Religion, Education, and the State*

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Abstract

This paper explores how state and religious providers of education compete during the nation building process. Using novel administrative data, we characterize the evolution of Indonesia's Islamic education system and religious school choice after the introduction of mass public primary schooling in the 1970s. Funded through informal taxation, Islamic schools competed with the state by entering in the same markets. While primary enrollment shifted towards state schools, religious education increased overall as Islamic schools absorbed growing demand for secondary education. In the short run, electoral support for the secular regime weakened in markets with greater public school construction. Over the long run, Islamic schools established at this juncture are more differentiated in terms of religious curriculum, and cohorts exposed to mass public schooling as children are more invested in religion than in the national identity. Our findings offer a new perspective on the political economy of education reforms and the emergence of parallel systems of public goods provision.

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1 Introduction

Providing education is one of the central missions of modern states. Yet, for centuries, religious organizations, rather than the state, provided schooling to the masses. In many countries, the state sidelined religious schools through sweeping secularization policies. In others, these schools still cater to large numbers of students. These varied trajectories raise important questions about how state and non-state providers of education compete throughout the development process. Recent work has examined the link between schooling reforms and ideology (Alesina et al., 2021; Cantoni et al., 2017) but has not explored the competitive response to state expansion in education markets, nor its potential to trigger a cultural backlash (Carvalho et al., 2022; Fouka, 2020; Squicciarini, 2020). In this paper, we show how educational expansion aimed at nation-building can have unintended consequences in the presence of equilibrium responses by competing religious institutions.

We explore the political economy of education reforms in Indonesia, the world's largest Muslim country. Millions of Indonesians were educated in religious institutions historically, and around one-fifth of students attended Islamic schools in 2019. This dual system has persisted despite many attempts by the state to reform it. In the 1970s, the country underwent a drastic expansion of its public schooling system through the celebrated *Sekolah Dasar* Presidential Instruction, or SD INPRES (Duflo, 2001). This policy not only increased access to public primary schooling, but also aimed to homogenize education through the adoption of a single secular national curriculum (Boland, 1982; Kelabora, 1976). We study how the Islamic school system adapted to this landmark policy and mitigated its impacts.

Our empirical strategy examines the dynamic effects of SD INPRES on education markets and exposed cohorts. We use several novel data sources to explore how the policy shaped multiple dimensions of schooling content and cultural outcomes. Nationally-representative surveys capture Islamic school choice, and administrative data record the universe of schools with date and location of establishment. The latter comprise nearly 220,000 secular and 160,000 Islamic schools, including day (*madrasa*), boarding (*pesantren*), and Qur'anic study schools (*diniyah*). Additional survey and administrative data help uncover local mechanisms for mobilizing and funding the Islamic sector response to SD INPRES. For some schools, we also observe a breakdown of curriculum hours in 2019, which we use to measure religious instruction and to identify shifts in ideological differentiation over the long run. Together, these data enable us to characterize market equilibria in the ensuing decades.

We explore the policy's multifaceted effects on three types of outcomes: Islamic school entry, school choice, and downstream ideological impacts. Using a suite of difference-in-differences (DID) methods, we first assess how SD INPRES affected Islamic school entry across different markets. The state allocated schools across districts proportional to their non-enrolled-student population, which *de facto* implied greater SD INPRES construction in markets where Islamic schools had been prevalent historically. Motivated by this insight, we estimate DID specifications that flexibly account for differential trends in Islamic education and use the synthetic DID approach (Arkhangelsky et al., 2021), which is more robust to potential violations of parallel trends. Using our granular administrative data, we also exploit, for the first time, the staggered entry of INPRES schools at the village level.

Islamic school construction increased in areas where the state built more primary schools. We find

greater entry both at the primary level, where new *madrasa* provided an alternative to newly built public primary schools, and at the secondary level, where *madrasa* capitalized on growing demand for continued schooling among SD INPRES graduates. This ensured that the state's educational expansion failed to crowd out Islamic schools. Informal boarding schools and afternoon Qur'anic study schools also entered, but these informal institutions decreased as a fraction of all new Islamic schools, consistent with competition from the state inducing formalization in the religious education sector.[1]

The Islamic sector mobilized its own resources to respond to the state's mass schooling effort. While windfall oil revenues allowed the state to build more than 61,000 schools between 1973–80, increased revenue from a simultaneous spike in the global price of rice accrued to the largely informal Islamic taxation system. In addition, the Islamic sector mobilized inalienable religious endowments (*waqf*) to expand educational infrastructure. Local elites often use the *waqf* to "endow public goods in perpetuity and to benefit from the prestige and reputational benefits associated with this public demonstration of piety," allowing "public recognition of their legacy to survive for decades" (Fauzia, 2013, p. 36). This revenue stream, built on private charity, supports religious investments in education markets across the Muslim world. We show that the entry response was stronger in villages with a larger *waqf* base before INPRES and greater exposure to the concurrent rice price shock. Meanwhile, as state oil revenue collapsed in the early 1980s, capacity constraints in public secondary schools deepened, thus creating an opportunity for the Islamic sector to capture SD INPRES graduates at the secondary level.

Islamic schools could have shifted their curriculum in a more secular direction to mitigate competition from SD INPRES schools and attract a larger student base. On the contrary, we find suggestive evidence that new *madrasa* entering high-INPRES districts after the program provided more religious curriculum over the long run at the primary and junior secondary level. We measure differentiation based on classroom hours devoted to religious subjects, including Islamic law, theology, and ethics, as well as Arabic instruction. The increase in Islamic content comes, in part, at the expense of core subjects in the standard curriculum, including study of the national language and *Pancasila*, the secular ideology of the state. These responses worked against the state's efforts to homogenize and secularize school curricula across Indonesia.

While Islamic schools lost market share in primary education, they expanded in secondary and ultimately increased exposure to formal Islamic education. Among school-age cohorts, SD INPRES decreased Islamic elementary enrollment. However, mass primary schooling created excess demand for secondary education, and the Islamic sector could absorb many INPRES graduates in its newly built secondary institutions.[2] Overall, these demand effects at the secondary level offset substitution effects at the primary level and made it more likely that exposed cohorts attended a formal Islamic school. Thus,

[1] In our data, formal and informal elementary Islamic schools clearly appear to be substitutes. 86% of the new informal Qur'anic study schools (*dinyah*) entering from 1973–78 were built in villages without any formal elementary *madrasa* construction, while 91% of the entering *madrasa* were built in villages without any *dinyah* construction.

[2] Auxiliary data from the Indonesian Family Life Survey suggest that nearly 80% of students in Islamic secondary schools attended public primary schools, and Indonesia is not unique in the prevalence of public-to-private transitions. In a series of studies, James (1987a,b, 1993) observed, across many countries, that excess demand for secondary education was an inevitable outcome of mass primary schooling interventions and a potential driver of growth in private secondary schools. An advisor to the Indonesian government observed that "[i]n 1972, any plan that rapidly increased the number of students going beyond grade 6 would have resulted in grave problems of accommodation" (Beeby, 1979, p. 193).

SD INPRES increased not only years of schooling but also, unexpectedly, exposure to *madrasa* education.

We show that heterogeneous preferences shaped these school choice responses. Female students exhibit stronger demand effects at the secondary level, particularly among cohorts exposed to a subsequent regulation banning the Islamic veil in public schools. While SD INPRES had more limited impacts on total years of schooling among girls, those impacts might have been even more limited if not for the new Islamic elementary options. Families were also more likely to send their children to an Islamic secondary school in high-INPRES regions with deeper historical support for Islamic politics.

These results open a new window into the celebrated SD INPRES program and help explain the surprising political and ideological legacy of mass schooling. The school expansion did not benefit the autocratic President Suharto's political party, *Golkar*, in the 1977 and 1982 elections, nor after 1987 when affected cohorts began to vote. In the medium to long run, school-age exposure to SD INPRES did not increase support for *Pancasila*, use of the national language, or affinity with secular principles. Instead, exposed cohorts are more literate in Arabic (a core part of Islamic school curriculum) and exhibit greater piety across a range of Islamic practices. Finally, Arabic literacy among affected cohorts is passed on to children in the next generation. Together, these results show that Indonesia's landmark mass public schooling policy did not bolster support for the regime nor adoption of a secular Indonesian identity.

Our paper provides a new perspective on the competition between the state and alternative providers of public goods over the course of development. While our focus is on education, the dynamics we study may apply broadly to other domains such as tax collection (Olken and Singhal, 2011), health (Lowes and Montero, 2019), policing (Blattman et al., 2021), and justice (Acemoglu et al., 2020). Competitive frictions are especially salient at early stages of development where limited capacity often induces states to outsource service delivery (Banerjee et al., 2019; Romero et al., 2020). Equipped with rich data on formal and informal schools, we offer new insights on the challenges associated with the formalization process. Our findings have implications for many settings where dual systems of governance involving traditional, informal, or religious authorities have endured (Acemoglu et al., 2014; Basurto et al., 2020).

Building on research across the social sciences, we also provide novel evidence on the role of education in nation building (Anderson, 1983; Boli et al., 1985; Gellner, 1983; Green, 1990). Recent work shows that mass schooling is introduced during periods of social conflict (Paglayan, 2022) and describes the strategies used by states to engage with religious schools (Ansell and Lindvall, 2013).[3] Our key innovation lies in understanding how the responses by non-state actors shape the impacts of mass schooling. Squicciarini (2020) shows how Catholic schooling slowed the diffusion of technical knowledge in 19th century France (see also Franck and Johnson, 2016). West and Woessmann (2010) argue that such backlash was pervasive in European states with a large Catholic population but where Catholicism was not the state religion.[4] In contrast, we explore competition between state and non-state schools after one of the largest school expansion programs ever implemented. Ultimately, the Islamic

[3] Alesina et al. (2021), Paglayan (2021), and Testa (2018) study why non-democratic regimes engage in mass schooling. Cantoni and Yuchtman (2013) examine the tradeoffs governments face in determining new forms of educational content. In the U.S., Bandiera et al. (2019) link the rise of compulsory schooling to nation-building efforts in response to mass immigration. Cantoni et al. (2017) study how a curriculum reform affected political attitudes in China. Other studies show that education fosters civic values and engagement (Andrabi et al., 2020; Dee, 2004; Larreguy and Marshall, 2017).

[4] On cultural backlash to state schooling policies, see also Fouka (2020) and Sakalli (2019) for examples from the U.S. and Turkey.

sector response contributed to the program's limited impacts on secular nation building.

Prior work on SD INPRES has not explored market dynamics or the program's nation-building consequences. Akresh et al. (2018) and Mazumder et al. (2019) explore intergenerational effects on similar outcomes as Duflo (2001), while Ashraf et al. (2020) study effects on ethnic groups with a bride price tradition, and Hsiao (2023) quantifies the program's distributional impacts in a spatial equilibrium framework. Martinez-Bravo (2017), Roth and Sumarto (2015), and Rohner and Saia (2019) explore impacts on governance, intergroup tolerance, and conflict. We expand the scope of analysis to provide new insights into the political economy of schooling reforms in the presence of alternative religious providers.

These insights also advance the literature on education and its consequences for religious transmission. Some have explored the returns to Catholic schooling (Altonji et al., 2005; Neal, 1997), while others provided background on Islamic schooling in Muslim societies (Andrabi et al., 2006; Berman and Stepanyan, 2004). Few studies distinguish between private secular and private religious schools, which often pursue distinct ideological objectives. Our findings suggest that mass public schooling in Indonesia fell short of its ideological objectives through a combination of exposure to religious education and increased transmission of Islamic values (as in the models of Bisin et al., 2020; Carvalho et al., 2022). This ensured that religiosity persisted over the long run. As such, our paper is among the first to link educational expansion to greater piety, at the expense of secularization objectives.[5] We provide a new answer to the puzzle of enduring religion in modernizing societies: religious institutions vary in their capacity to adapt to secularization, and religious schools can provide a relevant substitute to public education.

2 Political Economy of Education in Indonesia

Indonesia's vibrant Islamic education sector reflects the enduring role of religious schools in a country home to more than 230 million Muslims. This section provides relevant background on the origins and the resilience of the country's dual education system. Appendix C additionally presents qualitative accounts, collected via novel oral histories, of Islamic schools constructed during the mass schooling era.

2.1 Origins and Characteristics of the Dual Education System

Indonesia's education system has historically been comprised of secular and religious schools. The former were modeled after the Dutch system and first built in large numbers during the colonial era. After 1945, amidst heated debate about the role of religion in the young nation, Indonesia's new leaders opted for a state-run secular education system governed by the Ministry of Education and Culture (MEC).

However, Islamic schools long predated secular schools. The country's first religious schools, going as far back as the 15th century, were the *pesantren*, a type of boarding school blending Islamic and Javanese pedagogical principles. Contemporary *pesantren* are dedicated to the study of Islam, face little regulatory oversight, and offer instruction across multiple ages often in the same classroom.

[5] Many studies show that education weakens religious practice (e.g., Hungerman, 2014), with examples in Germany (Arold et al., 2022; Becker et al., 2017) and Turkey (Cesur and Mocan, 2018; Gulesci and Meyersson, 2016). However, across countries there is considerable heterogeneity in the education–religiosity relationship (see Appendix Figure A.10).

Madrasa, the main type of Islamic school operating today, are day schools that use methods similar to secular schools but offer more religious content. Inspired by reformist influences from the Middle East, *madrasa* appeared in Indonesia in the early 1900s as an attempt to modernize Islamic education and counter Western influence (Kelabora, 1976; Kuipers, 2011). *Madrasa* operate at the same levels as secular schools, from primary to junior secondary to senior secondary, but teach a range of religious subjects that are not covered in the latter. This includes Islamic law (*fiqh*), doctrine (*aqidah*), ethics (*akhlaq*), the Qur'an and traditions of Prophet Muhammad (*hadith*), Arabic language, and history of the Prophets (*qisa al-anbiya*). In our data, the average *madrasa* devotes 26% of instruction hours to religious content, only 5% is devoted to *Pancasila* and civic education, and an additional 5% to Indonesian language and literature. Beyond the formal *madrasa*, more informal schools known as *madrasa diniyah* focus largely on Qur'anic study, often operate in the afternoon, and attract students who attend public schools in the morning.

Although officially under the purview of the Ministry of Religious Affairs (MORA), the Islamic education system is highly decentralized with most establishments run through autonomous *waqf* endowments. Beyond its traditional role in supporting religious public goods, the *waqf* has often been used by religious elites in Indonesia (and beyond) to buttress local institutions against state encroachment. *Waqf* provide the land on which schools are built and some of the revenue to cover construction and operating costs. Under Islamic law, assets held in *waqf* are inalienable and can only be used for religious or charitable purposes. Bazzi et al. (2020) show how land transfers into *waqf* across Indonesia in the 1960s allowed Islamic institutions such as *pesantren* and *madrasa* to thrive and ensured their long-term financial autonomy. In addition to *waqf*-based financing, voluntary faith-based contributions (*infaq*) and obligatory alms (*zakat*) are important sources of revenue. While some schools are affiliated with large Indonesian Islamic NGOs, the vast majority are run by independent, local Islamic actors.[6]

Islamic schools comprise the majority of all private schools (more than 60% in 2019), and within many markets, private school choice is tantamount to Islamic school choice. Unlike non-religious private schools, Islamic and state schools charge minimal fees. According to 2015 household survey data (*Susenas*), average annual costs of primary *madrasa* were USD 20 compared to USD 21 for primary public, and students report traveling similar distances to attend each type of school. This suggests ample scope for local competition, something already observed in the early 1970s: "[e]xcept for the small number who can afford the more expensive private schools, the only significant choice at the primary level is between schools under the Education Department [i.e., SD] and religious schools" (Beeby, 1979).

At the time of writing, Islamic schools enroll 21% of Indonesia's 60 million students (Appendix Table A.16). More than two-thirds of these students attend formal *madrasa* with the remainder in *pesantren*. The rest attend secular schools, the vast majority of which are public, especially at the primary level.

2.2 The Politics of SD INPRES

Despite multiple reform attempts under Indonesia's first president, Sukarno, the government failed to homogenize the country's education system and to achieve universal primary schooling.[7] In the 1960s,

[6] We show in Section 3.2 that our findings on Islamic school entry are not driven by religious-NGO-affiliated schools.
[7] For example, in 1958, a failed reform aimed to limit religious instruction time to 21–28% of study hours in Islamic schools.

Indonesia was deeply divided, and a new regime, President Suharto's New Order, took hold after mass violence decimated a burgeoning Communist movement. Although Suharto initially allied with Islamic movements in the fight against Communism, after becoming president, he began mobilizing against some of these same forces, then seen as opposing his vision for the nation-state.

Suharto prioritized universal public education as part of a broader secular nation-building agenda at odds with organized Islam. The regime tried in 1967 and again in 1972, failing both times, to convince Islamic schools to become state-run and to reduce their religious curriculum. A decade later in 1982, a MEC regulation imposed standardized uniforms in public schools. This was tantamount to a ban on Islamic veiling (see Appendix Figure A.9). Confrontation also emerged in domains besides education. In the early 1970s, the state enacted a Marriage Law challenging Muslim marital norms enforced by Islamic courts (Cammack, 1989). In 1973, the regime forced Islamic political organizations into the umbrella United Development Party (*Partai Persatuan Pembangunan* or PPP). In 1977, the regime forced the PPP to drop Islamic symbolism, and in 1984 forced it to adopt *Pancasila* as its official ideological platform.

It was during this conflictual period that the regime launched SD INPRES. Equipped with windfall oil revenues, the government allocated considerable resources for primary school construction. Presidential Instruction No. 10/1973 and subsequent yearly decrees specified funding allocations to each district as a function of the child population not enrolled in school. In total, up to 61,000 schools were constructed between 1973–80 under the program, with districts building between 16 and 824 new elementary schools.[8] Parallel to the school expansion program, a 1972 decree stipulated that all formal education must be administered by the MEC. This was strongly opposed by Muslim leaders and abandoned in 1975.[9] The regime also intended to expand secondary school construction after SD INPRES implementation. However, as oil prices collapsed in the early 1980s, budgetary resources dried up, leaving the country with far fewer secondary public schools than anticipated by planners in the 1970s.

This vast reform agenda aimed at secularizing and homogenizing primary education. Civic education was to supplant certain Islamic subjects, while instruction was to take place in the national language, *Bahasa* Indonesia, rather than local ethnic languages or Arabic. The goal was to build a citizenry steeped in the inclusive *Pancasila* ideology and invested in the national identity. A World Bank (1989) report notes that "...public education was viewed by the Government as a key medium for promoting national unity—first, through instruction in *Pancasila*, and next through instruction in the national language" (p. 14), and that "[i]n so large and dispersed a country ... policymakers have consistently looked to neighborhood primary schools as vehicles for national integration" (p. 35).

Given its objective to expand public schooling, SD INPRES was prone to confrontation with the Islamic sector. The policy rule allocated resources proportional to the non-enrolled primary-school-age population at the district level within provinces. This meant building more schools in areas with greater unmet demand for formal education. Figure 1 shows that such areas were precisely where Islamic schools had greater presence historically.[10] Panel (a) illustrates the SD INPRES policy rule: the num-

[8]The Presidential Decrees for 1973–74 (INPRES 10/1973 and 6/1974), 1975–76 (6/1975 and 3/1976), 1977–78 (3/1977 and 6/1978) and 1979–80 (12/1979 and 6/1980) authorized grants for 6,000, 10,000, 15,000, and 14,000 new schools, respectively.

[9]According to Zuhdi (2006, p. 89), Muslim leaders believed the Decrees "intended, among other things, to weaken the status of the Islamic educational institutions ... they assumed that the government was trying to eliminate these latter ...".

[10]The SD INPRES guidelines were vague about how Islamic education should be treated. Decrees were only addressed to the

ber of schools allocated to a district is proportional to non-enrolled children in 1971. Panel (b) shows that Islamic primary schools are more likely to operate in areas underserved by the state. This induces a strong correlation between the number of SD INPRES built and the pre-existing stock of Islamic schools (panel c).[11] Table 1 corroborates the graphical evidence in Figure 1. First, we find similar targeting patterns regardless of the measure of Islamic primary education (columns 1–3). Second, conditional on the prevalence of Islamic education, the vote share of Islamic parties in the 1950s is also positively correlated with SD INPRES construction (column 4), which is consistent with the state allocating more schools to markets with more religious preferences. Finally, column 5 provides more localized evidence of confrontation: INPRES schools were more likely to be built in villages with an Islamic primary school and less likely in villages with a non-Islamic primary school.[12]

Qualitative accounts describe how those in the Muslim community perceived SD INPRES to be targeting Islamic sector strongholds (see Appendix C). Islamic school staff were required to take courses in *Pancasila* and accused of mobilizing for the Islamic PPP. In some communities, preachers urged congregants not to send their children to SD INPRES, which were derided as "school in hell" (*sekolah dalam neraka*) using a twist on the official acronym (*sekolah dasar negeri* or SDN).

While education was a central element of Suharto's homogenizing nation-building agenda, other policies also affected the landscape of ideological conflict. These include (i) a large population resettlement program, known as Transmigration, that moved millions of individuals from the Inner Islands of Java and Bali to the religiously and ethnically diverse Outer Islands of the country (see Bazzi et al., 2016, 2019), (ii) several administrative reforms aimed at harmonizing governance across the archipelago, culminating in a Village Law of 1979 that forced a single homogenous structure on village bureaucracies and may have helped extend the reach of Suharto's *Golkar* party (Kato, 1989), and (iii) suppression of separatist movements from Aceh to Papua to East Timor. In our empirical analysis, we account for potential confounding effects of these other events in the SD INPRES era.

2.3 Predictions: School Entry, School Choice, and Ideology

Before turning to our empirical analysis, we briefly outline the main hypotheses we aim to test. We explore the multifaceted effects of SD INPRES on three types of outcomes: Islamic school entry, school choice along the secular–religious dimension, and downstream ideological impacts.

First, we study how SD INPRES affected Islamic school entry at different levels of policy variation

Minister of Education and not the Minister of Religion who oversaw *madrasa*. An article early in the original decree (10/1973) references students not accommodated in public elementary schools, but later discussions of the proportionality rule merely refer to children who have not been accommodated without specifying the type of school. Furthermore, the proportional targeting was informed by the 1971 Census, which did not distinguish Islamic school enrollment. Observers at the time noted that official "targets have no reference to children enrolled in primary Madrasah" (Beeby, 1979, p. 196) and that the low enrollment rates in official data for some regions "could well be a function of the number of children who attend madrasah instead of sekolah dasar" (Orr et al., 1977, p. 133).

[11] In panel (d), we additionally control for the vote share of Islamic parties in the 1955 and 1957 elections, the last democratic contests before our study period. Estimates remain similar as in panel (c).

[12] In Appendix Table A.1, we show that the estimates in Table 1 are robust to controlling more flexibly for population. We include indicators for each decile of the 1971 child population and the 1971 enrollment rate in which each district's measure falls. These controls leave our main results on the confrontation between secular and Islamic schools unchanged.

and market aggregation (Section 3.1). Mass public schooling intensified competition in local education markets. This could have led to crowding in or crowding out of Islamic schools. At the primary level, competitive frictions might have arisen if the Islamic sector attempted to push back against the growing cultural influence of the state's secular schools in the same markets. At the same time, SD INPRES might have generated strategic complementarities by increasing demand for secondary education, on which Islamic schools were well positioned to capitalize. We thus explore entry responses at both the primary and the secondary instruction level. Since the strength of these competitive responses depended on the Islamic sector's ability to mobilize resources of its own, we also ask whether its schools entered markets where revenue-raising capacity, through informal Islamic taxation, was higher (Section 3.2). We provide additional evidence that formal Islamic schools gained influence at the expense of informal schools, and show, more suggestively, that new formal religious schools may have further differentiated their curriculum to maintain enrollment (Section 3.3). These findings are consistent with a Hotelling model of competition in which students differ in their preferences for religious schooling, and schools of both types decide which markets to enter and how religious to make their curriculum (see Appendix B for formal derivations and discussion of key insights from this framework).

We then examine the policy's nuanced effects on religious school choice (Section 4). We ask whether the evolution of religious school choice mirrors the observed patterns of school entry: increased competition at the primary level might have reduced the market share of Islamic schools at this level, but this could have been offset by demand effects at the secondary level, if the Islamic sector managed to absorb many INPRES graduates in its newly built secondary institutions. We also explore whether heterogeneous preferences by gender and by ideology shaped religious schooling decisions.

Finally, we study the downstream effects of mass schooling on identity, ideology, and nation building (Section 5). Students choosing between a state and a religious school after SD INPRES eventually became citizens who supported either the ruling secular regime or the religious opposition. We ask whether the market-level shifts went hand-in-hand with deeper individual-level shifts in religiosity and ideology among exposed cohorts and their children. In doing so, we shed light on the extent to which the state's mass schooling policy succeeded in advancing its secular, nation-building objectives.

3 Religious School Entry and Differentiation

This section studies the dynamic effects of SD INPRES on education markets. First, Muslim society, equipped with a mechanism for mobilizing private resources (*waqf*), expanded religious schooling in locations with greater SD INPRES entry. Second, newly entering Islamic schools in these locations provided, over the long run, more religious content instead of making their curriculum closer to the state's. Third, SD INPRES induced formalization within the Islamic sector. We study these effects in turn.

3.1 Islamic School Entry

We use data from administrative school registries and two distinct identification strategies to characterize the Islamic sector entry response to SD INPRES. The first relies on cross-sectional policy variation at

the district level. The second exploits the staggered entry of SD INPRES at the village level.

Data on School Registries. We use newly compiled administrative data from MORA comprising the universe of *madrasa* and *pesantren* active in 2019 (see Appendix D for details). In total, there are 52,398 formal *madrasa* across different grade levels, 82,871 informal *madrasa diniyah* (Qur'an study schools), and 25,938 *pesantren*, with establishment dates spanning more than 100 years. We rely on an analogous MEC registry of secular schools active in 2019. These data comprise 219,145 schools and include date of establishment, grade level, and private/public status. We address potential concerns about survival bias in these registries using a triennial census of villages (known as *Podes*) beginning in 1980.[13]

District-Level Identification. We estimate a balanced panel specification at the district-year level:

$$y_{jt} = \theta_j + \theta_t + \beta(\text{INPRES}_j \times \text{post1972}_t) + (\mathbf{X}_j'\boldsymbol{\theta}_t)'\boldsymbol{\eta} + \varepsilon_{jt}, \tag{1}$$

where y_{jt} denotes the number of Islamic schools built in district j and year $t \in [1960, 1999]$, per 1,000 children in 1971, θ_j and θ_t are corresponding fixed effects, $INPRES_j$ equals SD INPRES schools built from 1973–1978 per 1,000 children in 1971, and post1972_t is a dummy for years after 1972. With $\mathbf{X}_j'\boldsymbol{\theta}_t$, we flexibly account for differential trends by interacting year fixed effects with (i) the INPRES targeting variables (i.e., the district's 1971 child population, school enrollment and a concurrent water and sanitation program), and (ii) the prevalence in 1959 of Islamic elementary, junior secondary, senior secondary, and boarding schools, each separately. As in Duflo (2001), controlling flexibly for the INPRES targeting variables ensures that Islamic school entry effects are not driven by time-varying correlates of the enrollment levels used to determine program elibility. The effects we estimate are therefore conditional on initial enrollment and population levels. Standard errors are clustered at the district level.

We also estimate equation (1) using the synthetic differences-in-differences (SDID) approach from Arkhangelsky et al. (2021). The SDID approach reweights and matches pre-INPRES trends in Islamic school construction across high- and low-INPRES exposure districts. This delivers estimates that are more robust than standard difference-in-differences (DID) to violations of parallel trends. For implementation, SDID requires a binary regressor; we set $INPRES_j$ equal to 1 for districts above the 51st percentile in INPRES school construction.[14]

Table 2 shows greater entry of Islamic schools in high-INPRES districts: formal *madrasa* at the elementary (column 1), junior secondary (column 2), and senior secondary level (column 3), the informal *pesantren* (column 4) and *diniyah* (column 5), and the total number of Islamic schools of all types (column 6). In the standard DID (panel a), a one standard deviation increase in INPRES schools leads to 0.013 more Islamic schools per district-year and per 1,000 children, i.e, 1.4 additional Islamic school entries in the average district relative to a mean entry of 1.9 Islamic schools per district in 1972. The SDID

[13] While *pesantren* constitute an important part of the response to SD INPRES, their higher level of informality makes them more difficult to study than *madrasa*. Our main data for studying school choice in Section 4 below, *Susenas*, does not record *pesantren* attendance as *pesantren* do not follow the national exams. Nor does the MORA registry clarify the level at which a given *pesantren* organizes its instruction; many, in fact, teach students of all ages under one roof.

[14] While SDID uses less INPRES variation, by necessity of this discretization, it offers more compelling "local" comparisons across districts and time periods in which parallel trends are more likely to hold.

specification delivers positive and slightly larger estimates (panel b). This suggests that the increased supply of Islamic schools in high-INPRES districts is not an artifact of diverging pre-trends. Rather, the point estimates in panels (a) and (b) are consistent with a break in trend around the mid-1970s as religious leaders and organizations mobilized in locations with greater public primary school entry.

We provide further evidence of this trend break in Figures 2 and 3, which plot event studies showing the dynamic response to the state's primary school expansion. Figure 2 allows β in equation (1) to vary by semi-decade in the standard DID, and Figure 3 reports an analogous visualization for SDID. The latter tracks the annual variation in the high-INPRES (in red) and low-INPRES districts (in blue), and the straight lines and black arrow indicate the magnitude of the entry differential in the mid-1980s. Across both approaches, high-INPRES districts experience greater secondary *madrasa* and *pesantren* entry after 1973. A similar pattern holds for elementary *madrasa*. The village-based results below offer a clearer, more granular window into the entry response at this grade level.

Robustness. Several robustness checks are consistent with a causal interpretation of the Islamic sector response. First, in addition to the SDID results being robust to violations of parallel trends, the Roth and Rambachan (2022) procedure provides further suggestive evidence consistent with the visual impression from Figure 2 of a lack of pre-trends in the standard DID (see Appendix Figure A.1).[15] Second, the patterns are unlikely to be an artifact of survivor bias in the 2019 registry of Islamic schools. Appendix Table A.3 shows that the increase in Islamic school entry after the 1970s can be seen in historical administrative data (from *Podes* 1980, 1983, 1990, 1993) that is not subject to the attrition inherent to contemporary school registries. Third, we show robustness to interacting year FE with predetermined factors associated with religious schooling historically, including *waqf* endowments in 1960, the Muslim population share in 1972, Islamic party support in the 1955-57 elections, historical Arab immigration, Islamist insurgency activities in the 1950s, and the intensity of Transmigration resettlement through the 1980s.[16] In this set of controls we also include an indicator for districts involved in an experimental compulsory schooling program after 1957 (see Section 4.1). Some of these factors shaped the Islamic sector response to SD INPRES as we show later, but Appendix Table A.2 shows that the core results in Table 2 are robust to allowing for differential trends with respect to these controls.

[15] Roth and Rambachan (2022) propose a method that formalizes the motivation behind pre-trends tests, namely that the counterfactual post-intervention trends cannot depart too much from the pre-trends. Their method circumvents the need for pre-trends testing, instead allowing for uncertainty over the magnitude of the true trends in the pre-period. In Appendix Figure A.1, we report confidence sets that answer how much the post-INPRES trends in Islamic school entry would need to differ from the pre-trends in order to nullify the findings. We compute these confidence sets allowing this "how much" factor $\overline{m}$ to vary from 0 to 1.5 and find that for most outcomes the results break down at rather large values of $\overline{m}$, suggesting that our findings are unlikely to be driven by non-parallel trends. To invalidate the aggregate Islamic school entry results, we would need to allow for a post-INPRES violation of parallel trends that is more than 1.5 times larger than the maximal pre-treatment violation. We emphasize, however, that this test and the visual evidence of null pre-trends coefficients in Figure 2 are merely suggestive as both are formally valid for binary treatments and not continuous ones like the INPRES measure we use here.

[16] In the Indonesian context, support for Islamic parties correlates strongly with support for greater religious influence in various public domains including education (see Pepinsky et al., 2018). We draw on data compiled by Bazzi et al. (2020) to measure (i) Islamic political party support in the 1955 and 1957 legislative elections, (ii) ethnic Arab populations in the colonial era, and (iii) the presence of the Darul Islam movement, an insurgency aimed at establishing an Islamic state in Indonesia. We measure Transmigration prevalence using data from (Bazzi et al., 2016, 2019). Although these settlements had uniform, exclusively public schooling systems in the early years, their Inner Island populations were disproportionately Muslim relative to the more religiously diverse Outer Islands regions in which they were established.

Village Level. The district-level estimates capture Islamic sector entry effects averaged across several local education markets. We now use a village-level specification to identify more local entry dynamics:

$$y_{vt} = \theta_v + \theta_t + \sum_{\tau=-5}^{10} \gamma_\tau \text{INPRES}_{v,t-\tau} + (\mathbf{X}_v' \boldsymbol{\theta}_t)\boldsymbol{\eta} + \varepsilon_{vt}, \tag{2}$$

where y_{vt} denotes Islamic schools built in village v in year t with corresponding FE, θ_v and θ_t. $INPRES_{v,t-\tau}$ is a binary indicator for each year until/after the first SD INPRES is built from 1973–78 (entry is normalized to $\tau = 0$). The $\mathbf{X}_v'\boldsymbol{\theta}_t$ vector includes the numbers of public and Islamic schools in village v in 1959, each interacted with year FE. Standard errors are clustered at the village level.

We estimate equation (2) on a balanced panel from 1960 to 1999 using the Borusyak et al. (2024) estimator.[17] In robustness checks, we use a shorter panel from 1968–83. By allowing for arbitrary effect heterogeneity, this estimator addresses potential biases in staggered entry DID designs, which might arise here if, for example, the Islamic sector responded more effectively later in the 1970s once the government's secularization push through SD INPRES became more widely understood.

This specification provides more granular evidence of strategic Islamic school entry, but does so by eschewing the policy variation across districts and instead relying on differences in the timing of SD INPRES entry. While much of the timing variation is driven by idiosyncratic factors such as local administrative frictions and availability of funds, some of it may be endogenous with respect to potential religious schooling. Reassuringly, the Borusyak et al. (2024) estimator shows no evidence suggestive of pre-trends for Islamic (Figure 4) or non-Islamic private schools (Appendix Figure A.4). In Appendix Table A.4, we show that the *timing* of SD INPRES entry at the village level between 1973–78 is uncorrelated with the presence of Islamic schools in 1972, as well as predetermined agricultural productivity (potential crop yields) and natural advantages (e.g., elevation, distance to the coast).

Figure 4 provides further evidence of a dynamic Islamic sector response that varies across types and levels of schooling. The construction of an INPRES school is followed by a jump in Islamic school entry (panel a), which is driven in the short run by primary *madrasa* (MI) entering at twice the baseline annual rate (panel b). The latter persists for six years, after which MI entry rates revert back to baseline. Thus, Islamic providers competed head-on with new public primary schools in their communities.[18] Meanwhile, Islamic junior secondary school (MTs) entry peaks around years 6–9 after SD INPRES construction (panel c). As INPRES students graduate (alongside those from newly built MI), MTs entered in order to capture demand for continued education. In panel (d), we find smaller responses at the senior secondary (MA) level, perhaps in part because these schools tend to serve multiple villages.

In addition to greater entry of formal *madrasa*, SD INPRES construction is also associated with greater entry of informal Islamic schools. The effects are stronger for Qur'anic study schools (panel f) than for Islamic boarding schools (panel e). Entry of the former ratchets upwards around the time when SD INPRES students would have acquired sufficient reading skills to engage with the Qur'an (2nd or

[17] This procedure (i) estimates fixed effects using untreated observations (i.e., villages with no SD INPRES entry from 1973 to 1978), then (ii) imputes untreated outcomes for treated observations, and finally (iii) computes estimates of γ_τ parameters as weighted averages over the differences between actual and imputed outcomes.

[18] The immediate Islamic elementary response, within a year of SD INPRES being built, is consistent with the very short time required to establish an Islamic school at that level through the use of informal financing (see Appendix C for examples).

3rd grade). This is consistent with the common practice of attending SD INPRES in the morning and Qur'anic study school, *madrasa diniyah* (MD), in the afternoon. Moreover, at the local level, formal elementary MI and informal MD appear to be substitutes: the post-INPRES entry dynamics are mirror images across panels (a) and (f), and 86% of the MD entering from 1973–78 were built in villages without any MI construction, while 91% of the entering MI were built in villages without any MD construction.

Panels (c) and (d) of Table 2 summarize the graphical evidence in a single DID estimate consistent with the district-level results in panels (a) and (b). These village-level results hold using the standard DID (panel c) and Borusyak et al. (2024) estimators (panel d), which suggests limited bias due to time-varying heterogeneity (see also Appendix Figure A.3).[19] Overall, these findings suggest that SD INPRES did not displace Islamic schools but instead increased options for both secular and religious education.

Islamic and Other School Entry. While other types of schools may have also entered in response to SD INPRES, the Islamic sector's response appears distinctive and confrontational. In Appendix Figure A.2, we consider the district-level entry of private non-Islamic schools, of which there are 41,969 as of 2019. Some of these secular schools enter in response to SD INPRES, but their entry responses appear relatively muted at each instruction level.[20] Appendix Figure A.4 provides further, village-level evidence of distinctive entry by primary *madrasa* when compared to private non-Islamic primary schools.

Alongside these dynamics at the primary level, more secular junior secondary schools entered markets with greater SD INPRES construction (Appendix Figure A.5). Combined with our earlier findings, these results suggest efforts by the three sectors—Islamic, private non-Islamic, and state—to meet the rising demand for secondary education. Yet, such efforts largely took place in distinct markets, avoiding the local confrontation seen at the primary level: among villages with any SD INPRES construction, the correlation between subsequent construction of Islamic and public (private) junior secondary schools is 0.04 (0.05). Put simply, there was enough excess demand for junior secondary education that the Islamic sector could avoid head-on competition with the state while still growing its aggregate market share.

3.2 Financing New Islamic Schools

How did the Islamic education sector finance its expansion in the aftermath of SD INPRES? For decades, private Muslim actors, both individuals and organizations, funded schools through *waqf* endowments (Bazzi et al., 2020). In addition to endowing as *waqf* the land on which Islamic schools are built, Muslims in rural areas also endow agricultural land and regularly offer harvest revenue to support religious infrastructure (see Section 2.1). Given this common practice, large swings in commodity prices might affect charitable giving. Fortuitously for Islamic leaders, the initial year of SD INPRES coincided with a large spike in the price of rice, Indonesia's main agricultural commodity.[21]

[19] Appendix Table A.5 shows that the Borusyak et al. (2024) estimates are robust to removing time-varying controls, using a shorter panel window spanning 1968–83, and clustering standard errors by district.

[20] Moreover, the downward pre-trend in panel (a) might suggest that SD INPRES did crowd out non-Islamic primary schools built before the program. This stands in stark contrast with the corresponding estimates in Figure 2: unlike their secular counterparts, Islamic schools proved resilient against the mass entry of public elementary schools.

[21] Prices increased by 280% from 1972 to 1973 and remained unprecedentedly high for the remaining years of the 1970s (see Appendix Figure A.6). Although many rice farmers are net consumers, larger, net producers are those most likely to con-

Using granular village-level data, we show that these informal financing mechanisms may have helped catalyze and sustain the Islamic sector response to SD INPRES. In Table 3, we examine the role of *waqf* endowments as well as exposure to the 1970s rice price boom in supporting Islamic school construction. We estimate these heterogeneous effects using the following balanced panel specification:

$$y_{vt} = \theta_v + \theta_t + \beta_0 \text{INPRES}_{vt} + \beta_1(\text{INPRES}_{vt} \times \text{rice yield}_{v0}) + \beta_2(\text{INPRES}_{vt} \times \text{waqf}_{v0}) + (\mathbf{X}_v'\boldsymbol{\theta}_t)\boldsymbol{\eta} + \varepsilon_{vt}, \quad (3)$$

where the *rice yield* funding proxy is based on a time-invariant and standardized measure from FAO-GAEZ and averages over dry and wet rice yields (we construct a dummy equal to 1 if a village has a value of potential rice yields above the sample median), and the *waqf* funding proxy is constructed using data on land endowed in mosques as of 1960 (we construct a dummy equal to 1 if the district has *waqf* endowments above the sample median). The specification is otherwise based on the DID analogue of equation (2), with additional controls, in $\mathbf{X}_v'\boldsymbol{\theta}_t$, for year FE interacted with the two funding proxies.

Table 3 reveals stronger entry responses in villages with greater capacity to fund new Islamic schools. Villages with more *waqf* endowments and higher potential rice yield exhibit a greater likelihood of building an Islamic school of all types and at all levels after the construction of SD INPRES. Overall, these results point to a mobilization mechanism whereby local institutions and resources enabled the Islamic sector to compete with the rapidly expanding state sector.

Robustness and Validation Checks. Additional evidence supports our interpretation of these results. First, the heterogeneous response to public primary school entry does not similarly arise in other periods (1960–68 or 1990–98, Appendix Table A.7) when the relationship between Islamic leaders and the regime was less conflictual *and* when rice prices were lower.[22] Second, during the SD INPRES era, entry of non-Islamic private schools did not vary systematically with *waqf* prevalence (Appendix Table A.8). Third, Islamic school entry is not primarily driven by large-NGO-affiliated schools (Appendix Table A.9).

In further support of a local financing channel, we find that informal private contributions may have sustained the Islamic sector response to SD INPRES. Appendix Table A.10 reports higher rates of informal taxation to finance educational infrastructure in villages with Islamic schools built in this period. Such rates do not vary and may, in fact, be lower in villages with public schools built at that time. These associations, based on survey data from 2007–13 (see Olken and Singhal, 2011), are consistent with religious schools relying more heavily on private funding and faith-based charitable giving.

Finally, we find suggestive evidence of resource constraints as informally-financed religious schools crowd out other local public goods. Appendix Table A.10 reveals crowd-out of non-religious goods: in villages with Islamic schools, informal taxation to finance schools (and houses of worship) crowds out informal financing of roads and bridges. Appendix Table A.11 reveals crowd-out of other religious goods: in districts with greater SD INPRES construction, Islamic schools comprise a larger share of total

tribute large sums to fund local religious infrastructure and to endow *waqf* properties. Even small net consumers may have contributed to such infrastructure: we encountered several Islamic school founders describe a so-called "cash *waqf*" wherein villagers offer very small contributions out of agricultural income to support local Islamic schools (see Appendix C).

[22] The rice-price-shock mechanism is also broadly consistent with rice-growing areas having a more collectivistic culture that enables faster community-based mobilization in response to shocks (Geertz, 1963; Talhelm et al., 2014).

waqf-endowed land as of 2019, and this comes at the expense of mosques.[23] In sum, SD INPRES induced greater mobilization of *waqf* resources to support an expansion of religious schooling, and, in prioritizing education, the Muslim community partially crowded out other *waqf*-based religious public goods.

3.3 Curriculum Differentiation and Formalization

In response to SD INPRES, Islamic schools could have shifted their curriculum or pedagogy in a more secular direction to attract a larger student base. This section shows how the Islamic education sector adjusted along these margins. We first study curriculum changes using an online registry of schools, called *Sistem Informasi Aplikasi Pendidikan* (SIAP), which provides hour-by-hour timetables for *madrasa* during the 2018–19 school year. While the data cover nearly 20% of *madrasa*, secular schools do not report to SIAP, in large part because those schools offer much more standardized curricula, leaving little scope for marketable differentiation.[24] The timetables provide a unique window into the learning environment at Islamic schools. Our main interest lies in time allocated to (i) Islamic subjects, including Arabic language and literature, (ii) *Pancasila* and civic education, and (iii) Indonesian language and literature.

Curriculum Responses. We estimate an unbalanced panel analogue to equation (1) where each outcome is a mean curriculum subject share among all entering *madrasas*. Since we only observe a single cross-section of curriculum timetables, we construct a retrospective panel of mean curriculum subject shares at the district×grade×year level, using information on each school's year of establishment. The estimates identify differences in long-run curriculum between *madrasa* built before and after SD INPRES, across markets with varying INPRES intensity. Table 4 shows that Islamic schools created in high-INPRES districts after 1972 provide, if anything, more religious content. Each additional SD INPRES is associated with a 1.2 percentage point (p.p.) increase in the share of classroom time devoted to religious content among newly created Islamic schools (panel a, column 1), with increases of 1.3 p.p. and 2.4 p.p. at the primary and junior secondary levels, respectively (panel a, columns 2–3). These are sizable effects relative to curriculum among schools built before 1972, e.g., the 2.4 p.p. increase equals 9% of the mean and 82% of the standard deviation. We find similar effect sizes for Arabic instruction (panel b). Appendix Table A.12 (panels a and b) shows that these patterns hold for total instruction hours.

The estimates in panels (c) and (d), albeit noisy, suggest that some of the increase in religious content at the junior secondary level comes at the expense of *Pancasila*/civic education and national language (*Bahasa Indonesia*) instruction. At the primary level, there is limited scope to observe substitution with these two subjects given the generic curriculum structure wherein these are subsumed under a catch-all "thematic" subject matter. In our data, very few Islamic primary schools report dedicated hours for *Pancasila*/civic education, *Bahasa Indonesia*, mathematics or science on their timetables. At that level,

[23] These results are based on administrative data from the Indonesian *Waqf* Board, which provides detailed breakdown of the type of infrastructure but does not provide reliable measures of the time at which the *waqf* was founded.

[24] These data provide a long-run snapshot of curriculum for schools entering in different years. A school's curriculum is closely attached to its ideology, which arguably has persistent features tied to the identity of founders. Given the legacy of conservative schools' opposition to state oversight, we suspect that the *madrasa* included in SIAP are those with less Islamic content. This could work against our findings if such selective reporting varies with INPRES intensity. Yet, we find no evidence of differential reporting: *madrasa* created after 1972 in high-INPRES districts are no more or less likely to report to SIAP.

the increase in Islamic and Arabic instruction may partly be accommodated by an increase in instruction hours (Appendix Table A.12, panels a–b). At the senior secondary level, we find different patterns where SD INPRES is associated with a reduction, albeit statistically insignificant, in Islamic content and an increase in both Arabic and *Pancasila* instruction (panels a–c, column 4). This hints at a possible specialization of senior secondary Islamic schools aimed at capturing junior secondary graduates intent on continuing to non-Islamic universities and who did not acquire the necessary skills in testable subjects until reaching that level. Appendix Table A.13 supports this line of reasoning: the slight decrease in the Islamic subject share at that level helps accommodate instruction of mathematics and humanities (panels a and c, column 4), in addition to Arabic.

Although curricular outcomes are only measured in 2019, these findings nevertheless suggest that, over the long run, Islamic schools did not converge to secular school curricula in response to state competition. If anything, the results are consistent with Islamic schools introducing more religious curricula in order to attract students from more conservative families as options for secular education become more pervasive locally. Appendix Table A.14 supports this interpretation by showing, especially at the secondary level, a stronger curriculum differentiation response in markets with greater historical support for conservative Islam (proxied by Islamic political party vote shares in the 1950s).

Using the curriculum data and school names, we further construct a proxy for the religious ideology of all schools in the country. School names reflect a key branding decision by school founders and provide a window into ideology in the contemporaneous historical era. We first identify 100 common words or acronyms appearing in the names of Islamic schools.[25] We then regress total hours of Islamic content or the curriculum share dedicated to Islamic subjects on a vector of dummy variables indicating whether the school name contains a given word, interacted with the instruction level and province dummies. To avoid overfitting, we select a subset of these covariates using a ridge shrinkage estimator. We then predict the ideology of schools for which we do not observe actual curriculum using the penalized coefficients estimated in the previous step, combined with information on school names. Finally, we estimate a specification analogous to that in Table 4, now using the standardized religious ideology of all entering madrasas in a given district–year as the dependent variable. Appendix Table A.15 shows that Islamic schools entering high-INPRES districts after the program onset have a more religious ideology, based on this approach. While suggestive, these findings further indicate that the new *madrasa* built after SD INPRES did not offer a more secular educational approach to compete with state schools.

Formalization of the Islamic Sector. The above analysis focuses on *madrasa*, the main type of Islamic schools in operation today. However, *pesantren* also played a major role within the Islamic school system historically. After SD INPRES, these informal schools continued to enter systematically (see Section 3.1), while the newly built *madrasa diniyah* offered extracurricular religious instruction in communities where young children were now spending most of their day in secular public schools.

While informal religious education expanded in high-INPRES markets, formal religious education

[25] This list includes Arabic words such as *nur* ('light'), *ulum* ('knowledge' or 'science'), *huda* ('guidance' or 'right path'), *maarif* ('knowledge'), *hidaya* ('guide' or 'leader'), *falah* ('success') and *salam* ('peace') as well as Islamic concepts such as *islam* or *islamiyah*, *salam*, *sunnah*, *umma*, *mujahidin*, and *salafiyah*.

expanded even faster. Figure 5 shows that these markets saw growing influence of *madrasa* at the expense of the more informal *pesantren* and *diniyah*. Among entrants, the share of *madrasa* was relatively lower in high-INPRES districts during the height of the program in the late 1970s. By the early 1980s, however, formal *madrasa* entry outpaced non-Islamic school entry. The reverse is true for informal Islamic schools. Appendix Table A.6 corroborates this set of results: *madrasa* entry increased as a share of all new school entry (column 1), while the entry of informal Islamic schools (*pesantren* and *diniyah*) declined as a share of all new schools (column 2) and all new Islamic schools (column 3).

Unlike *pesantren*, the formal *madrasa* are organized along the same primary-to-secondary trajectory as state schools. This ensures progression across grade levels and allows for switching between public and religious schools, providing option value to moderate but still religious parents.[26] The ability of the newly entering *madrasa* to introduce more religious curriculum than incumbent *madrasa* ensured that the gradual formalization of the Islamic sector did not come at the expense of religious instruction.

4 Religious School Choice

This section explores dynamics of religious school choice, offering an individual-level perspective on the changes in education markets uncovered in Section 3. First, we show that changes in Islamic school choice closely align with the Islamic sector entry response to SD INPRES. Second, we identify heterogeneous effects across genders and across regions that are consistent with Islamic schools providing a differentiated educational option after SD INPRES.

4.1 Religious Schooling Response to SD INPRES

Survey Data on Schooling. We measure Islamic school attendance and other information on education status using six rounds of the National Socioeconomic Survey (*Susenas*) from 2012–18. These surveys report breakdowns of *madrasa* and secular education as well as information on birthplace, which is needed to identify childhood exposure to SD INPRES. *Susenas* does not record informal (*pesantren*) Islamic education, and it only identifies school type for the final level of attainment and hence misses switching across Islamic and secular schools. We revisit this in robustness checks below, where we also use the Indonesia Family Life Survey (IFLS) for validation. The IFLS is a longitudinal survey spanning 1993 to 2014, which, unlike *Susenas*, records schooling type for each year of education. However, the IFLS has limited geographic scope, which complicates analyses of policies with spatial variation like SD INPRES.

Estimating Exposure Effects. We identify effects of SD INPRES on religious school choice as follows:

$$y_{ijt} = \theta_j + \theta_t + \beta(\text{INPRES}_j \times young_{it}) + (\mathbf{X}_j'\boldsymbol{\theta}_t)'\boldsymbol{\eta} + \varepsilon_{ijt}, \tag{4}$$

where y_{ijt} is a schooling outcome for individual i born in district j in year t. We examine Islamic school exposure irrespective of one's final education level and, separately, conditional on completing a given

[26] Hefner (2009) provides examples of *pesantren* leaders that built formal *madrasa* on *pesantren* grounds in order to attract families who were averse to the informal, religion-centric *pesantren* curriculum but open to the *madrasa* alternative to state schools.

level. $INPRES_j$ is measured as either (i) SD INPRES schools constructed per 1,000 children from 1973–1978, in the DID estimation, or (ii) an indicator for districts above the 51st percentile in SD INPRES construction, in the SDID; $young_{it} = 1$ for individuals aged 2–6 in 1974 and zero otherwise; θ_j and θ_t are district and cohort FE, respectively; and $\mathbf{X}_j'\boldsymbol{\theta}_t$ includes cohort FE interacted with the same set of variables as in equation (1) with baseline Islamic schools measured as of 1957, the birth year of the oldest comparison cohort. As in equation (1), we control for the INPRES targeting variables to ensure that correlates of the initial enrollment levels used to determine SD INPRES intensity are not driving the effects of the program on religious school choice. Like Duflo (2001), we compare individuals aged 2–6 (i.e., those born between 1968–72) with those already of school age, but no older than 17 when the program began. In the DID estimation, we exclude partially exposed cohorts, aged 7–11 in 1974, as in Duflo (2001). In SDID, these cohorts are used in the construction of the synthetic control group.[27]

Table 5 reports the effects of SD INPRES on *madrasa* attendance. Panels (a) and (b) report DID and SDID estimates, respectively. The outcomes equal one if the respondent's highest level of education is Islamic primary (column 1), junior secondary (column 2), senior secondary (column 3), or any Islamic (column 4). SD INPRES pulled students away from primary *madrasa* and pushed them towards non-Islamic schools. Among cohorts aged 2–6 in 1974, one additional SD INPRES reduces the likelihood of Islamic primary by 7% (column 1). At the secondary level, Islamic schools absorbed some of the increased demand for post-primary education (columns 2 and 3). Together, these effects combine to a net increase in exposure to Islamic education: each additional SD INPRES increased the likelihood of attending an Islamic school by roughly 5% (column 4).[28]

Time-Varying Effects. These exposure effects are even clearer when looking across cohorts. Figure 6 reports cohort-specific Islamic school completion rates separately for high- and low-INPRES districts, and Figure 7 reports cohort-specific β from equation (4). In both cases, we see SD INPRES leading to a shift away from Islamic primary schools and towards Islamic secondary schools, both in the short (panels a, c, and e) and medium run (panels b, d, and f).[29] The effects grow steadily for younger cohorts, including those born during and shortly after the SD INPRES era. This is consistent with later cohorts having greater opportunity to attend newly built Islamic schools as the religious sector, especially at the secondary level, expanded significantly in the early 1980s in high-INPRES areas (see Figures 2–4).

Islamic School Graduation Shares. One concern with the outcomes in Table 5 is that the likelihood of completing an Islamic education could be increasing simply because SD INPRES increases overall education. Thus, in Table 6, we look at Islamic schooling conditional on graduating with a degree at the given level of education (primary, junior secondary, and senior secondary). These measures capture the share of Islamic graduation at each level and help clarify that the results in Table 5 are not driven solely by the INPRES-induced increase in overall education. Table 6 shows that the same patterns hold in this

[27] Our core sample comprises 275 districts based on boundaries at the time of SD INPRES in the 1970s. Duflo (2001) reports 283 districts based on boundaries in 1995, by which time four districts from the 1970s had split in two.

[28] These results are driven in part by those moving from public elementary to Islamic junior secondary. *Susenas* allows us to observe a subset of these transitions, namely for those that attend but do not graduate from Islamic junior secondary. Appendix Table A.17 shows that indeed SD INPRES increased the likelihood of such transitions.

[29] The corresponding graphical evidence for the SDID estimates can be found in Appendix Figure A.7.

conditional specification: students shift out of Islamic schools at the elementary level (column 1) and into junior secondary Islamic schools (column 2). The effects on senior secondary Islamic are weaker (column 3), perhaps because these schools are less differentiated on Islamic curriculum (Table 4). The net effect across instruction levels is an increase in the likelihood of graduating from an Islamic school (column 4). Here, too, the standard DID (panel a) and synthetic DID (panel b) agree, with few exceptions.

Accounting for Selection. SD INPRES increased total years of education *and* Islamic schooling.[30] Tables 5 and 6 suggest that these outcomes are jointly determined: greater schooling brings more opportunities for exposure to Islamic schools. Framed as a selection issue, only those continuing to secondary education have the potential to attend Islamic secondary schools. If those continuing on are more religious, this could introduce bias. Panels (c) and (d) of Table 6 address this type of selection bias.

We consider parametric (Heckman, 1976) and semiparametric (Newey, 2009) selection-correction procedures. First, we estimate the likelihood of completing a given level of education. Second, we estimate the likelihood of completing Islamic education for those reaching that level. The second-step includes selection-correction terms. In the Heckman (1976) case, this is the inverse Mills ratio. In the Newey (2009) case, this is a series approximation to the true correction term; in practice, we use a cubic polynomial in first-step probabilities based on flexible covariates (i.e., taking quintiles in each continuous regressor, interacted with cohort FE).[31] Key to both strategies is the exclusion from the second stage of at least one variable correlated with grade completion but otherwise unrelated to Islamic school choice. For this purpose, we rely on measures of exposure to a pilot compulsory schooling program in the 1960s.[32] This program shifted demand for education just prior to SD INPRES and was not systematically related to predetermined Islamic schooling or correlates thereof (see Appendix Table A.20).

The selection-adjusted estimates in panels (c) and (d) of Table 6 are in line with the unadjusted estimates in panel (a). Some of the estimates are larger (and noisier), but overall the magnitudes and signs are consistent, especially at the elementary and junior secondary level. Together, the selection-adjusted estimates approximately identify a local average treatment effect of INPRES exposure on Islamic schooling among compliers, namely children who received additional education as a result of the policy. For those induced to reach elementary school, this meant less exposure to Islamic education (column 1), but for those induced to go beyond elementary, SD INPRES increased the likelihood of attending Islamic junior secondary (column 2). This is again intuitive and in line with the newly built Islamic secondary schools absorbing excess demand for continued education among new primary graduates.

[30] Column 1 of Table A.22 shows that each SD INPRES increased years of schooling by 0.13 years. The male-specific estimate of 0.18 in panel (b) of Table 7 lies between the range of estimates in Duflo (2001)—0.12 to 0.19—based on the 1995 *Supas* data. Appendix A.5 additionally shows that in markets where elementary *madrasa* also entered, the two types of schools acted as substitutes in increasing total years of education.

[31] We select the polynomial order based on consistency results in Newey (2009), which imply an upper bound of 3 on the order of the approximating power series in a sample with effective size of 275 (i.e., the level of policy variation). We conduct inference with a percentile-t bootstrap shown to work well with two-step selection estimators (Yamagata, 2006).

[32] This compulsory primary education (*Wajib belajar*) pilot program, which applied to children aged 8 to 14, was rolled out in 35 pilot districts in the late 1950s and early 1960s (Sarumpaet, 1963). We identified in government reports from 1958–1960 the 35 affected districts. In the first step of the selection-correction procedure, we include interactions of cohort FE with the extensive and intensive margin (total teachers and schools allocated) of the program in respondents' district of birth. Appendix Tables A.2 and A.19 show that our results on Islamic school entry and choice, respectively, are robust to these controls as well.

Robustness Checks. We further address remaining identification concerns. First, we account for district-specific factors correlated with SD INPRES intensity and latent potential for Islamic schooling. Recall that cohort FE interacted with Islamic schools in 1957 are already in our baseline specification. In Appendix Table A.19, we also include interactions of cohort FE with proxies for the potential strength of the Islamic sector prior to SD INPRES (see the discussion of Appendix Table A.2). With a few minor exceptions, the key finding of increased Islamic school choice in high-INPRES regions remains. In this table, we additionally report results obtained after adding fifteen cohorts to the exposure group, covering one generation of students born between 1968—87 who were exposed to the Islamic sector response to SD INPRES. As expected, we find slightly larger effects on Islamic school choice among these cohorts.

Second, we show that SD INPRES was not systematically allocated towards districts with differential trends in Islamic schooling. Figure 7, described above, shows little indication of systematic pre-trends in Islamic school attainment and, moreover, exhibits an intuitive S-shaped exposure curve across cohorts. Thus, although the state built more SD INPRES in districts with more Islamic schools, they did not target areas where Islamic school choice was already growing faster.

Finally, we address measurement error in Islamic school choice reported in *Susenas*. Appendix Table A.16 shows that exposure to Islamic schooling is considerably higher in other sources.[33] There are three reasons why the *Susenas* data may lead to underestimates of SD INPRES effects on Islamic education. First, *Susenas* indicates whether the highest graduation level and/or the final year of education took place in a *madrasa*, thus missing Islamic school attendance earlier in one's educational life. Second, *Susenas* does not allow respondents to indicate *pesantren* education. Third, many students attend state schools in the morning and *madrasa* in the afternoon while, for enumeration purposes, only the former is official. Given that informal Islamic schools also entered to compete with SD INPRES (see Section 3.1), our estimates likely provide a lower bound on the total effect of SD INPRES on Islamic school choice.[34]

As a validation exercise, in Appendix Table A.18, we estimate the effects of SD INPRES in the IFLS. Unlike *Susenas*, the IFLS reports the type of education completed at every level. SD INPRES decreased the likelihood and total years of Islamic elementary (columns 1 and 3, respectively) and increased the likelihood and total years of Islamic junior secondary (columns 2 and 4, respectively). Although noisy given the coverage limitations of IFLS, these results mirror those in *Susenas*.

4.2 Heterogeneous Preferences and Religious Education

Heterogeneous preferences may play an important role in shaping religious school entry and individual school choice. We characterize here two important sources of heterogeneity in gender norms and religious ideology, both of which speak to salient cultural divides in many societies.

Gender. Parents from more conservative families may have been reluctant to send their daughters to secular INPRES schools, while Islamic schools, which adopt more conservative approaches to gender

[33] In the IFLS, Islamic education rates range from 11% in primary to 23% in junior secondary (20% overall). Administrative enrollment records for 2019 show rates ranging from 13% in primary to 23% in junior secondary (21% overall).

[34] The strong *pesantren* entry results in Section 3.1 make it unlikely that the growth in *madrasa* enrollment arose through an absolute decline in *pesantren*. Although individual-level *pesantren* attendance data does not exist, we can show, using registry data, that *pesantren* entering in response to SD INPRES enroll more students in the long run (see Appendix Figure A.8).

relations at school, could have been viewed as an acceptable alternative.[35] These gender norms became especially salient when the Suharto regime banned the Islamic veil (*hijab*) in public schools in the early 1980s, in a context of heightened tensions around veiling following the Iranian Revolution. A 1982 MEC regulation standardized the use of school uniforms, which amounted to a crackdown on veiling (see Jo, 2020; Shofia, 2020, and the illustration in Appendix Figure A.9). School-aged women who veiled thus faced a choice between transferring to a *madrasa* or dropping out of school.

In Table 7, we examine school choice outcomes separately by gender. We also introduce in our sample fifteen student cohorts born between 1973 and 1987, and we distinguish between women who would have completed their primary education before the veil ban, namely the cohorts born between 1968–72, and women who would still have been enrolled in school by the time the ban came into force, namely those born after 1973. Thus, our exposed cohorts in this table include boys and girls allocated to two groups: those born between 1968–72 and those between 1973–87. We interact our previous measure of SD INPRES exposure with a gender dummy and with two indicators for either age group. This provides a test of heterogeneous effects by gender, separately for women who were exposed or not exposed to the veil ban. Note that the effects of SD INPRES on boys' outcomes may also differ across those two age groups: the later cohorts from 1973–87 were exposed not only to the initial public school expansion but also to subsequent responses by the Islamic sector, which unfolded over several years.

The results in Table 7 are intuitive. First, SD INPRES-exposed boys of all cohorts are less likely to complete Islamic elementary (column 2), more likely to complete Islamic secondary (column 3), and more likely to complete any Islamic schooling overall (column 4). However, this effect is much more pronounced when we consider cohorts born sufficiently late to have benefited from the increased Islamic school entry: the point estimate for cohorts born 1973–87 is more than twice larger than that for cohorts born 1968–72. This aligns with the visual impression from the cross-cohort dynamics in Figures 6 and 7 (b, d, f). Second, there is evidence of heterogeneity by gender, but the extent of this heterogeneity varies between women who were affected by the veil ban and those who were not. Female students born between 1968–72 are relatively more likely than male students from those cohorts to complete Islamic schooling at all levels, but these point estimates are not statistically significant (third row, columns 2–4). However, female students born between 1973–87 are significantly more likely to complete secondary Islamic schooling (column 3) and Islamic schooling at any level (column 4). For these cohorts, the additional, differential effect of gender is roughly two thirds of the base effect we measure for boys.

Thus, Islamic schools may have helped address diverse religious preferences and gender norms. These effects are most pronounced after the regime crackdown on Islamic veiling: it is among the cohorts of women exposed to the ban that we find evidence that Islamic schools, which adopt more conservative approaches to gender relations at school, provided an acceptable alternative to secular INPRES schools.

Baseline Ideology. Although 90% Muslim, Indonesia has long been home to diverse views on the role of religion in public life. Beyond gender norms, elections offer another lens on this diversity as we show

[35] An early insight into this possibility comes from Oey-Gardiner (1991), who reports strongly female-biased sex ratios in religious schools and male-biased ratios in public schools, especially at the primary level, in administrative data from 1984–5. She interprets this difference as evidence of more conservative parental preferences for schooling girls than boys. We find a similar sex ratio differential among SD-INPRES-exposed cohorts in our *Susenas* data.

here, again using the 1950s vote share for Islamic parties to proxy for conservative ideology.

In Appendix Table A.21, we find stronger Islamic school choice responses to SD INPRES in districts with deeper historical support for Islamic politics. In districts with one standard deviation higher support for Islamic parties, exposed cohorts are nearly 50% more likely to attend Islamic schools (column 5). This heterogeneity materializes at the secondary level (columns 3–4), which is where we identified the strongest average responses. While Islamic school choice is more affected in these areas, total years of schooling is not (column 1). This is consistent with the conceptual framework in Appendix B: Islamic school construction and curriculum differentiation ensured that religiously conservative parents would have greater scope to educate their children in religious schools as mass public schooling expanded.

5 Mass Schooling and Nation Building

Like most mass schooling reforms, Indonesia's entailed ideological objectives. This section shows that many of these objectives were not fully attained. First, greater SD INPRES construction was associated with reduced electoral support for the Suharto regime in the short run, and this persisted as younger cohorts entered voting age. Second, these market-level electoral shifts went hand-in-hand with individual-level shifts in religiosity and ideology, among exposed cohorts and their children. Together, these results suggest that the equilibrium Islamic sector response (Section 3) and families' schooling decisions (Section 4) may have ultimately worked against the regime's secular nation-building agenda.

5.1 Electoral Impacts of SD INPRES

We explore the political impact of SD INPRES using legislative election results during Suharto's reign (1971, 1977, 1982, 1987, 1992) and after his demise (1999, 2004, 2009).[36] Only three parties were allowed to compete in elections after 1971: Suharto's *Golkar* party, the Muslim umbrella United Development Party (PPP),[37] and the nationalist Indonesian Democratic Party (PDI). As we discuss below, these elections were not fully free and fair. *Golkar* obtained 70% of the vote on average across all elections from 1977–92, while the PPP was the main opposition with 21% of the vote. After 1999, both parties waned in influence as others entered across the ideological spectrum.

We estimate the time-varying relationship between SD INPRES intensity and the *Golkar* vote share in a district×election panel. The 1971 round was the only Suharto-era election before school construction ensued and the first with *Golkar* candidates. As such, we cannot fully account for possible pre-trends in *Golkar* support. However, we can allow for differential trends based on vote shares for key party blocs in 1955 and 1957, the last pre-Suharto elections. Note that cohorts educated in INPRES schools (aged less than 6 in 1974) would have first voted in 1987, but INPRES could also have affected elections in 1977 and 1982 (e.g., through the increased presence of public schools in one's community).

[36] The final election of the Suharto era was in 1997, but we could not obtain district-level records from this round.

[37] In the 1971 election, we capture the Islamic vote share by combining all four Islamic parties that were subsumed in 1973 by regime decree under the PPP: *Nahdatul Ulama* (NU), the Muslim Party of Indonesia (Parmusi), the Islamic Association Party of Indonesia (PSII) and the Islamic Education Movement (Perti). NU was the second-highest ranked party in that election (after *Golkar*) with 18% of the vote.

Figure 8 shows that SD INPRES did not increase electoral support for the regime. Panel (a) shows a marked decline in *Golkar* vote shares from 1971 to 1977 in high-INPRES districts: each additional INPRES school per 1,000 children is associated with a 2.5 percentage point (p.p.) decline in the *Golkar* vote share (relative to the mean of 65% in 1971). This effect persists thereafter and is unchanged when including interactions of election-year FE with the vote share for Communist and Islamic parties in the 1950s elections (panel b). This provides suggestive evidence against pre-trends insomuch as support for *Golkar* in 1971 may be correlated with later school construction and with voting behavior in the 1950s.

The Islamic opposition captured some of the declining support for *Golkar*. We see this for the PPP vote share in absolute terms (panels c and d) and relative to *Golkar* (panels e and f). One explanation is that the Islamic education sector, and its political backers in the PPP, pushed back against secularization, which was most salient in districts with greater SD INPRES construction. The decline in *Golkar* support as early as 1977 is consistent with this pushback.[38] If instead these electoral shifts had been slower to materialize, it would have been difficult to rule out the alternative explanation that INPRES created a more educated and politically conscious citizenry that was simply opposed to the regime.

An important caveat to these results is the reliability of the electoral data from elections held between 1971 and 1992. Appendix Figure A.11 shows the distributions of the total number of votes cast, total *Golkar* votes, and the *Golkar* vote share by district in 1977 and 1982. While there are historical accounts of election tampering and voter intimidation in Suharto-era elections (King, 1992; Liddle, 1978a,b), the relevant concern for our analysis is whether voter fraud was correlated with SD INPRES intensity. To examine this, we construct indicators of suspicious support for *Golkar* and vote tallies. We define districts as having experienced suspicious support for *Golkar* if the *Golkar* vote share is either more than one or more than 1.5 standard deviation above the sample mean in a given election year. We analogously define two measures of suspiciously high vote tallies. Reassuringly, the estimates in Appendix Tables A.25 and A.26 suggest that districts with greater SD INPRES construction between 1973–78 did not experience suspiciously higher (or lower) support for *Golkar* or vote tallies in elections held after the program.

5.2 National and Religious Identity

The electoral impacts of SD INPRES were accompanied by deeper cultural changes. Table 8 reports cohort-level exposure effects on dimensions of secular national (panel a) and religious (panel b) identity.

We first examine a standard marker of attachment to the national identity in multilingual countries: the use of the national language at home. This is distinct from speaking ability. In the 2010 Census, nearly 90% of Indonesians can speak *Bahasa* Indonesia, but only 20% use it as the main language at home, reflecting greater attachment to national as opposed to ethnic or religious identity (see Bazzi et al., 2019, for validation). Column 1 reports null effects of SD INPRES using the exposed versus control cohort

[38] These patterns resonate with insights from the leading scholar of Indonesian elections. Liddle (1978a) suggests that the Islamic school system played an important role in shaping electoral outcomes, especially after the 1971 election when "*Golkar* had had a strongly anti-Islamic image." During the 1970s, both *Golkar* and the Islamic opposition parties fought for the hearts of minds of religious voters by mobilizing Islamic school teachers, who had long been a mainstay of political Islam in Indonesia, dating to the important role they played in the 1950s elections. The backlash interpretation of Figure 8 is consistent with stronger counter-mobilization to *Golkar* in high-INPRES districts where the affront to religious schools was more salient.

design (equation 4). Behind this null lies a religious divide: 15% of Muslims prefer using Indonesian at home compared to 28% of non-Muslims.[39] Among Muslims, exposed cohorts are less likely to use *Bahasa* Indonesia at home (column 2), while non-Muslims exhibit a smaller response (column 3). These weak, and even negative effects are striking given that INPRES schools aimed to promote a single Indonesian identity built around one language. Although SD INPRES increased Indonesian proficiency (Appendix Table A.23, columns 1–3), it did not increase vernacular attachment to the national language.

For those exposed to Islamic education, immersion in *Bahasa* Indonesia (or Indonesian) may have been crowded out by Arabic study. Table 4 showed that schools created in high-INPRES districts after 1972 devote more classroom time to Arabic and less to Indonesian. Table 8 shows that SD INPRES increased Arabic knowledge among exposed cohorts (column 4), driven by those with some Islamic education (two-thirds of whom report Arabic literacy, compared to one-third with secular education).[40] While SD INPRES increased literacy in the Latin alphabet on which Indonesian is based, it did not do so for other languages besides Arabic (Appendix Table A.23, columns 4–9). This is consistent with the unique role of Arabic among Muslims and the importance of Islamic education in transmitting such knowledge (see Appendix Table A.24 on the strong association of Islamic education with Arabic literacy).

These language shifts align closely with broader changes in piety. In Table 8 (panel b), we look at Islamic practices using a nationally-representative survey conducted in 2008 by Pepinsky et al. (2018). These include praying 5 times a day (column 1), fasting during Ramadan (column 2), reading the Qur'an (column 3), attending Friday prayer (column 4), performing non-obligatory *Sunna* prayers (column 5), joining prayer groups known as *pengajian* (column 6), and paying *zakat* (column 7). Respondents' practices vary widely, e.g., 62% report praying 5 times daily, while only 25% always regularly read the Qur'an. We find positive exposure effects across most measures, and each additional INPRES school is associated with a sizable 19% increase in a mean index across all practices (column 8).

Together, the results in Table 8 suggest that SD INPRES bolstered religious identity, which may have come at the expense of secular national identity.[41] For those attending Islamic schools, this could have occurred through learning Arabic and Islamic thought. For those attending state schools, this could have occurred through greater exposure to Islamic-educated peers in one's community or engagement with the Islamic sector outside formal schooling (e.g., through parental inputs or attendance of *madrasa diniyah* or mosque-based youth groups). We explore some of these mechanisms in the next section.

[39] Using this same data, we find a precise zero effect of SD INPRES on the likelihood of being Muslim: -0.0003 (0.0011).

[40] We switch between sample splitting on religion and on religious schooling across outcomes in panel (a) because *Susenas* does not record religion, and the 2010 Population Census does not report type of schooling.

[41] Appendix Table A.27 shows that SD INPRES had a null effect on support for *Pancasila* (column 1), the secular national ideology advanced through state schools. Although exposure to mass schooling did not deepen support for *Pancasila*, nor did it increase support for conservative Islamist ideology as an alternative. We use several measures of support for Islamist ideology from Pepinsky et al. (2018). Columns 2 and 3 indicate whether individuals report strong or very strong support for Islamic principles to govern public life. The index in column 4 combines these two questions with two others about subjective support for *sharia* law. Column 5 averages across six objective dimensions of *sharia*: corporal punishment for crime, prohibition of interest, mandatory *hijab*, legalized polygamy, stoning for adultery, and death for apostates. Across measures, we find null, albeit also imprecise, effects of SD INPRES on exposed cohorts of Muslim citizens.

5.3 Intergenerational Transmission of Religious Values

Finally, we highlight the role of intergenerational cultural transmission in shaping the legacy of mass schooling. Two generations after Indonesia's landmark policy, one in five students remained enrolled in *madrasa* or *pesantren*. This suggests that the shifts in religious values set in motion by SD INPRES were likely passed on to future generations.

Table 9 examines household-based mechanisms for such transmission, focusing on whether those directly exposed to SD INPRES changed their familial investments in religion as adults. For example, parents might engage in greater religious socialization at home for fear that children would lose religious values in a fast-secularizing society. We explore two main pathways for vertical religious transmission, which, in theory, could either complement or substitute for religious school choice.

First, men exposed to SD INPRES as kids were more likely to marry women educated in Islamic schools (column 1). This could be explained by assortative matching among the religiously educated. It could also be a consequence of the larger effect of SD INPRES on *madrasa* education for girls (Section 4.2). The effects are null for women's marital choice (column 2), perhaps because they face greater constraints (see Rubio, 2014, on arranged marriage). Regardless, the greater presence of religiously educated people in the marriage market could have increased religious transmission to children.

The remaining columns of Table 9 elaborate how such transmission flowed within the household. We proxy for engagement with Islam using the Arabic literacy of parents and children measured in *Susenas*. We saw in Section 5.2 that SD INPRES increased Arabic literacy. In columns 3–4, our dependent variable is a dummy for a father, a mother, and their child all being literate in Arabic. Both paternal and maternal exposure to SD INPRES increase the likelihood that the entire household is literate in Arabic, which is consistent with assortative mating and greater religious transmission. In columns 5–6, we restrict attention to Arabic-literate parents and show that children formally educated in non-Islamic schools are more likely to be literate in Arabic if the parents were exposed to SD INPRES. Although endogenous, this sample restriction provides further suggestive evidence of religious transmission outside the Islamic school system, which might occur, for example, through instruction at home or extracurricular education at the local mosque or *madrasa diniyah*. Overall, parents exposed to mass public schooling ensured, through socialization choices, that their children maintain a strong religious identity.

6 Conclusion

One of the most ambitious educational interventions ever implemented, SD INPRES pursued developmental as well as ideological objectives. A large literature documents the policy's effects on human capital. In contrast, we provide the first comprehensive investigation of its impacts on education markets. As much as the policy itself, competitive responses from the Islamic school system shaped education markets for years to come and also plausibly counteracted the advance of secular nation building.

Our findings point to some surprising and unintended consequences of mass public schooling in the presence of competing religious institutions. The policy failed to crowd out religious schools, as the Muslim community raised funds to build new schools in response to the state's investments. We

find suggestive evidence that over the long run, these new Islamic schools offered more rather than less religious curriculum, and became more formal. These responses ensured that children raised in the Muslim faith continued to gain exposure to formal Islamic teachings. Such responses were particularly beneficial to more conservative families and their daughters, whose education levels may have increased in part due to Islamic schools being a substitute, especially after a ban on Islamic veiling came into force in secular public schools. This allowed many Indonesian families to reconcile the challenges of "modernization" with a strong continued adherence to religious values.

Our paper raises important questions for countries striving to find the optimal mix between centralizing and outsourcing public goods provision. On the one hand, Islamic schools helped the central state cater to heterogeneous preferences for different types of schooling and meet the excess demand for secondary schooling coming from universal primary education. This is reminiscent of the "division of responsibility for education" in diverse societies conceptualized by James (1987a,b). At the same time, the robust response by local Muslim communities illustrates the persistent challenges of centralized policies in settings with limited state capacity. These challenges were already salient during our period of interest in Indonesia: as a leading education expert noted, "the existence of two parallel and relatively independent [school] systems ... poses very real problems for the reform and modernization of education" (Beeby, 1979, pp. 34-35). Similar challenges abound in the uneasy coexistence between the state and informal authorities in many developing countries where dual systems of governance persist.

The challenges associated with such dual systems are especially pronounced in conservative societies where religion provides a strong alternative source of political legitimacy to that of the state. Religious institutions are often perceived as more compatible with local preferences than institutions bequeathed by colonization or Western influence. Organizations that derive legitimacy from strict adherence to religious faith actively compete with central authorities by providing alternative forms of justice, taxation, and service provision. Our paper offers a new perspective on how these competitive frictions unfold, and what they imply for state- and nation-building efforts in diverse societies.

Data Availability Statement. The data and code underlying this research is available on Zenodo at https://doi.org/10.5281/zenodo.15866351.

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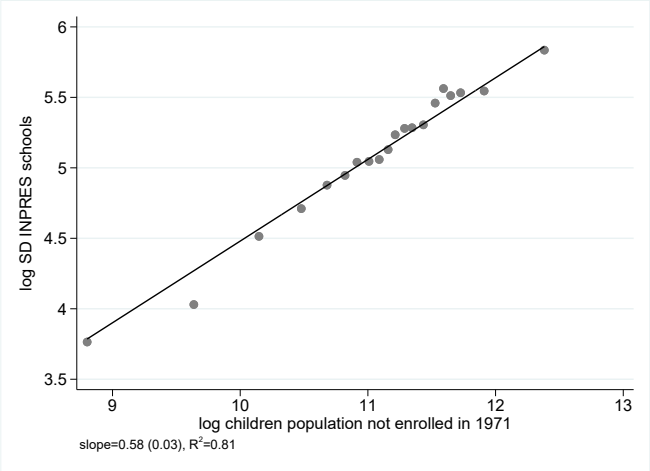
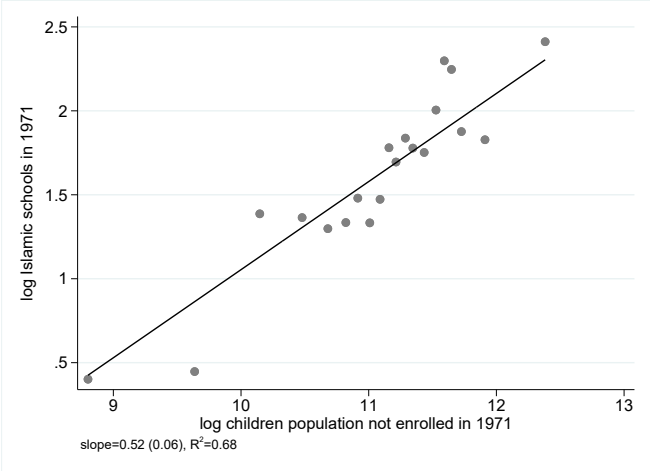
Figures

Figure 1: Targeting of INPRES School Construction

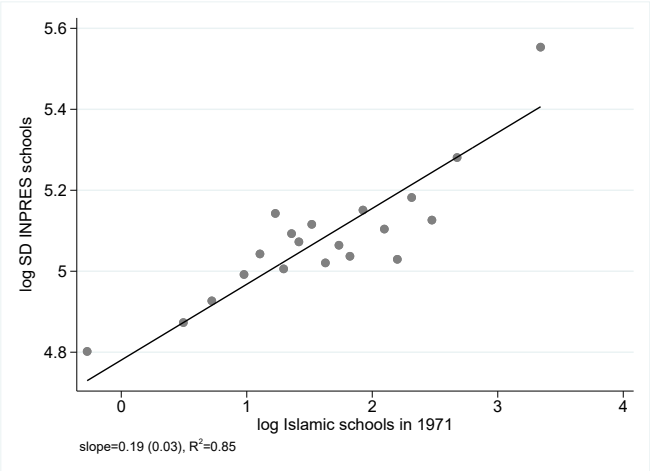
(a) Policy Rule



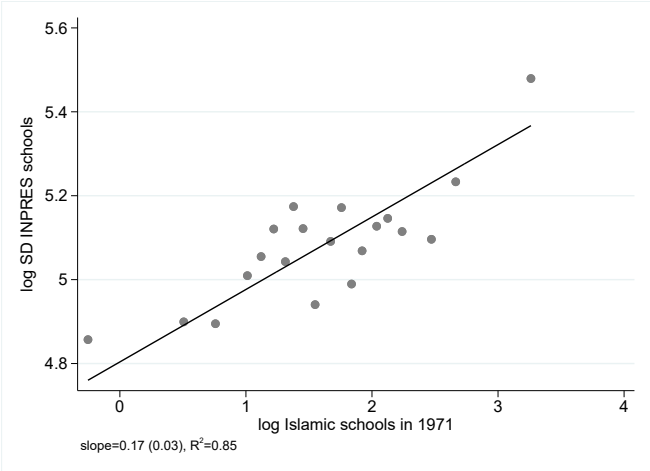
(b) Prevalence of Islamic Schools in Target Areas



(c) SD INPRES and Islamic School Presence

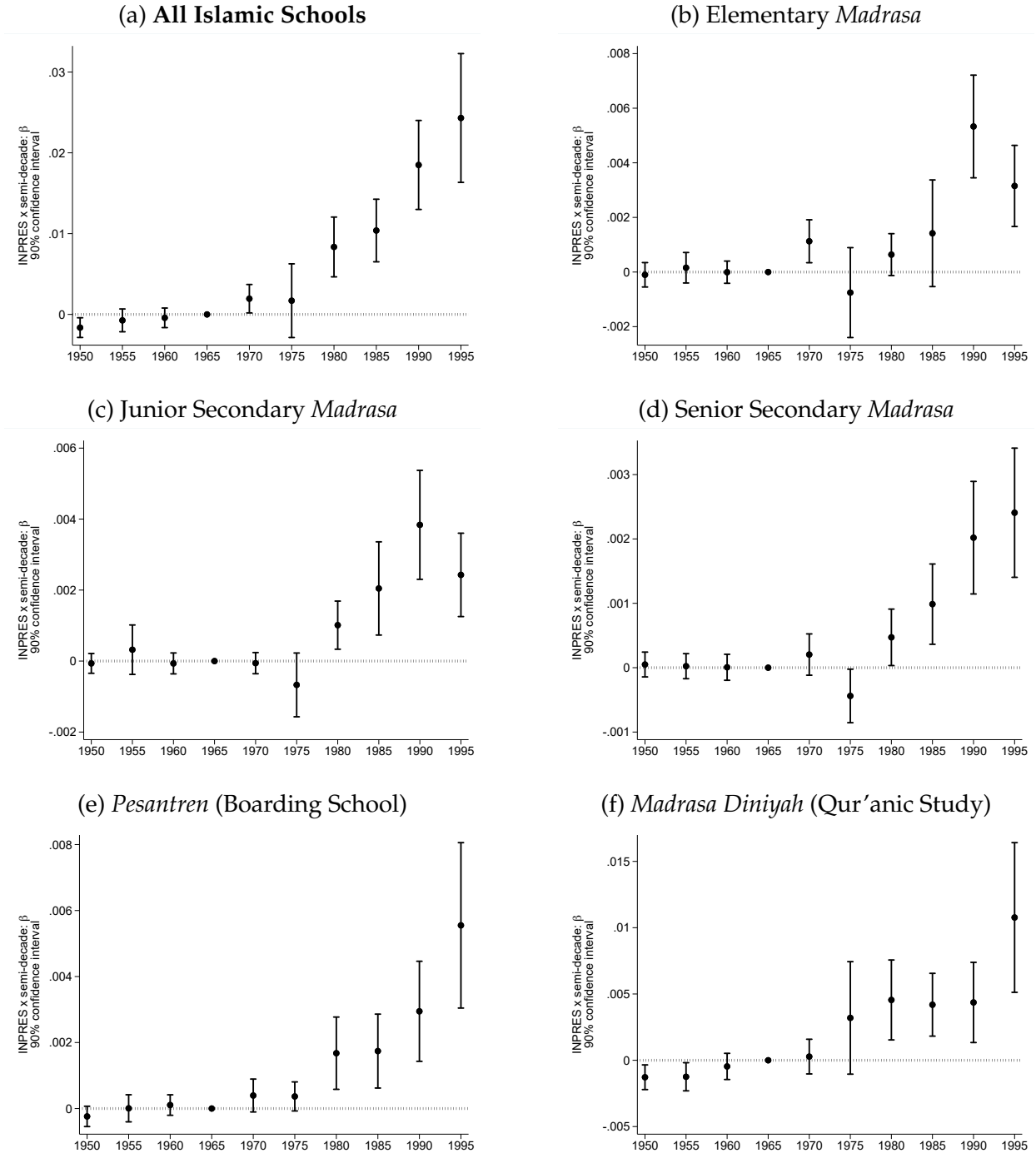


(d) SD INPRES and Islamic School Presence Controlling for Religious Preferences



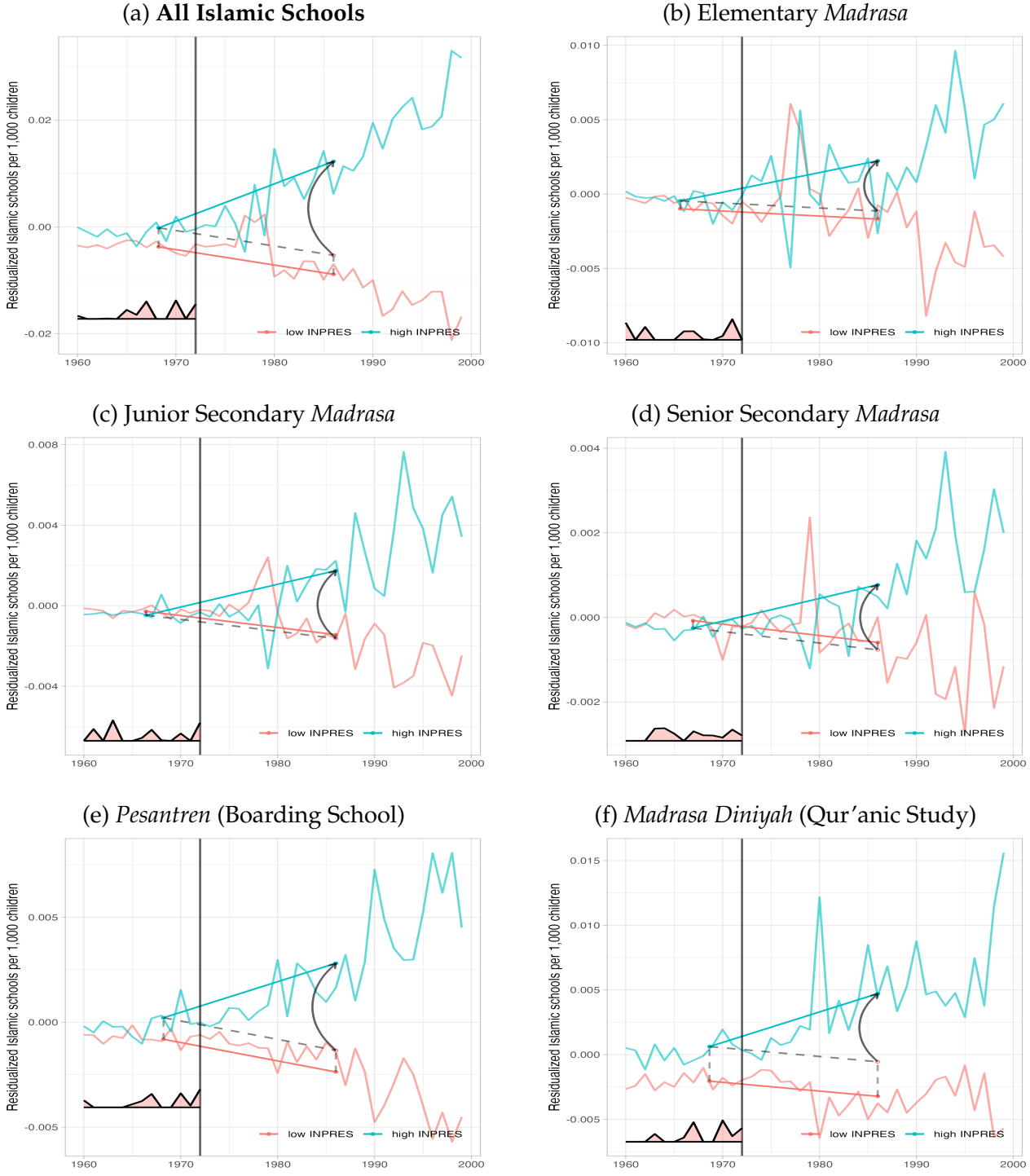
Notes: This figure displays district-level binscatter plots between SD INPRES school construction, the population of children not enrolled in school in 1971, and the baseline presence of Islamic schools (elementary *madrasa* and *pesantren*) measured in 1971. Panel (a) illustrates the government's policy rule: SD INPRES school construction is proportional to the population of children not enrolled in 1971. In Panel (b), we regress the log of Islamic schools in 1971 on the log population of children not enrolled in 1971. In Panel (c), we regress log SD INPRES school construction on the log of Islamic schools in 1971, controlling for the population of children not enrolled and province dummies. In Panel (d), we estimate the same regression controlling for the vote share of Islamic parties in the 1955 and 1957 legislative elections, the last before the Suharto era.

Figure 2: INPRES Intensity and Entry of Islamic Schools
New schools per 1,000 children



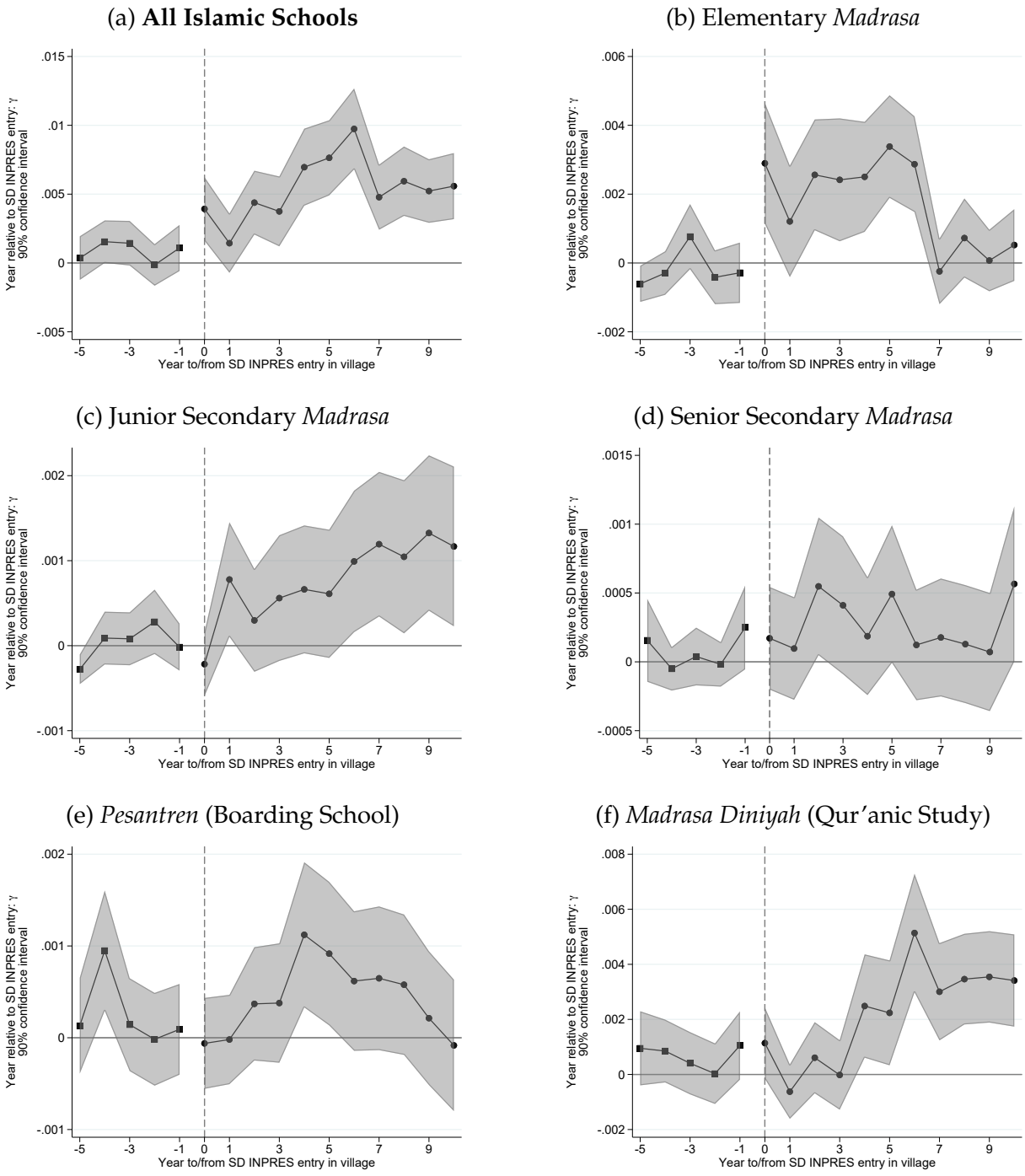
Notes: This figure reports semi-decade-specific estimates of β in equation (1) on a balanced district–year panel. INPRES intensity is defined as the number of SD INPRES schools constructed from 1973–78 per 1,000 children in 1971. The dependent variable measures the total number of Islamic schools (panel a), elementary *madrasa* (b), junior secondary *madrasa* (c), senior secondary *madrasa* (d), *pesantren* (Islamic boarding schools across all levels) (e), and *madrasa diniyah* (Qur'anic afternoon schools) (f) established by semi-decade and by district per 1,000 children in 1971. The 1965–69 period is the reference period given district fixed effects. The dots correspond to the period-specific β, and the bars to 90% confidence intervals with standard errors clustered by district, of which there are 275. All specifications include district fixed effects and year fixed effects interacted with the 1971 children population, the 1971 enrollment rate, district-level exposure to the water and sanitation program, the number of elementary, junior secondary, senior secondary *madrasa* in 1949, and the number of *pesantren* in 1949.

Figure 3: Islamic School Entry: Synthetic Difference-in-Differences



Notes: This figure reports synthetic difference-in-differences (SDID) estimates of the effect of SD INPRES on Islamic school entry at the district–year level from 1960–99. Each figure shows trends in entry of Islamic schools over time for districts above the 51st percentile of SD INPRES intensity ("high INPRES" in blue) and the relevant weighted average of comparison districts below the 51st percentile ("low INPRES" in red), with the weights used to average pre-INPRES time periods at the bottom of each panel (in red). The dashed diagonal line indicates the counterfactual parallel trend, and the arrow indicates the estimated effect. Following Arkhangelsky et al. (2021), we apply the SDID estimator to the residuals from equation (1): $y_{jt}^{res} = y_{jt} - (\mathbf{X}_j'\boldsymbol{\theta}_t)'\widehat{\boldsymbol{\eta}} - \widehat{\theta}_j - \widehat{\theta}_t$, where y_{it} is the total number of Islamic schools (panel a), elementary *madrasa* (b), junior secondary *madrasa* (c), senior secondary *madrasa* (d), *pesantren* (e), and *madrasa diniyah* (f) built per district–year and per 1,000 children in 1971; $\mathbf{X}_j'\boldsymbol{\theta}_t$ includes year fixed effects interacted with the 1971 children population, the 1971 enrollment rate, exposure to the water and sanitation program, the number of elementary, junior secondary, senior secondary *madrasa*, and the number of *pesantren* in 1959.

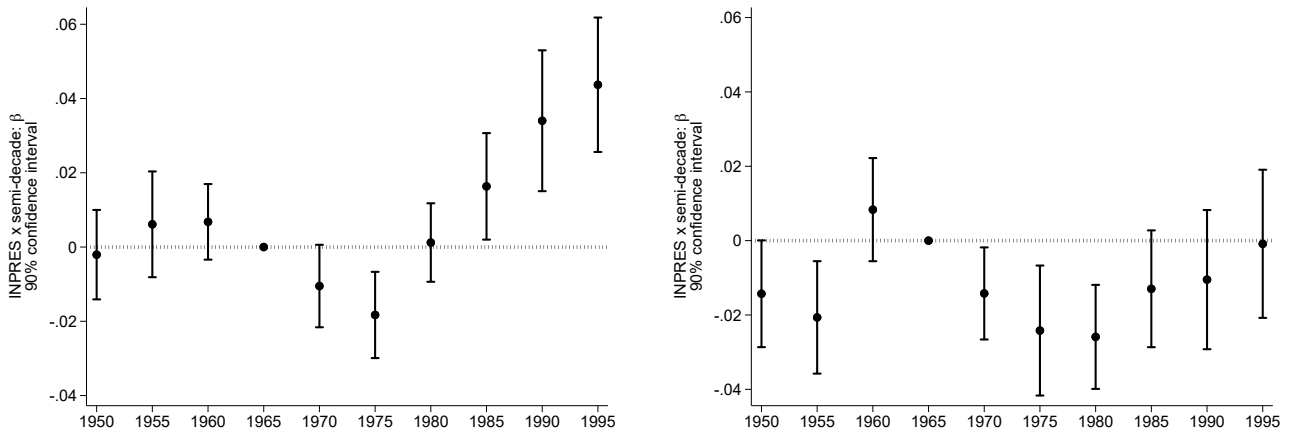
Figure 4: Islamic School Entry at the Village Level



Notes: This figure reports estimates of γ in equation (2) using the robust and efficient estimator from Borusyak et al. (2024) and a balanced panel of villages spanning 1960–99. The dependent variable measures the total number of Islamic schools (panel a), elementary *madrasa* (b), junior secondary *madrasa* (c), senior secondary *madrasa* (d), *pesantren* (e), and *madrasa diniyah* (f) established per village–year. All specifications include village fixed effects and year fixed effects interacted with the number of secular elementary schools and Islamic schools in the village as of 1959. The gray shading corresponds to 90% confidence intervals with standard errors clustered by village.

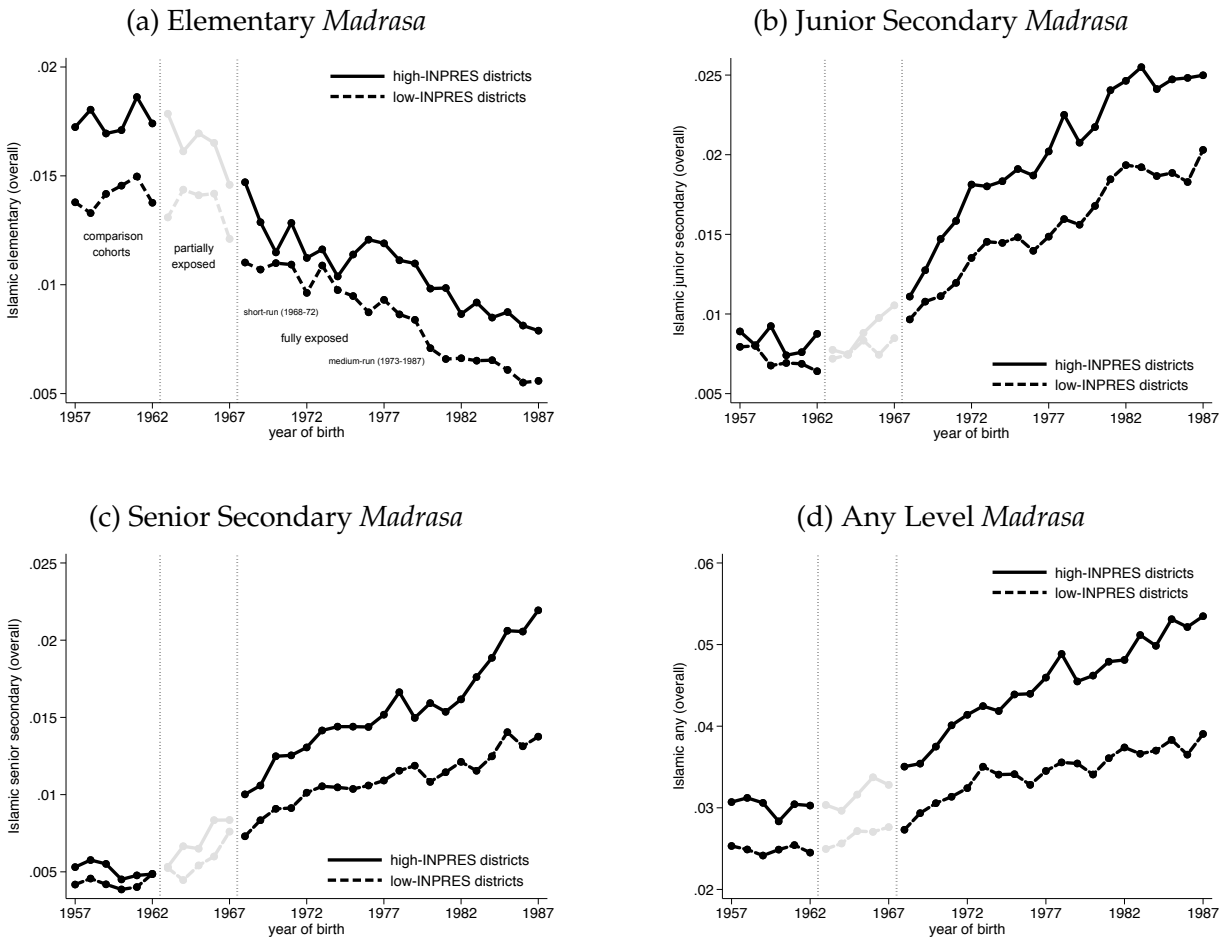
Figure 5: Entry of Formal and Informal Islamic Schools
As a Share of All School Entry

(a) Formal Schools (*Madrasa*) (b) Informal Schools (*Pesantren* and *Diniyah*)



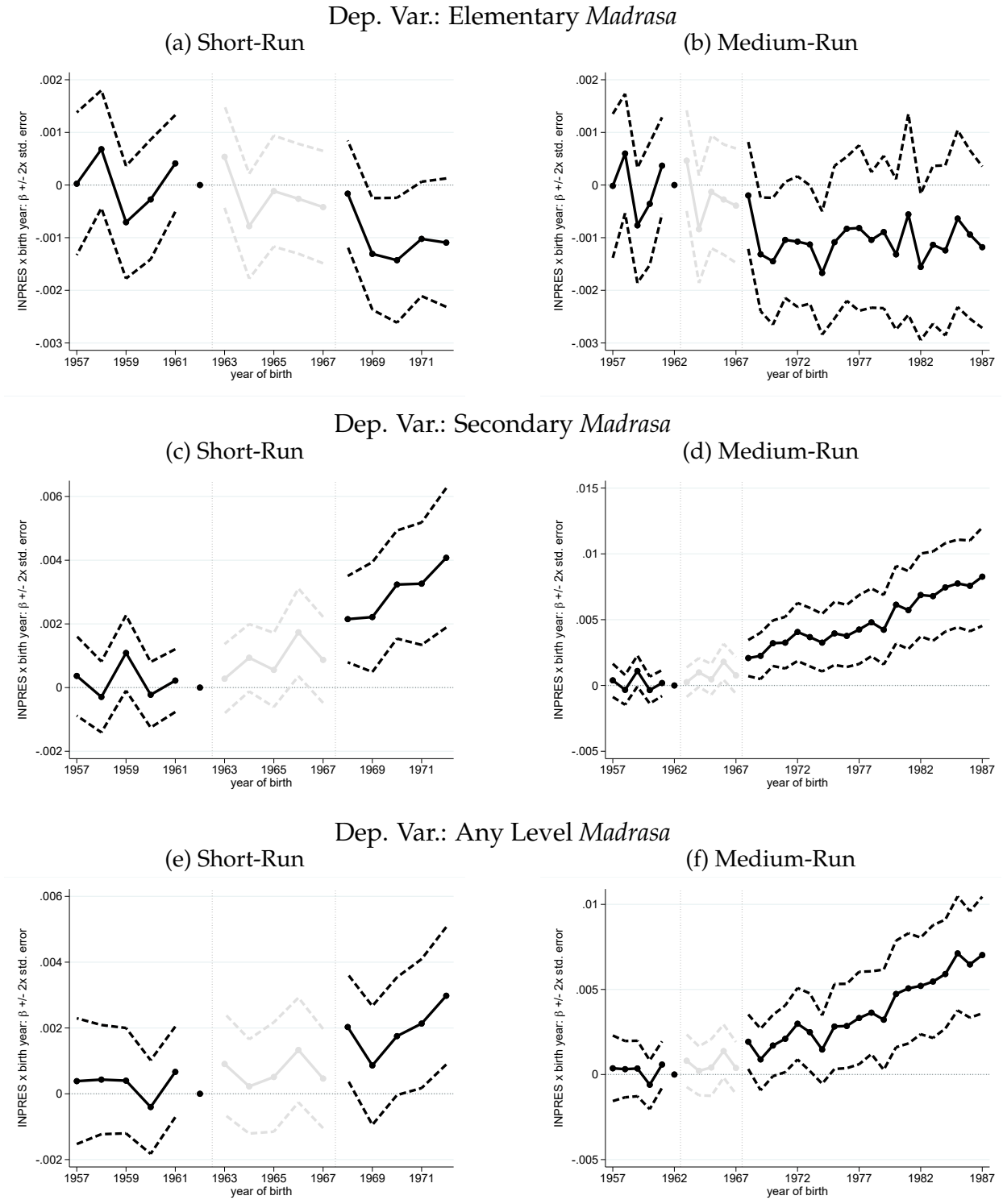
Notes: This figure reports semi-decade-specific estimates of β in equation (1). The dependent variable measures: (a) *madrasa* at all instruction levels built per district–year as a fraction fo all formal schools (including secular public, private, and Islamic schools), and (b) *pesantren* and *madrasa diniyah* built per district–year as a fraction of all schools (including formal and informal schools). As in Figure 2, the 1965–69 period is the reference period given district fixed effects. The dots correspond to the period-specific β, and the bars to 90% confidence intervals with standard errors clustered by district. All specifications include district fixed effects and year fixed effects interacted with the 1971 children population, the 1971 enrollment rate, district-level exposure to the water and sanitation program, the number of elementary, junior secondary, senior secondary *madrasa* in 1949, and the number of *pesantren* in 1949.

Figure 6: INPRES Exposure and Islamic Schooling – Raw Summary



Notes: This figure reports mean Islamic school completion rates over time for districts with above-median (high) and below-median (low) INPRES intensity from 1973–78. INPRES intensity is defined as the number of SD INPRES schools constructed from 1973–78 per 1,000 children in 1971. The rates are computed for cohorts from 1957 to 1987, pooling across annual *Susenas* data from 2012 to 2018, and they indicate whether the final level of education is (a) elementary *madrasa*, (b) junior secondary *madrasa*, (c) senior secondary *madrasa*, and (d) any level *madrasa*. The outcomes are the same as those in Table 5. The cohorts born before 1963 would have fully completed primary schooling before SD INPRES was rolled out in 1973. The cohorts born from 1968 onwards would have been fully exposed to SD INPRES given that they would have been no more than 6 years old just prior to school construction ensuing. The cohorts born from 1963 to 1967 (greyed out) correspond to the partially-exposed cohorts. See Section 4 for further discussion of these distinctions across cohorts.

Figure 7: INPRES Exposure and Islamic Schooling – Estimated Effects by Cohort

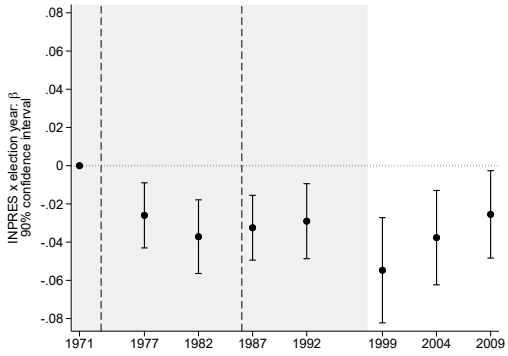


Notes: This figure reports age-specific estimates of β in equation (4). INPRES intensity is defined as the number of SD INPRES schools constructed from 1973-78 per 1,000 children in 1971. The dependent variable in panels (a) and (b) is an indicator equal to one if the individual's final year of schooling was completed in an Islamic elementary school. Panels (c) and (d) are for an Islamic secondary school, and panels (e) and (f) for any Islamic school. Panels (a), (c), and (e) correspond to the original cohort specification: fully-exposed born 1968–1972 (black), partially-exposed born 1963–1967 (gray), and unexposed born 1957–1962 (black). Panels (b), (d), and (f) expand exposed cohorts to 1987. The 1962 cohort serves as the reference age, given age fixed effects, in both the short- and long-run specifications. All specifications include survey year $\times$ district of birth dummies and year of birth with the 1971 children population, the 1971 enrollment rate, district-level exposure to the water and sanitation program, the number of elementary, junior secondary, senior secondary *madrasa* in 1957, and the number of *pesantren* in 1957. The dashed lines correspond to 90% confidence intervals with standard errors clustered by district of birth.

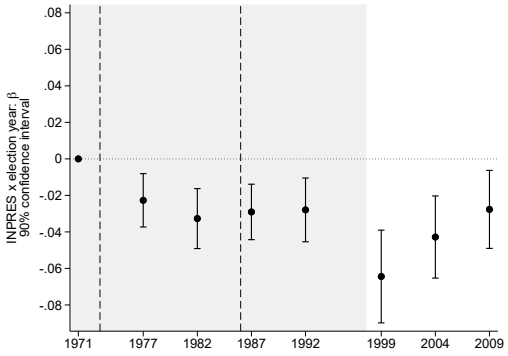
Figure 8: Electoral Impacts of SD INPRES

State Regime (*Golkar*, Suharto's Party)

(a) Baseline

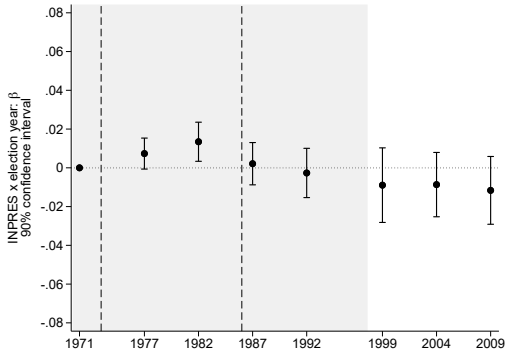


(b) . . . + 1950s Voting Trends

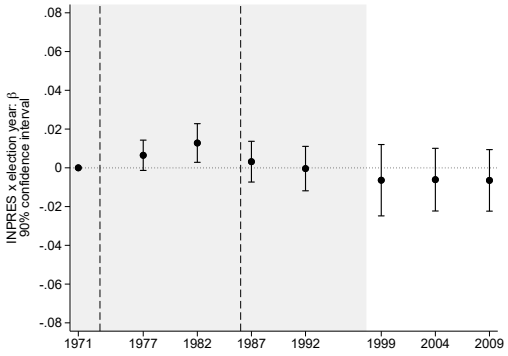


Islamic Opposition (United Development Party, PPP)

(c) Baseline

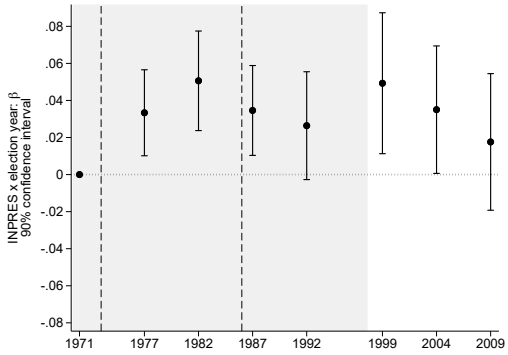


(d) . . . + 1950s Voting Trends

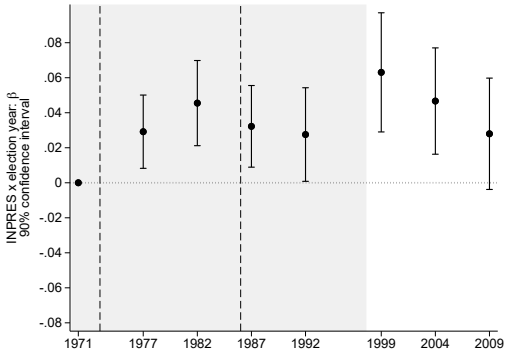


Islam vs. State (PPP minus *Golkar*)

(e) Baseline



(f) . . . + 1950s Voting Trends



Notes: This figure reports legislative-election-year-specific estimates and 90% confidence intervals around β in equation (1) on a balanced district–election-year panel. INPRES intensity is defined as the number of SD INPRES schools constructed from 1973–78 per 1,000 children in 1971. The dependent variable measures vote shares for *Golkar*, the party of Suharto and the New Order regime (panels a–b), the Islamic opposition party/ies (panels c–d), and the difference in vote shares between the two (panel d–e). All specifications include district fixed effects and election-year fixed effects interacted with the 1971 children population, the 1971 enrollment rate, exposure to the water and sanitation program, the number of elementary, junior secondary, senior secondary *madrasa*, and the number of *pesantren* in 1972. The specifications in panels b, d, and f additionally control for election-year fixed effects interacted with the respective vote shares for Islamic and Communist parties in the 1950s legislative elections. In 1971, there were four Islamic parties that we group together, but from 1973 onward, the regime only allowed a single umbrella Islamic party, the United Development Party or PPP. The 1971 election was the last just prior to SD INPRES and serves as the reference election given district fixed effects. The gray area captures elections conducted under the New Order regime. The elections in 1987 and 1992 are the first in which INPRES-exposed cohorts would have been eligible to vote. The elections from 1999 onward took place after the fall of Suharto when the country democratized and both secular and Islamic parties proliferated.

Tables

Table 1: Correlates of INPRES Elementary School Allocation

	Dependent Variable:				
	log SD INPRES in district				SD INPRES in village
District Level	(1)	(2)	(3)	(4)	(5)
% Islamic primary enrollment, 1967-72	0.039***	0.028***		0.011	
	(0.009)	(0.009)		(0.008)	
log school-aged children not enrolled, 1971	0.684***		0.622***	0.628***	
	(0.076)		(0.080)	(0.072)	
% Non-Islamic primary enrollment, 1967-72		-0.016***		-0.014***	
		(0.005)		(0.005)	
log Islamic primary schools, 1971			0.130***	0.079***	
			(0.030)	(0.025)	
Islamic parties vote share, 1950s				0.004***	
				(0.001)	
Village Level					
any public elementary in village, 1971					-0.028**
					(0.012)
any private non-Islamic elementary in village, 1971					-0.046***
					(0.015)
any private Islamic elementary in village, 1971					0.052***
					(0.019)
Number of Districts or Villages	275	275	275	275	75,208
Targeting Policy Controls	✓	✓	✓	✓	✓
R^2	0.872	0.812	0.872	0.893	0.030

Notes: This table reports correlates of SD INPRES school construction at the district and village levels. The dependent variable is the log number of INPRES elementary schools constructed at the district level between 1973–78 (columns 1–4) and an indicator for any SD INPRES built in the village during that same period (column 5). All regressions control for the variables that informed the policy rule for INPRES school allocations: province fixed effects, the 1971 children population, the 1971 enrollment rate, and exposure to the water and sanitation program.

* p<0.1, ** p<0.05, *** p<0.01. Robust standard errors in parentheses, clustered by district in column 5.

Table 2: SD INPRES Intensity and Islamic School Entry

	Formal *Madrasa*			Informal		All
	Elementary	Junior Sec.	Senior Sec.	*Pesantren*	*Diniyah*	Islamic
	(1)	(2)	(3)	(4)	(5)	(6)
	(a) Difference-in-Differences, District Level					
INPRES × post-1972	0.0017***	0.0016***	0.0009***	0.0021***	0.0041**	0.0104***
	(0.0005)	(0.0004)	(0.0002)	(0.0005)	(0.0016)	(0.0023)
	(b) Synthetic Difference-in-Differences, District Level					
INPRES × post-1972	0.0034***	0.0034***	0.0015***	0.0041***	0.0053*	0.0176***
	(0.0013)	(0.0009)	(0.0004)	(0.0011)	(0.0027)	(0.0039)
1959 Islamic Schools × Year FE	✓	✓	✓	✓	✓	✓
District FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Number of District–Years	11,000	11,000	11,000	11,000	11,000	11,000
Dep. Var. Mean	0.007	0.005	0.002	0.007	0.018	0.039
R^2 (panel a)	0.178	0.169	0.166	0.313	0.565	0.463
	(c) Difference-in-Differences, Village Level					
SD INPRES Entry	0.0021***	0.0018***	0.0007***	0.0017***	0.0043***	0.0105***
	(0.0003)	(0.0002)	(0.0001)	(0.0003)	(0.0007)	(0.0011)
	(d) Robust Difference-in-Differences Estimator, Village Level					
SD INPRES Entry	0.0022***	0.0017***	0.0008***	0.0013***	0.0035***	0.0094***
	(0.0002)	(0.0001)	(0.0001)	(0.0002)	(0.0003)	(0.0005)
1959 Islamic Schools × Year FE	✓	✓	✓	✓	✓	✓
Village FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Number of Village–Years	3,334,560	3,334,560	3,334,560	3,334,560	3,334,560	3,334,560
Dep. Var. Mean	0.0009	0.0001	0.0001	0.0006	0.0025	0.0041
R^2 (panel c)	0.035	0.029	0.029	0.068	0.063	0.075

Notes: The dependent variables are measured as new schools of a given type created per district–year and per 1,000 children in 1971 in panels (a) and (b) and per village–year in panels (c) and (d). Panel (a) reports difference-in-differences estimates of β in equation (1). INPRES refers to SD INPRES schools constructed from 1973–78 per 1,000 children in 1971. Panel (b) reports synthetic DID estimates computed using Arkhangelsky et al. (2021); see the notes to Figure 3 for details on the implementation. In panels (a) and (b), all specifications include district fixed effects and year fixed effects interacted separately with the 1971 children population, the 1971 enrollment rate, exposure to the water and sanitation program, the number of elementary, junior secondary, senior secondary *madrasa* in 1959, and the number of *pesantren* in 1959. Both (a) and (b) are estimated on a panel at the district–year level spanning 1960–99. Panels (c) and (d) report estimates of the average of post-SD-INPRES-entry coefficients τ in equation (2). Panel (c) reports standard difference-in-differences estimates and panel (d) reports estimates computed using the robust imputation method from Borusyak et al. (2024). SD INPRES Entry is a binary indicator equal to one in the first year of public primary school construction from 1973–78 and remains one in all years thereafter. All specifications include village fixed effects and year fixed effects interacted separately with the number of secular elementary schools and Islamic schools in the village as of 1959.

* p<0.1, ** p<0.05, *** p<0.01. Robust standard errors are clustered by district in panel (a), and using the cluster bootstrap described in Algorithm 2 of Arkhangelsky et al. (2021) in panel (b). Robust standard errors are clustered by village in panels (c) and (d).

Table 3: Funding of Islamic School Entry, Village Level

	Formal *Madrasa*		Informal		All
	Elementary	Secondary	*Pesantren*	*Diniyah*	Islamic
	(1)	(2)	(3)	(4)	(5)
SD INPRES	0.0007***	0.0012***	-0.0002	-0.0001	0.0016***
	(0.0002)	(0.0002)	(0.0001)	(0.0002)	(0.0004)
SD × high potential rice yield	0.0005	0.0008***	0.0003	0.0016***	0.0032***
	(0.0003)	(0.0002)	(0.0003)	(0.0005)	(0.0007)
SD × high *waqf* endowment	-0.0003	-0.0004	0.0015***	0.0025***	0.0033***
	(0.0003)	(0.0002)	(0.0002)	(0.0004)	(0.0006)
SD villages with high funding base	0.0009***	0.0016***	0.0016***	0.0040***	0.0081***
	(0.0003)	(0.0002)	(0.0003)	(0.0004)	(0.0006)
Village FE	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓
Year FE × ...	✓	✓	✓	✓	✓
Islamic Schools in 1959	✓	✓	✓	✓	✓
Secular Primary Schools in 1959	✓	✓	✓	✓	✓
high potential rice yield	✓	✓	✓	✓	✓
high *waqf* endowment	✓	✓	✓	✓	✓
Number of Village-Years	3,007,920	3,007,920	3,007,920	3,007,920	3,007,920
Dep. Var. Mean	0.0009	0.0001	0.0005	0.0029	0.0045
R^2	0.041	0.037	0.068	0.064	0.077

Notes: The dependent variables are measured as new schools of a given type created per village-year. SD INPRES Entry is a binary indicator equal to one in the first year of public primary school construction from 1973–78 and remains one in all years thereafter. The estimates are based on an augmented version of panel (c) in Table 2, including interactions of SD INPRES Entry with two proxies for underlying Islamic school funding potential. Rice yields are based on a time-invariant and standardized measure from FAO-GAEZ and averages over dry and wet rice yields. We construct a dummy equal to 1 if a village has a value of potential rice yields above the sample median. *Waqf* endowments are constructed using data on land endowed in mosques as of 1960. We then construct a dummy equal to 1 if the district has *waqf* endowments above the sample median. These data are not available for a small subset of districts and hence the difference in sample size with Table 2. All specifications include village fixed effects and year fixed effects interacted separately with the number of secular elementary schools and Islamic schools in the village as of 1959 as well as the two funding proxies. The estimates in the final row, "SD villages with high funding base," are based on the linear combination of the other three terms, reflecting the effects of SD INPRES in villages with high potential yield ands and high *waqf* endowments.

* p<0.1, ** p<0.05, *** p<0.01. Robust standard errors clustered by village.

Table 4: SD INPRES Intensity and Curriculum Differentiation in Islamic Schools

	All Levels (1)	Primary (2)	Jun. Sec. (3)	Sen. Sec. (4)
	(a) Islamic Subject Share			
INPRES × post-1972	0.012*	0.013**	0.022***	-0.040
	(0.007)	(0.006)	(0.008)	(0.024)
Dep. Var. Mean	0.246	0.238	0.261	0.242
Dep. Var. Std. Dev.	0.047	0.033	0.028	0.036
Number of Observations	4,243	1,404	1,662	1,046
Number of Districts	258	213	213	178
	(b) Arabic Share			
INPRES × post-1972	0.002*	0.003**	0.008***	0.017***
	(0.001)	(0.001)	(0.002)	(0.002)
Dep. Var. Mean	0.053	0.050	0.068	0.054
Dep. Var. Std. Dev.	0.013	0.009	0.010	0.007
Number of Observations	4,243	1,404	1,662	1,046
Number of Districts	258	213	213	178
	(c) *Pancasila*/Civic Share			
INPRES × post-1972	-0.002	n/a	-0.003	0.008***
	(0.002)		(0.003)	(0.002)
Dep. Var. Mean	0.052		0.060	0.039
Dep. Var. Std. Dev.	0.012		0.008	0.004
Number of Observations	2,775		1,662	1,046
Number of Districts	237		213	178
	(d) *Bahasa* Indonesia Share			
INPRES × post-1972	-0.004**	0.000	-0.005	0.002
	(0.002)	(0.003)	(0.005)	(0.002)
Dep. Var. Mean	0.027	0.001	0.123	0.084
Dep. Var. Std. Dev.	0.047	0.008	0.016	0.008
Number of Observations	4,243	1,404	1,662	1,046
Number of Districts	258	213	213	178
District FE	✓	✓	✓	✓
Grade-Level FE	✓	✓	✓	✓
Year-of-Entry FE	✓	✓	✓	✓

Notes: This table presents estimates from a modified version of equation (1). We use an unbalanced panel at the school–grade (primary, jun. sec., sen. sec.) × district × year level, including only years in which the given district had any school–grades enter. The estimating equation is $y_{sjt} = \beta(INPRES_j \times Post1972_t) + (\mathbf{X}_j \times Post1972_t)'\mathbf{\Theta} + \delta_s + \delta_j + \delta_t + \varepsilon_{sjt}$, where s is a school–grade level and other terms are defined as in equation (1). The dependent variable measures the mean share of weekly instruction time devoted to Islamic subject material in panel (a), Arabic instruction in panel (b), *Pancasila* and civic education in panel (c), and instruction of the national language and literature, *Bahasa* Indonesia in panel (d). The measures come from the SIAP registry for the 2018–19 school year, and we categorize subject material using a procedure detailed in Appendix D. It is not possible to identify *Pancasila* and civic subjects for primary schools as this subject is not covered in elementary schools and hence the omission of column 2 in panel (b); column (1) for this outcome necessarily omits primary schools. All specifications include district fixed effects, grade-level fixed effects, year-of-entry fixed effects, and a post-1972 dummy interacted with the 1971 children population, the 1971 enrollment rate, exposure to the water and sanitation program, and the baseline number of elementary, junior secondary, senior secondary *madrasa*, and *pesantren*.

* p<0.1, ** p<0.05, *** p<0.01. Robust standard errors clustered by district.

Table 5: SD INPRES Exposure and Islamic School Choice

	Highest Education Level: [...] *Madrasa*			
	Elementary	Junior Secondary	Senior Secondary	Any Level
	(1)	(2)	(3)	(4)
	(a) Difference-in-Differences			
INPRES × young	-0.0011**	0.0019***	0.0010***	0.0017**
	(0.0004)	(0.0004)	(0.0003)	(0.0007)
	(b) Synthetic Difference-in-Differences			
INPRES × young	-0.0025***	0.0034***	0.0020***	0.0026*
	(0.0008)	(0.0008)	(0.0007)	(0.0014)
District × Survey Year FE	✓	✓	✓	✓
Cohort FE	✓	✓	✓	✓
1957 Islamic Schools × Cohort FE	✓	✓	✓	✓
Number of Individuals	839,026	839,026	839,026	839,026
Number of Districts	275	275	275	275
Dep. Var. Mean	0.014	0.011	0.008	0.031
R^2 (panel a)	0.031	0.014	0.009	0.033

Notes: This table reports estimates of equation (4) based on annual *Susenas* data from 2012 to 2018. INPRES refers to SD INPRES schools constructed from 1973–78 per 1,000 children in 1971. The dependent variables include an indicator equal to one if the individual's final year of schooling took place in an Islamic elementary (column 1), junior secondary (column 2), senior secondary (column 3), or any level Islamic (column 4). Panel (a) reports standard DID estimates. All specifications include district of birth times survey–year fixed effects and cohort fixed effects interacted separately with the 1971 children population, the 1971 enrollment rate, exposure to the water and sanitation program in the district of birth, the number of elementary, junior secondary, senior secondary *madrasa* in 1957, and the number of *pesantren* in 1957. The sample is composed of all individuals aged 2–6 (young) or 12–17 in 1974. Robust standard errors are clustered by district of birth. Panel (b) reports synthetic DID estimates. The dependent variables are residualized outcomes obtained using the same set of covariates as in panel (a); see Figure 3 for generic details on SDID implementation. Analogous to Appendix Figure A.7, partially exposed cohorts aged 7–11 in 1974 are used in the construction of the synthetic control group; thus the sample is composed of all individuals aged 2–6 (young) or 7–17 in 1974 in odd-numbered columns.

* p<0.1, ** p<0.05, *** p<0.01. Standard errors are clustered by district of birth in both panels and, in panel (b), are computed using the cluster bootstrap described in Algorithm 2 of Arkhangelsky et al. (2021).

Table 6: SD INPRES Exposure and School Choice, Conditional Estimates

	Highest Education Level: [...] *Madrasa* | Graduating at that Level			
	Elementary	Junior Secondary	Senior Secondary	Any Level
	(1)	(2)	(3)	(4)
	(a) Difference-in-Differences (DID)			
INPRES × young	-0.0017**	0.0057***	-0.0000	0.0011
	(0.0007)	(0.0020)	(0.0014)	(0.0007)
	(b) Synthetic Difference-in-Differences			
INPRES × young	-0.0043***	0.0117***	-0.0003	0.0016
	(0.0016)	(0.0044)	(0.0028)	(0.0017)
	(c) DID with Selection Correction (Parametric)			
INPRES × young	-0.0031**	0.0040	0.0020	0.0003
	(0.0012)	(0.0027)	(0.0022)	(0.0009)
	[0.049]	[0.347]	[0.481]	[0.731]
Selection Terms, p-value	0.197	0.429	0.284	0.261
	(d) DID with Selection Correction (Semiparametric)			
INPRES × young	-0.0018**	0.0055***	0.0001	0.0005
	(0.0008)	(0.0021)	(0.0015)	(0.0009)
	[0.001]	[0.001]	[0.986]	[0.479]
Selection Terms, p-value	0.928	0.001	0.413	0.386
District × Survey Year FE	✓	✓	✓	✓
Cohort FE	✓	✓	✓	✓
1957 Islamic Schools × Cohort FE	✓	✓	✓	✓
Number of Individuals (panel a)	283,359	100,874	130,546	514,784
Number of Districts	275	275	275	275
Dep. Var. Mean	0.024	0.070	0.044	0.038

Notes: This table estimates the specifications in Table 5 on dependent variables defined conditional on graduating from a given level of education. These binary outcomes equal one for *madrasa* among elementary graduates (column 1), among junior secondary graduates (column 2), among senior secondary graduates (column 3), and any level graduates (column 4). The sample only includes individuals at the given graduation level. In panels (a) and (b), specification details for the DID and the SDID estimation are otherwise identical to those in panels (a) and (b) of Table 5, respectively. In panels (c) and (d), we report estimates from the second step of a two-step selection model that adjusts for the non-random sample selection, i.e., conditioning on those that reached the given level. Panel (a) estimates a parametric Heckman (1976) two-step procedure, which includes the inverse Mills Ratio in the second-step. Panel (b) estimates a semiparametric Newey (2009) procedure, which includes a cubic polynomial in flexibly estimated first-step probabilities; the cubic order is based on consistency results in Newey (2009), which imply an upper bound of 3 on the order of the approximating power series in a sample with effective size of 275 (i.e., the level of policy variation). In both cases, we exclude from the second step a set of covariates that capture exposure to a compulsory schooling pilot program in the 1950s and early 1960s: cohort FE × (i) an indicator equal to one if the individual's district of birth was one of 35 pilot sites, (ii) the number of schools allocated to the district as part of the program, and (iii) the number of teachers allocated to the district as part of the program. In panel (d), to better approximate the true selection correction function, we create quintiles of all continuous regressors in the first step estimation, i.e., (ii) and (iii) plus the continuous regressors in the baseline specification.

* p<0.1, ** p<0.05, *** p<0.01. Robust standard errors clustered by district of birth in all specifications. Panels (c) and (d) deploy a percentile-t cluster bootstrap procedure proposed by Yamagata (2006) and shown to work well with two-step selection estimators. The standard errors in those panels are based on non-bootstrap inference, but the significance levels on the coefficients and p-values reported below the standard errors are based on the asymmetric percentile-t confidence intervals derived from 250 cluster bootstrap repetitions.

Table 7: Medium-Run Effects and Heterogeneity by Gender

	Years of School	Highest Education Level: [. . .] *Madrasa*		
		Elementary	Secondary	Any
	(1)	(2)	(3)	(4)
INPRES × born 1968-72	0.1766***	-0.0015***	0.0029***	0.0014*
	(0.0309)	(0.0005)	(0.0007)	(0.0007)
INPRES × born 1973-87	0.2058***	-0.0017***	0.0053***	0.0035***
	(0.0398)	(0.0006)	(0.0012)	(0.0012)
INPRES × born 1968-72 × female	-0.1002***	0.0006	0.0005	0.0010
completed primary before the 1982 veiling ban	(0.0285)	(0.0005)	(0.0006)	(0.0007)
INPRES × born 1973-87 × female	0.0188	0.0007	0.0016**	0.0022**
in school when the veiling ban came into effect	(0.0397)	(0.0007)	(0.0007)	(0.0009)
Number of Individuals	2,315,933	2,315,949	2,315,949	2,315,949
Number of Districts	275	275	275	275
Dep. Var. Mean	8.424	0.011	0.028	0.038
R^2	0.189	0.025	0.029	0.039

Notes: This table reports estimates of a modified version of equation (4). The sample includes all children born between 1957–1962 (control cohorts) and 1968–1987 (exposed cohorts). Compared to the baseline DID specification, we interact INPRES intensity with either a dummy for individuals born between 1968–1972 or a dummy for individuals born between 1973–1987. We use the latter cohorts to identify the medium-run effects of the program, inclusive of Islamic school entry responses and exposure to the 1982 ban on Islamic veiling in public schools. We also include two interactions of each age group with female dummies while also interacting the cohort FE and all baseline controls with a female indicator, i.e., all coefficients and FE are allowed to vary with gender. The specification is otherwise identical to that in panel (a) of Table 5 (see the notes therein).

* p<0.1, ** p<0.05, *** p<0.01. Robust standard errors clustered by district of birth.

Table 8: SD INPRES Exposure, Identity, and Religiosity

	(a) Identity, Proxied by Language					
	National Language Use at Home			Arabic Literacy		
	All	Muslims	Non-Muslims	All	Islamic-Educated	Secular-Educated
	(1)	(2)	(3)	(4)	(5)	(6)
INPRES × young	-0.0011	-0.0030*	-0.0019	0.0113***	0.0147	0.0024
	(0.0015)	(0.0017)	(0.0021)	(0.0026)	(0.0108)	(0.0025)
Number of Individuals	31,680,947	27,811,517	3,869,430	839,026	25,819	813,087
Number of Districts	273	273	273	275	264	275
Dep. Var. Mean	0.166	0.150	0.275	0.343	0.689	0.332

	(b) Islamic Piety and Practice							
	Pray 5x daily	Fast during Ramadan	Reads the Qur'an	Prayer: Friday	Prayer: *Sunna*	Prayer: Group	Pay *Zakat*	**Index**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
INPRES × young	0.1368**	-0.0030	0.0990**	0.1562**	0.0953*	0.0364	0.0357	0.0792***
	(0.0606)	(0.0501)	(0.0481)	(0.0619)	(0.0489)	(0.0465)	(0.0456)	(0.0296)
Number of Individuals	1,282	1,283	1,281	1,276	1,268	1,280	1,281	1,284
Number of Districts	144	144	144	144	144	144	144	144
Dep. Var. Mean	0.623	0.797	0.251	0.187	0.140	0.230	0.834	0.415

Notes: This table reports estimates of equation (4) using data from multiple sources. The dependent variable in columns 1–3 of panel (a) is an indicator for whether the individual speaks the national language, *Bahasa* Indonesia, as his/her main language at home. The data come from the complete-count 2010 Population Census. Columns 4–6 in panel (a) look at an indicator for whether an individual reports literacy in Arabic in the annual *Susenas* data from 2012 to 2018. Panel (a) sample splits across Muslims and non-Muslims in the Population Census (where we do not observe Islamic education) and across Islamic-educated and non-Islamic-educated in *Susenas* (where we do not observe religion). The specifications in panel (a) are restricted to mothers and fathers (husbands and wives) that fall within the original birth cohorts: aged 2–6 (young) or 12–17 in 1974. The dependent variables in panel (b) include indicators for whether an individual reports partaking in a range of Islamic practices as reported in the Pepinsky et al. (2018) survey data from 2008. The final column is a mean index across all 7 prior outcomes. The sample in panel (b) is restricted to Muslim respondents from 1957 to 1987, excluding the partially exposed cohorts born 1963–67. The specification is otherwise identical to panel (a) in Table 5, which includes district of birth (times survey–year) fixed effects and cohort fixed effects interacted separately with the 1971 children population, the 1971 enrollment rate, exposure to the water and sanitation program in the district of birth, the number of elementary, junior secondary, senior secondary *madrasa* in 1957, and the number of *pesantren* in 1957 (see the notes therein).

* p<0.1, ** p<0.05, *** p<0.01. Robust standard errors clustered by district of birth.

Table 9: SD INPRES Exposure and Religious Cultural Transmission

	Marriage Matching		*Arabic Literacy*			
	Islamic-Educated Partner		Arabic in the Home Parents & Children		Child's Arabic No Islamic Schooling	
	(1)	(2)	(3)	(4)	(5)	(6)
INPRES × young (Father)	0.0020**		0.0043*		0.0072**	
	(0.0009)		(0.0025)		(0.0036)	
INPRES × young (Mother)		-0.0002		0.0048*		0.0054
		(0.0007)		(0.0026)		(0.0046)
Number of Individuals	725,803	544,143	304,048	246,049	95,678	77,064
Number of Districts	275	275	275	275	272	272
Dep. Var. Mean	0.039	0.024	0.213	0.268	0.877	0.887
R^2	0.038	0.026	0.112	0.138	0.048	0.043

Notes: This table reports estimates of a modified version of equation (4) where *young* now denotes the INPRES exposure of a parent (father or mother). INPRES refers to SD INPRES schools constructed from 1973–78 per 1,000 children in 1971. The dependent variable in columns 1–2 is an indicator for whether the spouse has an Islamic education, in columns 3–4 an indicator for all 3 members of the household (father, mother, and child) being literate in Arabic, and in columns 5–6 an indicator equal to 1 if the child is literate in Arabic, conditional on the parent being literate in Arabic and the child having received no Islamic schooling. All specifications are restricted to children with mothers and fathers (or to husbands and wives) that fall within the original birth cohorts: aged 2–6 (young) or 12–17 in 1974. We restrict to co-resident children that are at least 18 years old and hence likely to have completed their education. The regressions additionally control for child birth cohort fixed effects. The specification is otherwise identical to panel (a) in Table 5 (see the notes therein).

* p<0.1, ** p<0.05, *** p<0.01. Robust standard errors clustered by the parent's district of birth.