

The Impact of Terrorism on Educational Outcomes: The Case of Pakistan

By

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## Abstract

Adverse shocks can bring unrest in the most vulnerable communities. These negative stimuli have been associated with educational and health investment, thus restricting the development of a society. This thesis will provide an empirical insight into the influence of extreme, adverse events in the form of a terrorist attack on the learning outcomes for children in Pakistan. We use data from the Annual Status of Education Report and Global Terrorism Database for 2013- 2016 to look at the effects of terrorism on learning outcomes. We test for the impact of terrorism conditional on students who are enrolled in school by employing a Hurdle model (Cragg, 1971) for analysis. We conducted a range of robustness checks to show these results are valid across a variety of context. This study finds that that the intensity of exposure is a significant determinant of learning outcomes – children belonging to districts that have encountered severe intensity of attacks perform worse on standardized tests. Furthermore, girls are affected significantly more than boys, while younger children (those aged 10 and below) are more vulnerable to terrorist attacks. Our results deduce that the decline in the educational attainment of children is directly influenced by extremely traumatic events.

## Dedication

To the man who left before he could see me shine; Amir Jilani (father).

To the woman who made sure I never felt the grief of losing a parent-my rock and support through the ages; Ambreen Jilani (mother).

To the martyrs of terrorism; to those who lost their lives in the wake of APS- may this become a tool towards enlightenment.

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## 1. Introduction

Security and stability have been termed as vital contributors to the smooth functioning of an economy. This is particularly true in the case of developing countries where the need for stability arises from the continuous internal and external conflicts that have caused a halt on the prosperity of these nations. Shocks to an economy and its members can be experienced in several forms; theft, natural disasters, political instability and so on. These shocks have the potential to derail economic prospects. One extreme form of adverse events is terrorism. The global economy recognizes Pakistan as one of five countries that have been severely damaged by terrorism since 2013 (Institute for Economics and Peace, 2017). The evidence of grave loss can be found in the statistics compiled by the Pakistan Ministry of Finance, where the accumulation of losses from 2016-18 are US \$7543 million (Ministry of Finance, 2015). Economic barriers, socio-political unrest, sanctions and, with special reference to Pakistan, the impact of terrorism on the economy can be understood from the recent 10.22% increase in the allocation of the defence budget from the revised value of Rs. 998 million for the fiscal year 2018- 25 percent of the total budget. With a relatively small proportion of the national or provincial budgets allocated to social programs such as education and health, the cost of terrorism warrants the continuing trend of the budget breakdown. Without proper attention to these integral growth components, the progress of Pakistan will be limited (Hyder, et al., 2015).

Given the rise in not just the numbers but the intensity of terrorist activities, disruptions are felt across the economic board, from restricting business ventures due to security concerns to disturbing growth in the tourism industry, to causing massive civilian casualties. A sector directly affected is that of education. A report published by National Consortium for the Study of Terrorism and Responses to Terrorism (START, 2014) highlights how Pakistan is a country which experienced the most attacks on educational institutions between 2004-2013. As noted by this report, *“The country that experienced the most terrorist attacks on educational targets*

between 1970 and 2013 was Pakistan, where 753 attacks targeted educational institutions, 724 (96%) of which took place between 2004 and 2013. Between 2004 and 2013, far more attacks on educational targets took place in Pakistan than in the next three countries combined: Thailand (213), Afghanistan (205), and Iraq (184).” Moreover, literature shows that with the Taliban movement targeting school enrolment, particularly female enrolment, attendance and consequently, the learning outcomes have been severely and adversely affected (Khan & Seltzer, 2016; Bilal et al., 2016).

Broadly speaking, terrorism is defined as a violent manifestation of extremist views, intended to cause harm. Of the many, the earliest records of classifying what constitutes as terrorism is found in the League of Nation’s Article 1.1 of the 1937 Convention whereby

1. *"Acts of terrorism" as "criminal acts directed against a State and intended or calculated to create a state of terror in the minds of particular persons or a group of persons or the general public". (Nations, 1937)*

For the United Nations “criminal acts intended or calculated to provoke a state of terror in the general public, a group of persons or particular persons for political purposes are in any circumstance unjustifiable, whatever the considerations of a political, philosophical, ideological, racial, ethnic, religious or any other nature that may be invoked to justify them” is the complete definition of terrorism. The consequences of terrorist activities magnified in the aftermath of 9/11. In 2016, Pakistan along with Afghanistan, Syria, Nigeria and Iraq, accounted for three fourth of the deaths due to terrorism (Institute for Economics and Peace, 2017).

Of all the recent attacks in Pakistan, the one that shook every individual to their core occurred on the date of 16<sup>th</sup> December 2014. The horrific Army Public School (APS) Massacre was the fourth largest schooling massacre by death tolls<sup>1</sup>. However, the attack was particularly

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<sup>1</sup> After Beslan School Siege (Russia, 2004), Walisongo School Massacre (Indonesia, 2000) and Eastern University Massacre (Sri Lanka, 1990).

heinous and jarring in being a planned attempt to gun down children and minors at school. A total of 149 children (aged eight to eighteen) and faculty members lost their lives. The event left an imprint so prominent that it was termed as Pakistan's 9/11 by The Guardian (2014). Not only did it damage infrastructure, it induced fear in the hearts of the families near and far alike. For the initial year following the tragedy, children across the country were struck with fear and had a growing disinterest in attending school ("Dreams Turned into Nightmares | Attacks on Students, Teachers, and Schools in Pakistan", 2017). This raises the education-terrorism nexus once more for the developing countries.

This thesis will empirically analyze the impact of an adverse shock in the form of terrorist attacks on the learning outcomes in children. In addition, we will test if this effect differs by the intensity of the attack, i.e. if the APS had a significantly greater impact on learning outcomes. The primary contribution to literature is the fact that this paper looks at the qualitative damage in the educational sector as opposed to just the quantitative damage that has been measured through the enrolment rates. Secondly, it uses the Hurdle model to estimate the degree of influence terrorism has on the children who are enrolled during our sample years. Third, it not only looks at the effect of singular events, such as the APS massacre, but the cumulative effects of extreme events on the learning outcomes of young children.

To study the impact of terrorism on learning - an area where literature on Pakistan is lacking, we make use of two sets of data. The Global Terrorism Database (GTD) is a publically accessible data source containing information on attacks around the world from the year 1970 onwards. As the only source of extensively documented repository of terrorist incidents, it serves the purpose of categorizing the exposure intensity of various areas within Pakistan. In combination with the GTD, the Annual Status of Educational Report (ASER) has been used to gauge and link the educational outcomes of students. Carried at the district level, it provides

reliable accounts of the children's learning through two standard tests, modeled along the lines of Pratham tests in India<sup>2</sup>.

Finally, it is important to acknowledge the possibility for average test scores to be biased due to students dropping out of school as a consequence of terrorist attacks. In fact, this selection itself can be expected to vary with the intensity of attacks. To fully gauge the impact that terrorism has on learning outcomes, we employ the Hurdle Model to test for the impact of adverse shocks, conditional on students who are enrolled and use standardized tests administered by ASER. Furthermore, we run a range of robustness checks across various subsamples, definitions of terrorism and selection to show that the results are valid.

The paper is arranged as follows: introduction (section 1), literature review (section 2), methodology (section 3), data (section 4), results (section 5), robustness checks (section 6), discussion (section 7) and lastly, conclusion (section 8).

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<sup>2</sup> <http://www.pratham.org/programmes/aser>

## 2. Literature Review

Events that occur outside a particular framework and have either a direct or indirect effect on the dynamics of the said framework are termed as shocks or external stimuli. Shocks can range from being naturally occurring to purposefully inflicted (earthquakes vs. a robbery). Literature identifies wealth, weather, health and conflict as shocks that have an impeding influence on the governance of society. In particular, within this thesis, the focus will be on adverse (negative) shocks and how they influence a particular socio-economic institution; education. Commonly known shocks that impact education include shocks to investment, health, income, borrowing abilities, temperature and weather. A health shock to the earning member of the household is known to reduce educational consumption by approximately 1.5 years (Alam, 2015). Shocks to the household wealth in the form of a loss of an asset or loss of borrowing option is known to increase the likelihood of a child dropping out of school (Glick et al., 2011). In support of the above findings, Dung (2013) further highlights how shock affected households reduce the time spent on educational activities of the child outside of school.

Today, terrorism is an important challenge as it has direct consequences such as loss of lives, destruction of infrastructure, as well as indirect effects including stress and fear (Becker & Rubinstein, 2011); anxiety (Nijdam et al., 2014); and detrimental impact on self-reported mental health (Dustmann & Fasani, 2014). The aftermath of terrorism is multifaceted, and is most dominant in the sphere of human capital.

An extreme event such as a terrorist attack affects not only the victims but also peers and the society as a whole. Additionally, the psychological impact such an extreme event brings with itself has long lasting consequences - individuals tend to form expectations about the reoccurrence of such adverse shocks. Since they cannot predict the when and the where of these shocks, the fear of the unknown makes them act as present biased agents of the economy. This

behavior is evident especially in the case of education attainment, reflected in the enrolment rates in the affected regions of Pakistan (Khan & Seltzer, 2016).

Literature identifies various types or categories of terrorist attacks. These include: state-sponsored terrorism, left/right terrorism, transnational terrorism, religious terrorism, pathological terrorism, issue oriented terrorism, gender-specific terrorism, separatist (nationalist) terrorism, narco-terrorism, dissent terrorism and anarchist terrorism (Michael, 2007). One of the most evident trends in terrorist activities is their concentration in Muslim areas, thus verifying that the latest terror wave is religion-based in nature. Having said that though, it is vital to emphasize that despite generalizing this nature of the era of terrorism, it is still difficult to narrow down an attack to a specific category. The reason for this is that most attacks are a combination of types; the Taliban campaign against the education of girls is both driven by religious extremism and is gender specific as well.

The positive relationship between human capital accumulation and economic prosperity has been argued for a long time (Wise 1975; Goujan et al, 2016). Terrorist attacks have been shown to have a negative effect on birth outcomes (Eccleston, 2011; Brown, 2012; Currie & Schwandt, 2014), reducing average birth weight and fraction of babies without birth defects (Quintana-Domeque & Ródenas-Serrano, 2017). Further, in a recent study by Yashodhan Ghorpade (2016), the influence of terrorist organizations such as the Taliban reduced the access of households to large, federal compensation funds. In the context of developing countries, where a significant proportion of households lie near and below the poverty line, a reduction in cash transfers can substantially and adversely affect the allocation of household expenditure on health and schooling.

#### ***a. Terrorism and gender***

An area of particular interest within schooling is to test if a gender gap exists in educational outcomes. Most of the studies using data from the developing world conclude that females tend

to be more constrained in terms of access to schooling. Several studies highlight how religion has led to the reduction in the access to education for girls and how this effect is more dominant in Muslim majority countries (Cooray & Potrafke, 2011).

In an interview with the local Pashtun tribes residing in Khyber Pakhtunkhwa (KPK), Aamir Jamal (2016) noted that they were well aware of the new teachings that are inconsistent with religious values, being spread under the name of religion: no education for the females and a dismissal of 'Western' education. Sadly, this view is greatly supported by the community given the prevalent mind set was preconditioned towards religious and not western education. The impact of Taliban is such that the number of schools has drastically reduced to a point where the families have limited options for sending their sons for education, let alone consider female education (Jamal, 2016).<sup>3</sup> Further, recent studies validate the lack of improvement in reducing gender bias in enrolment and educational attainment (Goujan et al, 2016; Klasen, 2000 & 2002; Monazza Aslam, 2007 & 2012).

Religious terrorism has affected the education of girls in other parts of the world as well. Using a global level dataset, Krueger & Malečková (2003) found that having higher faith in any of the four major religions<sup>4</sup> is associated with acts of terrorism. A classic example is that of Nigeria where parents expressed their concerns over the presence of the Boko Haram and how that became an obstacle for the education of their daughters (Urien, 2017). The stark difference between the communities in KPK and Nigeria is how they have perceived the no-education agenda: while those in Pakistan stand with the idea, parents in Nigeria hold strong conviction against these teachings.

More generally, cultural norms can impose greater restrictions on females, rather than males, mobility following adverse events. Evidence of this can also be found in Niger's 1986

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<sup>3</sup> Aamir Jamal's paper presents riveting interview quotes that provide an insight into several possible explanations of the gender gap in the Northern region of Pakistan; a topic beyond the scope of this paper.

<sup>4</sup> Islam, Christianity, Buddhism and Hinduism

outbreak of Meningitis which widened the gender gap in education and the effect was significant for school going girls (Archibong & Annan, 2017; Shah & Stienberg, 2017). Similarly, Björkman-Nyqvist (2013) finds significant effects for female enrolment when there are deviations in rainfall. In the same study, it was found that if education is provided free of cost, and there is an income shock, it is the female students whose test scores suffer as compared to the boys.

In Afghanistan, 33% of the difference in the rate of completing education is due to terrorist activities and approximately a quarter of the difference in enrolment can be linked to terrorism (Noury & Ecares, 2012). Akresh et al. (2017) reach to a similar conclusion that the probability of women completing schooling is reduced if they are exposed to terrorism (Biafran Wars) in their early years (0-3, & 7-12), while the stats for men remain unaffected in the first generation. Subsequently, the second-generation impact on education is mitigated by a number of factors other than the mother's exposure to war during her early years. These impacts are similar across the genders (Akresh et al., 2017).

#### ***b. Terrorism and school learning outcomes***

Although terrorism can directly prevent students from attending school, performance is likely to be obstructed even when children continue going to school, if they are fearful of doing so (Khan & Seltzer, 2016; Bilal et al., 2016). There are a number of recent studies that have attempted to document this affect. Using a pseudo panel for the nation of Colombia, Soler (2016) finds that the higher the intensity of conflicts, the more adverse an impact there was on standardized test results of English and Mathematics. A series of investigations have been underway on the Boko Haram in Nigeria, a manifestation of religious extremism similar in nature to the Taliban agenda of forbidden western education in Pakistan. The damage to the schooling environment is massive and given the uncertainty, there appears to be no plan for development and re-settlement as the insurgents may return to lay waste (Sieff, 2015). A study



focused on provinces in Sri Lanka that were affected by armed conflict, found that children who experienced trauma as a result of such conflicts were at risk of performing poorly in their exams and were susceptible to memory loss -the ability to recall perfectly fell drastically from 74 to 56 (Elbert et al., 2009). Even in the developed countries, the influence of terrorism on educational attainment is visible. A study carried out in Virginia public schools (2002) looked at the outcome of the Beltway Sniper attacks using location as a proxy for the intensity of exposure. As per their results, students of third grade and fifth grade suffered significantly in their reading and math tests (Gershenson & Tekin, 2015).

However, there are a few studies present that emphasize the fact that the impact on children does not have to be negative in mild to less severe exposure. An experiment was conducted with victims of an Earthquake (children) by holding a series of sessions intended to heighten the details of the earthquake incident and assess the responses. With each subsequent round of narration, there were more disturbing recollections and reactions (until round 4). They concluded by saying that children tend to be more resilient in face of shocks, provided few things are already in place (Galante & Foa, 1986). Moreover, a study by Jensen and Shaw (1993) concludes that children who had low to mild exposure to war had a tendency to counter-act the negativity of the trauma based on their cognitive immaturity.

### *c. Terrorism and school enrolment*

One of the common factors that influence the learning outcomes is the environment. An insecure atmosphere coupled with psychological distress prevents learning in a child as the external environment itself is toxic. When there is a lack of such positive influence, the stunted learning that occurs can manifest in the adult years as inconsistent jobs, lack of skills, aggression and other behavioral issues. Experiencing severe trauma in one's childhood has been associated with intense behavioral issues in the latter years of a child's life. According to Yehuda and Hyman (2005), the more exposed a child is to terrorism, the more likely they are

to develop post traumatic psychopathology. Not only does frequent or large scale exposure hinder learning outcomes, but in fact, empirical evidence shows that even a minor exposure to adverse shocks in terms of schooling, has lingering intergenerational impacts which could serve as an explanation for how the differences in the human capital amongst countries prevail (Justino, 2010).

Zaman and Amin (2017) report that while the enrolment rates over the years have indeed declined in Pakistan, rates for the madrassas have increased as a response to the religious propaganda of the terrorists. This shows the strength of the adverse shock on the rate of enrolment in the public and private schools which make up the largest proportion of the sector. Malhotra (2017) uses data from the GTD for 2001-14, controlling for various factors such as the attack type, economic variables and target types, and finds a negative effect of terrorism on the schooling enrolment rates. However, some studies also suggest that over time and distance, the effects of terrorist activities fade out (Shany, 2017). Therefore, it is unclear whether the effects of terrorism persist over time.

### 3. Methodology

#### Empirical Estimation

This paper aims to test the effect of terrorism on the educational status of children in Pakistan. We test if the effects differ by intensity of district-wide exposure to terrorist activities. We also make use of an extreme event – the APS massacre in 2014- to separately measure the effect of a particularly extreme terrorist event. This study uses data from 2013 - 2016 for Pakistan, which includes two years before and two after the APS event. Finally, we test if the effect differs by gender of the student.

The three main research questions are: i) whether learning outcomes are affected by intensity of exposure to the attacks, (ii) whether this effect is different before and after the extreme event (APS massacre) and (iii) whether these effects differ by gender of the student, as follows:

$$y_{idt} = \beta_0 + \beta_1 Exposure Intensity_{dt} + \beta_2 Year_t + \beta_3 Exposure Intensity_{dt} Post APS Years_t + Controls_{idt} + \varepsilon_{idt}$$

(1)

$$y_{idt} = \beta_0 + \beta_1 Exposure Intensity_{dt} + \beta_2 Post APS Years_t + \beta_3 Female_i + \beta_4 Exposure Intensity_{dt} Post APS Years_t + \beta_5 Exposure Intensity_{dt} Post APS Years_t Female_i + \beta_6 Post APS Years_t Female_i + \beta_7 Exposure Intensity_{dt} Female_i + Controls_{idt} + \varepsilon_{idt}$$

(2)

In the equations above, the dependent variables of interest measured by  $y$  is test score (or the educational attainment of children) which itself is measured using the dataset from

ASER, as explained in appendix C. The test scores are divided into 3 categories; Reading in English, Reading in Local Language and Mathematics, which are measured on a scale of 1 to 5, where 1 represents low score and 5 is indicative of high score. The variable exposure intensity is representative of the experience of the district relative to the total number of attacks that occurred in the country in a particular year. This variable indicates whether the district/region was a low or high intensity area that specific year and is constructed for the years 2013 till 2016. The frequency of attacks would be split into two categories of intensity annually; low and high where low intensity exposure would be referred to as our base category. The division of this variable would be done as follows: (i) low exposure is classified as less than equal to the 25<sup>th</sup> percentile of attacks in a particular year, (ii) high exposure is greater than the 25<sup>th</sup> percentile for a given year. The Post-APS dummy splits period into two and assigns the value of 0 to Pre-APS is reflective of the years 2013 and 2014 and 1 to Post-APS =years 2015 and 2016. Female is a dummy variable that indicates whether the individual in question is a female if it takes on a value of 1. Details of the variables can be found in appendix A. In order to understand any prevailing relationship between gender, terrorism and test scores, interaction terms have been included in the regression analysis in equation (2). To isolate the effect of exposure on tests scores, we also control for the age of the child, the age squared, enrolment and number of deaths per district. All regressions control for provincial fixed effects, with errors clustered at the district level.

As per theory, the impact of terrorism on educational outcomes is represented by  $\beta_5$  in equation 1 and  $\beta_3$  in equation 2. If there is a negative impact of terrorist shocks to schooling, the  $\beta$ s of interest would be negative and where there is a greater degree of exposure, the coefficient would be higher than that of a low exposed area.

Endogeneity may be present with respect to the fact that there can be a selection bias. Children, and parents of children, who are inherently more motivated, may continue going to

school even after adverse events. An even more pressing reasoning is that children who have survived may be the only ones who attend schools.

The Hurdle Model (Cragg, 1971)<sup>5</sup> will be applied to this analysis for the purpose of accounting for conditionality (i.e. impact on students conditional on their enrolment). The concept of the Hurdle model is that it defines decisions of an outcome variable of interest to take on a value of either zero or a positive integer. The latter is representative of the ‘hurdle’ being crossed and then, conditional on it, the true effect of the independent variable is evaluated on  $y$ . In this case, the ‘hurdle’ to be crossed is enrolment. For further robustness of results, fixed effects at the district level will be used to account for any external influences on the variables of interest.

A typical hurdle model will appear as follows:

$$p(g = 0) = \varphi(\mathbf{x}\gamma)$$

$$\log(g) | (\mathbf{x}, g > 0) \sim \text{Normal}(\mathbf{x}\beta, \sigma^2)$$

Where  $g$  is the number of attacks that occurred on educational institutions and  $\mathbf{x}$  is the vector matrix of other explanatory variables. The nature of these variables is such that they are characteristics of the individuals that could be accounted for with respect to their enrolment decision. These include but are not limited to age, gender, age squared, enrolment status and deaths per district. The dataset that is being used for this study did not contain information on the average district income; however, we have tried to control for it by including district fixed effects. The parameters of interest here are  $\gamma$  and  $\beta$  and  $\sigma$  is the standard deviation of  $g$  (Aslam & Kingdon, 2008). In the first set of equations (1-3), the predicted probability of a student with a certain set of characteristics being enrolled will be estimated. Then using the said probability in the Hurdle model, the unbiased impact of terrorism on test scores of those students who are enrolled only will be estimated.

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<sup>5</sup> Chi (2017), Kouser & Qaim (2015),

The Hurdle model has been documented to be a better fit for continuous variables compared to the Heckman model that deals with selection bias arising from missing data (Hofstetter et al., 2016; Chi, 2017). For our sample, the zeros in the data set do not indicate missing variables, but are instead decision outcomes. An added advantage of the Hurdle model is that it allows a different set of covariates or correlations to influence enrolment. In our first stage selection for factors that can affect enrolment, we will use the gender of the child, the corresponding asset index for the child in question and their district of residence. The basis for these selection variables is that the enrolment of children in a social setup such as Pakistan is heavily contingent upon whether the child is a female or male. The level of wealth is proxied by the asset index which comprises of the following variables available in the dataset: availability of electricity, ownership of mobile phone and possession of a television. These variables have been documented to have significant impact on the enrolment decision when it comes to children in Pakistan (Lloyd, Mete & Sathar, 2005). While we control for district level income through our fixed effects, the direct impact of wealth status on the enrolment of an individual cannot be unaccounted for. Lastly, locality has a significant result on the enrolment- some districts are more prone to education attainment compared to others and therefore, has an important role to play in the enrolment decision. As such, the Hurdle model is preferred. The model also provides a correlation coefficient denoted by sigma (Hofstetter et al., 2016).

## 4. Data

In total, the comprehensive record of attacks is documented by sources such as The International Terrorism: Attributes of Terrorist Events (ITERATE), RAND Database of Worldwide Terrorism Incidents (RDWTI), Integrated Network for Societal Conflict Research (INSCR) and GTD<sup>6</sup>. However, amongst these data bases, the GTD stands out for its extensively recorded information for each specific country. It has data from 1970 onwards and the consistent upgrading allows for researchers to take into account the most recent data (START, 2018). In comparison, RDWTI is limited to the year 2009 and therefore, would not suffice for the objectives of this study. Compared to the GTD, ITERATE only covers information for popular events that appear in electronic and print media (Enders & Sandler, 2007). Another factor that warrants the use of GTD is that it provides information on casualties and classifies the attacks into several categories and sub-categories within the same listing, unlike the ITERATE.

The data is specific to the attacks that occurred in Pakistan between 2013 and 2016. For the purpose of this study the definition of terrorism will be adopted from the main data source, GTD, whereby a terrorist attack is defined as *the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation*<sup>7</sup> (GTD, 2016).

For analyzing the impact of shocks on the learning outcome, ASER<sup>8</sup> will be used for the same years as the GTD. This is the largest citizen led household survey that is conducted to improve the educational state of the children residing in Pakistan. The main variable of interest from here would be the test scores which are reflective of the learning of a child. Test

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<sup>6</sup> GTD is maintained by the National Consortium for the Study of Terrorism and Responses to Terrorism (START) at the University of Maryland.

<sup>7</sup> Refer to the GTD codebook for full specifications.

<sup>8</sup> Led by Idara-e-Taleem-o-Aagahi (ITA) or the Center for Education and Consciousness.

scores are divided into three categories; reading in their local language(Sindhi/Pashto/Urdu), arithmetic and reading in English. The tests are designed to measure the competency of children in the areas of language and mathematics. The content of the assessment is based on the curriculum of grade 1 and 2, which is defined as the minimum schooling level that equips students with the skills to read and learn basic numeracy skills. These variables are defined in the ASER dataset as being measured on a scale of 1 to 5, where 5 is representative of the highest level of competency.

To provide a comprehensive understanding of terrorism in different aspects of a child's development, these scores will be treated as three dependent variables of interest. These are based on the questions asked by ASER and details of it can be found in the Appendix C. Control variables such as the child's age, age squared and enrolment status are also extracted from the dataset.

### Data Description

Figure 1 (appendix B) shows how the sphere of terrorism has mapped itself on to the society over a course of 45 years. Narrowing down the attacks to the area of interest in this research, figure 2 highlights the core areas that were under attack in Pakistan for the years 2013 to 2016. A majority of the attacks took place along the north of the Durand line, specifically in Peshawar and surrounding districts. Despite the length of the border, the effects of the war against terrorism in Afghanistan appears to have little influence in Baluchistan as evident by the frequency of attacks shown in figure 2 (appendix B).

Table 1 presents an overview of the data being used for this paper. On average, students score 3 in the 1 to 5 scale that was used to gauge their learning. These scores seem to be slightly reduced in the post-APS years. The average age in the ASER sample was 9 with the overall range being 5 to 16 year old. Prior to the APS years, there were more incidents of deaths per district which decreases in the post APS years, perhaps, owing to the massive counter terrorism



activities that took place. The deaths on average could be driven from the highest value of 21,803 deaths which occurred in Karachi over the course of four years. Lastly, of the sample in question, approximately 89% of students were enrolled when the surveys were undertaken, however test scores are for the entire sample (regardless of their enrolment status). It is evident that in the years after the incident took place, there was a marginal decline in some of the key indicators of educational attainment such as the test scores and the enrolment levels. However, there was a small increase in the proportion of female students even though there was an overall decline in the number of children. Other than the difference in the number of female students, all other differences are significant at the 5% level. The primary reason for the differences across the control variables is due to the missing values in the test scores for English Reading and Mathematics. These are missing as they were not reported in the ASER data.

*Table 1: Descriptive Statistics*

<b>Dependent Variables</b>	<b>Independent Variables</b>	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>
English Reading Score		783,262	3.104	1.562	0	5
	Female	783,261	0.388	0.487	0	1
	Child's Age	783,262	9.742	3.268	5	16
	Age Squared	783,262	105.598	67.527	25	256
	Enrolled	783,262	0.899	0.302	0	1
	Deaths per District	783,262	1836.15	4121.73	0	21803
Reading in Local Language Scores		785,550	3.152	1.529	0	5
	Female	785,549	0.388	0.487	0	1
	Child's Age	785,550	9.739	3.268	5	16
	Age Squared	785,550	105.518	67.505	25	256
	Enrolled	785,550	0.899	0.302	0	1
	Deaths per District	785,550	1837.15	4125.34	0	21803
Mathematics Scores		783,357	3.141	1.498	0	5
	Female	783,356	0.388	0.487	0	1
	Child's Age	783,357	9.74	3.268	5	16
	Age Squared	783,357	105.547	67.51	25	256
	Enrolled	783,357	0.899	0.302	0	1
	Deaths per District	783,357	1840.49	4129.78	0	21803
<b>Pre APS</b>						
English Reading Score		380,096	3.168	1.545	1	5
	Female	380,096	0.381	0.486	0	1
	Child's Age	380,096	9.759	3.259	5	16

	Age Squared	380,096	105.863	67.268	25	256
	Enrolled	380,096	0.908	0.289	0	1
	Deaths per District	380,096	2149.68	4716.27	0	21803
<hr/>						
Reading in Local Language Scores		381,569	3.205	1.494	1	5
	Female	381,569	0.381	0.486	0	1
	Child's Age	381,569	9.753	3.258	5	16
	Age Squared	381,569	105.743	67.239	25	256
	Enrolled	381,569	0.908	0.289	0	1
	Deaths per District	381,569	2151.47	4720.59	0	21803
<hr/>						
Mathematics Scores		380,978	3.192	1.444	1	5
	Female	380,978	0.381	0.486	0	1
	Child's Age	380,978	9.755	3.258	5	16
	Age Squared	380,978	105.781	67.249	25	256
	Enrolled	380,978	0.908	0.289	0	1
	Deaths per District	380,978	2151.29	4717.45	0	21803
<hr/>						
<b>Post APS</b>						
<hr/>						
English Reading Score		403,166	3.044	1.577	0	5
	Female	403,165	0.394	0.489	0	1
	Child's Age	403,166	9.727	3.277	5	16
	Age Squared	403,166	105.348	67.769	25	256
	Enrolled	403,166	0.89	0.312	0	1
	Deaths per District	403,166	1540.56	3443.09	0	21803
<hr/>						
Reading in Local Language Scores		403,981	3.102	1.56	0	5
	Female	403,980	0.394	0.489	0	1
	Child's Age	403,981	9.724	3.277	5	16
	Age Squared	403,981	105.306	67.756	25	256
	Enrolled	403,981	0.89	0.313	0	1

	Deaths per District	403,981	1540.27	3444.35	0	21803
Mathematics Scores		402,379	3.093	1.547	0	5
	Female	402,378	0.394	0.489	0	1
	Child's Age	402,379	9.726	3.277	5	16
	Age Squared	402,379	105.325	67.755	25	256
	Enrolled	402,379	0.89	0.313	0	1
	Deaths per District	402,379	1546.23	3457.5	0	21803

Note: Author's own calculations based on data from GTD and ASER for the years 2013-2016, where 2013 and 2014 are pre-APS years and 2015 and 2016 are post-APS years

## 5. Results

To provide an in-depth analysis of the relationship between adverse shocks and educational outcomes, we use the Hurdle model to test the impact of the adverse shock on the student's test scores, conditional on their enrolment. We utilize the full sample of students who were enrolled at the time of the ASER survey for the regression analysis. Moreover, although the statistics show approximately 785,000 observations for our test scores, combined with the missing data we have for provinces causes the drop in observations for our regression analysis as we apply fixed effects using the province level variable.

### 5.1 Impact variation by exposure intensity

Table 2 shows results from estimating equation (1). On average, there is a greater decline in the educational attainment of students who are present in areas that have had high intensity of exposure compared to those students who have had low exposure to violence. On average, as an aftermath of the terrorist attack, results for all three scores have shown a decline ranging between 2 to 3 percent (Table 2, column 1,4 and 7). We see that for the case of English reading scores, there is a decrease in test scores by 2.3%. For the arithmetic results, after accounting for selection, the high exposure variable shows a considerable decrease in scores by 2.6%. The lowest decline out of all three assessments is that in reading in local language scores.

However, this negative effect is further aggravated after the APS incident, especially in regressions with controls and the Hurdle model (Table 2, columns 2,3,5,6, 8 and 9). The results from this analysis states that people in high exposure have a decrease from terrorist attacks and *further* decrease after APS. The trend for all three measures of educational attainment, shown by the coefficient on the interaction term High Intensity\* Post APS, is negative. While the

coefficient on the interaction term is usually negative in all specification, it becomes negative and significant when we use the Hurdle model to look at the effect of terrorism on learning, conditional on being enrolled.

As an additional measure, we will run an OLS with district and time fixed effects. The Hurdle model results are as shown in main tables since the variation left after we control for district and/or time effects is insufficient for the Hurdle model to compute results. The results for this can be found in Appendix E, Table E.

**Table 2: Impact of Exposure to Terrorism Exposure on Test Scores, by intensity**

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	-0.0235 (0.0732)	-0.0675 (0.0460)	-0.116*** (0.00513)	-0.0238 (0.0610)	-0.0543 (0.0392)	-0.101*** (0.00488)	-0.0254 (0.0620)	-0.0561 (0.0412)	-0.104*** (0.00471)
Post APS Years	-0.0278 (0.0706)	-0.0494 (0.0530)	-0.0192*** (0.00600)	0.000639 (0.0609)	-0.0224 (0.0454)	0.00134 (0.00577)	-0.0254 (0.0644)	-0.0463 (0.0508)	0.0171*** (0.00561)
High Exposure * Post APS	-0.162* (0.0888)	-0.0457 (0.0652)	-0.0943*** (0.00717)	-0.161** (0.0742)	-0.0515 (0.0529)	-0.0979*** (0.00687)	-0.124 (0.0801)	-0.0191 (0.0601)	-0.0729*** (0.00667)
Constant	4.071*** (0.0479)	-1.454*** (0.145)	-1.342*** (0.0169)	4.001*** (0.0490)	-1.797*** (0.140)	-1.579*** (0.0160)	3.981*** (0.0504)	-1.555*** (0.132)	-1.226*** (0.0155)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	NO	YES	YES	NO	YES	YES	NO	YES	YES
Observations	783,262	783,261	783,261	785,550	785,549	785,549	783,357	783,356	783,356
R-squared	0.077	0.448		0.053	0.463		0.054	0.443	

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

## 5.2 Impact variation by gender

To test gender differential in effects, we estimate equation (2), where the main variables of interest include the interaction terms between being a female in an exposed area pre and post APS. For each test type, columns show results from estimating a simple OLS model, a saturated OLS model with controls and fixed effects and a Hurdle model with controls. As indicative from Table 3, females have a disadvantage; a female student is likely to score lower on tests compared to their male counterparts, particularly in the mathematics assessments. Recent studies have documented a systematic gender differential in the proportion of women who select Science, Technology, Engineering and Mathematics (STEM) and their performance in these STEM subjects, citing traditional gender roles as the core factor for why women perform poorly in subjects such as Mathematics compared to the male students (Salikutluk & Heyne, 2017). With regards to both the cultural norms and gender roles that prevail in Pakistan, this theory could be a likely candidate that explains the differences in the test scores, which further escalate during times for shocks.

Performance is even lower for girls than for boys as the intensity of the shock increases, and this effect is significant in the case of the hurdle model when selection is taken into account (Columns 3, 6, 9 in Table 3). The performance is worsened after a particularly extreme negative shock - a female student in the years after APS had significantly worse performance in all three tests compared to their male counterparts. Girls residing in highly exposed areas faced a double digit decline compared to low exposed females. On average, these girls had a decline of 13-14% in their reading and mathematics scores (Table 3, columns 3, 6, and 9). The coefficient of these interaction variables are highly significant in all specifications.



Similar to running district and time level fixed effects, for equation (1), we will run equation (2) with the same parameters for an additional robustness check. The results for this estimation are shown in Table B, Appendix E.

**Table 3: Impact of Exposure to Terrorism by Gender**

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	0.0197 (0.0720)	-0.0544 (0.0487)	-0.0695*** (0.00630)	0.0191 (0.0605)	-0.0429 (0.0406)	-0.0573*** (0.00598)	0.0183 (0.0621)	-0.0430 (0.0434)	-0.0596*** (0.00576)
Post APS Years	-0.0168 (0.0749)	-0.0382 (0.0566)	0.00542 (0.00760)	0.00810 (0.0643)	-0.0138 (0.0479)	0.0219*** (0.00728)	-0.0193 (0.0681)	-0.0403 (0.0539)	0.0353*** (0.00708)
High Exposure * Post APS	-0.104 (0.0908)	-0.00891 (0.0683)	-0.0441*** (0.00892)	-0.101 (0.0754)	-0.0131 (0.0552)	-0.0470*** (0.00852)	-0.0691 (0.0822)	0.0166 (0.0635)	-0.0243*** (0.00826)
Female * Post APS	-0.0203 (0.0393)	-0.0284 (0.0277)	-0.0632*** (0.0122)	-0.0114 (0.0376)	-0.0220 (0.0263)	-0.0531*** (0.0118)	-0.00748 (0.0381)	-0.0156 (0.0277)	-0.0473*** (0.0114)
Female * High Exposure	-0.112** (0.0454)	-0.0297 (0.0255)	-0.114*** (0.0100)	-0.112** (0.0447)	-0.0255 (0.0235)	-0.107*** (0.00959)	-0.114*** (0.0438)	-0.0305 (0.0242)	-0.108*** (0.00923)
Female * High Exposure * Post APS	-0.145** (0.0573)	-0.0964*** (0.0355)	-0.137*** (0.0146)	-0.149*** (0.0551)	-0.100*** (0.0325)	-0.138*** (0.0140)	-0.137** (0.0542)	-0.0928*** (0.0337)	-0.130*** (0.0136)
Female	-0.156*** (0.0322)	-0.0133 (0.0191)	-0.0703*** (0.00834)	-0.169*** (0.0329)	-0.0206 (0.0198)	-0.0786*** (0.00801)	-0.182*** (0.0311)	-0.0409** (0.0191)	-0.0959*** (0.00774)
Constant	4.149*** (0.0511)	-1.481*** (0.144)	-1.407*** (0.0171)	4.085*** (0.0529)	-1.822*** (0.138)	-1.640*** (0.0162)	4.071*** (0.0543)	-1.580*** (0.131)	-1.286*** (0.0157)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	NO	YES	YES	NO	YES	YES	NO	YES	YES
Observations	783,261	783,261	783,261	785,549	785,549	785,549	783,356	783,356	783,356
R-squared	0.087	0.449		0.065	0.463		0.066	0.443	

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

### 5.3 Heterogeneity by Age

Trauma has a varying degree of influence on individuals due to a number of characteristics. One of the factors that we control for in this study is age. For our analysis, we divide the sample into two groups: children between the ages of 5 till 10 and children aged 11 and above. We regress both specifications on these subgroups to get a better understanding of the relationship between age and gender. We then specifically test it on girls who tend to be the more marginalized members of society. The results for this are present in Table I to L in Appendix E.

We find mixed results for our study with regards to variation in ages and the impact of trauma on children's ability to perform academically. For children who are aged 10 and less, their test scores tend to fall by 12% to 17% in all three test scores. However, when compared to the sub sample of children older than 10 years of age, we see that they do not face a substantial decline in their test scores (Table B, Appendix E). It can be inferred from this that younger children tend to be more vulnerable to the negative aftermath of terrorist activities. In a paper by Qouta et., al (2008), they notice that as children grow older, they tend to develop better cognitive skills as well as the ability to form complex reasoning and engage in social activities. This in turn reduces their attention towards aggression and improves their ability to withstand trauma.

Compared to the full sample, younger girls had a smaller magnitude of decline in their Mathematics scores. As we move towards the results of females aged 11 years and above, we notice that they tend to have a greater decline in their academic performance. They experience a decrease in test scores by 25% to 27% for Reading and Mathematics respectively. As per research, girls have a higher inclination towards fostering and expressing anxiety and anxiety related symptoms (Green et al., 1991; Pine & Cohen, 2002; Shaw, Applegate & Schorr, 1996), which is evident from the results in Table B and Table D.

**Table 4: Impact of Terrorism across intensity for children less than equal to 10 years of age**

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	-0.00248 (0.0670)	-0.0518 (0.0466)	-0.0910*** (0.00674)	-0.0125 (0.0535)	-0.0443 (0.0402)	-0.0816*** (0.00635)	-0.00967 (0.0560)	-0.0425 (0.0430)	-0.0802*** (0.00606)
Post APS Years	0.0640 (0.0666)	0.0394 (0.0551)	0.0840*** (0.00780)	0.0713 (0.0558)	0.0480 (0.0475)	0.0768*** (0.00745)	0.0548 (0.0606)	0.0324 (0.0531)	0.101*** (0.00715)
High Exposure * Post APS	-0.202** (0.0800)	-0.109* (0.0646)	-0.174*** (0.00917)	-0.174*** (0.0644)	-0.0929* (0.0528)	-0.144*** (0.00871)	-0.141* (0.0722)	-0.0606 (0.0602)	-0.120*** (0.00835)
Constant	3.433*** (0.0479)	-0.441** (0.173)	-1.688*** (0.0444)	3.323*** (0.0518)	-0.549*** (0.145)	-1.602*** (0.0415)	3.328*** (0.0523)	-0.596*** (0.148)	-1.415*** (0.0397)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	NO	YES	YES	NO	YES	YES	NO	YES	YES
Observations	483,432	483,431	483,431	485,272	485,271	485,271	483,731	483,730	483,730
R-squared	0.085	0.368		0.054	0.372		0.052	0.360	

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

**Table 5: Impact of Terrorism by Gender, across age greater than 10**

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	-0.00576 (0.0687)	-0.0718 (0.0544)	-0.0971*** (0.00918)	0.0113 (0.0593)	-0.0466 (0.0457)	-0.0705*** (0.00880)	0.0132 (0.0607)	-0.0531 (0.0475)	-0.0798*** (0.00859)
Post APS Years	-0.126* (0.0713)	-0.162** (0.0630)	-0.129*** (0.0113)	-0.0692 (0.0630)	-0.107* (0.0551)	-0.0738*** (0.0109)	-0.105 (0.0677)	-0.150** (0.0597)	-0.0763*** (0.0107)
High Exposure * Post APS	0.0462 (0.0962)	0.104 (0.0833)	0.112*** (0.0134)	0.00529 (0.0802)	0.0603 (0.0671)	0.0578*** (0.0129)	0.0335 (0.0872)	0.0954 (0.0746)	0.0875*** (0.0127)
Female * Post APS	-0.193*** (0.0524)	-0.0322 (0.0369)	-0.0939*** (0.0188)	-0.195*** (0.0503)	-0.0297 (0.0356)	-0.0856*** (0.0183)	-0.199*** (0.0493)	-0.0171 (0.0363)	-0.0738*** (0.0182)
Female * High Exposure	-0.246*** (0.0524)	-0.0219 (0.0336)	-0.146*** (0.0154)	-0.256*** (0.0487)	-0.0227 (0.0295)	-0.147*** (0.0149)	-0.275*** (0.0479)	-0.0285 (0.0291)	-0.144*** (0.0146)
Female * High Exposure * Post APS	-0.172** (0.0824)	-0.202*** (0.0587)	-0.264*** (0.0232)	-0.159** (0.0779)	-0.196*** (0.0542)	-0.255*** (0.0225)	-0.136* (0.0759)	-0.197*** (0.0549)	-0.263*** (0.0223)
Female	-0.00576 (0.0687)	-0.0718 (0.0544)	-0.0971*** (0.00918)	0.0113 (0.0593)	-0.0466 (0.0457)	-0.0705*** (0.00880)	0.0132 (0.0607)	-0.0531 (0.0475)	-0.0798*** (0.00859)
Constant	4.906*** (0.0470)	-2.358*** (0.284)	0.256 (0.188)	4.888*** (0.0473)	-2.310*** (0.287)	0.407** (0.182)	4.839*** (0.0490)	-2.067*** (0.297)	0.506*** (0.179)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	NO	YES	YES	NO	YES	YES	NO	YES	YES
Observations	299,830	299,830	299,830	300,278	300,278	300,278	299,626	299,626	299,626
R-squared	0.091	0.348		0.075	0.346		0.078	0.323	

Note: The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

## 6. Robustness Checks

In order to rule out the possibility of results being driven by outliers, identified in the dataset as having the largest number of attacks, we also test if results are robust to the removal of Karachi and Peshawar from the sample, to varying definition of intensity and to the age of the student. Furthermore, exponential hurdle checks were run for the specifications to account for any parameters that could cause a non-linear outcome. The results for these can be found in appendix E from Table A onwards. We utilize the full sample of students who were enrolled at the time of the ASER survey for the regression analysis

### 6.1 Accounting for district level variation

The impact of exposure to terrorism might be confounded by differences across district level factors such as income. In order to rule this out, we augment our model with district level fixed effects<sup>9</sup>.

The results can be found in Table E and F. From table F, it can be inferred that the results are robust as there is no change in the direction nor the significance of the interaction term of interest. The Hurdle model results are similar to the main result as the lack variation in the Hurdle model does not allow for the district and time fixed effects to be computed.

### 6.2 Isolating Peshawar and the APS incident

While the negative effect of APS is visible in the subsequent years for the whole of Pakistan, we run another regression that removes this extreme event and find results for exposure intensity consistent to that of Table 2 (see Tables G and H in Appendix E). The magnitudes of the coefficients are slightly smaller but still negative and significant except for the case of

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<sup>9</sup> Fixed effects are not used for the Hurdle model.



mathematics, where the magnitude is greater (Table G, column 9). Thereby reflecting that the initial results may have been driven due to the APS incident but not by a significant amount.

### 6.3 Isolating Karachi

During the analysis, Karachi was identified as an outlier since the frequency of attacks in Karachi was relatively higher (close to 1500) in our sample years compared to other districts. To ensure the accuracy of results, Karachi was also dropped as a district for analysis along with Peshawar. The results do not change, except for a minimal increase in the coefficients in regression 1, therefore reinstating the accuracy of our main regressions (see Tables I and J in Appendix E).

### 6.4 Exponential Hurdle

Although the linear output model was used in the regressions, an exponential Hurdle model was run simultaneously to account for any plausible distributional parameters that could cause non-linearity. Although the directions of the variables remain the same, the coefficients change by a noticeable amount (See Tables K and L in Appendix E).

### 6.5 Using Cumulative exposure measure

In order to account for the oscillations in the flow of terrorism and counter terrorism activities within Pakistan during the sample years, an additional robustness check was performed where the exposure intensity variables were defined differently. In this case, for each sample year in question, the preceding 4 years were also used to construct the exposure intensity variable for the purpose of smoothing out abnormalities. Therefore, each exposure intensity variable is a cumulative representation of the terrorist attacks. This implies that the intensity exposure variables are based on the cumulative frequency of attacks in the current year *and* the previous four years. Another benefit of this robustness measure is that it takes into account, the trends of the past years, thus enabling us to account for yearly variations. Using Tables M and N, we can conclude that on

average, the results do not change except for the case of high exposure for equation (1) where some of the coefficients become insignificant. Otherwise, the results from this check also indicate that an extreme shock leads to a decline in educational attainment, which holds true for both boys and girls.

### 6.6 Using different measures of the exposure variable

Earlier, we defined our exposure intensity variables as two categories; low if the frequency of attacks were below the 25<sup>th</sup> percentile for the year and high exposure otherwise. To ensure the robustness of the definition of the variables themselves, we reclassify our variables using another cutoff: a low intensity area takes on a value of one if the frequency of attacks in below the 50<sup>th</sup> percentile. Therefore, the high intensity area is defined as an area that experienced attacks greater than equal to the 50<sup>th</sup> percentile of the frequency of attacks within that year. We notice a similar trend in the results when we ran our main regressions with our initial classification. Thus, based on the results in Appendix E, Tables O, except for the decrease in the magnitude of the coefficients, the sign and significance remains the same. From Table P, we can conclude that in for the second estimation, the direction of the impact remains the same but the significance drops. Therefore, the initial results are not driven by the definition of the variable.

### 6.7 Using the Heckman approach

We mentioned in our study that there is a potential cause for endogeneity in our sample. We implemented the Hurdle model to show the effect of terrorism on learning outcomes conditional on a student being enrolled. In this phase, we will address the selection problem by implementing the Heckman model (Heckman, 1979). This will additionally serve as a robustness check for the comparison between the Hurdle technique as the Heckman model shows the results if we cannot assume the two decisions are conditionally independent. Initially in Table Q, column 1 represents the results from the Hurdle model where we control for province level fixed effects;

the second column indicates the results from the Heckman model where we implement fixed effects at the province level; the last column accounts for district level clustering in the Heckman model. As is evident from Table Q in Appendix E, after accounting for selectivity in the data and applying clustering at the district level, the impact of terrorist activities is insignificant although it is negative. What is interesting to note is that being a female has a positive impact when it comes to tests scores compared to our earlier estimates where gender had a negative impact. It would appear in first glance that these adverse shocks have no statistically significant cause and effect relationship when it comes to the case of learning outcomes. However, Table R shows that being a female in a highly exposed area after the APS incident took place has an adverse effect on the learning outcomes. Although it is tempting rule out the impact of the depth of the intensity when it comes to controlling for selection, it would be incorrect to negate it altogether given that the results of Table R are highly significant and the coefficients are also downward sloping.

### 6.8 Testing for migration

It is possible for the test results in areas highly impacted by attacks to be affected by out-migration – high-ability families and children migrate out of the severely impacted districts or provinces. We do not have access to district level migration rates; however, our earlier robustness measure of using district and time fixed effects may account for district migration rates. Furthermore, we explore provincial out-migration rates. We use the Labour Force Survey (LFS) data for Pakistan for two rounds; 2013-14 and 2014-15 to look at the pre and post event migration levels. The LFS is an annual, comprehensive survey that provides insights into the earnings, age, marital status, educational levels, migration and occupational trends at the district level. The round 2012-13 serves as a pre-incident year and since there is a lack of data availability for the years 2016 and 2017, we will be comparing the migration rates with the 2014-15 round where the APS incident occurred in December 2014. The analysis of this study is at the district level and therefore,

capturing the district level trends in migration is necessary. The use of the LFS for migration analysis in Pakistan has been carried out in prior studies (Mahmud et al., 2010; Nisar, Akram & Hussain, 2013).

Using the data available at the Pakistan Bureau of Statistics (PBS), we calculate the differences in the migration rates for across provinces and within provinces as well. Between the two data rounds, there was an outward migration from Khyber Pakhtunkhwa (KPK) of 0.85% which is the highest level of migration, followed by that of Sindh (0.71%) and lastly, FATA (0.26%). All other provinces experienced a net inflow of migration instead. Thus, the overall migration trends across provinces are in fact low. Despite the severity of terrorism in KPK and Sindh, the flow of individuals relocating is smaller than what should be expected if security concerns were the primary factor for driving out residents.

Within KPK, there was an increase from 4.76% to 5.69%, thus implying that a significant proportion of the migration was intra provincial in nature. For the case of Sindh, there was change from 51.56% to 52.02% of people moving to Punjab for settlement. Sindh, therefore, experienced more inter province migration than the APS district. <sup>10</sup>

Despite a lack of data for the years immediately after the APS incident, the recent publication of the LFS report for the year 2017-18 highlights an important aspect of migration: the average migration level within Pakistan at the province level did not change substantially between the rounds 2014-15 and 2017-18. The largest increase in migration level between the two years was in Punjab where the growth was from 68.2% to 70.3%.

Given the unavailability of data, it might be difficult to appropriately control for migration between districts. However, with our earlier robustness measure of using district and time fixed

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<sup>10</sup> As calculated by the Pakistan Bureau of Statistics (LFS), table 12: Percentage distribution of migrant population 10 years of age and over by place of present and previous residence, area, sex and provinces.

effects, and the data pertaining to migration that is available, it can be concluded that the migration levels are not sufficiently large to bias our results.

## 7. Discussion

Although studies documenting the impact of adverse shocks using ASER are rare, a paper pertaining to the in-utero exposure to drought in India shows similar pattern to our empirical estimation (see Shah & Steinberg, 2014). Furthermore, Akter and Chindarkar (2019) document the impact of a mother's vulnerability to partner violence and show how children score lower on the Mathematics and Reading scores by a magnitude similar to the results of this study. As per their results, there is a decline of 0.002 and 0.026 standard deviations<sup>11</sup> for the reading and mathematics scores respectively. However, as it is evident from Table 1, our coefficient estimates are larger in comparison.

In an article by Jayasinghe, Jayawardena, & Perera, (2009), exposure of a child to intimate partner violence(IPV) resulted in lower average marks by a coefficient of 2.8 (OR)<sup>12</sup>. Comparing our results across the context of developed countries, Peek-Asa, et al., (2007) used the standardized test score framework similar to this study and analyzed the impact of violence on schooling outcomes and found that the performance of children who are exposed decreased by 12.2 percentage points.

Testing for the impact on sixth graders between the ages of 11-13, community level exposure showed a negative correlation of 18.44% with academic achievement which was measured using the Iowa Test of Basic Skills (ITBS). Similarly, witnessing any form of violence had a negative correlate of 19.6% (Thompson & Massat, 2005). Based on the Test of Early Reading Ability, Delaney-Black et al., (2002) conclude that higher exposure to community level violence reduces the score on the test by 9.8 points.

For our own results, we present a comparison of the average scores in high intensity areas prior to the incident with the estimates of our results. Prior to the incident, the average learning

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<sup>11</sup> Statistically significant at the 1% level.

<sup>12</sup> Odds ratio.

outcomes were 3.17, 3.21 and 3.13 out of 5, for English reading, Reading in local language and Mathematics respectively. Given the coefficient estimates in Table 2, the mean scores in the high intensity areas decreased by 2.8%, 3.1% and 2.3% in aforementioned order. Further, we use the average scores of females in high intensity areas before the APS incident (2.95, 2.99 and 2.97 for English reading, Reading and Mathematics scores) and the estimates from Table 3. Our estimates indicate a decline in the average scores of females in high intensity areas post APS by 4.6% for both the reading scores and there is a decline in Mathematics score by 4.4%.

Despite the vastly documented impact of certain types of conflicts on test scores, at present there is no study that evaluates the impact of a significant one off terrorist attack on the learning outcomes of children, especially for Pakistan. Therefore, making a direct comparison of the impact is difficult at this point.

## 8. Conclusion

This study aims at understanding the relationship between adverse terrorist shocks and the impact they have on the educational attainment of children within the geographical bounds of Pakistan for the years 2013 till 2016. For the purpose of this thesis, data was used from the GTD and ASER Pakistan for the aforementioned years. We specifically look at the APS incident as an extreme event.

The overall result from this study is that terrorism and related adverse shocks tend to cause a decline in the school performance of children. Further, the presence of an extreme event exacerbates the negative effect. This paper finds that performance of the female students suffers more than the male students. In subsequent analysis we also find that, in line with literature documenting psychological effects of traumatic events, younger children are affected more than the older children, while boys tend to be more resilient in later years.

In a country that is plagued by low levels of literacy and even lower levels of education for girls, terrorism serves as a seemingly impossible obstacle to overcome. These findings suggest that females are the most affected party when it comes to violence and this vulnerability is expressed in their test performance. Thus, there needs to be a pragmatic approach towards counteracting the Taliban propaganda, specifically in the most vulnerable areas of the country. This approach would require providing infrastructure and resources that are more female oriented such as higher female to male teacher ratio and ensuring that educational institutions are located in nearby vicinities. By doing so, the fear associated with travelling to schools further away, with terrorist threats also present, is reduced to some extent. In addition to fostering a higher sense of safety for children, it would prompt the community to further the education of their children knowing that they are closer to home. For girls, reinstating education at homes is a viable option should the fear of an attack prevent parents from sending them to schools that are distant.



Our results imply that the decline in the educational attainment of children is directly influenced by extremely traumatic events specifically those that are targeted at students and educational institutions. As children who experience shocks are more prone to experiencing trauma related psychological difficulties, ensuring quality training of emergency response teams as well as the provision of state funded psychologists can help children overcome this negativity (Garbarino et al., 2015). One of the significant results pertain to the enrolment status of children. This in turn suggests that the government should focus on the fourth sustainable development goal: ensuring free schooling for boys and girls (United Nations Sustainable Development, n.d).

Given the susceptible environment that exists within Pakistan, coupled with the fact that terrorist activities since the APS incident have not been eradicated<sup>13</sup>, children who are survivors of these incidents require extensive care to combat the trauma that is present today<sup>14</sup>. Conclusively, it would be in the interest of the people if resources and effort was provided to the conflict areas in Pakistan.

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<sup>13</sup> Shikarpur Imambargah (2015), Attack on Ismailis (2015), Gulshan-i-Iqbal Park (2016), Civil Hospital Quetta (2016), Police Academy Quetta (2016), Shah Noorani Shrine Khuzdar (2016), Lal Shahbaz Qalandar Shrine Sehwan (2017), Mastung (2018) and Hangu (2018). ("Timeline of the deadliest terrorist attacks in Pakistan since APS", 2017; "Major terrorist attacks that shook Pakistan in 2018", 2018) .

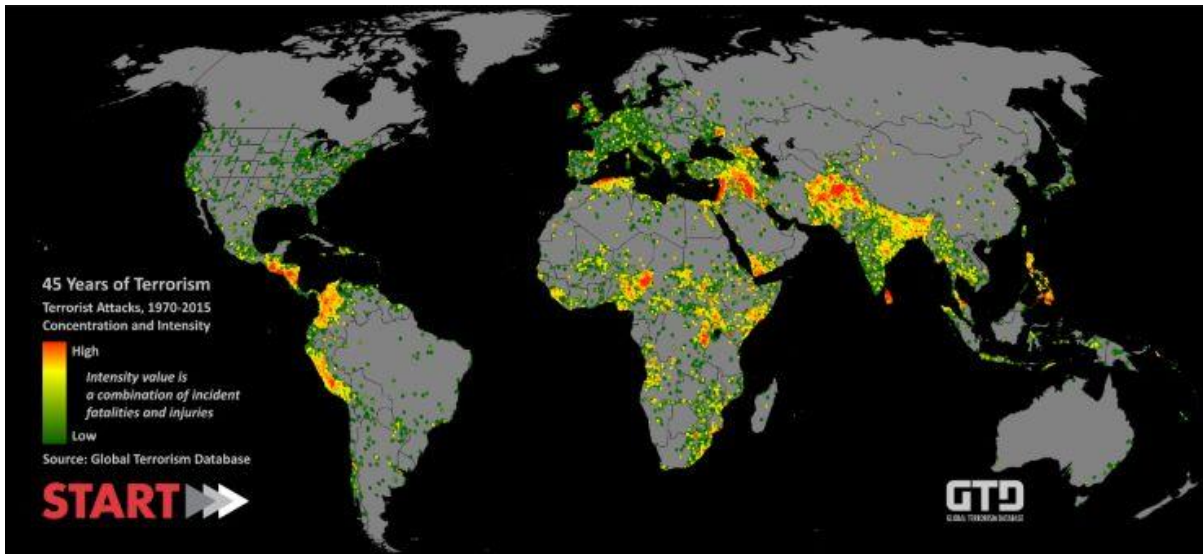
<sup>14</sup> "Umar still struggles, he says. From time to time, he will panic if he hears a loud noise, running through the house demanding that all the doors and windows be closed, latched, locked and secured." Narration of a survivor's father in 2018 (Hashim, 2018).

## Appendices

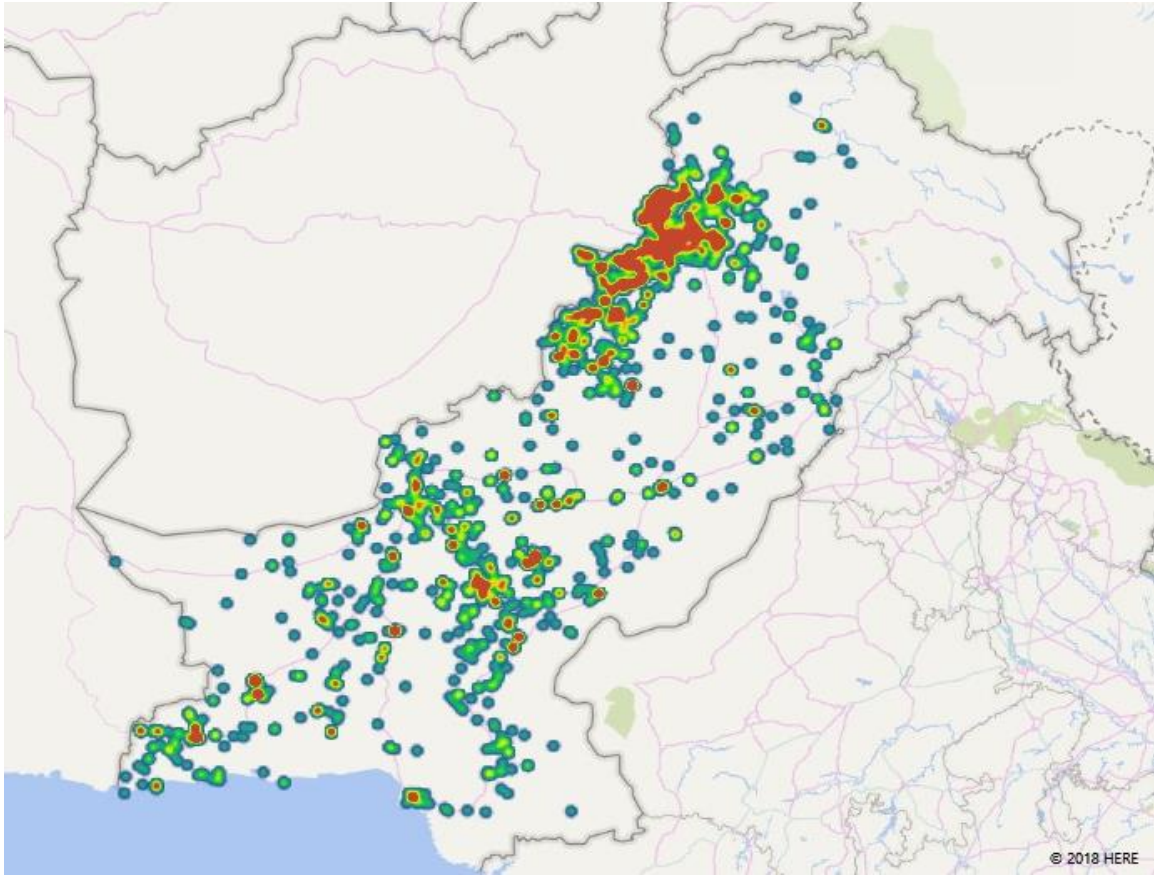
### *Appendix A*

Variable	Measure	Source	Description
<b>Low Exposure Intensity</b>	Dummy variable	GTD	Dummy = 1 if frequency of attacks is less than the 25 <sup>th</sup> percentile
<b>High Exposure Intensity</b>	Dummy variable	GTD	Dummy = 1 if frequency of attacks is greater than the 25 <sup>th</sup> percentile
<b>Year (pre)</b>	Dummy Variable	GTD/ASER	Dummy = 1 if year is 2013 or 2014
<b>Year (post)</b>	Dummy Variable	GTD/ASER	Dummy = 1 if year is 2015 or 2016
<b>Female</b>	Dummy variable	ASER	Dummy= 1 if female.
<b>Deaths per District</b>	Count	GTD	This field stores the number of total confirmed fatalities for the incident. The number includes all victims and attackers who died as a direct result of the incident in a particular district over the four-year period.
<b>Child's Age</b>	In years	ASER	Age in Years.
<b>Age Squared</b>	In years	ASER	Age in Years.
<b>Enrolled</b>	Dummy variable	ASER	Dummy = 1 if child is currently enrolled in school

*Appendix B*



*Figure 1 Source: Global Terrorism Database, Heat map of terrorist activities for 1970-2015, around the globe.*



*Figure 2: Author's own calculations using GTD, Heat map of the terrorist activities 2013-2017, Pakistan*

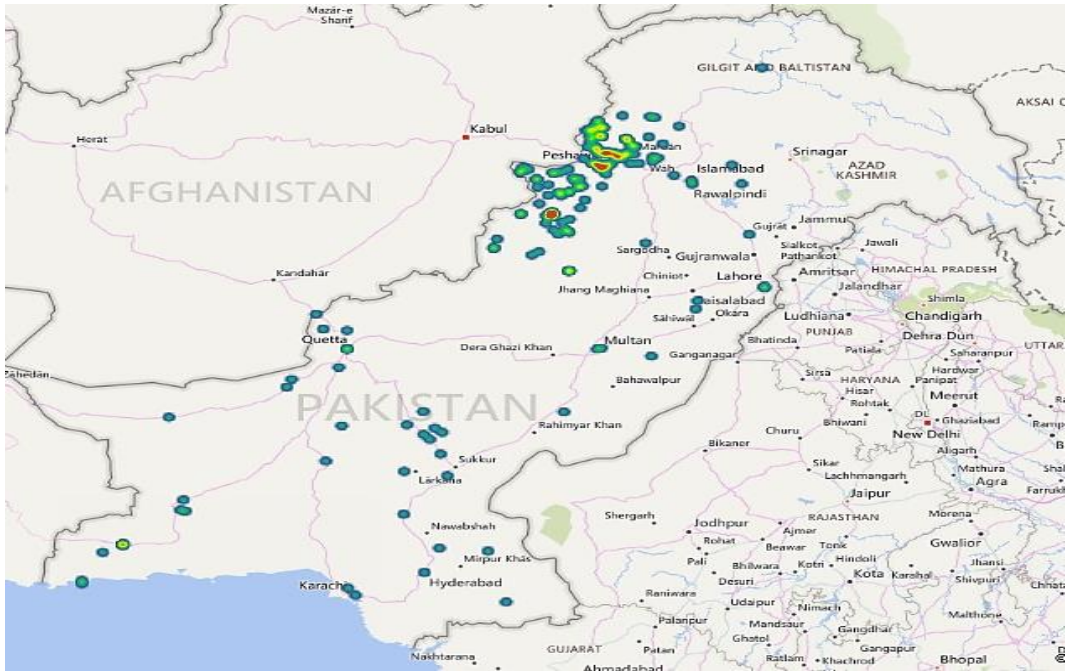


Figure 3: Author's own calculations based on GTD, Heat map of attacks on educational institutions, 2013-2016

Appendix C

ASER Questions for English, 2016

**English Tools**

Annual Status of Education Report  
**ASER 2016**  
Facilitated by SAFED

**Capital Letters**

Start from Here

Sample-1

C            L            T

          M            U

Q            S            F

          G            W

PAGE ①

Ask the child to read any 5 letters, out of which 4 must be correct.  
بچے سے کوئی سے پانچ حرف لے کر پوچھیں۔ 5 میں سے 4 صحیح ہونے چاہئے۔

Annual Status of Education Report  
**ASER 2016**  
Facilitated by SAFED

**Small Letters**

Sample-1

d            o            k

          h            a

x            n            p

          v            r

PAGE ①

Ask the child to read any 5 letters, out of which 4 must be correct.  
بچے سے کوئی سے پانچ حرف لے کر پوچھیں۔ 5 میں سے 4 صحیح ہونے چاہئے۔

Kindly fold the paper.

**English Tools**

Annual Status of Education Report  
**ASER 2016**  
Facilitated by SAFED

**Words**

Sample-1

Book        Fan

          Sky        Come        Milk

          Play        King        Tree

          Glass        Van

PAGE ②

Ask the child to read any 5 words, out of which 4 must be correct.  
بچے سے کوئی سے پانچ الفاظ لے کر پوچھیں۔ 5 میں سے 4 صحیح ہونے چاہئے۔

Ask the child to say the meaning of the identified words in local language.  
بچوں سے ان کو لکھی گئی زبان میں ان الفاظ کے معنی پوچھیں۔

Annual Status of Education Report  
**ASER 2016**  
Facilitated by SAFED

**Sentence**

Sample-1

Hira is my sister.  
She loves to sing.  
She plays with toys.  
She likes to eat rice.

**Sentence**

I have a pen.  
I like to write with it.  
I keep it in my pocket.  
Its colour is black.

PAGE ②

Ask the child to read one set of sentences only. 2 sentences out of 4 must be correct.  
بچے سے کوئی ایک جملہ لے کر پوچھیں۔ 4 جملوں میں سے 2 صحیح ہونے چاہئے۔

Ask the child to say the meaning of the sentences in local language.  
بچے سے ان جملوں کے معنی پوچھیں۔

Kindly fold the paper.

Capital Letters

Start from Here

Sample-2

D H P  
 V E  
 J N K  
 R Z

Small Letters

Sample-2

b f g  
 w c  
 m q t  
 y s

PAGE ①

Ask the child to read any 5 letters, out of which 4 must be correct۔ بچے سے کوئی سے پانچ حرف پڑھانے کو کہیں۔ 5 میں سے 4 صحیح ہونے چاہئے۔

Ask the child to read any 5 letters, out of which 4 must be correct۔ بچے سے کوئی سے پانچ حرف پڑھانے کو کہیں۔ 5 میں سے 4 صحیح ہونے چاہئے۔

Kindly fold the paper.

Words

Sample-2

Cake Hen  
 Man Foot Iron  
 Goat Read Water  
 Like Pen

Sentence

Sample-2

My father is a teacher.  
 He teaches Urdu.  
 He has black hair.  
 I love my father.

Sentence

I like reading.  
 I have a story book.  
 I keep it in my bag.  
 I read it daily.

PAGE ②

Ask the child to read any 5 words, out of which 4 must be correct۔ بچے سے کوئی سے پانچ الفاظ پڑھانے کو کہیں۔ 5 میں سے 4 صحیح ہونے چاہئے۔  
 Ask the child to say the meaning of the identified words in local language۔ بچوں سے ان کے نام لکھی زبان میں بتانے کے الفاظ کا مطلب پوچھیں۔

Ask the child to read one set of sentences only. 2 sentences out of 4 must be correct۔ بچے سے کوئی ایک جملوں کا سب سے پڑھانے کو کہیں۔ 4 جملوں میں سے 2 صحیح ہونے چاہئیں۔  
 Ask the child to say the meaning of the sentences in local language۔ بچے سے ان جملوں کا مطلب پوچھیں۔

Kindly fold the paper.

## ASER Questions for Urdu, 2016

### Urdu Tools

Sample-1 Words الفاظ

آگ بات  
وقت گائے کھیل  
شوق ادب  
گاڑی زمین چڑیا

Sample-1 Letters حرف

ب م  
ص ط خ  
غ ل  
ش گ ی

PAGE ①

Ask the child to read any 5 words, out of which 4 must be correct

بچے سے کوئی سے پانچ الفاظ پڑھائیں۔ 5 میں سے 4 صحیح ہونے چاہیے۔

Ask the child to read any 5 letters, out of which 4 must be correct

بچے سے کوئی سے پانچ حرف پڑھائیں۔ 5 میں سے 4 صحیح ہونے چاہیے۔

Kindly fold the paper.

### Urdu Tools

Sample-1 Story کہانی

علی کو پودے لگانے کا بہت شوق تھا۔ ایک دن علی نے ایک خالی ڈبہ لیا۔ اُس میں مٹی ڈالی اور ایک ننھا پودا لگایا۔ اُس نے پودے کو پانی دیا اور اُسے روشنی میں رکھا۔ چند دنوں میں پودا بڑا ہو گیا۔ وہ ہر ابھر پودا سکول لے گیا۔ اس کے ساتھی اُسے دیکھ کر بہت خوش ہوئے۔ استاد جی نے علی کو شاباش دی اور باقی بچوں سے بھی پودے لگانے کے لئے کہا۔ اس طرح سب بچے اپنے اپنے پودے سکول لے کر آئے اور سکول ہر ابھر اہو گیا۔

**BONUS QUESTIONS سوالات**

Q1 علی کو کیا شوق تھا؟

Q2 استاد جی نے سب بچوں سے کیا کہا؟

PAGE ②

Ask the child to read story fluently.

Ask questions, if the child reads story and mark accordingly.

بچے سے کہانی پڑھانی ہے۔ پڑھنے سے سوالات پوچھیں۔ اگر بچہ کہانی پڑھتا ہے تو اس سے سوالات پوچھیں۔

Kindly fold the paper.

Start from Here

Sample-1 Sentences جملے

حنامیری دوست ہے۔  
وہ میری ہم جماعت بھی ہے۔  
ہم اکٹھے سکول جاتے ہیں۔  
وہ پڑھائی میں میری مدد کرتی ہے۔

Sentences جملے

چڑیا دانہ چکاتی ہے۔  
تتلی باغ میں اڑتی ہے۔  
مینا گانا گاتی ہے۔  
طوطا شور مچاتا ہے۔

Ask the child to read any one Para. Child must read the sentences fluently.

بچے سے کوئی ایک پارا پڑھانی ہے۔ وہ پارا سے جملے پڑھانے ہوں گے۔



Urdu Tools

Sample-2 Words الفاظ

سچ گرم  
جنگل پاک بارش  
کتاب چمک  
آسمان نظر سکول

Sample-2 Letters حرف

پ س  
ح د ن  
ت ز  
ظ ک ع

PAGE ①

Ask the child to read any 5 words, out of which 4 must be correct

بچے سے کوئی سے پانچ الفاظ پڑھانے کو کہیں۔ 5 میں سے 4 صحیح ہونے چاہئے۔

Ask the child to read any 5 letters, out of which 4 must be correct

بچے سے کوئی سے پانچ حرف پڑھانے کو کہیں۔ 5 میں سے 4 صحیح ہونے چاہئے۔

Kindly fold the paper.

Urdu Tools

Sample-2 Story کہانی

ایک دفعہ ایک شیر مزے کی نیند سو رہا تھا۔ ایک چوہا کھیلتا ہوا آکر اس پر چڑھ گیا۔ شیر کی آنکھ کھل گئی۔ اس نے چوہے کو اپنے پنجے میں دبا لیا۔ چوہے نے بہت معافی مانگی اور شیر نے اسے چھوڑ دیا۔ کچھ عرصے بعد شیر ایک شکاری کے جال میں پھنس گیا۔ چوہے کا وہاں سے گزر ہوا۔ اس نے دیکھا کہ شیر جال میں پھنسا ہوا ہے تو اس نے اپنے تیز دانتوں سے جال کاٹ دیا۔ اس طرح شیر نے بھی چوہے کی اس نیکی پر اس کا شکریہ ادا کیا۔

BONUS QUESTIONS سوالات

Q1 شیر نے چوہے کے ساتھ کیا کیا؟  
Q2 چوہے نے شیر کی جان کیسے بچائی؟

PAGE ②

Ask the child to read story fluently.

بچے سے کہانی پڑھانے کو کہیں۔

Ask questions, if the child reads story and mark accordingly.

اگر بچہ کہانی پڑھانے سے اس سے سوالات پوچھیں۔

Kindly fold the paper.

Start from Here

Sample-2 Sentences جملے

عید خوشی کا دن ہے۔  
بچوں نے نئے کپڑے پہنے ہیں۔  
امی نے میٹھی سویاں بنائی ہیں۔  
ابو گلاب جامن لائے ہیں۔

Sentences جملے

میرا گاؤں بہت بڑا ہے۔  
اس میں بہت سے گھر ہیں۔  
اس میں ایک مٹھائی کی دکان ہے۔  
گاؤں میں بس کا اڈا بھی ہے۔

Ask the child to read any one Para. Child must read the sentences fluently.

بچے سے کوئی ایک پارا پڑھانے کو کہیں۔ روایتی سے جملے پڑھانے چاہئے۔

ASER Questions for Arithmetic, 2016

Math Tools



Sample-1

Number Recognition 1-9	Number Recognition 10-99
4    6	14    51
1    3	25    63
5    7	38    74
2    9	82    69
46    97	

Ask any 5 from the child, out of which 4 must be correct.  
پچھنے سے کوئی سے پچھنے سے 5 میں سے 4 صحیح ہونے چاہئے۔

Ask any 5 from the child, out of which 4 must be correct.  
پچھنے سے کوئی سے پچھنے سے 5 میں سے 4 صحیح ہونے چاہئے۔

Start from Here

Sample-1

Subtraction	Division	
$\begin{array}{r} 42 \\ -15 \\ \hline \end{array}$	$\begin{array}{r} 73 \\ -48 \\ \hline \end{array}$	$56 \div 4$
$\begin{array}{r} 52 \\ -37 \\ \hline \end{array}$	$\begin{array}{r} 93 \\ -56 \\ \hline \end{array}$	$72 \div 6$
$\begin{array}{r} 90 \\ -42 \\ \hline \end{array}$	$\begin{array}{r} 86 \\ -58 \\ \hline \end{array}$	$91 \div 7$
$\begin{array}{r} 61 \\ -14 \\ \hline \end{array}$	$\begin{array}{r} 54 \\ -35 \\ \hline \end{array}$	$48 \div 3$

Ask child to solve any two sums. Both must be correct.  
پچھنے سے کوئی سے 2 مسائل حل کرنے ہونے چاہئے۔

Ask child to solve any one sum. It must be correct.  
پچھنے سے کوئی سے 1 مسئلہ حل کرنے ہونے چاہئے۔

Kindly fold the paper.

Math Tools



Sample-2

Number Recognition 1-9	Number Recognition 10-99
7    2	18    45
5    1	37    61
4    6	42    73
8    3	29    85
56    94	

Ask any 5 from the child, out of which 4 must be correct.  
پچھنے سے کوئی سے پچھنے سے 5 میں سے 4 صحیح ہونے چاہئے۔

Ask any 5 from the child, out of which 4 must be correct.  
پچھنے سے کوئی سے پچھنے سے 5 میں سے 4 صحیح ہونے چاہئے۔

Start from Here

Sample-2

Subtraction	Division	
$\begin{array}{r} 58 \\ -19 \\ \hline \end{array}$	$\begin{array}{r} 72 \\ -24 \\ \hline \end{array}$	$64 \div 4$
$\begin{array}{r} 42 \\ -28 \\ \hline \end{array}$	$\begin{array}{r} 60 \\ -26 \\ \hline \end{array}$	$78 \div 6$
$\begin{array}{r} 35 \\ -16 \\ \hline \end{array}$	$\begin{array}{r} 56 \\ -38 \\ \hline \end{array}$	$84 \div 7$
$\begin{array}{r} 94 \\ -26 \\ \hline \end{array}$	$\begin{array}{r} 87 \\ -49 \\ \hline \end{array}$	$54 \div 3$

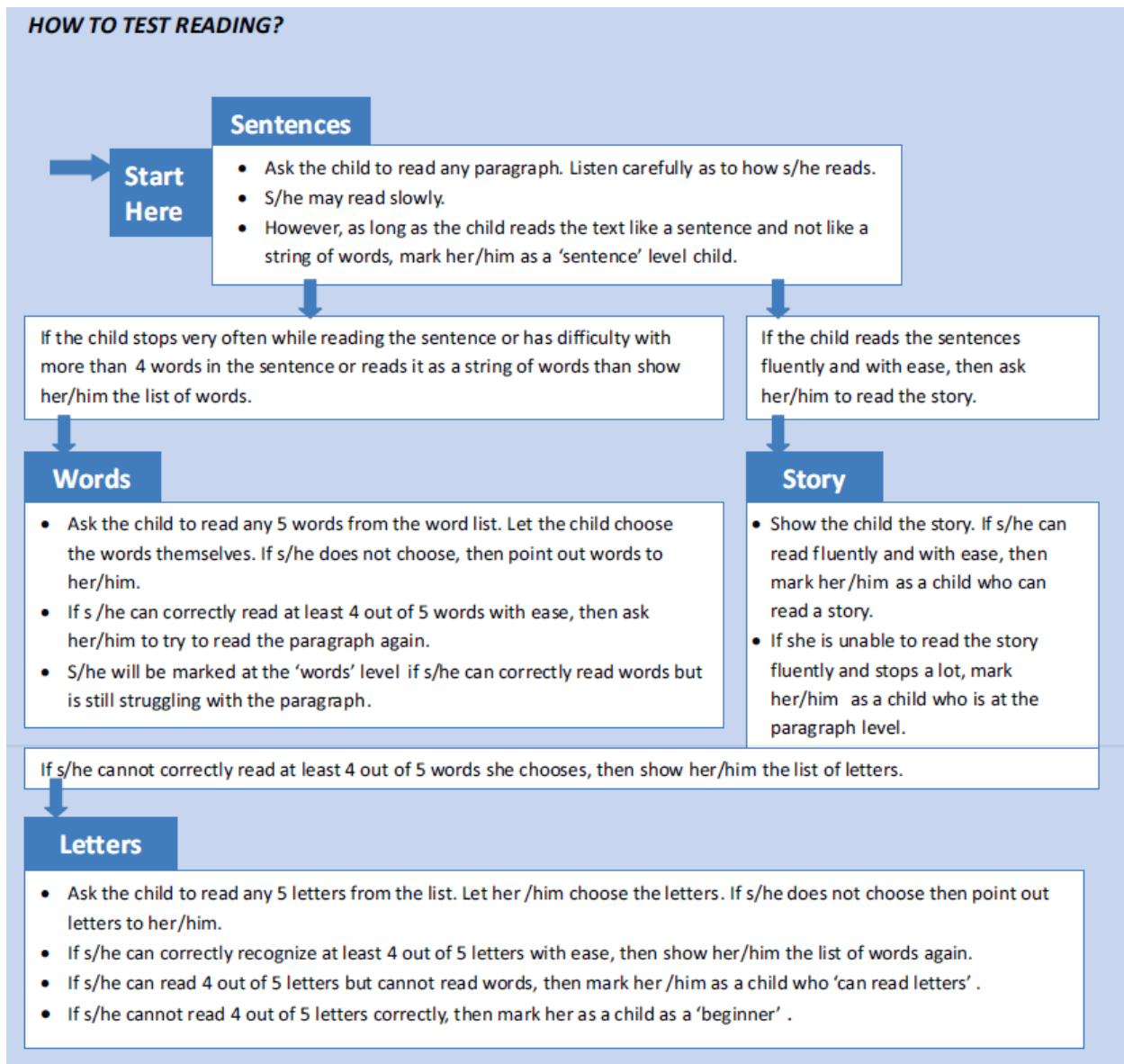
Ask child to solve any two sums. Both must be correct.  
پچھنے سے کوئی سے 2 مسائل حل کرنے ہونے چاہئے۔

Ask child to solve any one sum. It must be correct.  
پچھنے سے کوئی سے 1 مسئلہ حل کرنے ہونے چاہئے۔

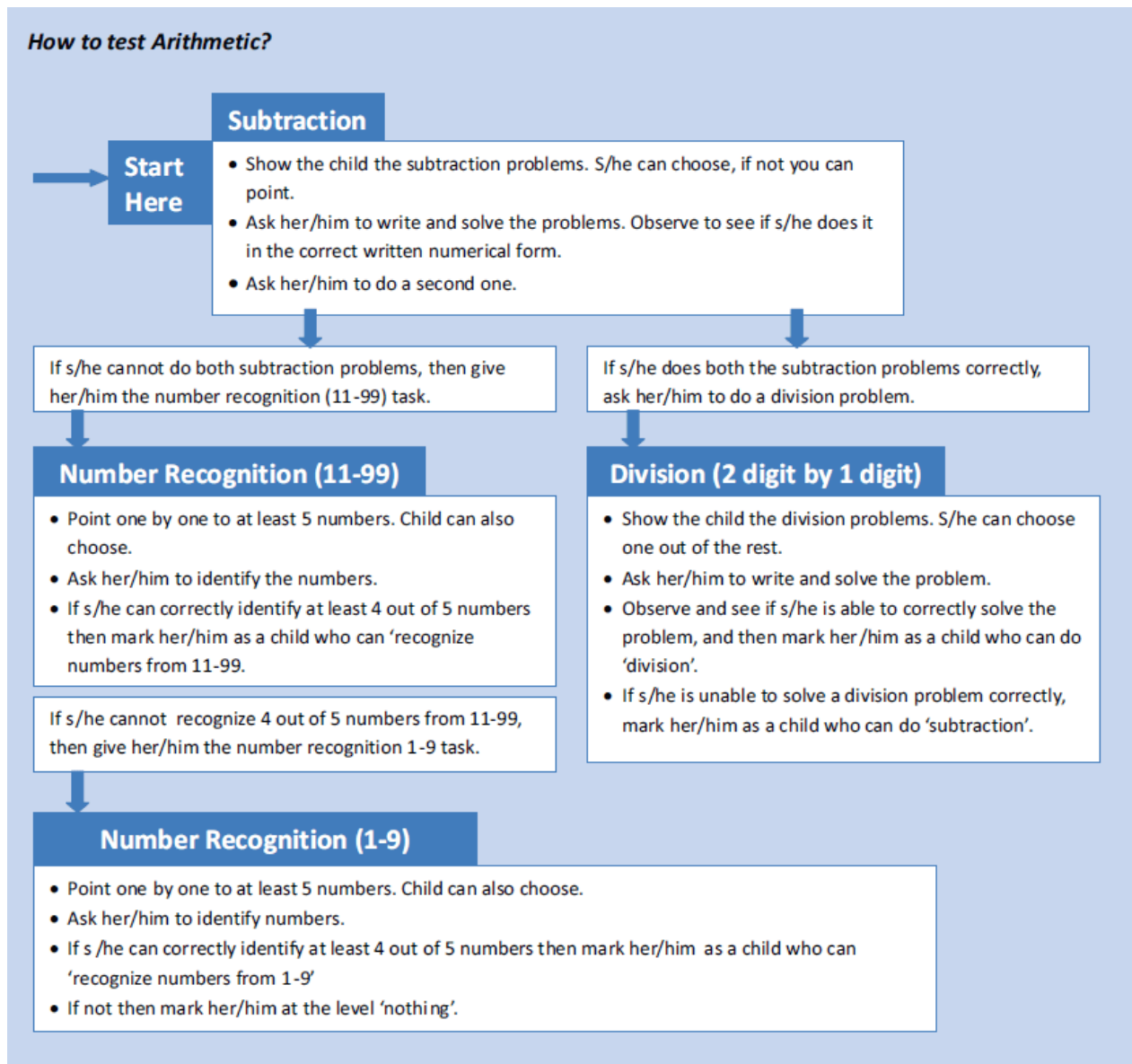
Kindly fold the paper.

## Appendix D

Methodology used for constructing the Reading scale, 2013--2016



Methodology used for constructing the Arithmetic scale, 2013-2016



## Appendix E

*Table A: Impact of Terrorism across intensity for children less than equal to 10 years of age*

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	-0.00248 (0.0670)	-0.0518 (0.0466)	-0.0910*** (0.00674)	-0.0125 (0.0535)	-0.0443 (0.0402)	-0.0816*** (0.00635)	-0.00967 (0.0560)	-0.0425 (0.0430)	-0.0802*** (0.00606)
Post APS Years	0.0640 (0.0666)	0.0394 (0.0551)	0.0840*** (0.00780)	0.0713 (0.0558)	0.0480 (0.0475)	0.0768*** (0.00745)	0.0548 (0.0606)	0.0324 (0.0531)	0.101*** (0.00715)
High Exposure * Post APS	-0.202** (0.0800)	-0.109* (0.0646)	-0.174*** (0.00917)	-0.174*** (0.0644)	-0.0929* (0.0528)	-0.144*** (0.00871)	-0.141* (0.0722)	-0.0606 (0.0602)	-0.120*** (0.00835)
Female		-0.0396*** (0.0114)	-0.142*** (0.00410)		-0.0430*** (0.0102)	-0.143*** (0.00387)		-0.0606*** (0.0110)	-0.159*** (0.00371)
Child's Age		0.386*** (0.0369)	0.962*** (0.0120)		0.357*** (0.0293)	0.894*** (0.0112)		0.398*** (0.0299)	0.878*** (0.0107)
Age Squared		-0.00415* (0.00214)	-0.0356*** (0.000788)		-0.000809 (0.00164)	-0.0303*** (0.000743)		-0.00470*** (0.00174)	-0.0312*** (0.000710)
Deaths per Districts		4.32e-05*** (3.80e-06)	6.05e-05*** (5.19e-07)		2.35e-05*** (3.16e-06)	3.54e-05*** (4.93e-07)		2.60e-05*** (4.57e-06)	3.89e-05*** (4.73e-07)
Enrolled		1.207*** (0.0368)			1.219*** (0.0267)			1.207*** (0.0307)	
Constant	3.433*** (0.0479)	-0.441** (0.173)	-1.688*** (0.0444)	3.323*** (0.0518)	-0.549*** (0.145)	-1.602*** (0.0415)	3.328*** (0.0523)	-0.596*** (0.148)	-1.415*** (0.0397)

Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	483,432	483,431	483,431	485,272	485,271	485,271	483,731	483,730	483,730
R-squared	0.085	0.368		0.054	0.372		0.052	0.360	

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

*Table B: Impact of Terrorism, by Gender, across age less than equal to 10 years*

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	0.0589 (0.0654)	-0.0394 (0.0492)	-0.0526*** (0.00855)	0.0524 (0.0521)	-0.0353 (0.0410)	-0.0483*** (0.00803)	0.0635 (0.0547)	-0.0306 (0.0447)	-0.0444*** (0.00767)
Post APS Years	0.109 (0.0707)	0.0535 (0.0599)	0.105*** (0.0101)	0.118* (0.0603)	0.0579 (0.0514)	0.0929*** (0.00965)	0.108* (0.0649)	0.0419 (0.0581)	0.117*** (0.00927)
High Exposure * Post APS	-0.213** (0.0824)	-0.0996 (0.0685)	-0.158*** (0.0118)	-0.186*** (0.0675)	-0.0783 (0.0565)	-0.123*** (0.0111)	-0.165** (0.0752)	-0.0511 (0.0650)	-0.105*** (0.0107)
Female * Post APS	-0.107*** (0.0352)	-0.0336 (0.0294)	-0.0501*** (0.0157)	-0.110*** (0.0342)	-0.0234 (0.0276)	-0.0384** (0.0150)	-0.125*** (0.0332)	-0.0227 (0.0298)	-0.0386*** (0.0144)
Female * High Exposure	-0.150*** (0.0270)	-0.0289 (0.0243)	-0.0915*** (0.0131)	-0.158*** (0.0254)	-0.0207 (0.0226)	-0.0793*** (0.0124)	-0.179*** (0.0268)	-0.0279 (0.0233)	-0.0857*** (0.0118)
Female * High Exposure * Post APS	0.0288 (0.0436)	-0.0244 (0.0323)	-0.0445** (0.0184)	0.0299 (0.0419)	-0.0370 (0.0294)	-0.0562*** (0.0175)	0.0586 (0.0401)	-0.0241 (0.0317)	-0.0409** (0.0168)
Female		0.00878 (0.0192)	-0.0324*** (0.0111)		-0.00116 (0.0198)	-0.0437*** (0.0106)		-0.0188 (0.0187)	-0.0606*** (0.0101)
Child's Age		0.386*** (0.0369)	0.962*** (0.0120)		0.357*** (0.0292)	0.893*** (0.0112)		0.398*** (0.0299)	0.877*** (0.0107)
Age Squared		-0.00416* (0.00214)	-0.0356*** (0.000787)		-0.000817 (0.00164)	-0.0303*** (0.000742)		-0.00471*** (0.00173)	-0.0312*** (0.000710)
Deaths per District		4.32e-05*** (3.79e-06)	6.05e-05*** (5.19e-07)		2.35e-05*** (3.15e-06)	3.54e-05*** (4.93e-07)		2.60e-05*** (4.56e-06)	3.89e-05*** (4.73e-07)
Enrolled		1.206***			1.218***			1.206***	

		(0.0368)			(0.0267)			(0.0307)	
Constant	3.440*** (0.0478)	-0.461*** (0.173)	-1.732*** (0.0445)	3.330*** (0.0517)	-0.566*** (0.144)	-1.642*** (0.0417)	3.335*** (0.0522)	-0.613*** (0.147)	-1.455*** (0.0399)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	483,431	483,431	483,431	485,271	485,271	485,271	483,730	483,730	483,730
R-squared	0.089	0.368		0.058	0.372		0.057	0.361	

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%



*Table C: Impact of Terrorism across intensity for children greater than 10 years of age*

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	-0.0976 (0.0697)	-0.0833 (0.0510)	-0.156*** (0.00777)	-0.0840 (0.0610)	-0.0581 (0.0442)	-0.129*** (0.00747)	-0.0885 (0.0626)	-0.0666 (0.0457)	-0.137*** (0.00732)
Post APS Years	-0.204*** (0.0704)	-0.173*** (0.0592)	-0.161*** (0.00917)	-0.148** (0.0644)	-0.117** (0.0525)	-0.103*** (0.00889)	-0.185*** (0.0686)	-0.155*** (0.0571)	-0.101*** (0.00882)
High Exposure * Post APS	-0.0110 (0.0957)	0.0334 (0.0789)	0.0199* (0.0112)	-0.0475 (0.0830)	-0.00847 (0.0656)	-0.0313*** (0.0108)	-0.0116 (0.0885)	0.0253 (0.0716)	-0.00510 (0.0107)
Female		-0.131*** (0.0234)	-0.366*** (0.00565)		-0.132*** (0.0226)	-0.364*** (0.00550)		-0.154*** (0.0228)	-0.376*** (0.00541)
Child's Age		0.591*** (0.0401)	0.631*** (0.0284)		0.578*** (0.0406)	0.607*** (0.0275)		0.563*** (0.0416)	0.587*** (0.0270)
Age Squared		-0.0188*** (0.00148)	-0.0208*** (0.00105)		-0.0183*** (0.00151)	-0.0198*** (0.00102)		-0.0179*** (0.00153)	-0.0193*** (0.00100)
Deaths per Districts		3.91e-05*** (3.68e-06)	5.72e-05*** (6.11e-07)		2.69e-05*** (3.10e-06)	4.43e-05*** (5.87e-07)		2.73e-05*** (4.51e-06)	4.49e-05*** (5.81e-07)
Enrolled		2.730*** (0.0439)			2.744*** (0.0367)			2.599*** (0.0413)	
Constant	4.886*** (0.0452)	-2.323*** (0.285)	0.360* (0.189)	4.868*** (0.0452)	-2.277*** (0.289)	0.506*** (0.183)	4.818*** (0.0473)	-2.033*** (0.298)	0.607*** (0.179)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES

Observations	299,830	299,830	299,830	300,278	300,278	300,278	299,626	299,626	299,626
R-squared	0.073	0.346		0.056	0.345		0.058	0.321	

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

*Table D: Impact of Terrorism by Gender, across age greater than 10*

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	-0.00576 (0.0687)	-0.0718 (0.0544)	-0.0971*** (0.00918)	0.0113 (0.0593)	-0.0466 (0.0457)	-0.0705*** (0.00880)	0.0132 (0.0607)	-0.0531 (0.0475)	-0.0798*** (0.00859)
Post APS Years	-0.126* (0.0713)	-0.162** (0.0630)	-0.129*** (0.0113)	-0.0692 (0.0630)	-0.107* (0.0551)	-0.0738*** (0.0109)	-0.105 (0.0677)	-0.150** (0.0597)	-0.0763*** (0.0107)
High Exposure * Post APS	0.0462 (0.0962)	0.104 (0.0833)	0.112*** (0.0134)	0.00529 (0.0802)	0.0603 (0.0671)	0.0578*** (0.0129)	0.0335 (0.0872)	0.0954 (0.0746)	0.0875*** (0.0127)
Female * Post APS	-0.193*** (0.0524)	-0.0322 (0.0369)	-0.0939*** (0.0188)	-0.195*** (0.0503)	-0.0297 (0.0356)	-0.0856*** (0.0183)	-0.199*** (0.0493)	-0.0171 (0.0363)	-0.0738*** (0.0182)
Female * High Exposure	-0.246*** (0.0524)	-0.0219 (0.0336)	-0.146*** (0.0154)	-0.256*** (0.0487)	-0.0227 (0.0295)	-0.147*** (0.0149)	-0.275*** (0.0479)	-0.0285 (0.0291)	-0.144*** (0.0146)
Female * High Exposure * Post APS	-0.172** (0.0824)	-0.202*** (0.0587)	-0.264*** (0.0232)	-0.159** (0.0779)	-0.196*** (0.0542)	-0.255*** (0.0225)	-0.136* (0.0759)	-0.197*** (0.0549)	-0.263*** (0.0223)
Female		-0.0244 (0.0233)	-0.116*** (0.0125)		-0.0280 (0.0237)	-0.119*** (0.0121)		-0.0519** (0.0229)	-0.137*** (0.0119)
Child's Age		0.592*** (0.0401)	0.633*** (0.0283)		0.579*** (0.0406)	0.608*** (0.0274)		0.564*** (0.0417)	0.589*** (0.0269)
Age Squared		-0.0188*** (0.00149)	-0.0208*** (0.00105)		-0.0183*** (0.00151)	-0.0199*** (0.00102)		-0.0179*** (0.00153)	-0.0193*** (0.00100)
Deaths per District		3.90e-05*** (3.68e-06)	5.71e-05*** (6.12e-07)		2.68e-05*** (3.11e-06)	4.42e-05*** (5.88e-07)		2.73e-05*** (4.52e-06)	4.48e-05*** (5.82e-07)
Enrolled		2.719*** (0.0441)			2.733*** (0.0370)			2.588*** (0.0416)	

Constant	4.906*** (0.0470)	-2.358*** (0.284)	0.256 (0.188)	4.888*** (0.0473)	-2.310*** (0.287)	0.407** (0.182)	4.839*** (0.0490)	-2.067*** (0.297)	0.506*** (0.179)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	299,830	299,830	299,830	300,278	300,278	300,278	299,626	299,626	299,626
R-squared	0.091	0.348		0.075	0.346		0.078	0.323	

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

*Table E: Impact of Exposure to Terrorism Exposure on Test Scores, by intensity, using district level fixed effects*

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	0.0348 (0.0572)	0.0273 (0.0456)	-0.116*** (0.00513)	0.0384 (0.0523)	0.0288 (0.0436)	-0.101*** (0.00488)	0.0304 (0.0537)	0.0219 (0.0460)	-0.104*** (0.00471)
Post APS Years	-0.210*** (0.0784)	-0.175** (0.0675)	-0.0192*** (0.00600)	-0.149** (0.0666)	-0.116** (0.0570)	0.00134 (0.00577)	-0.198*** (0.0723)	-0.167*** (0.0635)	0.0171*** (0.00561)
High Exposure * Post APS	-0.0630 (0.0784)	-0.0327 (0.0661)	-0.0943*** (0.00717)	-0.0943 (0.0660)	-0.0603 (0.0549)	-0.0979*** (0.00687)	-0.0552 (0.0700)	-0.0232 (0.0597)	-0.0729*** (0.00667)
Female		-0.0996*** (0.0141)	-0.237*** (0.00338)		-0.0993*** (0.0136)	-0.236*** (0.00324)		-0.114*** (0.0137)	-0.248*** (0.00314)
Child's Age		0.593*** (0.0225)	0.885*** (0.00331)		0.634*** (0.0218)	0.911*** (0.00314)		0.607*** (0.0194)	0.852*** (0.00306)
Age Squared		-0.0186*** (0.00102)	-0.0306*** (0.000161)		-0.0200*** (0.000971)	-0.0315*** (0.000154)		-0.0193*** (0.000862)	-0.0295*** (0.000150)
Deaths per Districts		-0.000458*** (9.99e-06)	5.95e-05*** (3.98e-07)		-0.000284*** (8.83e-06)	3.92e-05*** (3.80e-07)		-0.000338*** (9.40e-06)	4.16e-05*** (3.69e-07)
Enrolled		1.549*** (0.0373)			1.600*** (0.0307)			1.541*** (0.0332)	
Constant	3.953*** (0.0376)	0.210 (0.151)	-1.342*** (0.0169)	3.814*** (0.0325)	-0.842*** (0.142)	-1.579*** (0.0160)	3.739*** (0.0339)	-0.473*** (0.134)	-1.226*** (0.0155)
Fixed Effects	YES	YES	NO	YES	YES	NO	YES	YES	NO

Observations	783,262	783,261	783,261	785,550	785,549	785,549	783,357	783,356	783,356
R-squared	0.150	0.475		0.103	0.479		0.110	0.465	

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual. For the Hurdle model, the FE are applied at the Province level as specified in the main regression.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

*Table F: Impact of Exposure to Terrorism by Gender, using district and time level fixed effects*

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	0.0831 (0.0620)	0.0412 (0.0487)	-0.0695*** (0.00630)	0.0841 (0.0578)	0.0394 (0.0455)	-0.0573*** (0.00598)	0.0769 (0.0585)	0.0343 (0.0477)	-0.0596*** (0.00576)
Post APS Years	-0.200** (0.0832)	-0.172** (0.0703)	0.00542 (0.00760)	-0.141** (0.0701)	-0.114* (0.0586)	0.0219*** (0.00728)	-0.192** (0.0751)	-0.167** (0.0651)	0.0353*** (0.00708)
High Exposure * Post APS	-0.00915 (0.0841)	0.00422 (0.0697)	-0.0441*** (0.00892)	-0.0359 (0.0712)	-0.0208 (0.0574)	-0.0470*** (0.00852)	-0.00248 (0.0740)	0.0124 (0.0624)	-0.0243*** (0.00826)
Female * Post APS	0.00594 (0.0346)	-0.00796 (0.0240)	-0.0632*** (0.0122)	0.0128 (0.0347)	-0.00329 (0.0241)	-0.0531*** (0.0118)	0.0157 (0.0345)	0.00222 (0.0247)	-0.0473*** (0.0114)
Female * High Exposure	-0.120*** (0.0429)	-0.0313 (0.0243)	-0.114*** (0.0100)	-0.113** (0.0434)	-0.0228 (0.0227)	-0.107*** (0.00959)	-0.116*** (0.0424)	-0.0281 (0.0230)	-0.108*** (0.00923)
Female * High Exposure * Post APS	-0.134** (0.0518)	-0.0970*** (0.0322)	-0.137*** (0.0146)	-0.145*** (0.0518)	-0.104*** (0.0311)	-0.138*** (0.0140)	-0.129** (0.0503)	-0.0929*** (0.0314)	-0.130*** (0.0136)
Female	-0.186*** (0.0314)	-0.0356** (0.0178)	-0.0703*** (0.00834)	-0.200*** (0.0326)	-0.0415** (0.0184)	-0.0786*** (0.00801)	-0.209*** (0.0308)	-0.0589*** (0.0176)	-0.0959*** (0.00774)
Child's Age		0.593*** (0.0225)	0.885*** (0.00330)		0.634*** (0.0218)	0.911*** (0.00314)		0.607*** (0.0194)	0.851*** (0.00305)
Age Squared		-0.0187*** (0.00102)	-0.0306*** (0.000161)		-0.0200*** (0.000969)	-0.0315*** (0.000154)		-0.0193*** (0.000860)	-0.0295*** (0.000150)
Deaths per District		-0.000459*** (1.00e-05)	5.95e-05*** (3.99e-07)		-0.000285*** (8.85e-06)	3.92e-05*** (3.80e-07)		-0.000339*** (9.43e-06)	4.16e-05*** (3.69e-07)
Enrolled		1.545*** (0.0375)			1.596*** (0.0308)			1.537*** (0.0332)	

Constant	4.036*** (0.0416)	0.190 (0.150)	-1.407*** (0.0171)	3.903*** (0.0377)	-0.859*** (0.141)	-1.640*** (0.0162)	3.831*** (0.0390)	-0.490*** (0.132)	-1.286*** (0.0157)
Fixed Effects	YES	YES	NO	YES	YES	NO	YES	YES	NO
Observations	783,261	783,261	783,261	785,549	785,549	785,549	783,356	783,356	783,356
R-squared	0.161	0.475		0.115	0.480		0.123	0.465	

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual. For the Hurdle model, the FE are applied at the Province level as specified in the main regression.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%



**Table G: Impact of Exposure to Terrorism on Test Scores, excluding Peshawar**

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	-0.0305 (0.0735)	-0.0682 (0.0461)	-0.118*** (0.00515)	-0.0297 (0.0612)	-0.0546 (0.0393)	-0.102*** (0.00490)	-0.0315 (0.0622)	-0.0570 (0.0413)	-0.105*** (0.00472)
Post APS Years	-0.0277 (0.0707)	-0.0496 (0.0529)	-0.0193*** (0.00601)	0.000779 (0.0611)	-0.0226 (0.0453)	0.00126 (0.00578)	-0.0254 (0.0645)	-0.0465 (0.0507)	0.0170*** (0.00562)
High Exposure * Post APS	-0.158* (0.0894)	-0.0423 (0.0654)	-0.0906*** (0.00720)	-0.158** (0.0747)	-0.0492 (0.0531)	-0.0955*** (0.00690)	-0.119 (0.0805)	-0.0146 (0.0602)	-0.0688*** (0.00669)
Female		-0.0860*** (0.0154)	-0.238*** (0.00341)		-0.0880*** (0.0146)	-0.236*** (0.00326)		-0.107*** (0.0149)	-0.249*** (0.00316)
Child's Age		0.588*** (0.0229)	0.889*** (0.00334)		0.631*** (0.0222)	0.915*** (0.00317)		0.603*** (0.0197)	0.855*** (0.00308)
Age Squared		-0.0183*** (0.00105)	-0.0308*** (0.000163)		-0.0198*** (0.000991)	-0.0317*** (0.000156)		-0.0191*** (0.000880)	-0.0296*** (0.000151)
Deaths per Districts		4.27e-05*** (3.57e-06)	5.98e-05*** (4.00e-07)		2.57e-05*** (2.93e-06)	3.93e-05*** (3.82e-07)		2.76e-05*** (4.31e-06)	4.19e-05*** (3.71e-07)
Enrolled		1.670*** (0.0405)			1.681*** (0.0321)			1.627*** (0.0362)	
Constant	4.073*** (0.0480)	-1.459*** (0.146)	-1.365*** (0.0170)	4.003*** (0.0491)	-1.805*** (0.141)	-1.600*** (0.0161)	3.983*** (0.0504)	-1.560*** (0.134)	-1.245*** (0.0156)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES

Observations	774,182	774,181	774,181	776,414	776,413	776,413	774,215	774,214	774,214
R-squared	0.078	0.449		0.054	0.463		0.054	0.444	

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

*Table H: Impact of Exposure to Terrorism, by Gender, excluding Peshawar*

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	0.0127 (0.0722)	-0.0549 (0.0488)	-0.0693*** (0.00633)	0.0128 (0.0606)	-0.0432 (0.0407)	-0.0574*** (0.00600)	0.0126 (0.0623)	-0.0432 (0.0435)	-0.0588*** (0.00578)
Post APS Years	-0.0167 (0.0751)	-0.0384 (0.0566)	0.00529 (0.00760)	0.00818 (0.0645)	-0.0139 (0.0479)	0.0218*** (0.00728)	-0.0193 (0.0683)	-0.0405 (0.0538)	0.0352*** (0.00708)
High Exposure * Post APS	-0.101 (0.0914)	-0.00642 (0.0685)	-0.0415*** (0.00895)	-0.0986 (0.0759)	-0.0115 (0.0554)	-0.0454*** (0.00855)	-0.0649 (0.0826)	0.0201 (0.0636)	-0.0217*** (0.00829)
Female * High Exposure	-0.112** (0.0460)	-0.0306 (0.0257)	-0.118*** (0.0101)	-0.111** (0.0452)	-0.0257 (0.0237)	-0.109*** (0.00963)	-0.115** (0.0443)	-0.0325 (0.0243)	-0.113*** (0.00927)
Female * High Exposure * Post APS	-0.144** (0.0577)	-0.0941*** (0.0356)	-0.134*** (0.0146)	-0.149*** (0.0555)	-0.0984*** (0.0326)	-0.135*** (0.0140)	-0.136** (0.0546)	-0.0900*** (0.0337)	-0.126*** (0.0136)
Female * Post APS	-0.0201 (0.0393)	-0.0285 (0.0277)	-0.0634*** (0.0122)	-0.0113 (0.0376)	-0.0221 (0.0263)	-0.0532*** (0.0118)	-0.00737 (0.0381)	-0.0157 (0.0277)	-0.0475*** (0.0114)
Female	-0.156*** (0.0323)	-0.0132 (0.0191)	-0.0700*** (0.00834)	-0.170*** (0.0330)	-0.0205 (0.0198)	-0.0785*** (0.00801)	-0.182*** (0.0312)	-0.0407** (0.0190)	-0.0957*** (0.00774)
Child's Age		0.589*** (0.0229)	0.889*** (0.00333)		0.632*** (0.0221)	0.915*** (0.00317)		0.603*** (0.0197)	0.855*** (0.00308)
Age Squared		-0.0183*** (0.00104)	-0.0308*** (0.000163)		-0.0198*** (0.000989)	-0.0317*** (0.000155)		-0.0191*** (0.000878)	-0.0296*** (0.000151)
Deaths per District		4.27e-05*** (3.56e-06)	5.97e-05*** (4.01e-07)		2.57e-05*** (2.92e-06)	3.93e-05*** (3.82e-07)		2.76e-05*** (4.30e-06)	4.19e-05*** (3.71e-07)
Enrolled		1.666*** (0.0406)			1.677*** (0.0322)			1.623*** (0.0362)	

Constant	4.151*** (0.0512)	-1.486*** (0.146)	-1.430*** (0.0172)	4.087*** (0.0530)	-1.829*** (0.139)	-1.662*** (0.0163)	4.072*** (0.0543)	-1.585*** (0.132)	-1.305*** (0.0158)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	774,181	774,181	774,181	776,413	776,413	776,413	774,214	774,214	774,214
R-squared	0.088	0.449		0.065	0.464		0.066	0.444	

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

*Table I: Impact of Exposure to Terrorism, excluding Karachi*

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	-0.0652 (0.0675)	-0.0611 (0.0465)	-0.111*** (0.00519)	-0.0549 (0.0574)	-0.0493 (0.0397)	-0.0972*** (0.00493)	-0.0594 (0.0576)	-0.0508 (0.0417)	-0.0998*** (0.00475)
Post APS Years	-0.0288 (0.0695)	-0.0489 (0.0531)	-0.0186*** (0.00604)	-0.000652 (0.0599)	-0.0218 (0.0453)	0.00212 (0.00581)	-0.0263 (0.0637)	-0.0441 (0.0505)	0.0193*** (0.00564)
High Exposure * Post APS	-0.136 (0.0872)	-0.0522 (0.0657)	-0.102*** (0.00729)	-0.140* (0.0726)	-0.0557 (0.0531)	-0.104*** (0.00698)	-0.100 (0.0789)	-0.0223 (0.0603)	-0.0767*** (0.00677)
Female		-0.0909*** (0.0152)	-0.248*** (0.00351)		-0.0935*** (0.0141)	-0.247*** (0.00336)		-0.112*** (0.0144)	-0.260*** (0.00325)
Child's Age		0.587*** (0.0238)	0.898*** (0.00343)		0.629*** (0.0229)	0.922*** (0.00326)		0.603*** (0.0204)	0.863*** (0.00316)
Age Squared		-0.0183*** (0.00108)	-0.0312*** (0.000167)		-0.0197*** (0.00102)	-0.0320*** (0.000160)		-0.0191*** (0.000912)	-0.0299*** (0.000155)
Deaths per Districts		2.28e-05 (1.38e-05)	4.71e-05*** (1.14e-06)		6.39e-06 (1.05e-05)	2.71e-05*** (1.07e-06)		-5.14e-06 (1.16e-05)	1.92e-05*** (1.04e-06)
Enrolled		1.663*** (0.0398)			1.677*** (0.0317)			1.623*** (0.0355)	
Constant	4.083*** (0.0466)	-1.438*** (0.148)	-1.408*** (0.0174)	4.010*** (0.0485)	-1.782*** (0.142)	-1.631*** (0.0165)	3.990*** (0.0495)	-1.545*** (0.135)	-1.275*** (0.0160)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES

Observations	746,242	746,241	746,241	748,336	748,335	748,335	746,142	746,141	746,141
R-squared	0.092	0.447		0.061	0.462		0.064	0.444	

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

*Table J: Impact of Exposure to Terrorism by Gender on Test Scores; excluding Karachi*

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	-0.0116 (0.0688)	-0.0453 (0.0490)	-0.0560*** (0.00638)	-0.00263 (0.0590)	-0.0350 (0.0408)	-0.0458*** (0.00605)	-0.00544 (0.0601)	-0.0338 (0.0437)	-0.0472*** (0.00583)
Post APS Years	-0.0178 (0.0738)	-0.0377 (0.0567)	0.00657 (0.00764)	0.00737 (0.0634)	-0.0130 (0.0478)	0.0235*** (0.00732)	-0.0199 (0.0675)	-0.0382 (0.0536)	0.0378*** (0.00711)
High Exposure * Post APS	-0.0844 (0.0895)	-0.0167 (0.0689)	-0.0550*** (0.00905)	-0.0868 (0.0744)	-0.0191 (0.0553)	-0.0560*** (0.00863)	-0.0513 (0.0815)	0.0113 (0.0638)	-0.0320*** (0.00837)
Female * High Exposure	-0.140*** (0.0410)	-0.0365 (0.0262)	-0.134*** (0.0103)	-0.138*** (0.0403)	-0.0328 (0.0235)	-0.126*** (0.00979)	-0.143*** (0.0391)	-0.0405* (0.0239)	-0.130*** (0.00941)
Female * High Exposure * Post APS	-0.128** (0.0581)	-0.0937** (0.0365)	-0.131*** (0.0149)	-0.133** (0.0557)	-0.0963*** (0.0333)	-0.130*** (0.0143)	-0.121** (0.0548)	-0.0877** (0.0341)	-0.121*** (0.0138)
Female * Post APS	-0.0200 (0.0393)	-0.0284 (0.0277)	-0.0647*** (0.0123)	-0.0125 (0.0376)	-0.0226 (0.0263)	-0.0550*** (0.0118)	-0.00782 (0.0381)	-0.0152 (0.0275)	-0.0481*** (0.0115)
Female	-0.159*** (0.0320)	-0.0138 (0.0191)	-0.0702*** (0.00836)	-0.172*** (0.0328)	-0.0211 (0.0198)	-0.0788*** (0.00803)	-0.184*** (0.0310)	-0.0414** (0.0189)	-0.0960*** (0.00775)
Child's Age		0.587*** (0.0237)	0.898*** (0.00342)		0.630*** (0.0228)	0.922*** (0.00326)		0.603*** (0.0204)	0.862*** (0.00316)
Age Squared		-0.0183*** (0.00108)	-0.0312*** (0.000167)		-0.0198*** (0.00102)	-0.0320*** (0.000160)		-0.0191*** (0.000910)	-0.0299*** (0.000155)
Deaths per District		2.28e-05* (1.38e-05)	4.71e-05*** (1.14e-06)		6.45e-06 (1.06e-05)	2.71e-05*** (1.07e-06)		-5.08e-06 (1.16e-05)	1.92e-05*** (1.04e-06)
Enrolled		1.659*** (0.0399)			1.673*** (0.0318)			1.620*** (0.0355)	

Constant	4.163*** (0.0498)	-1.467*** (0.148)	-1.477*** (0.0176)	4.095*** (0.0524)	-1.809*** (0.141)	-1.696*** (0.0167)	4.081*** (0.0533)	-1.571*** (0.134)	-1.339*** (0.0162)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	746,241	746,241	746,241	748,335	748,335	748,335	746,141	746,141	746,141
R-squared	0.103	0.448		0.073	0.462		0.077	0.444	

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%



**Table K: Exponential Estimates of Impact of Exposure**

Dependent Variable	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	Full Sample	Isolating Peshawar	Isolating Karachi	Full Sample	Isolating Peshawar	Isolating Karachi	Full Sample	Isolating Peshawar	Isolating Karachi
High Exposure	-0.0428*** (0.00189)	-0.0435*** (0.00190)	-0.0410*** (0.00191)	-0.0396*** (0.00178)	-0.0401*** (0.00179)	-0.0381*** (0.00180)	-0.0384*** (0.00176)	-0.0390*** (0.00177)	-0.0369*** (0.00178)
Post APS Years	-0.00505** (0.00222)	-0.00508** (0.00222)	-0.00487** (0.00223)	-0.0111*** (0.00212)	-0.0112*** (0.00212)	-0.0108*** (0.00213)	-0.00678*** (0.00212)	-0.00682*** (0.00212)	-0.00617*** (0.00213)
High Exposure * Post APS	-0.0361*** (0.00265)	-0.0348*** (0.00266)	-0.0387*** (0.00268)	-0.0332*** (0.00253)	-0.0327*** (0.00253)	-0.0355*** (0.00256)	-0.0278*** (0.00252)	-0.0266*** (0.00253)	-0.0297*** (0.00255)
Female	-0.0929*** (0.00124)	-0.0931*** (0.00125)	-0.0965*** (0.00128)	-0.0942*** (0.00119)	-0.0944*** (0.00120)	-0.0980*** (0.00123)	-0.0984*** (0.00119)	-0.0988*** (0.00119)	-0.102*** (0.00123)
Child's Age	0.312*** (0.00118)	0.313*** (0.00119)	0.315*** (0.00122)	0.326*** (0.00113)	0.327*** (0.00114)	0.329*** (0.00116)	0.314*** (0.00113)	0.315*** (0.00114)	0.317*** (0.00117)
Age Squared	-0.0113*** (5.80e-05)	-0.0113*** (5.86e-05)	-0.0114*** (5.99e-05)	-0.0118*** (5.55e-05)	-0.0119*** (5.60e-05)	-0.0120*** (5.74e-05)	-0.0115*** (5.54e-05)	-0.0115*** (5.59e-05)	-0.0116*** (5.73e-05)
Deaths per Districts	2.16e-05*** (1.46e-07)	2.17e-05*** (1.47e-07)	1.79e-05*** (4.19e-07)	1.42e-05*** (1.37e-07)	1.42e-05*** (1.38e-07)	1.04e-05*** (3.94e-07)	1.53e-05*** (1.37e-07)	1.53e-05*** (1.37e-07)	8.33e-06*** (3.95e-07)
Constant	-0.509*** (0.00605)	-0.514*** (0.00609)	-0.521*** (0.00620)	-0.606*** (0.00579)	-0.608*** (0.00583)	-0.617*** (0.00594)	-0.527*** (0.00581)	-0.531*** (0.00585)	-0.539*** (0.00596)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	783,261	774,181	746,241	785,549	774,903	748,335	783,356	774,214	746,141

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*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

**Table L: Exponential Estimates of Impact of Terrorism (Gender)**

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	Full Sample	Isolating Peshawar	Isolating Karachi	Full Sample	Isolating Peshawar	Isolating Karachi	Full Sample	Isolating Peshawar	Isolating Karachi
High Exposure	-0.0248*** (0.00233)	-0.0250*** (0.00234)	-0.0204*** (0.00235)	-0.0219*** (0.00218)	-0.0220*** (0.00219)	-0.0178*** (0.00220)	-0.0196*** (0.00215)	-0.0196*** (0.00216)	-0.0151*** (0.00217)
Post APS Years	0.00430 (0.00281)	0.00426 (0.00281)	0.00469* (0.00282)	-0.00295 (0.00267)	-0.00296 (0.00267)	-0.00242 (0.00268)	0.00136 (0.00267)	0.00132 (0.00267)	0.00214 (0.00267)
High Exposure * Post APS	-0.0170*** (0.00330)	-0.0162*** (0.00331)	-0.0208*** (0.00334)	-0.0141*** (0.00312)	-0.0138*** (0.00313)	-0.0177*** (0.00316)	-0.0101*** (0.00311)	-0.00941*** (0.00312)	-0.0136*** (0.00315)
Female * High Exposure	-0.0438*** (0.00371)	-0.0450*** (0.00372)	-0.0503*** (0.00378)	-0.0431*** (0.00350)	-0.0439*** (0.00351)	-0.0497*** (0.00357)	-0.0460*** (0.00346)	-0.0475*** (0.00347)	-0.0536*** (0.00352)
Female * High Exposure * Post APS	-0.0498*** (0.00537)	-0.0486*** (0.00538)	-0.0471*** (0.00545)	-0.0498*** (0.00514)	-0.0489*** (0.00515)	-0.0468*** (0.00522)	-0.0459*** (0.00513)	-0.0444*** (0.00514)	-0.0422*** (0.00521)
Female * Post APS	-0.0238*** (0.00451)	-0.0239*** (0.00451)	-0.0244*** (0.00453)	-0.0208*** (0.00433)	-0.0208*** (0.00433)	-0.0215*** (0.00435)	-0.0209*** (0.00432)	-0.0209*** (0.00432)	-0.0213*** (0.00434)
Female	-0.0293*** (0.00309)	-0.0292*** (0.00309)	-0.0292*** (0.00309)	-0.0327*** (0.00292)	-0.0327*** (0.00292)	-0.0327*** (0.00293)	-0.0363*** (0.00290)	-0.0362*** (0.00290)	-0.0363*** (0.00290)
Child's Age	0.312*** (0.00118)	0.313*** (0.00119)	0.315*** (0.00122)	0.326*** (0.00113)	0.327*** (0.00114)	0.329*** (0.00116)	0.314*** (0.00113)	0.315*** (0.00114)	0.317*** (0.00116)
Age Squared	-0.0113*** (5.80e-05)	-0.0113*** (5.85e-05)	-0.0114*** (5.99e-05)	-0.0118*** (5.54e-05)	-0.0119*** (5.59e-05)	-0.0120*** (5.73e-05)	-0.0115*** (5.53e-05)	-0.0115*** (5.59e-05)	-0.0116*** (5.72e-05)
Deaths per District	2.16e-05*** (1.46e-07)	2.16e-05*** (1.47e-07)	1.80e-05*** (4.19e-07)	1.42e-05*** (1.37e-07)	1.41e-05*** (1.38e-07)	1.04e-05*** (3.94e-07)	1.53e-05*** (1.37e-07)	1.53e-05*** (1.37e-07)	8.34e-06*** (3.94e-07)

Constant	-0.535*** (0.00613)	-0.540*** (0.00617)	-0.549*** (0.00627)	-0.631*** (0.00586)	-0.635*** (0.00589)	-0.643*** (0.00600)	-0.552*** (0.00588)	-0.557*** (0.00592)	-0.565*** (0.00603)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	783,261	774,181	746,241	785,549	776,413	748,335	783,356	774,214	746,141

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

*Table M: Impact of Terrorism across intensity, using cumulative exposure*

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	0.372** (0.155)	0.116 (0.0816)	0.119*** (0.00655)	0.282** (0.121)	0.0873 (0.0650)	0.0906*** (0.00610)	0.300** (0.122)	0.110* (0.0608)	0.0959*** (0.00586)
Post APS Years	-0.0822 (0.0650)	-0.0539 (0.0493)	-0.0476*** (0.00466)	-0.0754 (0.0539)	-0.0438 (0.0407)	-0.0518*** (0.00438)	-0.0885 (0.0547)	-0.0578 (0.0435)	-0.0221*** (0.00424)
High Exposure * Post APS	-0.0717 (0.103)	0.00240 (0.0858)	-0.00842 (0.00868)	-0.0851 (0.0906)	-0.0298 (0.0712)	-0.0310*** (0.00824)	-0.0628 (0.0933)	-0.0113 (0.0755)	-0.0188** (0.00795)
Female		-0.0959*** (0.0185)	-0.256*** (0.00422)		-0.104*** (0.0179)	-0.258*** (0.00400)		-0.119*** (0.0182)	-0.267*** (0.00386)
Child's Age		0.537*** (0.0248)	0.849*** (0.00409)		0.577*** (0.0232)	0.867*** (0.00385)		0.548*** (0.0207)	0.804*** (0.00373)
Age Squared		-0.0158*** (0.00113)	-0.0287*** (0.000199)		-0.0172*** (0.00104)	-0.0292*** (0.000189)		-0.0164*** (0.000926)	-0.0271*** (0.000183)
Deaths per Districts		3.54e-05*** (4.96e-06)	4.99e-05*** (4.87e-07)		2.21e-05*** (4.06e-06)	3.37e-05*** (4.59e-07)		2.27e-05*** (4.61e-06)	3.54e-05*** (4.45e-07)
Enrolled		1.654*** (0.0472)			1.657*** (0.0379)			1.598*** (0.0413)	
Constant	4.030*** (0.0473)	-1.291*** (0.172)	-1.304*** (0.0230)	3.982*** (0.0516)	-1.586*** (0.153)	-1.470*** (0.0217)	3.973*** (0.0546)	-1.311*** (0.144)	-1.073*** (0.0210)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES

Observations	530,996	530,995	530,995	532,692	532,691	532,691	531,546	531,545	531,545
R-squared	0.069	0.439		0.046	0.460		0.047	0.436	

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*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

*Table N: Impact of Terrorism by Gender, using cumulative exposure*

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	0.473*** (0.128)	0.132 (0.0850)	0.135*** (0.00748)	0.391*** (0.0957)	0.0982 (0.0661)	0.102*** (0.00697)	0.413*** (0.0977)	0.123* (0.0665)	0.109*** (0.00669)
Post APS Years	0.0650 (0.0660)	-0.0167 (0.0519)	0.0153*** (0.00571)	0.0780 (0.0540)	-0.00785 (0.0417)	0.00631 (0.00534)	0.0664 (0.0549)	-0.0215 (0.0445)	0.0379*** (0.00516)
High Exposure * Post APS	-0.126 (0.0938)	0.0317 (0.0854)	0.0199* (0.0103)	-0.153* (0.0805)	-0.00607 (0.0682)	-0.00589 (0.00976)	-0.136 (0.0828)	0.0107 (0.0721)	0.00328 (0.00940)
Female * Post APS	-0.376*** (0.0428)	-0.0978*** (0.0274)	-0.169*** (0.00979)	-0.392*** (0.0426)	-0.0944*** (0.0255)	-0.156*** (0.00924)	-0.395*** (0.0421)	-0.0951*** (0.0252)	-0.161*** (0.00893)
Female * High Exposure	-0.270** (0.105)	-0.0468 (0.0542)	-0.0469*** (0.0125)	-0.292*** (0.102)	-0.0310 (0.0474)	-0.0335*** (0.0117)	-0.301*** (0.104)	-0.0375 (0.0511)	-0.0379*** (0.0113)
Female * High Exposure * Post APS	0.119 (0.0845)	-0.0862 (0.0625)	-0.0934*** (0.0187)	0.154* (0.0805)	-0.0712 (0.0552)	-0.0833*** (0.0178)	0.170** (0.0804)	-0.0659 (0.0559)	-0.0737*** (0.0172)
Female		-0.0286 (0.0190)	-0.154*** (0.00674)		-0.0438** (0.0176)	-0.167*** (0.00629)		-0.0578*** (0.0162)	-0.174*** (0.00601)
Child's Age		0.538*** (0.0248)	0.849*** (0.00409)		0.577*** (0.0232)	0.867*** (0.00385)		0.548*** (0.0207)	0.804*** (0.00373)
Age Squared		-0.0159*** (0.00113)	-0.0287*** (0.000199)		-0.0172*** (0.00104)	-0.0292*** (0.000188)		-0.0164*** (0.000923)	-0.0271*** (0.000183)
Deaths per District		3.56e-05*** (4.93e-06)	5.02e-05*** (4.90e-07)		2.23e-05*** (4.01e-06)	3.39e-05*** (4.62e-07)		2.29e-05*** (4.53e-06)	3.56e-05*** (4.48e-07)
Enrolled		1.652***			1.655***			1.596***	

		(0.0475)			(0.0381)			(0.0415)	
Constant	4.050*** (0.0491)	-1.316*** (0.170)	-1.340*** (0.0230)	4.003*** (0.0561)	-1.608*** (0.151)	-1.502*** (0.0217)	3.994*** (0.0590)	-1.333*** (0.142)	-1.106*** (0.0210)
Fixed Effects	NO	YES	YES	NO	YES	YES	NO	YES	YES
Observations	530,995	530,995	530,995	532,691	532,691	532,691	531,545	531,545	531,545
R-squared	0.078	0.439		0.056	0.460		0.058	0.436	

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%



*Table O: Impact of Exposure to Terrorism Exposure on Test Scores, if intensity greater than 50*

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	0.143 (0.108)	0.0567 (0.0514)	0.0533*** (0.00475)	0.107 (0.0834)	0.0519 (0.0415)	0.0485*** (0.00447)	0.133 (0.0875)	0.0776* (0.0433)	0.0698*** (0.00427)
Post APS Years	-0.0670 (0.0741)	-0.0552 (0.0538)	-0.0476*** (0.00502)	-0.0613 (0.0600)	-0.0409 (0.0423)	-0.0471*** (0.00473)	-0.0640 (0.0613)	-0.0446 (0.0451)	-0.00670 (0.00458)
High Exposure * Post APS	-0.134 (0.0960)	-0.0469 (0.0689)	-0.0724*** (0.00655)	-0.0944 (0.0780)	-0.0313 (0.0545)	-0.0401*** (0.00623)	-0.0830 (0.0810)	-0.0202 (0.0579)	-0.0496*** (0.00603)
Female		-0.0854*** (0.0152)	-0.236*** (0.00339)		-0.0878*** (0.0144)	-0.234*** (0.00325)		-0.105*** (0.0147)	-0.247*** (0.00314)
Child's Age		0.586*** (0.0228)	0.885*** (0.00331)		0.629*** (0.0220)	0.911*** (0.00315)		0.602*** (0.0196)	0.851*** (0.00306)
Age Squared		-0.0182*** (0.00104)	-0.0306*** (0.000162)		-0.0197*** (0.000985)	-0.0314*** (0.000154)		-0.0190*** (0.000874)	-0.0294*** (0.000150)
Deaths per Districts		4.10e-05*** (3.61e-06)	5.78e-05*** (4.04e-07)		2.42e-05*** (2.94e-06)	3.76e-05*** (3.86e-07)		2.55e-05*** (4.10e-06)	3.97e-05*** (3.74e-07)
Enrolled		1.678*** (0.0407)			1.686*** (0.0321)			1.632*** (0.0360)	
Constant	3.963*** (0.0895)	-1.530*** (0.147)	-1.431*** (0.0170)	3.918*** (0.0730)	-1.864*** (0.142)	-1.660*** (0.0161)	3.872*** (0.0776)	-1.649*** (0.133)	-1.326*** (0.0156)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES

Observations	783,262	783,261	783,261	785,550	785,549	785,549	783,357	783,356	783,356
R-squared	0.077	0.448		0.052	0.462		0.054	0.443	

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*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

*Table P: Impact of Exposure to Terrorism by Gender, if intensity greater than 50*

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	0.131 (0.102)	0.0616 (0.0552)	0.0473*** (0.00580)	0.0909 (0.0794)	0.0497 (0.0441)	0.0368*** (0.00543)	0.124 (0.0829)	0.0822* (0.0462)	0.0641*** (0.00519)
Post APS Years	-0.0178 (0.0766)	-0.0202 (0.0571)	0.0110* (0.00617)	-0.0124 (0.0620)	-0.00673 (0.0441)	0.00791 (0.00577)	-0.0158 (0.0624)	-0.0112 (0.0464)	0.0488*** (0.00559)
High Exposure * Post APS	-0.130 (0.0959)	-0.0397 (0.0722)	-0.0688*** (0.00803)	-0.0939 (0.0774)	-0.0262 (0.0568)	-0.0368*** (0.00759)	-0.0892 (0.0798)	-0.0214 (0.0601)	-0.0537*** (0.00734)
Female * Post APS	-0.111** (0.0449)	-0.0913*** (0.0305)	-0.156*** (0.0105)	-0.110** (0.0446)	-0.0887*** (0.0283)	-0.146*** (0.00993)	-0.108** (0.0424)	-0.0867*** (0.0273)	-0.147*** (0.00961)
Female * High Exposure	0.0315 (0.0532)	-0.0135 (0.0291)	0.0150 (0.00969)	0.0429 (0.0519)	0.00505 (0.0257)	0.0304*** (0.00913)	0.0249 (0.0512)	-0.0124 (0.0253)	0.0144 (0.00875)
Female * High Exposure * Post APS	-0.0201 (0.0626)	-0.0170 (0.0432)	-0.00816 (0.0136)	-0.0108 (0.0603)	-0.0126 (0.0387)	-0.00795 (0.0130)	0.00639 (0.0607)	0.00390 (0.0396)	0.0117 (0.0126)
Female	-0.258*** (0.0366)	-0.0262 (0.0219)	-0.162*** (0.00772)	-0.278*** (0.0371)	-0.0415** (0.0202)	-0.174*** (0.00723)	-0.282*** (0.0349)	-0.0549*** (0.0183)	-0.183*** (0.00693)
Child's Age		0.587*** (0.0228)	0.885*** (0.00331)		0.629*** (0.0220)	0.911*** (0.00315)		0.602*** (0.0196)	0.851*** (0.00306)
Age Squared		-0.0182*** (0.00104)	-0.0306*** (0.000161)		-0.0197*** (0.000984)	-0.0314*** (0.000154)		-0.0190*** (0.000873)	-0.0294*** (0.000150)
Deaths per District		4.10e-05*** (3.61e-06)	5.77e-05*** (4.04e-07)		2.42e-05*** (2.93e-06)	3.75e-05*** (3.86e-07)		2.55e-05*** (4.09e-06)	3.96e-05*** (3.74e-07)
Enrolled		1.676*** (0.0407)			1.685*** (0.0321)			1.631*** (0.0359)	

Constant	4.082*** (0.0929)	-1.551*** (0.146)	-1.458*** (0.0172)	4.045*** (0.0769)	-1.881*** (0.141)	-1.683*** (0.0162)	4.001*** (0.0805)	-1.667*** (0.131)	-1.351*** (0.0157)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	783,261	783,261	783,261	785,549	785,549	785,549	783,356	783,356	783,356
R-squared	0.086	0.448		0.063	0.462		0.065	0.443	

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

*Table Q: Impact of Exposure to Terrorism Exposure on Test Scores, by intensity using Heckman*

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	Hurdle	Heckman	Heckman (clustering)	Hurdle	Heckman	Heckman (clustering)	Hurdle	Heckman	Heckman (clustering)
High Exposure	-0.116*** (0.00513)	-0.0556*** (0.00408)	-0.0556 (0.0413)	-0.101*** (0.00488)	-0.0521*** (0.00402)	-0.0521 (0.0352)	-0.104*** (0.00471)	-0.0545*** (0.00387)	-0.0545 (0.0360)
Post APS Years	-0.0192*** (0.00600)	0.00176 (0.00472)	0.00176 (0.0459)	0.00134 (0.00577)	0.0283*** (0.00469)	0.0283 (0.0403)	0.0171*** (0.00561)	0.0224*** (0.00454)	0.0224 (0.0424)
High Exposure * Post APS	-0.0943*** (0.00717)	-0.106*** (0.00561)	-0.106* (0.0566)	-0.0979*** (0.00687)	-0.108*** (0.00556)	-0.108** (0.0479)	-0.0729*** (0.00667)	-0.0702*** (0.00539)	-0.0702 (0.0527)
Female	-0.237*** (0.00338)	0.0364*** (0.00361)	0.0364** (0.0151)	-0.236*** (0.00324)	0.0198*** (0.00347)	0.0198 (0.0132)	-0.248*** (0.00314)	0.00730** (0.00345)	0.00730 (0.0141)
Child's Age	0.885*** (0.00331)	0.733*** (0.00255)	0.733*** (0.0123)	0.911*** (0.00314)	0.813*** (0.00246)	0.813*** (0.0126)	0.852*** (0.00306)	0.761*** (0.00243)	0.761*** (0.0110)
Age Squared	-0.0306*** (0.000161)	-0.0255*** (0.000119)	-0.0255*** (0.000583)	-0.0315*** (0.000154)	-0.0287*** (0.000118)	-0.0287*** (0.000647)	-0.0295*** (0.000150)	-0.0267*** (0.000116)	-0.0267*** (0.000564)
Deaths per Districts	5.95e-05*** (3.98e-07)	3.64e-05*** (3.38e-07)	3.64e-05*** (3.37e-06)	3.92e-05*** (3.80e-07)	2.38e-05*** (3.20e-07)	2.38e-05*** (2.34e-06)	4.16e-05*** (3.69e-07)	2.56e-05*** (3.13e-07)	2.56e-05*** (3.47e-06)
Constant	-1.342*** (0.0169)	-0.0477*** (0.0140)	-0.0477 (0.0769)	-1.579*** (0.0160)	-0.540*** (0.0134)	-0.540*** (0.0707)	-1.226*** (0.0155)	-0.273*** (0.0132)	-0.273*** (0.0640)

Observations	783,261	783,261	783,261	785,549	785,549	785,549	783,356	783,356	783,356
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*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual. Column 3, 6 and 9 are Heckman results generated from clustering at the District level.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

*Table R: Impact of Exposure to Terrorism by Gender using Heckman*

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	Hurdle	Heckman	Heckman (clustering)	Hurdle	Heckman	Heckman (clustering)	Hurdle	Heckman	Heckman (clustering)
High Exposure	-0.0695*** (0.00630)	-0.0303*** (0.00506)	-0.0303 (0.0421)	-0.0576*** (0.00598)	-0.0270*** (0.00494)	-0.0270 (0.0359)	-0.0595*** (0.00576)	-0.0285*** (0.00477)	-0.0285 (0.0374)
Post APS Years	0.00539 (0.00760)	0.0167*** (0.00604)	0.0167 (0.0489)	0.0218*** (0.00728)	0.0414*** (0.00594)	0.0414 (0.0433)	0.0353*** (0.00708)	0.0315*** (0.00577)	0.0315 (0.0457)
High Exposure * Post APS	-0.0434*** (0.00892)	-0.0688*** (0.00704)	-0.0688 (0.0582)	-0.0467*** (0.00852)	-0.0704*** (0.00692)	-0.0704 (0.0501)	-0.0237*** (0.00827)	-0.0355*** (0.00674)	-0.0355 (0.0557)
Female * Post APS	-0.0633*** (0.0122)	-0.0328*** (0.00948)	-0.0328 (0.0249)	-0.0531*** (0.0118)	-0.0298*** (0.00947)	-0.0298 (0.0238)	-0.0473*** (0.0114)	-0.0206** (0.00914)	-0.0206 (0.0245)
Female * High Exposure	-0.114*** (0.0100)	-0.0528*** (0.00794)	-0.0528** (0.0253)	-0.107*** (0.00959)	-0.0539*** (0.00789)	-0.0539** (0.0257)	-0.108*** (0.00923)	-0.0560*** (0.00757)	-0.0560** (0.0251)
Female * High Exposure * Post APS	-0.139*** (0.0146)	-0.0957*** (0.0112)	-0.0957*** (0.0370)	-0.139*** (0.0140)	-0.0953*** (0.0112)	-0.0953*** (0.0346)	-0.132*** (0.0136)	-0.0860*** (0.0108)	-0.0860** (0.0350)
Female	-0.0702*** (0.00834)	0.128*** (0.00708)	0.128*** (0.0203)	-0.0785*** (0.00801)	0.111*** (0.00702)	0.111*** (0.0207)	-0.0958*** (0.00774)	0.0919*** (0.00674)	0.0919*** (0.0201)
Child's Age	0.884*** (0.00330)	0.733*** (0.00256)	0.733*** (0.0122)	0.909*** (0.00314)	0.812*** (0.00247)	0.812*** (0.0125)	0.850*** (0.00305)	0.761*** (0.00243)	0.761*** (0.0109)
Age Squared	-0.0306*** (0.000161)	-0.0255*** (0.000119)	-0.0255*** (0.000579)	-0.0314*** (0.000154)	-0.0286*** (0.000118)	-0.0286*** (0.000643)	-0.0294*** (0.000150)	-0.0267*** (0.000116)	-0.0267*** (0.000562)
Deaths per District	5.95e-05*** (3.99e-07)	3.65e-05*** (3.38e-07)	3.65e-05*** (3.37e-06)	3.92e-05*** (3.80e-07)	2.39e-05*** (3.21e-07)	2.39e-05*** (2.33e-06)	4.16e-05*** (3.69e-07)	2.56e-05*** (3.14e-07)	2.56e-05*** (3.46e-06)

Constant	-1.402*** (0.0171)	-0.0866*** (0.0142)	-0.0866 (0.0781)	-1.633*** (0.0162)	-0.576*** (0.0136)	-0.576*** (0.0701)	-1.281*** (0.0157)	-0.306*** (0.0133)	-0.306*** (0.0641)
Observations	783,261	783,261	783,261	785,549	785,549	785,549	783,356	783,356	783,356

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual. Column 3, 6 and 9 are Heckman results generated from clustering at the District level.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%



*Table S: Impact of Exposure to Terrorism Exposure on Test Scores, by intensity (First Stage)*

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	Hurdle First Stage	Heckman First Stage	Heckman First Stage cluster	Hurdle First Stage	Heckman First Stage	Heckman First Stage cluster	Hurdle First Stage	Heckman First Stage	Heckman First Stage cluster
Female	-0.120*** (0.0113)	-0.180*** (0.00246)	-0.180*** (0.0147)	-0.157*** (0.0127)	-0.178*** (0.00247)	-0.178*** (0.0145)	-0.0664*** (0.00926)	-0.172*** (0.00245)	-0.172*** (0.0139)
Asset Index	0.120*** (0.00487)	0.0877*** (0.00102)	0.0877*** (0.00734)	0.120*** (0.00552)	0.0807*** (0.00102)	0.0807*** (0.00638)	0.0793*** (0.00418)	0.0791*** (0.001000)	0.0791*** (0.00665)
Districts	0.000428*** (0.000109)	-0.000117*** (1.60e-05)	-0.000117 (0.000179)	5.44e-05 (0.000123)	-0.000121*** (1.65e-05)	-0.000121 (0.000162)	0.000187** (8.89e-05)	-0.000214*** (1.62e-05)	-0.000214 (0.000165)
Constant	2.346*** (0.0154)	0.471*** (0.00300)	0.471*** (0.0278)	2.502*** (0.0174)	0.490*** (0.00303)	0.490*** (0.0258)	2.238*** (0.0132)	0.490*** (0.00300)	0.490*** (0.0264)
Observations	783,261	783,261	783,261	785,549	785,549	785,549	783,356	783,356	783,356

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual. Column 3, 6 and 9 are Heckman results generated from clustering at the District level.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

**Table T: Impact of Exposure to Terrorism by Gender (First Stage)**

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	Hurdle First Stage	Heckman First Stage	Heckman First Stage cluster	Hurdle First Stage	Heckman First Stage	Heckman First Stage cluster	Hurdle First Stage	Heckman First Stage	Heckman First Stage cluster
Female	-0.120*** (0.0113)	-0.181*** (0.00246)	-0.181*** (0.0149)	-0.158*** (0.0127)	-0.178*** (0.00248)	-0.178*** (0.0146)	-0.0664*** (0.00927)	-0.172*** (0.00245)	-0.172*** (0.0140)
Asset Index	0.120*** (0.00487)	0.0878*** (0.00103)	0.0878*** (0.00733)	0.119*** (0.00553)	0.0806*** (0.00102)	0.0806*** (0.00639)	0.0794*** (0.00418)	0.0791*** (0.00100)	0.0791*** (0.00662)
Districts	0.000429*** (0.000109)	-0.000126*** (1.60e-05)	-0.000126 (0.000179)	5.05e-05 (0.000123)	-0.000128*** (1.65e-05)	-0.000128 (0.000163)	0.000188** (8.90e-05)	-0.000221*** (1.63e-05)	-0.000221 (0.000166)
Constant	2.345*** (0.0154)	0.471*** (0.00300)	0.471*** (0.0279)	2.502*** (0.0174)	0.490*** (0.00304)	0.490*** (0.0259)	2.238*** (0.0132)	0.490*** (0.00300)	0.490*** (0.0265)
Observations	781,751	1,083,607	1,083,607	784,039	1,083,607	1,083,607	781,846	1,083,607	1,083,607

Note: The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

*Table U: Impact of Exposure to Terrorism Exposure on Test Scores, by intensity*

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	-0.0235 (0.0732)	-0.0675 (0.0460)	-0.116*** (0.00513)	-0.0238 (0.0610)	-0.0543 (0.0392)	-0.101*** (0.00488)	-0.0254 (0.0620)	-0.0561 (0.0412)	-0.104*** (0.00471)
Post APS Years	-0.0278 (0.0706)	-0.0494 (0.0530)	-0.0192*** (0.00600)	0.000639 (0.0609)	-0.0224 (0.0454)	0.00134 (0.00577)	-0.0254 (0.0644)	-0.0463 (0.0508)	0.0171*** (0.00561)
High Exposure * Post APS	-0.162* (0.0888)	-0.0457 (0.0652)	-0.0943*** (0.00717)	-0.161** (0.0742)	-0.0515 (0.0529)	-0.0979*** (0.00687)	-0.124 (0.0801)	-0.0191 (0.0601)	-0.0729*** (0.00667)
Female		-0.0865*** (0.0152)	-0.237*** (0.00338)		-0.0889*** (0.0144)	-0.236*** (0.00324)		-0.107*** (0.0148)	-0.248*** (0.00314)
Child's Age		0.588*** (0.0227)	0.885*** (0.00331)		0.630*** (0.0219)	0.911*** (0.00314)		0.602*** (0.0195)	0.852*** (0.00306)
Age Squared		-0.0183*** (0.00104)	-0.0306*** (0.000161)		-0.0197*** (0.000982)	-0.0315*** (0.000154)		-0.0190*** (0.000871)	-0.0295*** (0.000150)
Deaths per Districts		4.25e-05*** (3.63e-06)	5.95e-05*** (3.98e-07)		2.55e-05*** (2.99e-06)	3.92e-05*** (3.80e-07)		2.73e-05*** (4.44e-06)	4.16e-05*** (3.69e-07)
Enrolled		1.671*** (0.0404)			1.680*** (0.0320)			1.627*** (0.0360)	
Constant	4.071*** (0.0479)	-1.454*** (0.145)	-1.342*** (0.0169)	4.001*** (0.0490)	-1.797*** (0.140)	-1.579*** (0.0160)	3.981*** (0.0504)	-1.555*** (0.132)	-1.226*** (0.0155)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES

Observations	783,262	783,261	783,261	785,550	785,549	785,549	783,357	783,356	783,356
R-squared	0.077	0.448		0.053	0.463		0.054	0.443	

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

*Table V: Impact of Exposure to Terrorism by Gender*

Dependent Variables	English Reading Scores			Reading in Local Language Scores			Mathematics Scores		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle	OLS w/o Controls	OLS w/ Controls	Hurdle
High Exposure	0.0197 (0.0720)	-0.0544 (0.0487)	-0.0695*** (0.00630)	0.0191 (0.0605)	-0.0429 (0.0406)	-0.0573*** (0.00598)	0.0183 (0.0621)	-0.0430 (0.0434)	-0.0596*** (0.00576)
Post APS Years	-0.0168 (0.0749)	-0.0382 (0.0566)	0.00542 (0.00760)	0.00810 (0.0643)	-0.0138 (0.0479)	0.0219*** (0.00728)	-0.0193 (0.0681)	-0.0403 (0.0539)	0.0353*** (0.00708)
High Exposure * Post APS	-0.104 (0.0908)	-0.00891 (0.0683)	-0.0441*** (0.00892)	-0.101 (0.0754)	-0.0131 (0.0552)	-0.0470*** (0.00852)	-0.0691 (0.0822)	0.0166 (0.0635)	-0.0243*** (0.00826)
Female * Post APS	-0.0203 (0.0393)	-0.0284 (0.0277)	-0.0632*** (0.0122)	-0.0114 (0.0376)	-0.0220 (0.0263)	-0.0531*** (0.0118)	-0.00748 (0.0381)	-0.0156 (0.0277)	-0.0473*** (0.0114)
Female * High Exposure	-0.112** (0.0454)	-0.0297 (0.0255)	-0.114*** (0.0100)	-0.112** (0.0447)	-0.0255 (0.0235)	-0.107*** (0.00959)	-0.114*** (0.0438)	-0.0305 (0.0242)	-0.108*** (0.00923)
Female * High Exposure * Post APS	-0.145** (0.0573)	-0.0964*** (0.0355)	-0.137*** (0.0146)	-0.149*** (0.0551)	-0.100*** (0.0325)	-0.138*** (0.0140)	-0.137** (0.0542)	-0.0928*** (0.0337)	-0.130*** (0.0136)
Female	-0.156*** (0.0322)	-0.0133 (0.0191)	-0.0703*** (0.00834)	-0.169*** (0.0329)	-0.0206 (0.0198)	-0.0786*** (0.00801)	-0.182*** (0.0311)	-0.0409** (0.0191)	-0.0959*** (0.00774)
Child's Age		0.588*** (0.0227)	0.885*** (0.00330)		0.630*** (0.0219)	0.911*** (0.00314)		0.603*** (0.0195)	0.851*** (0.00305)
Age Squared		-0.0183*** (0.00103)	-0.0306*** (0.000161)		-0.0198*** (0.000979)	-0.0315*** (0.000154)		-0.0190*** (0.000868)	-0.0295*** (0.000150)
Deaths per District		4.25e-05*** (3.63e-06)	5.95e-05*** (3.99e-07)		2.55e-05*** (2.99e-06)	3.92e-05*** (3.80e-07)		2.73e-05*** (4.44e-06)	4.16e-05*** (3.69e-07)
Enrolled		1.667*** (0.0405)			1.676*** (0.0321)			1.623*** (0.0360)	

Constant	4.149*** (0.0511)	-1.481*** (0.144)	-1.407*** (0.0171)	4.085*** (0.0529)	-1.822*** (0.138)	-1.640*** (0.0162)	4.071*** (0.0543)	-1.580*** (0.131)	-1.286*** (0.0157)
Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	783,261	783,261	783,261	785,549	785,549	785,549	783,356	783,356	783,356
R-squared	0.087	0.449		0.065	0.463		0.066	0.443	

*Note:* The dependent variable is measured on a scale of 1-5, with 1 being the lowest and 5 being the highest. Standard errors are clustered at the district level and are represented in the parentheses. Fixed Effects are applied at the provincial level. Controls include Female, Child's Age, Age Squared, Deaths per district and the enrolment status of the individual.

Source: Author's own Calculations. \*\*\* Significant at 10%, \*\* Significant at 5% and \* Significant at 1%

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