effective barrier to entry for the poor, thereby reinforcing preexisting polarization.7

Finally, Bisin et al. (2011) use a dynamic model to explore the factors that shape not only the formation of an oppositional identity but its persistence as a stable equilibrium. A preexisting majority and (ethnic) minority provide the precondition for the emergence of an oppositional identity akin to the Akerlof and Kranton (2000) model, but interactions between these groups weaken this identity by exposing the minority to majoritarian role models. Given these opposing forces, social segregation, discrimination and alienation of the minority from the majority reduce the likelihood of majoritarian role models influencing the minority and, beyond a threshold, enable the oppositional identity to persist.8

More recent work on aspirations emphasizes the role of social interaction in shaping what goals or achievements individuals consider to be possible. Building on Amartya Sen’s work, this paper suggests that external constraints can often become internalized (Sen, 1999) – most social capital research considers this to be intrinsically good, some work considers the possibility of harmful effects of social capital (Solow, 1996; Loury, 1977) – norms that shape not only the formation of an oppositional identity but its persistence.6

In much of the world, religion shapes social networks, social capital and norms in profound ways. The importance of religion and associated beliefs and rituals is evident in many dimensions of life. While some of these effects are purely social in nature and most religious adherents value the social aspects of their religious engagement,9 most religions hope to deliver something more than just social interaction. It is this more ambitious aim, typically a connection to the divine or supernaturally, that ostensibly distinguishes a religious community from a bowling club (Lybbert 2008). Although recent work suggests that Durkheim’s Emotional Synchrony (1912) is functional in religious as well as secular gatherings and that “the only difference lies in the sacred or secular values with which the collective event is imbued” (Páez et al., 2015 p.727), this conclusion risks minimizing substantive differences in these values. Potentially distinctive features of sacred values have prompted researchers to distinguish social capital and psychosocial effects of collective gathering (Páez et al., 2015), which can clearly emerge from engagement in a religious community, from the deeper religious or spiritual effects of this engagement, which often accumulate slowly with consistent devotion and commitment to lofty ideals over an extended period.
period of time (Finke, 2003; Stark & Finke, 2000). Whether collateralized as a form of spiritual capital (e.g., Lybbert 2008) or enhancing one’s life and productivity in broader or more nuanced ways, these include “spiritual resources” such as a sense of purpose, a vision of opportunity, a strong family ethic, an ethic of benevolence, a work ethic, discipline, a thirst for knowledge, and self-esteem (Fogel, 2000). One recent study finds that religiosity reduces depression among adolescents and further concludes that “alternative forms of school social support, such as clubs, sports, and the number of friends, do not appear to substitute for religiosity” (Fruehwirth et al., 2019).

The economics of religion as a field of study has expanded rapidly in recent decades. This growth and the shifting frontiers of this field are clear when comparing two comprehensive surveys of this research written roughly two decades apart (Iannaccone, 1998; Iyer, 2016). The more recent survey argues that one of the key contributions of this work has been to “cast light on the economics of nonmarket behavior illustrating the role that norms, values, social capital, and “spiritual capital” may play in influencing human behaviors by affecting both beliefs and actions” (Iyer, 2016, p.396). Unsurprisingly, the challenge of causal identification of religiosity in empirical studies features prominently in the survey of more recent work (Iyer, 2016), which generally uses instrumental variable (IV) approaches. For example, Gruber (2005) uses an IV approach to estimate the causal effect of religiosity on education and other outcomes in the U.S. He finds that greater religious engagement increases education, income, and the likelihood of being married, results that are robust to tests of higher ability individuals selecting into religiosity. Similar studies in the U.S. have found effects on trust (Tan & Vogel, 2008) and reduced crime and illegitimate births (Evans et al., 1995; Freeman, 1985; Lipford et al., 1993). Barro and McCleary (2002) use a cross-country panel and an IV strategy and find that religious beliefs affect economic growth.10

Given the parallels in the historical and contemporary lived experiences between many African Americans in the US and many Roma in Europe, the evidence of religiosity effects among African Americans is potentially relevant. These parallels include exposure to historical slavery and exclusion and continued discrimination and poverty. While structural and institutional forces are central to contemporary discrimination and marginalization of African Americans in ways that are clearly distinct from the Roma experience (Loury, 2005; Wilson, 2009) advocates for the unique role religious institutions can play in helping to resolve these entrenched problems, which are also rooted in “spiritual issues.”11 As is obvious from the historical record, the influence of religious engagement on excluded groups can also be alarmingly negative as religion can divide and suppress rather than unite and uplift.12 Emerging evidence suggests, however, that religiosity can in some settings provide a potent remedy to oppositional identities. While many of the positive impacts of religious engagement in the literature are likely shared by majority and minority alike, the distinctive patterns of exclusion and dysfunctional norms that can emerge among marginalized minorities open additional and distinctive pathways for religiosity effects.

3.4. Application to the Roma

These diverse channels through which religiosity might shape integration and related outcomes have potential relevance for the Roma. Although Romani culture consists of much more than oppositional identities, the influence of such identities among the Roma is clear in many domains throughout Europe. Indeed, much of the foundational work behind the oppositional identity models relate directly to the Roma in Europe (e.g., Akhtar 1984, McCarthy 2010, Thomas and Znaniecki 1974). The emergence of oppositional identities among the Roma has been most widely documented in the context of integration efforts aimed at education (Lauritzen & Nodeland, 2018). Levinson (2015) describes the cultural tensions that exist among Roma students in the UK who “linger on the periphery of the education system” while trying to maintain (or at least not betray) their distinctive and often oppositional Roma identity, which has traditionally included disregard for formal schooling, marriage at young ages and narrow occupational choices (Silverman, 1986; Smith, 1997). Levinson interviews Roma students in their early teens about their experiences at school and documents how resistant the students are to taking school seriously because “...school ain’t for us” (p.1159). Such a collective opposition to formal education among the Roma also reflects low expectations among non-Roma teachers and administrators (Baucal, 2006) who have tended to segregate Roma students and place them without cause in schools for mentally disabled children (Battaglia & Lebedinski, 2015). Such a response from the majority fuels the formation and persistence of the oppositional identity among the minority as described in the models above.

Prevailing and pervasive segregation of the Roma from the non-Roma in Europe (residential location, occupation and daily routines) make it difficult for the Roma to build the kind of bridging social capital that could open new opportunities. Again, while this is true across many domains, it is clear in the context of educational decisions, which often hinge on parental perceptions of returns to schooling (Jensen, 2010). Battaglia and Lebedinski (2015 and 2017) explore the role of low expectations in the educational investments of the Roma and estimate the impact of a Roma Teaching Assistant Program in Serbia. This program aims to improve educational outcomes for Roma students through a combination of remedial education and role models as the teaching assistants are themselves Roma and have achieved higher than expected educational outcomes. Battaglia and Lebedinski (2017) find that this program indeed improved educational attainment among Roma students, especially in schools with relatively small Roma populations (where oppositional identities may not be as entrenched), and attribute at least some of this impact on role models lifting students’ and parents’ educational aspirations and expectations.

4. Data

In this analysis, we use data from the Regional Roma Survey 2011 supported by the United Nations Development Programme (UNDP), World Bank, and The European Commission (EC) in coordination with the European Union’s Agency for Fundamental Rights (EU FRA). This 2011 UNDP/WB/EC Roma survey represented at the time the largest integrated household survey of the Roma ever conducted.13 Follow-up

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10 Subsequently, Barro and McCleary (2006) explore heterogeneity in these findings across different religious identities using a similar strategy and find that adherence to Islam slows economic growth, suggesting that the effect of religious beliefs on other outcomes is likely to vary by the content of these beliefs.

11 Berrien and Winship (1999) provide related evidence with their examination of a Boston based coalition of 40 churches, called the Ten-Point Coalition, which helped reduce inner city gang violence. This represented the first major step toward active collaboration within Boston’s African-American religious community. Soon the Coalition reached out to the police in a partnership to reduce crime. The authors argue that this partnership was crucial in seeing the reduction of crime in Boston to zero teenage homicides from 1997 to 1998.

12 As one such example, the Dutch Reformed Church helped to institutionalize exclusion and segregation in South Africa (Ritter, 1967).

13 The combined UNDP/WB/EC Regional Roma Survey 2011 has a total of 9,207 Roma households (41,334 household members living in these households) and 4,274 non-Roma households living nearby (13,326 household members) covering 11 Eastern European countries. Details of this survey and its construction can be found in Ivanov et al. (2012).
The 2011 survey sample consisted of: (i) all the households in Roma settlements or areas of compact Roma population and (ii) non-Roma communities living in close proximity to Roma. The sampling universe for the Roma sample was defined as “the households in Roma settlements or areas of compact Roma population who identify themselves as Roma.” The non-Roma sample was defined as “the households of non-Roma populations living in close proximity to Roma” (Ivanov et al., 2012), which implies that the non-Roma in our data in a given municipality are geographic neighbors to the Roma households in the sample. The sampling frame first drew a random sample of municipalities (i.e., primary sampling units (PSU)) with at least 30 households, from which a target of 7 Roma households were randomly selected for every 3, 4 non-Roma households. The survey team randomly selected one adult in each surveyed household to respond to a detailed module on beliefs, attitudes, norms, and expectations. We rely heavily on responses to these questions and restrict our analysis to the (very common) case in which a parent was selected as this individual respondent. Based on the sampling frame and the sampling procedure the survey representativeness varied between 83% and 90%. Table A1 gives the realized sample size by country.

The PSUs included in this survey straddle the former Ottoman as mapped in Fig. 1. This historical influence is an essential dimension of heterogeneity in our analysis because of the clear implications for religious and cultural expression: Former Ottoman PSUs are much more likely to be Muslim, whereas non-Ottoman PSUs – many of which historically belonged to the Habsburg Empire – are more likely to be Christian. We leverage this variation by building on the approach of Grosjean and Senik (2011) who use the historical boundaries of the Ottoman and Habsburg empires to define shared cultural roots. Like Grosjean and Senik (2011) we assign PSUs (empire boundaries often split modern-day countries) to these historical empires based on a ‘duration of exposure’ rule: Only regions that belonged to these former empires for at least 200 years are identified, respectively, as Ottoman and Habsburg territories (Euratlas, 2008; Shepherd, 1911).

4.1. Descriptive statistics on Roma disparities

The survey aimed to document the disparities between Roma households compared to non-Roma neighbors that live nearby and are subject to similar local conditions and infrastructure. The data confirms just how stark these disparities are, albeit with significant country-level heterogeneity. Appendix tables and figures show disparities in poverty (Fig. A1), housing (Fig. A2), education (Table A2), and in employment (Fig. A3). Fig. A4 uses radar graphs to summarize average disparities of Roma relative to Non-Roma across five dimensions for each country.

The data reveal strong disparities in domains associated with identity, norms and aspirations, which further reflect historical and current discrimination and marginalization. The Roma are overrepresented in special schools compared to their non-Roma neighbors (Fig. A5) and are more likely to be bullied at school. Roma girls marry significantly earlier than non-Roma girls (Fig. A6), which diminishes educational opportunities for and aspirations among Roma girls. As our primary outcome variable, we construct child educational attainment as a school completion rate measured as years of completed education as a ratio of the years of schooling of child of that age would have accumulated under normal progress. The denominator of this ratio is constructed using data from UNESCO on school starting and finishing ages for the countries surveyed (see Table B1 in Appendix B). As shown in Fig. 2, this educational attainment ratio is significantly different for Roma and non-Roma households: Whereas about 2/3 of all non-Roma children have attained all the education possible given their age (i.e., an educational attainment ratio of 1.0), fewer than 1/3 of Roma children reached this level (for secondary and tertiary age children see Fig. A7). Educational expectations for boys and girls are similarly much lower among the Roma, and the gap in what is considered a sufficient level of education is wider in former Ottoman than non-Ottoman PSUs (Fig. 3).

4.2. Religiosity among the Roma in Eastern Europe

Religiosity research among the Roma, though sparse, argues that in the past century they “have begun to seize upon the organization of religious experience, and its promises of hope, and make them their own” (Acton, 1997). The religiously engaged Roma in our study areas share the same denomination as their non-Roma neighbors, which may enable churches and mosques to bridge differing norms of co-congregants. Exploratory interviews we conducted in 2010 suggested that religious institutions shaped the Roma experience in many ways – and set the stage for this empirical assessment of one such pathway.

The belief and expectations module included several detailed religiosity questions, including both practices, religious convictions and

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14 The questionnaires used in these subsequent rounds were modified in a variety of ways. For example, they include progressively fewer and less detailed questions about religious practice and beliefs. Thus, only the 2011 survey enables the detailed analysis of religiosity we provide in this paper.

15 The interviewers did not have any problems identifying the ethnicity of Roma respondents. There were only a few situations in which the interviewers identified individuals as being Roma and they denied it.

16 In order to have a total of 350 non-Roma respondents in the sample, every fourth PSU aimed to sample 4 non-Roma households with 3 non-Roma interviewees conducted in every other PSU. In rare cases where there were an insufficient number of non-Roma in close proximity of the cluster selected in Roma sample, these non-Roma targets were reallocated to the next closest non-Roma cluster.

17 Although their research question is different (whether exposure to democracy expands individual preferences for markets or vice versa), the underlying logic of their empirical approach is relevant for our analysis, not least because of the potential relevance of history and culture for our question as well and because all of our countries are represented in their survey data.

18 Countries in these tables and figures are ranked from highest Human Development Indicator (HDI), the Czech Republic, to lowest HDI, Moldova.

19 Since the Roma in our sample typically do not continue their studies beyond secondary school, we set secondary school completion as the maximum and cap this completion ratio at one.

20 Related evidence from France suggests that 34% of Roma adopted evangelical Christianity, which is credited with instilling good work ethic, family values, regard for civil law and local authorities, and value of education (Marquand, 2010).

21 We conducted exploratory interviews among the Roma in 2010, which included discussion of the influence of religion on behavior and outcomes. In Croatia and Slovakia, individuals spoke about how their newfound belief in God curbed the prevalence of drinking, domestic abuse, and stealing, and instead encouraged them to seek education and employment. A Slovak Roma man spoke about his religious convictions motivating him to establish an all Roma boarding school, the first in the Slovak Republic. In Romania, a local church, Christian non-profits and the local government collaborated to open a Roma primary school. Several Serbian Roma churches aim to transform their communities through behavioral interventions and housing projects for their poorest members. While we recognize this as purely anecdotal evidence and appreciate that churches and mosques may perpetuate rather than alleviate discrimination and exclusion, there is growing support for engaging religious institutions in efforts to integrate the Roma in Europe.
perceptions. Fig. A8 shows the distribution of our Roma and non-Roma sample across different categories of religious engagement and participation categories by country. The fraction of our sample attending religious services once a month or more, which is one of the indicators we use to construct our religiosity index, is mostly below half for both Roma and non-Roma sub-samples. In every country except the Czech Republic, the share of Roma who never participate is higher than their non-Roma counterparts. In contrast, differences in the share attending once a month or more are more mixed with the Roma reporting greater religiosity rates on average than the non-Roma in half of the 12 countries.

Given the richness of the responses to the belief and expectations module, these data provide a unique opportunity to explore religiosity among the Roma, including predictors of religious engagement and belief. To leverage this opportunity, we first construct an inverse covariance index (Anderson, 2009) of religiosity using several relevant responses in the survey. We allow for the weights in this index to vary according to the dominant religious affiliation of the PSUs represented in the data by estimating these weights separately for Muslim, Orthodox Christian and non-Orthodox Christian PSUs (based on the modal religious denomination). We pool Roma and non-Roma respondents together in constructing these weights, but allow for female and male responses to have different weights. We use five specific responses, each represented separately based on whether the respondent was male or female. These variables and their standardized weights are shown in Fig. 4. While the broad pattern across the three religious PSU categories are similar, there are some clear differences (e.g., religious attendance is weighted more in Orthodox Christian PSUs. The cumulative distributions of these resulting indices (Fig. A9) suggest that religiosity is more comparable for Roma and non-Roma in non-Ottoman PSUs than in Ottoman PSUs (where Roma respondents register higher religiosity scores above the mean index value of zero). This religiosity index figures prominently in the analysis that follows.

To explore religiosity further and compare the Roma to their non-Roma neighbors in this regard, we use a data-driven LASSO approach. Using 73 potential predictors, which include household-, PSU-, region-, and country-specific variables, we estimate a separate LASSO model by Roma and non-Roma with the same Muslim, Orthodox Christian, non-Orthodox Christian PSU categories we used to construct the index. We include the government religious restriction index (GRI) (described in detail shortly as our instrument) as a potential predictor in order to evaluate its importance relative to the other selected covariates. Fig. 5 shows the coefficient paths of these LASSO estimations, and Table A3

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22 The question asks a randomly selected member of the household age 16+ how often they attend church or mosque – 1, never, practically never – 2, less often than once a year – 3, once a year – 4, only on special holy days – 5, once a month – 6, Once a week – 7, More than once a week. This is a standard question from the World Values Survey http://www.worldvaluesurvey.org/.

23 We consider the randomly selected respondent to be a representative of the household, but allow for female and male respondents to understand and respond systematically differently to these personal belief and perception questions. Basic t-tests reveal significant differences by sex for many of the responses we use in constructing this index.
shows the final set of non-zero coefficients for each of these sub-samples. Several striking patterns emerge from these results. First, religiosity in predominantly Muslim PSUs is predicted with the best fit (i.e., the highest): Among the Roma the out-of-sample $R^2$ for Muslim PSUs is 0.19 as compared to 0.13 and 0.08 for Orthodox and non-Orthodox Christian PSUs, respectively. Second, Roma religiosity in Muslim PSUs also seems to be more heterogeneous than in other PSUs in the sense that the LASSO selects many more covariates: 35 non-zero coefficients relative to 12 and 15 for Orthodox and non-Orthodox Christian PSUs, respectively. Third, while in Muslim PSUs these coefficient paths are similar for non-Roma and Roma respondents, they are less similar in Christian PSUs (and especially in non-Orthodox PSUs). Finally, the specific predictors of religiosity vary significantly by sub-sample, but our GRI instrument ranks among the most important predictors of religiosity based on the magnitude of standardized coefficients (Table A3).

Next, consider what religious engagement among the Roma means in practice—specifically, as it relates to their non-Roma neighbors living in the same communities. Using the survey data, we can explore a few specific angles on religious engagement. First, the Roma households in our sample tend to identify with the same religious tradition as their non-Roma neighbors. This shared religious identity is strongest for Catholics and Muslims, but also clear for Orthodox Christians and Protestants. Second, within a given community the pattern of religious beliefs among the religiously engaged look nearly indistinguishable for Roma and non-Roma respondents, which is why the distribution of the religiosity index looks nearly identical for the two groups (Fig. A8). Third, anecdotal evidence from at least some of the countries covered by the data suggest that Roma and non-Roma adherents tend to attend worship services in the same physical location, but we cannot observe this in our data as the location of churches and mosques is not included. The survey asked respondents how important they think it is that the Roma have access to a local religious leader who is also Roma. Three patterns in these responses are noteworthy: (i) The Roma consistently report that it is ‘important’ or ‘very important’ at higher rates than the non-Roma, (ii) This difference is driven almost entirely by respondents in predominantly Muslim and, to a lesser extent, Orthodox Christian PSUs, and (iii) Responses are uncorrelated with the religiosity index, suggesting that for the religiously-engaged Roma, a non-Roma minister does not interfere with their religious experience.

Finally, these empirical patterns associated with religiosity characterize differences and (mostly) similarities among the Roma and their non-Roma neighbors, but should not be extrapolated to Western Europe or other settings outside the Eastern European countries represented in these data. In these other settings, there is evidence that Evangelical or Pentecostal forms of Christianity have taken root in Roma communities in distinctive and pronounced ways (Marquand, 2010).  

5. Empirical approach

In this section, we introduce a basic specification for testing whether

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24 Regressing the religious identity of a Roma household on the average religious identity of their non-Roma neighbors yields R-squares of 0.47, 0.42, 0.35, and 0.19 for Catholic, Muslim, Orthodox, and Protestant, respectively.

Fig. 3. Educational expectations for boys and girls by Roma and non-Roma and by Ottoman and non-Ottoman. These expectations are elicited as parental responses to the question, “What level of education do you consider to be sufficient?” (1=Lower basic (grades 1–4), 2=Upper basic (grades 5–8), 3=Vocational, 4=High School, 5=College-Associates, 6=University-BS/BA or higher).

Fig. 4. Anderson (2009) weights for religiosity index, constructed separately for Muslim, Orthodox Christian and Non-Orthodox Christian PSUs but pooling Roma and non-Roma together within these predominant religion categories. Female and Male refers to the respondent selected for the beliefs module. ‘# Beliefs’ indicates how many of 10 basic religious beliefs the respondent claimed to have (note that these included belief in Jesus as God, Mohammed as a prophet, the Koran and the Bible, but since there were an equal number of distinctly Muslim and Christian beliefs we can still use the sum of all belief questions in a similar manner); ‘Attend 1+/month’ indicates whether the respondent attends religious services at least once per month on average; ‘Religious Leader Help’ indicates whether the respondent would seek help from a religious leader if they needed urgent help; and ‘B(_)_’ indicates whether the respondent believes in miracles and in a personal God, two of the religious belief questions included in ‘# Beliefs’ as well.
Religious engagement of Roma parents affects the educational attainment of their children. We then describe two primary empirical challenges we face in this analysis – endogeneity of religiosity and the mechanism of softened oppositional identity – and discuss our approach to these challenges.

5.1. Econometric specification

Our primary specification uses child educational attainment for child \(c\) in household \(i\), community \(j\), and country \(z\) as the outcome variable of interest, denoted \(y_{cijz}\). We test how our index of religiosity, \(R_{ijz}\), for Roma parents affects this outcome using the following specification:

\[
y_{cijz} = \alpha + \beta R_{ijz} + \gamma_{c} x_{c} + \gamma_{i} x_{i} + \gamma_{j} x_{j} + \gamma_{z} x_{z} + \epsilon_{cijz}\tag{1}
\]

where \(\beta\) is the coefficient of interest and \(x\) denotes vectors of control variables at the child \(c\), household \(i\), community \(j\), and country \(z\) level. We cluster standard errors throughout at the community (i.e., PSU) level. Like much of the economics of religiosity literature, we instrument for \(R_{ijz}\) as described shortly. To isolate the parent (caregiver)-child relationship in this estimation, we only include in our analysis households where a parent or primary caregiver was selected as the adult respondent to the beliefs module.

Our main outcomes of interest are educational attainment and expectations. We observe educational attainment for every member of the households in our sample. We define as a child those members who were old enough to have started school but no older than 28 years old at the time of the survey (2011), which restricts our sample to those who were of age to start school after the fall of communism (i.e., who were at least 6 years old in 1989). In addition to estimating the model for all these ‘children’, we also separately estimate it for children who were of primary school age at the time of the survey. We also estimate specification (1) using educational expectations as the outcome variable (see Fig. 3). Educational expectations complement educational attainment since expectations may change more quickly and are not as affected by broader household- or community-constraints.

We use Post Double Selection (PDS) LASSO to select control variables for each regression we estimate. These controls are drawn from a rich set of 66 potential covariates. Potential child control variables \(x_{c}\) include the gender, health status (reported by the main respondent and constructed as a dummy variable) and age cohort dummies (primary, secondary, tertiary). Potential household control variables \(x_{i}\) include the age of the parental respondent and years of education for the father and mother of the child, ownership of a variety of assets, and monthly household expenditure. Potential community controls \(x_{j}\) include dummy variables for rural and access to a pre-school, distance to primary, secondary and tertiary schools, and perceived frequency of bullying and the subjective discrimination rate. Potential country-level control variables \(x_{z}\) include GDP growth rate, the country’s total

---

26 While some households have only one child, many households in our sample have multiple children, which share the same religiosity dummy variable and other household controls.

27 Since many children leave home as they enter young adulthood, the sample of secondary and tertiary age students gets progressively smaller. We include some analysis for these older age cohorts, but focus our main analysis on all ages and the primary school age cohort.
spending on education per capita, the student-teacher ratio for primary and secondary schools, and the 2012 Freedom House Democracy Score for transition countries. We further expand this set of potential controls by including several interactions among these variables (e.g., parental education and household income). As an alternative to these country-level controls, we include country fixed effects.

We allow religiosity effects to be different in communities located inside and outside the historical borders of the Ottoman Empire by estimating specification (1) separately for Ottoman and non-Ottoman PSUs (see Fig. 1). This important form of heterogeneity is central to our analysis because the 12 countries included in our data are situated at the cultural and religious crossroads of East and West. The implications for current religious engagement are important for our purposes because religiosity likely affects child educational outcomes differently depending on whether that engagement is in a Christian church or a Muslim mosque. While Ottoman regions tend to be predominantly Muslim, the correlation is not perfect, and using the historical boundaries of the Ottoman Empire avoids some of the endogeneity concerns that might arise with estimating heterogeneous effects based on the current share of Muslims in the local population.28

Table 1 provides summary statistics for several variables included in these set of potential controls disaggregated by Roma and non-Roma and for former Ottoman and non-Ottoman PSUs. This table includes all the households potentially used in these estimations. The actual number of households used in a given specification varies depending on the number of PDS LASSO controls selected.

5.2. The endogeneity challenge: a birth year-location instrumental variable

We confront two main empirical challenges in this analysis. In this subsection, we discuss the first: religiosity is endogenous. To address this endogeneity challenge, we instrument for parents’ religiosity using historical restrictions on religious practice, which vary widely across the 12 culturally- and politically-diverse countries in our sample. Based on the birth year and location of the parent respondent, we use annual religious restriction scores by country to compute average lifetime exposure to religious restriction. While we believe this IV strategy offers a defensible remedy to the endogeneity of religiosity, we also acknowledge that IV estimates can be sensitive and difficult to interpret so we also report non-IV estimates to clarify the underlying empirical relationships.

Throughout the 20th Century, people living in the 12 countries included in our data witnessed dramatic changes in their exposure to western liberal society and accompanying institutions. This included a remarkable diversity in the treatment of formal religion in these countries (many of which converted churches and mosques into museums of atheism) and rapid changes in this treatment since the fall of communism, all of which directly shaped how openly an individual could practice her faith in society. The influence of the evolution in these specific government regulations on individuals’ subsequent religiosity has yet to be demonstrated empirically, but evidence from elsewhere suggests this is possible or even likely. For example, Gruber and Hungerman (2008) show that in the US the repeal of the “blue laws” which prohibited retail activity on Sunday led to a decrease of 5% in religious participation. Finke (2013) provides a broader perspective on the causes and consequences of religious restriction and summarizes similar research that suggests that the contemporaneous effect of religious restriction is not surprisingly to reduce religiosity. The dynamic effect of removing or significantly reducing restrictions on current religious engagement is a more interesting and more open question since it raises the possibility of both path dependence (i.e., continued suppression of religious engagement) and an opposing response in which people seek out what they were once denied.

The pronounced heterogeneity in religious regulation under communism is nowhere sharper than in the contrast between Albania and Hungary. In Albania, religious restrictions escalated in the first 20 years of communist rule and culminated in 1967 when dictator Enver Hoxha declared it the world’s first atheist state and destroyed many churches and mosques. Hungary, on the other hand, largely accommodated religion (Christianity) throughout its communist era. After the fall of communism, both countries warmed to religious practice. Indeed, in

28 The influence of both the Ottoman and the Habsburg empires blended religious, political and economic sources of power. In the case of the Ottoman Empire, much of its success and stability over centuries is attributed to the official and formal incorporation of Islam into the state structure with the Sultan regarded as “the protector of Islam” and the name of its capital connoting the “city of Islam.” While the Ottoman administrative structure allowed for the co-existence of religious and ethnic minorities, it also actively pursued by conquest and unity in the name of Islam and was the world’s most powerful Islamic state for much of its existence. External threats of the 18th and 19th Centuries prompted a distinct shift to centralizing control in Istanbul as the extent of the empire retreated. During much of its history, the Ottoman Empire engaged the neighboring Habsburg Empire as its chief rival – a conflict that always carried clear religious weight. Within the Habsburg Empire, Catholicism was officially sanctioned and other Christian traditions were repressed, but at the Ottoman frontier such tensions gave way to a larger conflict with Islam. Much like their Ottoman neighbors, the Habsburg Empire was so driven by its religious identity that extending its religious pre-eminence was often as important as maintaining and expanding its political power.

### Table 1

<table>
<thead>
<tr>
<th></th>
<th>Household Expenditure (monthly, USD PPP)</th>
<th>Education, Father (years)</th>
<th>Education, Mother (years)</th>
<th>Rural (0,1)</th>
<th>HH Size</th>
<th>Age of Parent Respondent</th>
<th>Single parent HH (0,1)</th>
<th>HH has computer (0,1)</th>
<th>HH has bed for every member (0,1)</th>
</tr>
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<tr>
<td><strong>Former Ottoman Empire</strong></td>
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<td>Household N</td>
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<td></td>
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<tr>
<td><strong>Non-Ottoman Empire</strong></td>
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<td>Household N</td>
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<td></td>
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<tr>
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<tr>
<td>Non-Roma</td>
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<td></td>
</tr>
</tbody>
</table>
2014 Pope Francis praised Albania for its religious tolerance and suggested it serve as a model for other countries.29 In the midst of this tumultuous communist and post-communist period and for all 12 countries in our data, many of the restrictions imposed on religions in practice, including wide disparities between the countries, were relatively ad hoc in nature. While many of these regimes shared a communist vision for their society, the practical implementation varied widely, often turning on the influence of a particular individual or institution with strong views. It is this variation in religious restriction over time and across countries that we leverage as our first instrument, which—as we describe below—we construct as an individual parent’s long-run exposure to religious restriction based on their location and year of birth.

Since 1999, the US state department has published annual reports on religious freedom in all countries of the world.30 We follow the approach of Grimm and Finke (2007) to construct an annual Government Regulation of Religion Index (GRI) for each of the countries in our dataset since 1911. This GRI measures “the [government] restrictions placed on the practice, profession, or selection of religion” (Grimm and Finke, 2007: p.636) and is not surprisingly correlated with other indexes of political and economic freedom and empowerment.31 In the appendix, we provide more detail about the construction of the GRI and our extension of this method back to the early 20th Century. We then combine this GRI with the birth country and year of parents in our surveyed households to construct a simple lifetime average exposure to religious restriction,32 which is our primary 20th Century instrument for current religiosity.

Whether this exposure to religious regulation instrument satisfies the exclusion restriction for IV regressions with educational attainment as the dependent variable (i.e., whether exposure to religious regulation has a direct effect on educational attainment) hinges importantly on whether religious restrictions directly affected access to schools and the provision of educational services. In our case, none of the countries included in this study has a tradition of religious institutions running schools. It is rare in these countries for churches and mosques to run kindergartens, pre-schools or after school programs, let alone full primary or secondary schools. Schooling in Eastern Europe has been almost entirely dominated by the state with private school options only starting in adulthood (e.g., work, marriage, childbearing),33 (ii) pride in one’s municipality, (iii) whether it is unacceptable to dodge taxes, pay bribes or abuse the welfare system, as well as general attitudes about work and leisure, (iv) access to a bank account and health insurance, and (v) frequency of self-initiated health check-ups. Non-Roma survey respondents have significantly stronger (higher) responses to all these questions on average. We then combine responses across these five sets into an inverse covariance integration index (Anderson, 2009) for which higher values indicate closer alignment with prevailing non-Roma attitudes and behaviors. We similarly construct an educational beliefs index that combines the educational expectations in Fig. 3 with attitudes about children going to school instead of work and about the appropriate ages for their transition to adulthood. A pattern of results that includes religiosity shifting the index in this direction while also improving educational outcomes would be consistent with our mechanism of interest: an

5.3. The mechanism challenge: testing for broader integration

Even with a cleanly identified causal effect of religious engagement on educational outcomes, we would like to test whether this effect is driven by altered identities, aspirations or expectations that emerge from engaging in a religious community. Detecting such an underlying mechanism constitutes the second challenge, which is amplified by the fact that only cross-section data is available for Roma households since the UNDP and others refuse to create panel datasets given the local sensitivities of tracking Roma households across time periods.

To address the mechanism challenge, we lean on the framework of identity and aspirations provided by the literature review above to guide and interpret additional empirical tests with our data. First, we assess the causal effect of parental religiosity on other outcome variables that reflect the integration of norms and attitudes. While more suggestive than conclusive, these results indicate that religiosity tends to shift a wider set of attitudes, beliefs and access to financial services towards integration with the local non-Roma population. Second, we use non-Roma households as the basis of a placebo test. If religious engagement of parents increases educational attainment of children for reasons unrelated to a household’s social status or cultural identity, we should see comparable effects for both Roma and non-Roma households. In contrast, the conceptual framework above is consistent with a pattern of results in which parental religious engagement improves child education outcomes for Roma households but not for non-Roma households. In the concluding section of the paper, we revisit this mechanism challenge and discuss potentially deeper spiritual underpinnings of such evidence of shedding oppositional norms in favor of those that are more productive, mainstream, which we cannot empirically test.

We consider two additional tests. First, other survey responses that arguably reflect mainstreamed attitudes, norms or behaviors provide an opportunity for supporting tests. We consider five sets of responses: (i) the appropriate ages for children and adolescents to transition to adulthood (e.g., work, marriage, childbearing),34 (ii) pride in one’s municipality, (iii) whether it is unacceptable to dodge taxes, pay bribes or abuse the welfare system, as well as general attitudes about work and leisure, (iv) access to a bank account and health insurance, and (v) frequency of self-initiated health check-ups. Non-Roma survey respondents have significantly stronger (higher) responses to all these questions on average. We then combine responses across these five sets into an inverse covariance integration index (Anderson, 2009) for which higher values indicate closer alignment with prevailing non-Roma attitudes and behaviors. We similarly construct an educational beliefs index that combines the educational expectations in Fig. 3 with attitudes about children going to school instead of work and about the appropriate ages for their transition to adulthood. A pattern of results that includes religiosity shifting the index in this direction while also improving educational outcomes would be consistent with our mechanism of interest: an

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30 The International Religious Freedom Reports (IRFR) were initiated through the International Religious Freedom Act passed in 1998 by the US Congress see http://www.humanrights.gov/2010/11/12/international-religious-freedom-a ct/. Reports are published on an annual basis, see for example the 2011 IRFR at http://www.state.gov/j/drl/rls/religiousfreedom/index.htm#wrapper.
31 The unconditional correlation with the indicators based on the Cingranelli-Richards (GRI) Human Rights Dataset (http://www.humanrightsdata.com/, accessed 10 March 2020), for example, ranges from 0.58 to 0.80. Not surprisingly, the correlation with indicators of religious freedom are particularly high. Since we use the GRI as the basis of an instrument for predicting individual religiosity, our approach exploits the variation in GRI that correlates with religiosity. The strong correlation of the GRI with other indicators of freedom need not, therefore, complicate the interpretation of our IV estimates.
32 The vast majority of the parents in our sample currently live in their birth country. About 5% were born in a different country (typically a neighboring country), in which case we construct their individual GRI average based on their birth country rather than their country of residence to avoid any endogeneity problems with the latter.
33 We acknowledge, however, that this instrument is likely to be correlated with other factors or forces linked to communist rule in these countries. For example, many communist countries sought to replace the social cohesion and unity often fostered by religious institutions with secular alternatives such as sports and other social clubs.
34 This is constructed relative to non-Roma responses to the same questions within PSU. Specifically, we compute the difference in appropriate age reported by a given Roma respondent relative to the average response by non-Roma respondents in their PSU. We then average these differences for a given Roma household across several life events (stopping school, starting work, beginning sexual life, getting married, and having children).
assimilation with mainstream norms that softens a preexisting oppositional identity.

Second, we estimate our main IV regression for non-Roma respondents as a placebo test. This represents a placebo test under the theoretical framework described above: Since the non-Roma in our surveyed communities typically do not adopt oppositional identities and therefore tend to adhere to mainstreamed norms, attitudes and aspirations, we expect parental religious engagement to have little or no effect on children’s educational attainment. Of course, this religious engagement could be valuable to non-Roma religious adherents in other ways, but the theoretical framework suggests that such religiosity should not have measurable effects on educational aspirations and investments for those who already identify with the mainstream.

6. Results

We first estimate the specification in (1) using OLS and report selected coefficients in Table 2. We see a positive but insignificant association between parental religiosity and educational attainment across the board. Although these descriptive patterns convey the essence of our primary results, we extend and elaborate the analysis using the IV identification strategy described above. This IV strategy has limitations, so we treat resulting estimates as largely an exploratory analysis of an understudied topic.

Table 3 presents the results of our first stage regression for Roma households in our sample and for all children and the primary age cohort (see Table A5 for results of the reduced form regression of educational attainment on GRI directly). The GRI instrument is consistently significant and suggests that higher exposure to religious restriction in predominantly Christian, non-Ottoman communities increases current religiosity, while the GRI loses significance in predominantly Muslim, former Ottoman communities. While proposing an explanation for this pattern is beyond the scope of this paper, it is worth noting that religious engagement in Christian churches is likely quite different than in Muslim mosques, so it seems plausible that there might be differences in these estimates. The F-statistic on our GRI instrument suggests it is predictive of current religiosity in some specifications, but is relatively weak throughout.

With these first stage results in mind, we present the IV results in Table 4 (see Table A4 for OLS and IV results with country fixed effects).

\begin{table}
\centering
\caption{Results of first stage regression of parental religiosity on GRI instrument for Roma households.}
\begin{tabular}{lcccc}
\hline
& \multicolumn{1}{c}{All} & \multicolumn{1}{c}{All} & \multicolumn{1}{c}{Primary Age} & \multicolumn{1}{c}{Primary Age} \\
& Ottoman & Non-Ottoman & Ottoman & Non-Ottoman \\
\hline GRI & -0.132*** & 0.144*** & -0.0678 & 0.144*** \\
 & 0.0384 & 0.0468 & 0.0457 & 0.0377 \\
Education, father & 0.0149* & 0.0145 & 0.00890 & 0.0107 \\
 & 0.00192 & 0.000121 & -1.33e-06 & -0.00761 \\
Education, mother & 0.00971 & 0.0124 & 0.0120 & 0.00942 \\
 & 0.765 & 0.421 & 1.239*** & \\
HH has computer & 0.478 & 0.339 & 0.469 & \\
 & -1.134* & -1.673*** & -0.901 & -1.905*** \\
Constant & 0.596 & 0.460 & 0.679 & 0.251 \\
\hline N & 3103 & 2684 & 1524 & 2114 \\
N(clusters) & 599 & 468 & 511 & 457 \\
F-stat (1st stage) & 11.93 & 9.4 & 2.2 & 14.5 \\
\hline
\end{tabular}
\end{table}

\begin{table}
\centering
\caption{IV results of children’s educational attainment ratio on (instrumented) parental religiosity for Roma households.}
\begin{tabular}{lcccc}
\hline
& \multicolumn{1}{c}{All} & \multicolumn{1}{c}{All} & \multicolumn{1}{c}{Primary Age} & \multicolumn{1}{c}{Primary Age} \\
& Ottoman & Non-Ottoman & Ottoman & Non-Ottoman \\
\hline Religion & 0.127* & 0.266** & 0.281* & 0.337** \\
 & 0.0758 & 0.107 & 0.245 & 0.123 \\
Education, father & 0.0235*** & 0.0245*** & \\
 & 0.00308 & 0.00580 & \\
Education, mother & 0.0170*** & 0.0128*** & \\
 & 0.00286 & 0.00453 & 0.00474 \\
HH has computer & 0.0939 & -0.0290 & -0.184 & \\
 & 0.142 & 0.122 & 0.361 \\
Constant & 0.715** & 1.625*** & 0.995** & 1.606*** \\
 & 0.214 & 0.256 & 0.406 & 0.185 \\
N & 3103 & 2684 & 1524 & 2114 \\
N(clusters) & 599 & 468 & 511 & 457 \\
F-stat (1st stage) & 11.93 & 9.4 & 2.2 & 14.5 \\
\hline
\end{tabular}
\end{table}

*p < 0.10, **p < 0.05, ***p < 0.01. Robust standard errors reported under estimated coefficients. PDS LASSO controls vary by specification. Reported controls are among most commonly selected. Unreported controls drawn from dummies for primary, secondary, and tertiary school age (for (1) and (2)), rural, poor health (child), single parent, access to pre-school, HH distance to nearest primary, secondary and tertiary school, and regional variables capturing bullying rate and subjective discrimination rate, parental age, country-level measures of freedom, GDP growth rate, spending on education per capita, and average enrolment rate at both primary and secondary school levels.
with larger and more precisely estimated coefficients: Parental religiosity improves children’s educational outcomes for all children and the primary school age cohort alone. These coefficients are not only precisely estimated, they are roughly an order of magnitude higher than their OLS counterparts. These large magnitudes suggest that Roma children of parents who become religiously engaged have completion rates that are higher than those with non-religious parents. While the magnitude of this effect is large, keep in mind that with IV we are estimating a local average treatment effect based on the households (parents) whose religious engagement was shaped by our instruments. Among this subset of households, we see religiosity having very large effects on children’s educational completion rates. It is possible that the non-IV estimates in Table 2 suffer from attenuation bias due to measurement error in religiosity, which would further widen the gap between the OLS and IV estimates.

In Table 5, we report similar OLS and IV results for Roma parents’ educational expectations for boys and girls, which suggest some similarities and some differences between Ottoman and non-Ottoman locations. All the estimated coefficients on religiosity are positive, indicating that parents with higher levels of religious engagement have higher educational expectations for kids. These coefficients are statistically comparable for boys and girls, which is noteworthy given the prevalence of gender norms related to girls’ educational outcomes among the Roma. Two differences between Ottoman and non-Ottoman results merit mention. First, the magnitude of the coefficients on religiosity is larger in Ottoman locations. Second, where the GRI instrument is strongest as an instrument (with an F-stat around 14) is in non-Ottoman PSUs, and there we see strong and significant positive IV effects of religiosity on expectations but very small and insignificant OLS effects. In contrast, where the instrument is especially weak, we see insignificant IV effects but significant OLS effects. Taken together with the educational attainment results in Table 4, these provide consistent evidence that religiosity improves educational outcomes and expectations in non-Ottoman areas. For Ottoman areas, where the determinants of religious engagement, including our GRI instrument, are distinctly different, the evidence is more statistically mixed – although we can rule out a negative relationship between religiosity and these educational outcomes.

To test for broader effects of religiosity on integration and as suggestive evidence that the parental religiosity effects on educational outcomes operate via the shedding (or softening) of an oppositional identity in favor of more mainstream norms, we estimate similar OLS and IV models with our integration index and educational belief index as dependent variables. As shown in Table 6, these estimated coefficients are positive throughout and most are statistically significant. Again, for Ottoman PSUs, the OLS results are preferred to the IV results due to the very low F-statistics on the GRI instrument. While not conclusive, this evidence that parental religiosity tends to increase or correlate with these measures of integration is consistent with the mechanism proposed by our conceptual framework.

Finally, as the placebo test we estimate Eq. (1) for non-Roma parents and children: if the religious engagement effects on education are operating through the mainstreaming of norms, aspirations and identities, we expect to see no similar effects for non-Roma households. The IV results in Table 6 indicate that predicted religiosity among non-Roma parents has no effect on children’s educational outcomes. As with the Roma households, our IV only really works for those in non-Ottoman PSUs, so also report the OLS results, which indicate a significant negative relationship. These results persist even if we only include non-Roma parents with low levels of education that are comparable with the Roma parents in our sample. There indeed appears to be something distinctive about religiosity for the Roma that has positive effects (or at least correlations) with educational outcomes. While we cannot rule out other explanations, this pattern is consistent with the conceptual framework we propose with its ‘shedding an oppositional identity’ mechanism (Table 7).

7. Discussion

In many places throughout the world, people are eager to confront the historical realities of racial and ethnic exclusion and to challenge the persistent forces and tendencies that perpetuate this structural discrimination and prejudice. In Europe, this could lend greater popular support to the many EU efforts since 2000 to facilitate the integration of the Roma into European society. These ambitious top-down efforts in the EU, however, have shown disappointingly little effect on the lived experiences of the Roma. The analysis in this paper aims to offer some behavioral insight into this integration process by providing an empirical test of the role of religious engagement in the shedding of oppositional norms in favor of those that might naturally lead to better integration and more prosperity for the rising generation of the Roma people.

We find that constituent elements and predictors of religiosity vary between Roma and non-Roma respondents and by prevailing religious denomination. Our results suggest that parental religiosity among the Roma in 12 Eastern European countries tends to increase educational attainment rates for their children and their own educational expectations. This evidence is statistically stronger in locations outside the former Ottoman Empire, in part because our instrument for religiosity is stronger in this subsample because the determinants of religiosity are quite different between Ottoman and non-Ottoman PSUs. We also find that religiosity may shift beliefs, attitudes and behaviors towards their majoritarian neighbors in a manner consistent with religious engagement helping to shed prevailing oppositional identities. At a time of expanded integration interest and effort, this analysis, while not conclusive, sheds light on a potentially overlooked part of local integration.

Attempting to extract policy implications from these findings raises a number of important questions. Most of the current integration policies aimed at integrating the Roma (or other excluded groups, for that matter) are essentially top-down, supply-side responses. These include initiatives to increase the supply of improved educational, occupational, political, and housing opportunities available to the Roma. If, over centuries, the Roma have learned to avoid majoritarian markets and norms – that is, if they have found it optimal to adopt an oppositional identity – then these supply side improvements may be insufficient. The effect we estimate in this analysis reveals a complementary demand side to this integration challenge. In the case of education, new public schools or educational opportunities will only improve the prospects for the next generation among the Roma if their parents expect more

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35 We conduct this test by defining a subsample of non-Roma households with parental education at or below the country-specific 75th (or 90th percentile) percentile of parental education among the Roma. Estimating the same specification as in Table 6 after pooling together all these country-specific subsamples yields no statistical change in estimated coefficients.

36 For a recent perspective on these largely ineffective efforts based on the series of surveys that started with the 2011 survey we use in this study, see https://progressivepost.eu/roma-survey-shows-disappointing-results/ (accessed 2 June 2023), which includes this telling statement: “In the new EU Roma Strategy particular emphasis has been placed on tackling prejudice and discrimination, conceptualized as anti-gypsyism. Good intentions notwithstanding, leading an ethnically specific racialised policy discourse and governance process that does not reduce the inequality and exclusion of the targeted group is an uncomfortable place to be.”
### Table 5
Parental religiosity and educational expectations for girls and boys for Roma households.

<table>
<thead>
<tr>
<th>Educational Expectations</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
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<tr>
<td></td>
<td>OLS</td>
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<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
<td>Boys</td>
<td>Girls</td>
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<td>Religiosity</td>
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<td>0.124***</td>
<td>0.0313</td>
<td>0.0447</td>
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<td>5.739</td>
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<td>1.024^</td>
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<td>0.0393</td>
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<td>(Edu, father) X Income</td>
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<td>0.0098***</td>
<td>0.009***</td>
<td>0.0079***</td>
<td>0.00153</td>
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<td>0.00179</td>
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<tr>
<td>(Edu, mother) X Income</td>
<td>0.0051***</td>
<td>0.0070***</td>
<td>0.00898</td>
<td>0.0102</td>
<td>0.00874</td>
<td>0.00731</td>
<td>0.00177</td>
<td>0.00187</td>
</tr>
<tr>
<td>HH has computer</td>
<td>1.004***</td>
<td>0.953***</td>
<td>0.859**</td>
<td>0.764*</td>
<td>0.689</td>
<td>0.772</td>
<td>0.582</td>
<td>0.462</td>
</tr>
<tr>
<td></td>
<td>0.342</td>
<td>0.365</td>
<td>0.361</td>
<td>0.396</td>
<td>1.710</td>
<td>1.406</td>
<td>0.513</td>
<td>0.526</td>
</tr>
<tr>
<td>Constant</td>
<td>3.924***</td>
<td>3.748***</td>
<td>3.185***</td>
<td>3.107***</td>
<td>−9.294</td>
<td>−7.185</td>
<td>5.062***</td>
<td>4.617***</td>
</tr>
<tr>
<td></td>
<td>0.567</td>
<td>0.599</td>
<td>0.274</td>
<td>0.277</td>
<td>17.93</td>
<td>14.67</td>
<td>0.751</td>
<td>0.698</td>
</tr>
<tr>
<td>N</td>
<td>2140</td>
<td>2138</td>
<td>2123</td>
<td>2120</td>
<td>2140</td>
<td>2138</td>
<td>2123</td>
<td>2120</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.949</td>
<td>0.97</td>
<td>0.961</td>
<td>0.967</td>
<td>0.949</td>
<td>0.97</td>
<td>0.961</td>
<td>0.967</td>
</tr>
<tr>
<td>N(clusters)</td>
<td>637</td>
<td>637</td>
<td>508</td>
<td>508</td>
<td>637</td>
<td>637</td>
<td>508</td>
<td>508</td>
</tr>
<tr>
<td>F-Stat</td>
<td>0.56</td>
<td>0.58</td>
<td>15.0</td>
<td>14.0</td>
<td>0.56</td>
<td>0.58</td>
<td>15.0</td>
<td>14.0</td>
</tr>
</tbody>
</table>

*p < 0.10, **p < 0.05, ***p < 0.01. [^, ^^^ defined analogously for wild-bootstrap inference (Young 2022).] Educational expectations based on responses to question "what level of education do you consider to be sufficient?" Robust standard errors reported under estimated coefficients. PDS LASSO controls vary by specification. Reported controls are among most commonly selected. Unreported controls drawn from dummies for primary, secondary, and tertiary school age (for (1) and (2)), rural, poor health (child), single parent, access to pre-school, HH distance to nearest primary, secondary and tertiary school, and regional variables capturing bullying rate and subjective discrimination rate, parental age, country-level measures of freedom, GDP growth rate, spending on education per capita, and average enrolment rate at both primary and secondary school levels.

### Table 6
Parental religiosity and broader integration based on the integration index and educational beliefs index for Roma households.

<table>
<thead>
<tr>
<th>Integration Indices</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OLS</td>
<td></td>
<td>IV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
<td>Boys</td>
<td>Girls</td>
<td>Boys</td>
<td>Girls</td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>Religiosity</td>
<td>0.0243</td>
<td>0.122***</td>
<td>0.0725***</td>
<td>0.0545*</td>
<td>4.366**</td>
<td>0.264</td>
<td>0.359*</td>
<td>0.177</td>
</tr>
<tr>
<td></td>
<td>0.0242</td>
<td>0.0268</td>
<td>0.0242</td>
<td>0.0300</td>
<td>3.748</td>
<td>0.653</td>
<td>0.209</td>
<td>0.230</td>
</tr>
<tr>
<td>(Edu, father) X Income</td>
<td>0.0056***</td>
<td>0.0068***</td>
<td>0.0077***</td>
<td>−0.00432</td>
<td>0.0066***</td>
<td>0.0077***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HH has computer</td>
<td>0.000999</td>
<td>0.00109</td>
<td>0.00111</td>
<td>0.00970</td>
<td>0.00143</td>
<td>0.00015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.636***</td>
<td>0.524**</td>
<td>0.608***</td>
<td>0.896</td>
<td>0.519**</td>
<td>0.570***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.203</td>
<td>0.206</td>
<td>0.201</td>
<td>1.035</td>
<td>0.210</td>
<td>0.201</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>2294</td>
<td>2207</td>
<td>2589</td>
<td>2168</td>
<td>2294</td>
<td>2207</td>
<td>2589</td>
<td>2168</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.173</td>
<td>0.152</td>
<td>0.092</td>
<td>0.072</td>
<td>0.173</td>
<td>0.152</td>
<td>0.092</td>
<td>0.072</td>
</tr>
<tr>
<td>N(clusters)</td>
<td>644</td>
<td>643</td>
<td>515</td>
<td>510</td>
<td>644</td>
<td>643</td>
<td>515</td>
<td>510</td>
</tr>
<tr>
<td>F-Stat</td>
<td>1.371</td>
<td>1.365</td>
<td>20.84</td>
<td>16.32</td>
<td>1.371</td>
<td>1.365</td>
<td>20.84</td>
<td>16.32</td>
</tr>
</tbody>
</table>

*p < 0.10, **p < 0.05, ***p < 0.01. [^, ^^^ defined analogously for wild-bootstrap inference (Young 2022).] Robust standard errors reported under estimated coefficients. Integration index includes municipal pride, possession of a bank account and health insurance, frequency of self-initiated health check-ups, attitudes about dodging taxes, paying bribes, and abusing the welfare system, preferences about income stability vs leisure, and responses to appropriate ages for kids to stop education, start work, begin sexual activity, get married, and have kids. Education beliefs index includes whether the respondent considers it alright for a child to work instead of going to school for girls and boys, educational expectations for girls and boys, and responses to appropriate age questions. PDS LASSO controls vary by specification. Reported controls are among most commonly selected. Unreported controls drawn from rural, poor health (child), single parent, access to pre-school, HH distance to nearest primary, secondary and tertiary school, and regional variables capturing bullying rate and subjective discrimination rate, parental age, country-level measures of freedom, GDP growth rate, spending on education per capita, and average enrolment rate at both primary and secondary school levels.
education for them and are willing to selectively shed cultural norms such as early age marriage and childbearing for girls to accommodate these new norms. As crucial as this demand side of the integration equation may be, it is important to recognize that policy often only indirectly shapes individuals’ demand for enhanced opportunities. This is certainly true in the case of religious engagement. In this sense, the policy upshot of this analysis is not that governments should treat religions and religiosity as a policy lever, 37 which risks undermining the authenticity that is key to meaningful religious engagement. Rather, they should appreciate the role religious convictions can play in the formation of identities of individuals and groups and formulate policies that are compatible with this appreciation.

It is also important to recognize that the core demand-side finding of this paper that religiosity increases demand for schooling is only likely to deliver improved outcomes and prospects and to alleviate poverty among the Roma if it is accompanied on the supply side by enhanced opportunities. The demand and supply perspectives on integration of a marginalized population like the Roma are obviously complements not substitutes. In the context of our analysis, this complementarity is clear in the question: ‘Does the additional schooling for a Roma child that is attributable to her parents’ religiosity translate into improved job prospects, wages, or other social or civic engagement opportunities?’ While this question is clearly outside the scope of this paper and would be difficult to address convincingly given the lack of panel datasets that include Roma households, it is also not difficult to conjecture that the answer must be “No” if prevailing and systematic discrimination entirely snuffs out these opportunities. Any positive impacts of religious engagement that work through the demand side will require enhanced supply side opportunities in schooling, housing and jobs to elevate realistically the integration prospects for the next generation.

Finally, we revisit the mechanism challenge we attempted to address in our empirical strategy above. There, we used recent work on aspirations, norms and identity along with additional empirical tests (Table 6) to argue that our main result is consistent with religious engagement prompting parents to abandon (parts of) the prevailing oppositional identity in favor of more mainstream norms that prioritize education more highly. We readily acknowledge that this only partly addresses the mechanism that translates religiosity into shedding an oppositional identity as it leaves several open questions. How exactly does religious engagement among the Roma work in this way? Does social interaction explain this effect as contact theory suggests (Emerson et al., 2002; Pettigrew, 1998; Pettigrew et al., 2011)? Does exposure to religious teaching about human flourishing or family responsibilities play a role? Do deeper spiritual mechanisms also contribute to the effect we estimate? We cannot empirically adjudicate between these with our data. Moreover, treating them as separate and isolated mechanisms may be far too reductionist as the experience of religious engagement often intertwines all three in ways that make them more mutually reinforcing and synergistic. The emotional and spiritual synchrony that can emerge from this potent combination can create a “collective effervescence” that builds identity, unity and social integration (Durkheim, 1912; Piecz et al., 2015). Understanding empirically how this synchrony works – in the context of marginalized groups and integration efforts in particular – merits additional research effort and attention as part of the broader and burgeoning study of the economics of religion (Iyer, 2016).

### Data availability

The authors do not have permission to share data.

### Acknowledgments

We thank the UNDP team that allowed us to contribute questions to the 2011 Regional Roma Survey that collected the data we use in this analysis, especially Andrey Ivanov and Jaroslav Kling. We also thank Salvatore Di Falco, Brian Dillon, Alexandra Janku, Laura Meinzen-Dick, Ashish Shenoy, Joakim Weill, anonymous reviewers, and participants at seminars and workshops at Cornell University, UC Davis, University of San Francisco, Utah State University, Brigham Young University, Groningen University, UC Louvain, UNU MERIT/Maastricht University, the CEIDS Seminar, and the 2021 Midwest International Economic Development Conference at Northwestern for suggestions and contributions.

### Table 7

For the non-Roma, parental religiosity has no effect on children’s educational completion rates.

<table>
<thead>
<tr>
<th>Educational Attainment</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OLS</td>
<td></td>
<td>Primary Age</td>
<td></td>
<td>IV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>Ottoman</td>
<td>All</td>
<td>Non-Ottoman</td>
<td>Non-Ottoman</td>
<td>All</td>
<td>Non-Ottoman</td>
<td>Non-Ottoman</td>
</tr>
<tr>
<td>Religion</td>
<td>-0.0306***</td>
<td>0.00179</td>
<td>-0.0301**</td>
<td>0.00259</td>
<td>-0.0719</td>
<td>0.00033</td>
<td>-1.830</td>
<td>0.0131</td>
</tr>
<tr>
<td>Education, father</td>
<td>0.00684***</td>
<td>0.00816</td>
<td>0.0145</td>
<td>0.0145</td>
<td>1.000</td>
<td>0.0330</td>
<td>7.187</td>
<td>0.0452</td>
</tr>
<tr>
<td>Education, mother</td>
<td>0.00305</td>
<td>0.0127</td>
<td>0.0127</td>
<td>0.0127</td>
<td>0.0127</td>
<td>0.0127</td>
<td>0.0127</td>
<td>0.0127</td>
</tr>
</tbody>
</table>

| HH has computer | Constant | 0.771*** | 0.937*** | 0.913*** | 0.920*** | 0.753* | 0.937*** | 0.662 | 0.920*** |
| HH has computer | 0.0837 | 0.00687 | 0.0171 | 0.0117 | 0.0116 | 0.449 | 0.00778 | 1.042 | 0.0119 |
| HH has computer | N | 797 | 766 | 395 | 387 | 797 | 766 | 395 | 387 |
| HH has computer | R-squared | 0.091 | 0.000 | 0.015 | 0.000 | 0.090 | 0.000 | 0.089 | 0.000 |
| HH has computer | N(clusters) | 336 | 321 | 242 | 213 | 336 | 321 | 242 | 213 |
| HH has computer | F-Stat | 0.4048 | 20.20 | 0.0634 | 17.65 |

*p<0.10, **p<0.05, ***p<0.01. [*, **, ***] defined analogously for wild-bootstrap inference (Young 2022).] Robust standard errors clustered by PSU reported under estimated coefficients. Unreported controls include dummies for primary, secondary, and tertiary school age (specification (1)), rural, poor health (child), single parent, access to pre-school, and regional variables capturing bullying rate and subjective discrimination rate, parental age, country-level measures of freedom, GDP growth rate, spending on education per capita, and average enrolment rate at both primary and secondary school levels.

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37 As a contrast to this claim that policy should not treat religion as a lever to be manipulated, note that our government regulation of religion instrument suggests that communist-era restriction on religions prompted individuals to become more religiously engaged later in life (perhaps due to the ‘people want what they cannot have’ effect), which implicitly suggests a somewhat perverse policy recommendation of imposing strict religious restrictions for a time in order to stimulate greater religiosity later. Drawing such a policy recommendation from our first stage results is an overstatement and misreading of our proposed IV strategy.


**Further reading**