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School Performance and Child Labor: Evidence from West Bank Schools

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ABSTRACT

The current study aims to investigate the impact of academic achievement on child labor. The study utilizes survey data collected from Palestinian children in West Bank schools who are in the primary grades (5th–9th). The results show that increasing a child's academic achievement is significantly associated with decreasing the probability that a child works for money in the following period. Our findings varied among children according to their gender, age, and parental academic background. Our analyses are subject to different specifications, including two-stage least squares (2SLS) to account for potential endogeneity. The results provide robust evidence about the linkage between school performance and child labor in the West Bank. Further, the study proposes an assessment of the child's mental health problems by the Strengths and Difficulties Questionnaire (SDQ) as a potential mechanism through which the child's achievement at school affects child labor.

KEYWORDS: Academic Achievement; Child Labor; West Bank

JEL CLASSIFICATIONS: D15; I21; J13; I12

1. INTRODUCTION

Children make up a substantial proportion of the human capital of any society. Countries' economic and social development depends on the degree of investment in community capital (Mincer 1984) by providing a sound environment in which the elements of education, health, and appropriate family care exist. Economists have indicated that the expected return on investment in individuals at the early stages of their lives is more efficient and effective than investing in advanced stages of life (Heckman, Stixrud, and Urzua 2006). Family factors interact with school and society to shape children's cognitive and behavioral awareness in the early life stages and contribute successively to later-life consequences, mainly educational attainment and labor market outcomes. Educators and policymakers recognize the importance of policies and legislation that prevent or limit school dropouts due to several social and economic factors, the most important of which is child labor.

The International Labor Organization (ILO) defines child labor as "work that exploits or exposes a child to danger and impairs the health of his physical, psychological and social development, and prevents him from educational achievement or access to basic services."[1] The literature differentiates between two types of child labor: unpaid work and work for money (Putnick and Bornstein 2015). The first category includes family work, usually in the form of family-owned business or in agriculture (Putnick and Bornstein 2015) and household chores as part of children's obligation toward their families (Lancy 2012). However, the United Nations Children's Fund (UNICEF 2006) indicates that this type of work should not exceed 28 hours per week otherwise it will be considered a form of hidden child labor since it affects a child's well-being and educational attainment. The second category of child labor is work outside the home in the form of paid work in any economic activity. Economists shed light on the second category of child labor since it has significant adverse effects on their schooling and mental and physical health. The negative concept of child labor does include some types of work that children do on official holidays without negatively affecting their educational attainment or

[1] See "What Is Child Labour" section on ILO website at https://www.ilo.org/ipec/facts/lang--en/index.htm#

conflicting with their studies. These activities contribute to children's development of the skills and experiences they need to be active in their societies (Khakshour et al. 2015)

Child labor is a growing social phenomenon at the global level. The prevalence of this phenomenon varies according to the nature of societies, as there are approximately 160 million children in the world classified as child laborers[2] (UNICEF 2022), especially after the increase in poverty, political conflicts, and forced displacement. With the increase in the number of refugees and, recently, the poverty that accompanied the spread of the COVID-19 pandemic, UNICEF (2022) estimates that there are nine million children who are exposed to being included in what is known as child labor, and these numbers indicate that approximately one child in every ten is classified as a child laborer.[3]

The Palestinian Labor Law (Article 93) prohibits the employment of children under the age of 15, and Articles 94, 95, and 96 of the same law stipulate those children between the ages of 15 and 17 years are allowed to work under certain conditions, including that these jobs are not dangerous, that the hours of work are short, and a medical examination of the child is provided every six months. The Palestinian Labor Law has been amended, and child labor among first-degree relatives has been included in the definition of child labor.[4] Nevertheless, in Palestine, it constitutes one of the economic and social challenges faced by the Palestinian society, as data from the Palestinian Central Bureau of Statistics (PCBS 2020) indicate that the percentage of child laborers in Palestine reached 3 percent of the total workforce, 4 percent in the West Bank, and 1.3 percent in the Gaza Strip (5.5 percent of male children compared to 0.2 percent of female children). These data constitute a dangerous indicator of the spread of child labor in Palestine compared to neighboring countries such as Jordan, where child labor, according to the ILO (2016) is 1.75 percent among Jordanians and 3 percent among refugee children from Syria.[5] The Israeli occupation and its measures directly contribute to the increase in child labor and school dropouts. The forcible link between the Palestinian and Israeli economies

[2] For more details see: https://www.unicef.org/protection/child-labour

[3] Noting that some sources indicate more severe rates of child labor from UNICEF, see: https://www.theworldcounts.com/stories/child-labor-facts-and-statistics l

[4] See amendments to the law in http://muqtafi.birzeit.edu/pg/getleg.asp?id=16500

[5] For more details see: https://www.ilo.org/beirut/media-centre/news/WCMS_510750/lang--en/index.htm

constitutes the main entry point for child labor through the availability of job opportunities in Israel, giving a higher financial return than employment opportunities in the Palestinian areas. Further, most of the professions in which the distribution of Palestinian workers in Israel is based are at the bottom of the occupational classification scale, such as construction, agriculture, and primary services. In other words, most of the demand generated by the Israeli labor market targets the least educated, which encourages dropping out of school.[6]

Several studies have indicated the adverse effects of child labor on a child's physical and psychological health in terms of the association of child labor with symptoms of psychological disorders (Amon et al. 2012), behavioral problems as a result of children's feelings of social inequality and inferiority (Trinh 2020), the appearance of symptoms of depression as a result of the inability to adapt socially or fear of punishment (Woodhead 2004), or exposure to abuse or sexual exploitation (Moayad et al. 2021). Further, child labor exposes children to the risk of physical health problems, such as muscle deformities resulting from children working in jobs that are not commensurate with their physical abilities (Roggero et al. 2007), the lack of public safety measures in children's workplaces, or exposing them to the risk of direct injury or children's ignorance of their safety procedures (Shendell et al. 2016).

Furthermore, child labor adversely affects children at the social and cultural levels. Child labor can contribute to the disruption of the social relationship between the child and his/her family due to some values that the child may acquire during their work that are not commensurate with those values considered important by the child's parents. Further, the child might develop a sense of the family having control and domination over him/her, mainly if some violence is applied to the child to perform some work (Levinson 1988). Moreover, depriving the child of their right to education and enjoying their childhood is one of the most common and influential

[6] For example, Palestinians in East Jerusalem have better access to the Israeli labor market than their peers in the West Bank. Further, most of the employment in the Israeli labor market is concentrated in low-skilled jobs, which increases the incentive to drop out of school early. Statistics indicate that 30 percent of Jerusalemites do not complete their school education (Association of Civil Rights in Israel 2017). Schools in East Jerusalem (which are entirely under the Israeli occupation municipality) suffer from the phenomenon of school dropouts, which amounted to 38 percent, and led to an increase in the participation of children under the age of 15 in the labor force (Shtern 2017).

causes that lead to adverse consequences for the child in all stages of their life (Putnick and Bornstein 2015).

In general, human capital investment yields a future return. However, several factors can affect human capital, causing a significant reduction in return. For example, household poverty can impact parents' investment in their offspring and consequently deteriorate their later-life return on human capital. Parental preference is considered one of the reasons that contribute to child labor. Altruistic parents care about their children's well-being and invest in their children's education and leisure (Frempong and Stadelmann 2021). Children from low-income families in developing countries tend to combine school and work (Dessy and Pallage 2001, 2005). A strand of literature finds a negative effect of child labor and human capital accumulation assessed by schooling performance (Assaad, Levison, and Dang 2010; Beegle, Dehejia, and Gatti 2009; Sedlacek et al. 2009; Zabaleta 2011) or ability tests (Patrinos and Psacharopoulos 1997; Akabayashi and Psacharopoulos 1999). On the other hand, research has shown that child labor and schooling are complementary (Ravallion and Wodon 2000) or that child labor can contribute to schooling up to a certain level (Lancaster et al. 2004). Economists shed light on child labor as a response to economic variations in the household due to liquidity constraints (Baland and Robinson 2000). Further, others find that the demand for child labor increases as a response to the increased adult wages (Dasgupta 2005).

Recent studies have been conducted in Palestine to investigate the effect of political conflict on child labor. Di Maio and Nandi (2013) showed that the growing number of border closure days increased the likelihood of child labor and decreased school attendance during the Second Palestinian Intifada (2000–6). They suggested local wage reductions, particularly for households whose head worked in Israel, as a possible transmission mechanism via which closure days may have enhanced child labor. Further, Di Maio and Nisticò (2019) indicated that losing a parent's work during the Second Intifada increased a child's dropout rate by 9 percentage points. The magnitude of the coefficient was different based on the child's gender, school grade, academic ability, parental education, and the number of children in the household.

This paper takes a complementary view and explores the effects of a child's ability (assessed by school achievement) in household decisions to increase their child labor supply. Contrary to the previously mentioned studies, which mostly discussed the negative impact of child labor, the current study raises the possibility of a correlation between educational achievement and paid child labor in Palestine. If such a correlation exists, what is its size and degree of impact, and what is the proposed mechanism for this relationship? Our study contributes to the research by investigating how household schooling investment decisions respond to low academic performance in the short run in a developing country. In addition, we attempt to address a transmission mechanism in which school performance can affect child labor.

The current study uses preliminary data at the individual level, collected in 2013 within a survey that included 100 schools distributed between schools for males and others for females that are affiliated with several official bodies and are located in the West Bank and East Jerusalem regions. The study includes several variables at the level of individuals, the family, the school, and the student's residential community in the analytical model to measure the impact of academic achievement on students' wage employment. Further analysis uses the instrumental variable (IV) method to account for potential endogeneity due to the omitted variable bias or the reverse causality between school performance and child labor. The child's school achievement was instrumented by the child health behavior as assessed by energy drink consumption during the survey. The IV regression results support the hypothesis of causality between a child's educational attainment and the probability of them working for wages.

The study concluded that a low level of academic achievement is related to the probability of a child working for a wage during the period following the school year. The main result suggests that improving the student's academic achievement by one point (on a 100-point scale) reduces the probability of the student working for a wage by 0.3 percent at the 1 percent confidence level. The IV results show that the magnitude of the estimates is large: improving child's GPA by an additional mark in the previous year reduces the possibility of child working in the following 12 months by 0.6 percent.

Thus, the research presents the impact of educational achievement on child labor for several groups in the study sample, based on gender, school stage, type of school (governmental or affiliated with UNRWA[7]), and the mother's education degree. The study suggests a mechanism to explain these results: poor academic achievement may contribute to behavioral and emotional disturbances and peer problems, according to the Children's Strengths and Difficulties Questionnaire (SDQ), which can increase the possibility of child labor.

The study recommends changing the perception associated with the concepts of school achievement in contemporary society to raise the rate of achievement and not link it and limit it to the school grades only. Low school achievement based on traditional learning and assessment methods will, in most cases, lead to low academic achievement due to the school's inability to pay attention to students' learning differences or increase their motivation toward learning and keep pace with the changes of the current globalized era.

The remainder of the study is organized as follows. Section 2 describes the data and identifies the data sources. Section 3 introduces the empirical approach and the identification strategy, and section 4 presents the results. Section 5 presents the robustness checks based on alternative specifications. Section 6 discusses the mechanism linking school performance and child labor. The paper concludes in section 7.

2. DATA

The current study employs survey data collected in 2013 in the context of a multidisciplinary project funded by the German Research Foundation (DFG) to explore the determinants of health and cognitive development in the West Bank, including East Jerusalem. The survey included 100 single-sex schools. Those schools represent the two major types of schooling system in the West Bank: 60 public/governmental schools and 40 schools managed by the UNRWA. The target population was students in grades 5 to 9. The survey randomly selected

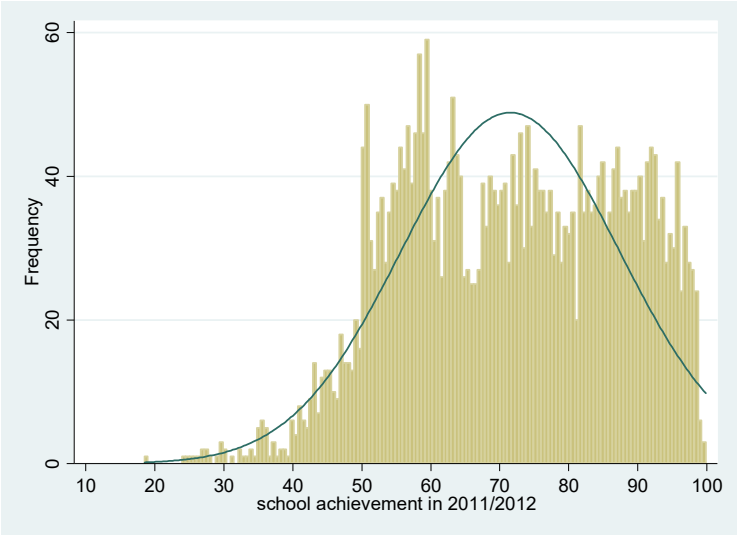
[7] UNRWA stands for the United Nations Relief and Works Agency for Palestine Refugees in the Near East. These schools are designed for Palestinian refugee children and provide free education until 9th grade.

60 students from each school (12 students from each grade/school). Those schools are randomly selected and stratified by sex, regions (south, center, and north), and school authority located in different West Bank localities. It is worth mentioning that single-sex schools represent the majority of primary schools in the West Bank (76 percent of public schools and 85 percent of UNRWA schools, according to the Ministry of Education and Higher Education records [MoEHE 2012]).[8] The key variable, school achievement in the academic year 2011–12 (one year before collecting the survey data), was obtained from the MoEHE official records, which minimizes the measurement error. Then we computed each student's grade point average (GPA) by dividing the student mark (graded on a 100-point scale) by six subjects. The subjects are religious education, Arabic, English, mathematics, science, and social science. These six subjects encompass more than 80 percent of the weekly lessons in the primary education stage (UNESCO 2011).

Further, all schools in the West Bank (public, UNRWA, and private) adopt the same national curriculum and use the same grading criteria (MoEHE 2016). A passing grade equals or is greater than 50 percent in all subjects. In the sample used, the average students' GPA was 70 percent. Figure (1) presents the distribution of school achievement measured by a child's GPA. The figure shows that many students' GPA is stacked at the passing grade (50 percent or the acceptance grade, around 60 percent). Thus, in the robustness test, we measure the impact of grade repetition on the probability of child labor.

[8] The sampling frame includes 382 governmental schools (160 boys and 222 girls) and 54 UNRWA schools (20 boys and 34 girls). In total, 74 percent of primary school students are enrolled in public schools as opposed to 23 percent in the UNRWA schools and 3 percent in private schools (PCBS 2017).

Figure 1: The Distribution of Child School Achievements during the Academic Year 2011–12



Source: Own calculations based on MEHE data.

The outcome variable "child labor" was obtained from the Health Behavior in School-aged Children (HBSC) questionnaire, an international survey that determines the social influence of health and well-being among the young, based on gender, age group, and family income levels (Gaspar et al. 2018).[9] Each student in this survey was asked whether they had worked for money during the past 12 months.[10] The percentage of students who answered yes to this question was 15 percent of the total sample. This percentage is relatively high compared to the official documented percentage of child labor in Palestine, according to the Central of Bureau and Statistics (PCBS 2020), which is 5.4 percent, regardless of whether the motivation for child labor was income or other purposes.

Our database contains several control variables collected from different questionnaires used in this survey. Data at the individual level covered students' socioeconomic backgrounds and were obtained from the household questionnaire answered by the students' mothers. These variables include student gender, age, parental educational attainment, father's employment

[9] For more details about the HBSC survey, see http://www.hbsc.org/.

[10] The ILO (2018) defines child labor as "work that deprives children (any person under 18) of their childhood, their potential, and their dignity, and that is harmful to their physical and/or mental development." In this study, we strictly adopt work for money as a definition of child labor, regardless of whether the work was conducted within a child's household or not or during/out of school time.

status, number of siblings, monthly household income, household characteristics measured by an indicator of whether the number of household rooms is greater than the medium per locality, and household standard of living scale.[11] Information on students' locality[12] was obtained from the PCBS and was merged with the survey data. The locality-level controls include locality type (i.e., urban, rural, or refugee camp), the proportion of the locality that belonged to area C,[13] and whether the separation wall intersected it.[14] Finally, we control for the type of school, i.e., whether the school is classified as a public school or managed by the UNRWA, since refugees generally have a lower income level than non-Palestinian refugees living in the West Bank (Hallaq 2020; PCBS 2015).

Our data contain information on students' noncognitive skills, which enables us to use them as a mechanism by which educational attainment affects child labor. We used the Strengths and Difficulties Questionnaire (SDQ)[15] to assess student mental health as an indicator for noncognitive skills. The SDQ is a brief behavioral screening questionnaire for children between the ages of 3–16 years. There are currently three self-reported versions of the SDQ in the following categories: children, parents, and teachers. In our survey, students' parents (mainly mothers) answered this questionnaire, which gives more reliability than a self-report by the child. However, some concerns remain about measurement bias, since parents tend to assess their children differently on their conduct and emotional problems (Johnston et al. 2014).

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[11] The standard of living index reflects whether a household owns fixed assets such as a TV, mobile phone, DVD player, air conditioning, or cars, among other belongings.

[12] Locality is the smallest geographical administrative unit defined by the PCBS.

[13] Area C includes areas in the West Bank that are still under full Israeli military and civil control based on the Oslo Accords of 1993. The Palestinian Authority has civil and security control in area A and civil autonomy but no security control in area B (Vishwanath et al. 2014) For more details, see www.btselem.org/topic/Area_c.

[14] The Israeli West Bank wall is a separation barrier built by the Israeli government in the West Bank along the 1949 armistice line known as the Green Line (Vishwanath et al. 2014). It divides Palestinian communities, encircles some, and isolates others from their surroundings while separating East Jerusalem from the rest of the West Bank (UNSCO 2014).

[15] Each version of SDQ includes between one and three of the following components: 25 items on psychological attributes, an impact supplement, and follow-up questions (R. Goodman 1997; A. Goodman, Lamping, and Ploubidis 2010). For a more detailed description of the SDQ see http://www.sdqin fo.com/ www.proceduresonline.com/coventry/childcare/user_controlled_lcms_area/uploaded_files/Strengths%20and%20Difficulties%20Questionnaires%20(SDQ's)%20-%20Good%20Practice%20Exemplar.pdf

The SDQ has a 25-item standardized test investigating positive and negative child behavioral characteristics. There are five questions each for assessing the following five attributes: (1) emotional difficulties; (2) peer interaction problems; (3) conduct problems; (4) hyperactivity/inattention; and (5) prosocial behavior. In each group, the question has three possibilities: not true (0 points), somewhat true (1 point), and certainly true (2 points). In our study, we used the following subscales:

- Internalizing problems (emotional difficulties and peer interaction problems) measure depression, anxiety, somatic complaints, and social withdrawal (Foster, Garber, and Durlak 2008);
- Externalizing behavior (conduct problems and hyperactivity/inattention) includes symptoms of aggression and delinquency (Foster, Garber, and Durlak 2008).

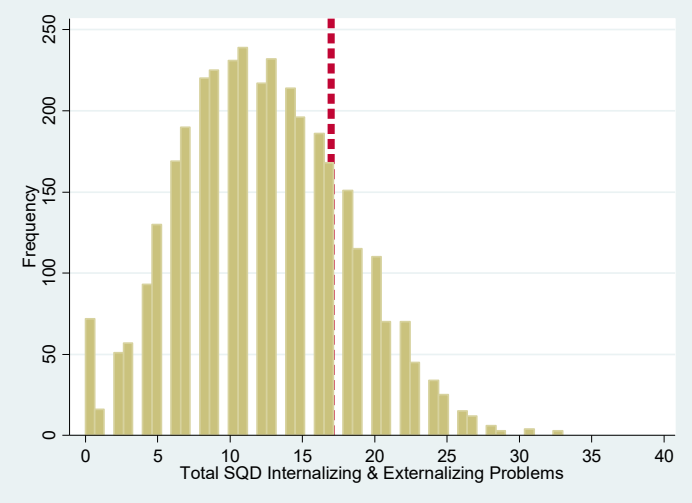
Total scores for externalizing and internalizing problems range from 0 to 20. Higher scores in these two categories reflect greater difficulties.[16]

- Abnormal SDQ problem: If the total score for externalizing problems and internalizing difficulties exceeds 17 or more (out of 40), the child is classified as having abnormal issues.

Figure 2 shows the SDQ internalizing and externalizing problems distribution and a reference line that shows the observations that identify the child as having abnormal SDQ problems. Table 1 presents the descriptive statistics of the outcome, the explanatory variables, and the control and proposed mechanism data used in this paper.

[16] A higher score in the prosocial behavior subscale is reflective of more personal strengths (Muris, Meesters, and van den Berg. 2003). We did not use this subscale in the current study.

Figure 2: The Distribution of SDQ Scores: Internalizing and Externalizing Score



Source: Own calculations based on survey data. The reference line indicates the observations that are classified as having abnormal SDQ problems.

Table 1: Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
Child work during the last 12 months	0.15	0.35	0	1
School GPA in 2011–12	70.60	15.97	18.5	99.83
Student passed in all subjects in year 2011–12	0.93	0.25	0	1
Male child	0.29	0.45	0	1
Child's age in years	12.87	1.51	10	18
Father education > 12 years	0.23	0.42	0	1
Mother education > 12 years	0.18	0.39	0	1
Living standard scale (10 points)	4.38	1.70	1	10
Father is working	0.59	0.49	0	1
Rooms at home (above median per locality)	0.72	0.45	0	1
No. of siblings	5.24	2.48	0	20
Household income NIS (<1500 /NIS is the reference group)				
1500 –2499	0.33	0.47	0	1
2500–3999	0.16	0.37	0	1
4000–5000	0.08	0.27	0	1
>5000	0.07	0.25	0	1
			0	1
Child's consumption of energy drinks	0.39	0.49	0	1
Proportion of locality under area C	0.30	0.30	0	1
Locality affected by separation wall	0.40	0.49	0	1
Locality type (urban is the reference group)				
Rural locality	0.34	0.47	0	1
Refugee camp	0.24	0.42	0	1
UNRWA school	0.41	0.49	0	1
SDQ-internalizing problems	6.03	3.06	0	17
SDQ-externalizing problems	6.45	3.52	0	19
SDQ_abnormal problem	0.24	0.43	0	1

3. ESTIMATION MODEL

We use the model to measure the effect of educational attainment on child labor:

$$Y_{ikl} = \alpha + \beta(GPA_{t-1})_{ikl} + \vartheta X_{ikl} + \varphi Z_{ik} + \partial S_{il} + \varepsilon_{ikl} \qquad (1)$$

where Y_{ikl} is the dependent variable that takes a value of 1 if the child *i* lived in locality *k* and enrolled in school/had worked for money during the previous 12 months and 0 otherwise. The variable of interest is the student GPA_{t-1} of the child for the school year 2011–12 (one year before collecting the data). Thus, β captures the impact of a change in the student's school achievements measured by GPA during the previous academic year on the possibility of child labor during the following 12 months. Economists indicate the possible endogeneity problem between school attainment and child labor, since the motivations that encourage students to work are the same factors that discourage school performance. The model captures an extensive array of controls that vary based on individual, household, locality, and schools between students to overcome this issue.

Child labor is highly influenced by the parents' education and the child's gender (Emerson and Souza 2007; Galdo, Dammert, and Abebaw 2021). Our model captures these variables. X_{ikl} stands for the student's individual and family observed characteristics, including student gender and age. The household characteristics that include maternal and paternal schooling (whether they finished 12 years of education) highly influence both a child's academic attainment and the possibility of child labor (Hallaq 2022). Further, parental job loss directly correlates with a child's school enrollment status in Palestine (Di Maio and Nisticò 2019). Thus, the model includes the father's employment status (whether he is employed). Our model also has an indicator of family size measured by number of siblings, since this factor has an essential role in determining child labor (Patrinos and Psacharopoulos 1997; Ponczek and Souza 2007). Family size also represents the substitution effect of parental investment in one child more than another (Dammert 2010). Further, the vector includes household characteristics covering house size, i.e., whether the number of rooms is greater than the locality's median, household income level, and an indicator of the household standard of

living. Z_{ik} represents the set of locality-level characteristics, the proportion of locality under area C, and the separation wall. The previous two factors indicate whether the child is close to accessing the Israeli labor market, which provides a significant wage premium over local wages. Also, most of the employment in the Israeli labor market is concentrated in low-skilled jobs (e.g., construction and agriculture) (Farsakh 2002), which increases motivation to drop out from school due to the anticipated economic return of schooling compared to wages in the Israeli labor market. On the other hand, Palestinian workers who live in area C and do not work in Israel pay wage penalties over and above other Palestinian workers inside the Palestinian territories (Fallah and Daoud 2015). These factors have a direct linkage to child labor given the Palestinian context (Di Maio and Nandi 2013). Finally, the model includes type of locality (rural, urban, or refugee camp). S*ik* is an indicator for a school type (whether the student is enrolled in a public or UNRWA school). School quality might directly influence child labor (Bezerra, Kassouf, and Arends-Kuenning 2009).

We anticipate that schools with poor infrastructure and few facilities might discourage students from doing well in their educational attainment and therefore entering the labor market early. In our sample, both UNRWA and public schools are characterized by lack of adequate resources and adequate classroom space. Teachers suffer from overcrowded classes, a lack of discipline, and low salaries. They also lack motivation and professional commitment, and many of them have a second job (Jabr and Cahan 2014) . Finally, ε_{ikl} represents an idiosyncratic error term. The school fixed effects are controlled for in a separate estimation model, which captures many differences in the time constant within a given geographical area and other motivational factors to study factors that vary among schools, such as school management and facilities. Also, the school fixed effects capture other unobserved characteristics within the geographical area, such as the fraction of the unemployment level, since child labor is highly affected by local market conditions (O'Donnell, Rosati, and Van Doorslaer 2005). All estimations using school sampling weight and error terms are clustered at the school level.

However, even the model captures several levels of controls that might influence households with children to have their child enter into the labor market early; the endogeneity problem is

not fully resolved due to the reverse causality (child labor leads to poor academic achievements as several economic works of literature have documented, e.g., Keane, Krutikova, and Neal [2020], Sanchez Gunnarsson, and Orazem [2005], and Zabaleta [2011]). Also, there is a concern regarding the self-reporting bias of the outcome variable. Therefore, the robustness analysis includes a discussion about using an IV to create an exogenous variation in students' school attainment without directly affecting child labor decisions.

4. RESULTS

4.1 Main Results

In this section, we discuss the findings that are presented in table 2 as follows. Column 1 presents the estimates of the model, including only the variable of interest: child GPA in the previous academic year (2011–12). Column 2 adds the individual-level characteristics, household characteristics, and children (gender, age, parental education, and family income, living standard index). Column 3 adds locality characteristics, column 4 adds the school type indicator (whether school is a UNRWA or public school), and column 5 alternatively adds school fixed effects.[17] In all analyses, the estimation in columns 4 and 5 represent the base model with all levels of control; then we separately estimate the base model by gender, grade level, school type (which indicates refugee status), mother's educational attainment, and father's employment status.

The relationship between students' school performance and child labor is statistically significant and negative in all specifications. The magnitude suggests decreasing child GPA by one point (out of 100-point scale) is associated with a 0.3 percentage point increase in the probability of child labor.

[17] Adding school fixed effects captures the variation between schools, including school type (public versus UNRWA school). We do not add a school type indicator when we control school fixed effects levels (95 schools remain in our sample with all specifications).

Table 2: The Correlation between School Performance and the Probability a Child Works for Money

Dep.Var: Child had worked for money during the last 12 months	(1)	(2)	(3)	(4)	(5)
School GPA in 2011–12	-0.004***	-0.003***	-0.003***	-0.003***	-0.003***
	(0.001)	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Observations	4,100	3,526	3,526	3,526	3,526
R-squared	0.025	0.199	0.199	0.199	0.243
Individual-level controls	NO	YES	YES	YES	YES
Family-level controls	NO	YES	YES	YES	YES
Locality-level controls	NO	NO	YES	YES	NO
School type	NO	NO	YES	YES	NO
School fixed effects	NO	NO	NO	NO	YES

Notes: The robust standard errors clustered at the school level are reported in parentheses. The individual-level controls include the child's sex and age. The family level controls include indicators as to whether child's father/mother has more than 12 years of schooling, the standard of living scale (10 points), an indicator of whether the number of rooms is above the median per locality, number of siblings, and household income. The locality-level controls contain the proportion of the locality under area C, the presence of the separation wall, and the locality type (dummy for urban). The school-level controls include school type (UNRWA or governmental). *** p<0.01, ** p<0.05, and * p<0.1.

In addition to the effect of students' school performance on child labor, we point out some other factors related to the Palestinian context that might contribute to a better understanding of child labor. Table A.1 in the appendix shows a male child is more likely to work than a female (the probability range between 31 percent without control and 10 percent with all levels of control and school fixed effects). A household with an educated father is less likely to have their children work. Consistent with the literature (Dammert 2010; Patrinos and Psacharopoulos, 1997; Ponczek and Souza, 2007), child labor is more prevalent among large households (number of siblings is greater than three) than with small households.

Further, household income has a negative and significant correlation with child labor. Finally, we included the locality-level control in column 3; the analysis does not significantly differ between children living in rural areas/refugee campuses and those living in urban areas. However, other locality characteristics can explain the difference. For example, a child who lives in the area classified as area C is more likely to work. Some explanations for this result include the ease of access to the Israeli labor market in these areas, the lack of control over child labor due to the absence of the government's role in area C, and the adverse living conditions of the residents in these localities. This result is consistent with the effect of the

West Bank separation wall on child labor. The separation wall has a negative and significant (at 10 percent) correlation with child labor, since it makes it difficult to access the Israeli labor market unless an individual has special access permits that are conditioned on many requirements, one of which is age.

4.2 Heterogeneity Analysis

The main results show that low school achievement in the previous academic year has a significant association with child labor. However, the effect or the size of the coefficient might be different under certain circumstances. To explore potential heterogeneous links between children's GPA and the probability of working, table 3 introduces the effect of academic performance based on children's sociodemographic characteristics.

The first group is based on the child's gender. The school performance coefficient is significant for both genders. However, the coefficient size is substantively larger for male students than for females. School dropouts, particularly for economic motivations, are more prevalent in male students than female, while female students are less likely to drop out of school to work (Di Maio and Nisticò 2019).

The second group is divided based on the child's educational stage: elementary school (grades 5–6) and middle school (grades 7–9). Interestingly, the magnitude of the coefficient is twice as great in the elementary grades than among middle schoolers, and even the relationship is negative and statistically significant for the two groups. There are two plausible explanations: either the parental decision to send their offspring to work early because of weak academic performance or the outcome variable is overestimated and suffered from self-reporting bias by children in the elementary grades. Poor academic achievement tends to be less correlated with the probability of a child going to work for children enrolled in UNRWA schools than those enrolled in public schools. One of the potential reasons for this is the lower cost of education among refugee students (UNRWA schools) compared to the students in public schools, as UNRWA provides free basic education (until grade 9) to Palestinian refugee children. This could also be explained by the fact that the Palestinian refugees, in general, have a higher

educational attainment than nonrefugees and also a higher female labor force participation rate (PCBS 2015).

We find no significant difference between the coefficient size among children classified based on their mother's educational attainment or father's current employment status; even the GPA coefficient is negative and statistically significant at 1 percent in these categories.

Table 3: Heterogeneity Analysis: The Correlation between School Performance and the Probability of Child Work for Money on Selected Groups

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. var.: Probability of child working for money						
	Child Gender		**Child Level in Primary Grades**		**School Types**	
Panel A:	Male	Female	Lower (5+6)	Upper (7+8+9)	Public	UNRWA
School GPA in 2011–12	-0.005***	-0.002***	-0.004***	-0.002***	-0.003***	-0.002***
	(0.001)	(0.0004)	(0.001)	(0.0004)	(0.001)	(0.001)
Observations	830	2,381	1,221	1,990	1,891	1,320
R-squared	0.171	0.072	0.285	0.307	0.259	0.245
Panel B:	**Mother's Education**		**Father's Employment Status**		**Locality Type**	
	>12 years	<12 years	Employed	Unemployed	Rural	Non-rural
School GPA in 2011–12	-0.003**	-0.003***	-0.003***	-0.003***	-0.001**	-0.004***
	(0.001)	(0.0005)	(0.0005)	(0.001)	(0.001)	(0.001)
	619	2,592	1,958	1,253	1,067	2,049
	0.350	0.257	0.253	0.313	0.277	0.239
Individual-level controls	YES	YES	YES	YES	YES	YES
Family-level controls	YES	YES	YES	YES	YES	YES
School fixed effects	YES	YES	YES	YES	YES	YES

Notes: The robust standard errors clustered at the school level are reported in parentheses. The individual-level controls include the child's sex and age. The family-level controls include indicators as to whether child's father/mother has more than 12 years of schooling, the standard of living scale (10 points), an indicator of whether the number of rooms is above the median per locality, the number of siblings, and household income. The locality-level controls contain the proportion of the locality under area C, the presence of the separation wall, and the locality type (dummy for urban). The school-level controls include school type (UNRWA or governmental). *** p<0.01, ** p<0.05, and * p<0.1.

5. ROBUSTNESS CHECKS AND IV ESTIMATIONS

One avenue through which to address the possibility of obtaining a biased estimate is to control for the reason for a child to work. The HBSC survey provides nine possible answers to let students indicate the reason for work. The most-frequently cited reason among these alternatives was to help households raise their income (47 percent), followed by to fill their free time (25 percent), and become independent (24 percent). Table A.2 in the appendix shows the mean value of these possible answers for child labor. As a robustness check, these nine options were added to the analysis. A child's GPA is still significant at 1 percent, as in the main result, but decreases by one point (from 0.3 percent to 0.2 percent). Columns 2 and 3 show the effect of a child's GPA on child labor for male and female students separately. The coefficient for male students is four times larger than the size coefficient for female students, and both are significant at 1 percent.[18]

The second robustness check was conducted when by changing the coefficient to pass/fail. The passing grade is 50 percent in all registered courses. In the employed sample, 6.5 percent of the students received a GPA of less than 50 percent.[19] This indicator was simply calculated based on looking at the GPA for those students. If the student's GPA in the main six topics is above 50 percent, the variable takes the value of one and zero otherwise (fail, child GPA less than 50 percent). Table 5 presents the association between the child's success in the previous year and the probability of working in the following period. Students who most likely will repeat the grade (did not pass) tend to be 12 percent more likely to work during the following period.

[18] Table A.3 in the appendix shows the effect of a child's school achievements on the probability of working for money during the following 12 months after excluding some observations with a different category for the reason to work. In all specifications, the coefficient is still significant at 1 percent.

[19] The passing grade is 50 percent. Students who obtain a score lower than 50 percent in three subjects or fewer are required to sit for a make-up exam; if they fail four subjects or more, they repeat the same grade based on the allowed repetition rate (MoEHE 2016).

Table 4: Robustness Checks: The Correlation Between School Performance and Child Labor, Controlling for a Reason to Work

Dep. var: Probability of child had worked for money	(1) All	(2) Male	(3) Female
School GPA in 2011–12	-0.002***	-0.004***	-0.001**
	(0.0004)	(0.001)	(0.0004)
Reason to work			
To participate in raising the family income	0.333***	0.400***	0.262***
	(0.032)	(0.054)	(0.037)
To help pay back the family debts	-0.057	-0.083	-0.008
	(0.059)	(0.083)	(0.090)
As a result of the Israeli actions and the deterioration of the economic situation	0.152	0.121	0.275*
	(0.094)	(0.114)	(0.163)
To fill in the free time of school vacations	0.286***	0.319***	0.255***
	(0.048)	(0.061)	(0.081)
To learn a profession	0.047	0.011	0.138
	(0.056)	(0.072)	(0.118)
Death of father or because the father quit his responsibilities	-0.082	-0.152	0.073
	(0.092)	(0.102)	(0.176)
To become independent	0.271***	0.317***	0.163**
	(0.056)	(0.073)	(0.076)
I don't have anything to do after school time other than work	0.090**	0.031	0.155***
	(0.043)	(0.070)	(0.057)
Other	0.092	0.077	0.089
	(0.056)	(0.087)	(0.062)
Observations	3,423	925	2,498
R-squared	0.430	0.367	0.2822
Controls	YES	YES	YES
School FE	YES	YES	YES

Notes: The robust standard errors clustered at the school level are reported in parentheses. Controls include individual-level controls such as child's sex and age. The family-level controls include indicators of whether child's father/mother has more than 12 years of schooling, the standard of living scale (10 points), an indicator as to whether the number of household rooms is above the median per locality, the number of siblings, and household income. *** p<0.01, ** p<0.05, and * p<0.1.

Table 5: Robustness Checks: The Correlation between School Performance (pass-no grade repetition) and Child Labor

Dep.Var: Child has worked for money during the last 12 months	(1)	(2)	(3)	(4)	(5)
Pass (student received > 50 percent) in all courses	-0.119***	-0.108***	-0.104***	-0.106***	-0.119***
	(0.033)	(0.025)	(0.025)	(0.025)	(0.026)
Observations	4,100	3,526	3,526	3,526	3,526
R-squared	0.008	0.188	0.189	0.189	0.242
Individual-level controls	NO	YES	YES	YES	YES
Family-level controls	NO	YES	YES	YES	YES
Locality-level controls	NO	NO	YES	YES	NO
School type	NO	NO	YES	YES	NO
School fixed effects	NO	NO	NO	NO	YES

Notes: The robust standard errors clustered at the school level are reported in parentheses. The individual-level controls include child's sex and age. The family-level controls include indicators as to whether child's father/mother has more than 12 years of schooling, the standard of living scale (10 points), an indicator as to whether the number of household rooms is above the median per locality, the number of siblings, and household income. The locality-level controls contain the proportion of the locality under area C, the presence of the separation wall, and the locality type (dummy for urban). The school-level controls include school type (UNRWA or governmental). *** p<0.01, ** p<0.05, and * p<0.1.

Ordinary least squares (OLS) could provide a biased estimation regarding the relationship between school achievements and child labor due to reverse causality or omitted variable bias due to the effect of unobservable individual characteristics. We control for a wide range of socioeconomic backgrounds in our analysis using the IV strategy to account for potential endogeneity. The employed dataset includes a health behavior survey, widely used in the literature. This survey includes questions about a child's dietary habits. One of these questions was about the child's consumption of energy drinks. The student had seven categories from which to answer this question, ranging from never consuming energy drinks (62 percent) or consuming them once per week (12 percent), twice per week (9 percent), three times per week (5 percent), four times a week (3 percent), five times a week (3 percent), and every day (more than) once per day (6 percent); figure A.1 in the appendix shows the distribution of the answer. In the main 2SLS model, the instrument was specified as a dichotomous variable taking a value of one if a child consumes energy drinks or zero otherwise. We utilize a continuous model to include all energy drink consumption answers as a robustness check.

Energy drink consumption is common among young people globally (Reissig, Strain, and Griffiths 2009). The research has documented that energy drink consumption is significantly associated with a lower GPA among undergraduate students (Champlin, Pasch, and Perry 2016) and adolescents in primary and middle school (Holubcikova et al. 2017; Leal, Jackson, and Boccio 2021). The empirical evidence attributes the association between energy drink consumption and poor school performance to increasing stress among consumers (Hafeez et al. 2016; Kreitzberg et al. 2019),[20] health problems and late bedtime (Koivusilta, Kuoppamäki, and Rimpelä 2016),[21] and behavioral problems (Holubcikova et al. 2017).

For our analysis, the first stage was given by using the following equation:

$$Child\ GPA_{ikl} = B_0 + B_1 D_{ikl} + B_2 X_{ikl} + B_3 Z_{ik} + B_4 S_{il} + \mu_{ikl} \qquad (2)$$

The treatment D_{ikl} in equation (2) is the IV for a child's school performance; it takes a value of one if the child consumes energy drinks and zero otherwise. The terms X_{ikl}, Zik, and S_{ik} are defined in the same way as in equation (1) and the term u_{ikl} represents the error terms clustered at the school level. All estimations include school fixed effects to capture any unobserved differences between school qualities that might affect child outcome.

While it is possible that our instrument is not exogenous and correlated with other variables, it threatens the instrument's exclusion restriction. For example, those children who work and earn income might have better access to energy drinks without depending on money provided by their families. Further, a working child might tend to consume more energy drinks if they believe that this type of drink will improve their ability to perform tasks or help them concentrate. Table A.4 shows that the instrument does not significantly correlate with some observed child-held characteristics, such as maternal schooling, child's living standard,

[20] While energy drinks are beneficial to consumers in terms of increased alertness, and enhanced mood, they can also have harmful physical consequences, such as impaired central nervous system, cardiovascular, gastrointestinal, and renal function (Malinauskas et al. 2007).

[21] Sugar and caffeine are the main ingredients in energy drinks. Several studies suggest a link between sugar-sweetened beverages and weight gain (Sabbah et al. 2015).

household income, and child's father's employment status, which support the hypothesis that the instrument is randomly assigned.

The IV coefficient results are reported in table 6. The 2SLS findings support the causal relationship between school performance and child labor. The 2SLS results assume that decreasing a child's GPA by one-point leads to a significant increase in the child labor probability by 0.6 percent. The IV coefficient is greater than the OLS (double), which indicates the local average treatment effect (LATE) on a subgroup of the population (students) whose school performance is directly affected by the treatment (energy drink) and their probability to work increases (the compiler).

Table 6 also reports the first-stage coefficient, which indicates a significant reduction of a child's GPA by 4.7 points on a 100-point scale for those students who consumed energy drinks. Further, the first stage F-statistic is larger than 10, so there is little evidence of weak instruments (Staiger and Stock 1997). Further, as a robustness check, 2SLS regression were run while using the instrument as a continues variable rather than a category variable. Table A.5 in the appendix reports the OLS, IV, and the first-stage estimations. All findings are consistent with the obtained results in table 6, where the size of the IV estimates is approximately double the OLS estimates. However, the only exception in the 2SLS results after adding school fixed effects becomes insignificant due to the larger standard error, which may indicate other unobserved characteristics that might contribute to the probability of a child working for money other than his/her school performance in the previous academic year.

Table 6: The Effect of School Performance on the Probability of a Child Working for Money (OLS and 2SLS regressions)

Dep. var: Probability child had worked for money	(1)	(2)	(3)	(4)
	OLS		**2SLS**	
School GPA in 2011–12	-0.003***	-0.003***	-0.017***	-0.006**
	(0.0004)	(0.0004)	(0.003)	(0.002)
Observations	3,526	3,526	3,526	3,526
R-squared	0.199	0.243		0.226
First-stage coefficient				
Energy drink consumption (0/1)	-4.742***	-4.793***		
	(0.576)	(0.599)		
R-squared	0.178	0.225		
First-stage F statistic	27.93	27.47		
Individual-level controls	YES	YES	YES	YES
Family-level controls	YES	YES	YES	YES
Locality-level controls	YES	NO	YES	NO
School type	YES	NO	YES	NO
School fixed effects	NO	YES	NO	YES

Notes: The robust standard errors clustered at the school level are reported in parentheses. The individual-level controls include child's sex and age. The family-level controls include indicators as to whether child's father/mother has more than 12 years of schooling, the standard of living scale (10 points), an indicator as to whether the number of rooms is above the median per locality, the number of siblings, and household income. The locality-level controls contain the proportion of the locality under area C, the presence of the separation wall, and the locality type (dummy for urban). The school-level controls include school type (UNRWA or governmental). *** p<0.01, ** p<0.05, and * p<0.1.

6. MECHANISM

A strand of literature has investigated the relationship between child labor and physical health (Beegle, Dehejia, and Gatti 2009; O'Donnell, Rosati, and Van Doorslaer 2005; Sim, Suryadarma, and Suryahadi 2017; Wolff et al. 2008), while there is less empirical evidence that examines the effect of child labor on children's conduct and emotional problems. The current study proposes a child's noncognitive measures as a potential mechanism for school performance to affect child labor. The literature has established the link between social and emotional skills, mental health, and academic performance (May et al. 2021; Panayiotou, Humphrey, and Wigelsworth 2019). More emotionally stable students (with less SDQ internalized problems) tend to have better academic achievements compared with the students with poor emotional skills, since the former are better at initiating, maintaining, and directing

their motivation toward their objectives (Valiente, Swanson, and Eisenberg 2012). Individuals with a high level of externalizing behavior, including aggression and delinquency, suffer from poor interpersonal relationships and classroom participation (Moilanen, Shaw, and Maxwell 2010) and the probability of completing their education is low (McLeod and Kaiser 2016).

Child labor causes behavioral disorders and decreased coping efficacy (Ibrahim et al. 2019). In addition, these noncognitive skills play an essential role in determining later life success, such as schooling and labor market outcomes (Heckman, Stixrud, and Urzua 2006).

We conducted two-stage tests to examine whether emotional and behavioral problems are potential mechanisms. First, we investigate the correlation between the SDQ's corresponding subscores for "internalizing symptoms" and "externalizing behavioral problems" and abnormal problems with the probability of child work. The second stage explores whether these mental health indicators are correlated with school performance.[22]

Table 7 presents the OLS regressions of child labor on z-standardized measures of scores for internalizing and externalizing problems and a dummy variable indicator for the abnormal problem using the same estimation as in equation (1). The results show that mental health indicators are significantly related to child labor. In addition, internalized symptoms and externalized problems have a relatively similar effect on child labor; a one-point change in standard deviation is associated with increasing the probability of child labor by 2 percentage points. The status of having abnormal SDQ problems (total SDQ points >17) tends to increase the likelihood of child labor by 5 percentage points compared to the other children.

The second-stage analysis shows that school achievements positively correlate with the three SDQ subscales. For example, increasing child's GPA by one point is significantly associated with decreasing internalizing/externalizing problems by 0.010/0.020 unit of standard deviation. Notably, the magnitude of the coefficient is substantially increased (approximately twice) with

[22] Figure A.2 in the appendix shows the distribution of standardized scores on the mental health internalizing and externalizing problems of the SDQ.

the externalized problem. The literature indicates that externalizing behavior problems tend to worsen later-life adverse consequences more than internalizing symptoms problems (Currie and Stabile 2009).[23]

Table 7: Mechanisms: The Correlation between SDQ Assessments and the Probability of Child Labor

Dep.Var.: Probability child worked for money	(1)	(2)	(3)
SDQ: Internalizing problems†	0.024***		
	(0.007)		
SDQ: Externalizing problems†		0.022***	
		(0.008)	
SDQ: Abnormal problem††			0.052***
			(0.016)
Observations	3,567	3,553	3,547
R-squared	0.216	0.215	0.216
Controls	YES	YES	YES
School fixed effects	YES	YES	YES

Notes: The robust standard errors clustered at the school level are reported in parentheses. Controls include individual-level controls, with child's sex and age. The family-level controls include indicators of whether the child's father/mother has more than 12 years of schooling, the standard of living scale (10 points), an indicator as to whether the number of rooms is above the median per locality, the number of siblings, and household income.

†The explanatory variable was on z-standardized measures of scores for internalizing and externalizing problems.

††A dummy variable (indicator) for the abnormal SDQ problem.

*** p<0.01, ** p<0.05, and * p<0.1.

[23] The estimation was obtained by OLS rather than 2SLS since it is hard to eliminate the exclusion restriction assumption between the instrument (energy drink consumption) and the SDQ indictor outcomes.

Table 8: Mechanisms: The Effect of School Performance on Child Mental Health Assessed by SDQ Indicators

	(1)	(2)	(3)
Dep. Var.	SDQ: Internalizing Problems†	SDQ: Externalizing Problems†	SDQ: Abnormal Problem††
Panel A-OLS estimations			
School GPA in 2011–12	-0.010***	-0.019***	-0.013***
	(0.001)	(0.001)	(0.001)
Observations	3,567	3,553	3,547
R-squared	0.099	0.151	0.091
Controls	YES	YES	YES
School fixed effects	YES	YES	YES

Notes: The robust standard errors clustered at the school level are reported in parentheses. Controls include individual-level controls with child's sex and age. The family-level controls include indicators as to whether child's father/mother has more than 12 years of schooling, the standard of living scale (10 points), an indicator as to whether the number of rooms is above the median per locality, the number of siblings, and household income.

†The dependent variable was on z-standardized measures

††A dummy variable (indicator) for the abnormal SDQ problem.

*** p<0.01, ** p<0.05, and * p<0.1.

7. CONCLUSION

With these findings, this study concluded that low educational achievement is one of the main factors influencing the increase in child labor in this context. Our study therefore recommends changing the public understanding of grade-related educational achievement by adopting authentic learning and authentic assessment methods and strategies. This shift will prepare the learner to deal with real-world problems and encourage them to find viable solutions for the world's persistent problems. The 21st Century Learning Skills[24] prepare students for life in many "scientific" ways,[25] therefore grade-based school achievement should not be seen as the only measure of understanding but simply as a performance indicator in this case.

[24] The knowledge, life skills, career skills, habits, and traits that are critical to student success in today's world, particularly as students progress to college, the workforce, and adulthood, are referred to as 21st-century skills. For further details see: https://www.panoramaed.com/blog/comprehensive-guide-21st-century-skills#:~:text=Everett%20Public%20Schools%20in%20Everett,critical%20thinking%2C%20and%20growth%20mindset.

[25] For further details, see The Glossary of Education Reform; available at: http://edglossary.org/

Furthermore, this study recommends considering the individual differences of learners and linking those differences to the subject of school achievement. While doing so, this study argues that raising school achievement should happen through using active learning strategies and methods that, if applied correctly, will increase students' achievement and eagerness for learning and understanding.

It is crucial here to provide a supportive school environment to advance achievement by providing the kind of activities that have the potential to enhance students' achievement in different subjects.

Finally, parents and families should play a significant role in this process and should be included in their children's teaching and learning to increase their achievement. By linking achievement to extracurricular and community activities, civic engagement, and the notions of continuous formative performance assessment and feedback, learners will develop self-evaluation orientation and metacognitive learning skills, ultimately improving their educational achievement.

REFERENCES

Akabayashi, Hideo, and George Psacharopoulos. 1999. "The Trade-off between Child Labour and Human Capital Formation: A Tanzanian Case Study." *The Journal of Development Studies* 35 (5): 120–40.

Amon, Joseph J., Jane Buchanan, Jane Cohen, and Juliane Kippenberg. 2012. "Child Labor and Environmental Health: Government Obligations and Human Rights." *International Journal of Pediatrics*. vol. 2012(2012), Article ID 938306, 1–8. doi:10.1155/2012/938306

Assaad, Ragui, Deborah Levison, and Hai-Anh Dang. 2010. "How Much Work Is Too Much? Effects of Child Work Hours on Schooling: The Case of Egypt." In R. Akee, E. Edmonds, and K. Tatsiramos (eds.), *Child Labor and the Transition between School and Work*. Cambridge, UK: Emerald Group Publishing Limited.

Association for Civil Rights in Israel. 2017. "East Jerusalem: Facts and Figures." Technical Report, May 21. Available at: https://bit.ly/3lTA2MT

Baland, Jean-Marie, and Jim Robinson. 2000. "Is Child Labour Inefficient?" *Journal of Political Economy* 108 (4): 663–79.

Beegle, Kathleen, Rajeev Dehejia, and Roberta Gatti. 2009. "Why Should We Care About Child Labor?" *Journal of Human Resources* 44 (4): 871–89.

Bezerra, Márcio Eduardo, Ana Lúcia Kassouf, and Mary Arends-Kuenning. 2009. "The Impact of Child Labor and School Quality on Academic Achievement in Brazil." IZA Discussion Paper No. 4062. Bonn: Institute for the Study of Labour (IZA).

Champlin, Sara E., Keryn E. Pasch, and Cheryl L. Perry. 2016. "Is the Consumption of Energy Drinks Associated with Academic Achievement among College Students?" *The Journal of Primary Prevention* 37 (4): 345–59.

Currie, Janet, and Mark Stabile. 2009. "Mental Health in Childhood and Human Capital." In Jonathan Gruber (ed.), *The Problems of Disadvantaged Youth: An Economic Perspective*. Chicago: University of Chicago Press.

Dammert, Ana C. 2010. "Siblings, Child Labor, and Schooling in Nicaragua and Guatemala." *Journal of Population Economics* 23 (1): 199–224.

Dasgupta, Basab. 2005. "Liquidity Constraint and Child Labor: Is Market Really Incapable of Eradicating it from Wage-Labor Households?" University of Connecticut Economics Working Paper 2005-37. Storrs, CT: University of Connecticut.

Dessy, Sylvain E., and Stéphane Pallage. 2005. "A Theory of the Worst Forms of Child Labour." *The Economic Journal* 115 (500): 68–87.

———. 2001. “Child Labor and Coordination Failures.” *Journal of Development Economics* 65 (2): 469–76.

Di Maio, Michele, and Roberto Nisticò. 2019. “The Effect of Parental Job Loss on Child School Dropout: Evidence from the Occupied Palestinian Territories.” *Journal of Development Economics* 141: 102375.

Di Maio, Michele, and Tushar K. Nandi. 2013. “The Effect of the Israeli–Palestinian Conflict on Child Labor and School Attendance in the West Bank.” *Journal of Development Economics* 100 (1): 107–16.

Emerson, Patrick M., and André Portela Souza. 2007. “Child Labor, School Attendance, and Intrahousehold Gender Bias in Brazil.” *The World Bank Economic Review* 21 (2): 301–16.

Fallah, Belal, and Yousef Daoud. 2015. “Wage Differentials and Economic Restrictions: Evidence from the Occupied Palestinian Territories.” *The Economics of Peace and Security Journal* 10 (1):13–22.

Farsakh, Leila. 2002. “Palestinian Labor Flows to the Israeli Economy: A Finished Story?” *Journal of Palestine Studies* 32 (1): 13–27.

Foster, Cynthia J. Ewell, Judy Garber, and Joseph A. Durlak. 2008. “Current and Past Maternal Depression, Maternal Interaction Behaviors, and Children’s Externalizing and Internalizing Symptoms.” *Journal of Abnormal Child Psychology* 36 (4): 527–37.

Frempong, Raymond Boadi, and David Stadelmann. 2021. “Risk Preference and Child Labor: Econometric Evidence.” *Review of Development Economics* 25 (2): 878–94.

Galdo, Jose, Ana C. Dammert, and Degnet Abebaw. 2021. “Gender Bias in Agricultural Child Labor: Evidence from Survey Design Experiments.” *The World Bank Economic Review* 35 (4): 872–91.

Gaspar, Tania, Ana Cerqueira, Cátia Sofia dos Santos Branquinho, and Margarida G. Matos. 2018. “The Effect of a Social-Emotional School-Based Intervention upon Social and Personal Skills in Children and Adolescents.” *Journal of Education and Learning* 7 (6): 57–66.

Goodman, Anna, Donna L. Lamping, and George B. Ploubidis. 2010. “When to Use Broader Internalising and Externalising Subscales Instead of the Hypothesised Five Subscales on the Strengths and Difficulties Questionnaire (SDQ): Data from British Parents, Teachers and Children.” *Journal of Abnormal Child Psychology* 38 (8): 1179–91.

Goodman, Robert. 1997. “The Strengths and Difficulties Questionnaire: A Research Note.” *Journal of Child Psychology and Psychiatry* 38 (5): 581–86.

Hafeez, Shakir, Aman Ullah Khan, Bilal Bin Saeed, and Yasir Javed. 2016. "Relationship among Perceived Stress, Academic Performance and Use of Energy Drinks: A Study on Universities' and Medical Students of Khyber Pakhtunkhwa Province of Pakistan." *International Review of Management and Marketing* 6 (3): 494–99.

Hallaq, Sameh. 2020. "Wage Differential between Palestinian Non-Refugees and Palestinian Refugees in the West Bank and Gaza." *International Journal of Development and Conflict* 10 (2): 145–81.

———. 2022. "First Palestinian Intifada and Intergenerational Transmission of Human Capital." *Studies in Economics and Econometrics* 1–34. https://doi.org/10.1080/03796205.2022.2043769.

Heckman, James J., Jora Stixrud, and Sergio Urzua. 2006. "The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior." *Journal of Labor Economics* 24 (3): 411–82.

Holubcikova, Jana, Peter Kolarcik, Andrea Madarasova Geckova, Sijmen A. Reijneveld, and Jitse P. van Dijk. 2017. "Regular Energy Drink Consumption Is Associated with the Risk of Health and Behavioural Problems in Adolescents." *European Journal of Pediatrics* 176 (5): 599–605.

Ibrahim, Abdalla, Salma M. Abdalla, Mohammed Jafer, Jihad Abdelgadir, and Nanne De Vries. 2019. "Child Labor and Health: A Systematic Literature Review of the Impacts of Child Labor on Child's Health in Low-and Middle-Income Countries." *Journal of Public Health* 41 (1): 18–26.

ILO (International Labour Organization). 2018. "What Is Child Labor." ILO International Programme on the Elimination of Child Labour website. Geneva: International Labour Organization. Available at: https://www.ilo.org/ipec/facts/lang--en/index.htm

———. 2016. "The child labor increase in Jordan since 2007 census." Technical Report (in Arabic). Geneva: International Labour Organization. Available at: https://www.ilo.org/beirut/media-centre/news/WCMS_511311/lang--ar/index.htm

Jabr, Dua, and Sorel Cahan. 2014. "Schooling Effects on Cognitive Development in a Difficult Environment: The Case of Refugee Camps in the West Bank." *International Studies in Sociology of Education* 24 (2): 165–88.

Johnston, David W., Carol Propper, Stephen E. Pudney, and Michael A. Shields. 2014. "The Income Gradient in Childhood Mental Health: All in the Eye of the Beholder?" *Journal of the Royal Statistical Society*. Series A (Statistics in Society) 177 (4): 807–27.

Keane, Michael P., Sonya Krutikova, and Timothy Neal. 2020. "The Impact of Child Work on Cognitive Development: Results from Four Low to Middle Income Countries." IFS Working Paper No. W18/29. London: Institute for Fiscal Studies (IFS).

Khakshour, Ali, Maryam Ajilian Abbasi, Seyed Javad Sayedi, Masumeh Saeidi, and Gholam Hasan Khodaee. 2015. "Child Labor Facts in the Worldwide: A Review Article." *International Journal of Pediatrics* 3 (1.2): 467–73.

Koivusilta, Leena, Heini Kuoppamäki, and Arja Rimpelä. 2016. "Energy Drink Consumption, Health Complaints and Late Bedtime among Young Adolescents." *International Journal of Public Health* 61 (3): 299–306.

Kreitzberg, Daniel S., Natalie M. Golaszewski, Alison Bryant Ludden, Alexandra Loukas, and Keryn E. Pasch. 2019. "Academic Achievement, Stress, and Energy Drink Consumption among Middle School Youth." *Journal of Caffeine and Adenosine Research* 9 (1): 20–27.

Lancaster, Geoffrey, and Ranjan Ray. 2004. "Does Child Labour Affect School Attendance and School Performance? Multi Country Evidence on SIMPOC Data." In Econometric Society 2004 Australasian Meetings. Available at: https://ideas.repec.org/s/ecm/ausm04.html

Lancy, D. F. 2012. *African Children at Work: Working and Learning in Growing up for Life.* Zürich, Switzerland: Lit Verlag.

Leal, Wanda E., Dylan B. Jackson, and Cashen M. Boccio. 2021. "Adolescent Energy Drink Consumption and Academic Risk: Results from the Monitoring the Future Study, 2010–2016:" *Health Education & Behavior* 49 (2): 281–90.

Levinson, David. 1988. "Family Violence in Cross-Cultural Perspective." In Vincent B. Hasselt, Randall L. Morrison, Alan S. Bellack, and Michel Hersen (eds.), *Handbook of Family Violence*. Boston: Springer.

McLeod, Jane D., and Karen Kaiser. 2016. "Childhood Emotional and Behavioral Problems and Educational Attainment:" *American Sociological Review* 69 (5): 636–58.

Malinauskas, Brenda M., Victor G. Aeby, Reginald F. Overton, Tracy Carpenter-Aeby, and Kimberly Barber-Heidal. 2007. "A Survey of Energy Drink Consumption Patterns among College Students." *Nutrition Journal* 6 (1): 1–7.

May, Felix, Tamsin Ford, Astrid Janssens, Tamsin Newlove-Delgado, Abigail Emma Russell, Javid Salim, Obioha C. Ukoumunne, and Rachel Hayes. 2021. "Attainment, Attendance, and School Difficulties in UK Primary Schoolchildren with Probable ADHD." *British Journal of Educational Psychology* 91 (1): 442–62.

Mincer, Jacob. 1984. "Human Capital and Economic Growth." *Economics of Education Review* 3 (3): 195–205.

Moayad, Saeedeh Jalili, Seyed Hossein Mohaqeqi Kamal, Homeira Sajjadi, Meroe Vameghi, Gholamreza Ghaedamini Harouni, and Sara Makki Alamdari. 2021. "Child Labor in Tehran, Iran: Abuses Experienced in Work Environments." *Child Abuse & Neglect* 117: 105054.

Moilanen, Kristin L., Daniel S. Shaw, and Kari L. Maxwell. 2010. "Developmental Cascades: Externalizing, Internalizing, and Academic Competence from Middle Childhood to Early Adolescence." *Development and Psychopathology* 22 (3): 635–53.

MoEHE (Ministry of Education and Higher Education). 2016. "About the Ministry." Ministry of Education and Higher Education–Palestine website. Available at: http://www.moehe.gov.ps/en/About-the-Ministry/Education-System

———. 2012. "Educational Statistical Yearbook 2012/2011." Technical report. Ramallah. Palestine: Ministry of Education and Higher Education.

Muris, Peter, Cor Meesters, and Frank van den Berg. 2003. "The Strengths and Difficulties Questionnaire (SDQ)." *European Child & Adolescent Psychiatry* 12 (1): 1–8.

O'Donnell, Owen, Furio C. Rosati, and Eddy Van Doorslaer. 2005. "Health Effects of Child Work: Evidence from Rural Vietnam." *Journal of Population Economics* 18 (3): 437–67.

Panayiotou, Margarita, Neil Humphrey, and Michael Wigelsworth. 2019. "An Empirical Basis for Linking Social and Emotional Learning to Academic Performance." *Contemporary Educational Psychology* 56: 193–204.

Patrinos, Harry Anthony, and George Psacharopoulos. 1997. "Family Size, Schooling and Child Labor in Peru: An Empirical Analysis." *Journal of Population Economics* 10 (4): 387–405.

PCBS (Palestinian Central Bureau of Statistics). 2015. "On the Eve of the International Day of Refugees." Technical report. Ramallah, Palestine: Palestinian Central Bureau of Statistics.

———. 2017. "Status of the Rights of Palestinian Children. 2016." Technical report. Ramallah, Palestine: Palestinian Central of Bureau and Statistics. Available at: http://www.pcbs.gov.ps/Downloads/book2275.pdf

———. 2020. "Child Labor in Palestine, 2017." Technical Report. Available at: https://www.pcbs.gov.ps/Portals/_Rainbow/Documents/childern-2020-01e.html

Ponczek, Vladimir Pinheiro, and André Portela Fernandes de Souza. 2007. "The Causal Effect of Family Size on Child Labor and Education." Escola de Economia de São Paulo Textos Para Discussão 162. São Paulo: Getulio Vargas Foundation, Brazil.

Putnick, Diane L., and Marc H. Bornstein. 2015. “Is Child Labor a Barrier to School Enrollment in Low-and Middle-Income Countries?” *International Journal of Educational Development* 41: 112–20.

Ravallion, Martin, and Quentin Wodon. 2000. “Does Child Labour Displace Schooling? Evidence on Behavioural Responses to an Enrollment Subsidy.” *The Economic Journal* 110 (462): 158–75.

Reissig, Chad J., Eric C. Strain, and Roland R. Griffiths. 2009. “Caffeinated Energy Drinks—A Growing Problem.” *Drug and Alcohol Dependence* 99 (1–3): 1–10.

Roggero, Paola, Viviana Mangiaterra, Flavia Bustreo, and Furio Rosati. 2007. “The Health Impact of Child Labor in Developing Countries: Evidence from Cross-Country Data.” *American Journal of Public Health* 97 (2): 271–75.

Sabbah, Haleama Al, Naim Qamhia, Mustafa Younis, and Al Sabbah. 2015. “Consumption Patterns and Side Effects of Energy Drinks among University Students in Palestine: Cross-sectional Study.” *MOJ Public Health* 2 (2): 36–44.

Sanchez, Mario A., Victoria Gunnarsson, and Peter F. Orazem. 2005. “The Effect of Child Labor on Mathematics and Language Achievement in Latin America.” Social Protection Discussion Paper No. 0516. Washington, DC: World Bank.

Sedlacek, Guilherme, Suzanne Duryea, Nadeem Ilahi, and Masaru Sasaki. 2009. “Child Labor, Schooling, and Poverty in Latin America.” In Peter F. Orazem, Guilherme Sedlacek, and Zafiris Tzannatos (eds.), *Child Labor and Education in Latin America*. New York: Palgrave Macmillan.

Shendell, Derek G., Saisattha Noomnual, Shumaila Chishti, MaryAnn Sorensen Allacci, and Jaime Madrigano. 2016. “Exposures Resulting in Safety and Health Concerns for Child Laborers in Less Developed Countries.” *Journal of Environmental and Public Health.* 12.

Shtern, Marik. 2017. “Polarized Labor Integration: East Jerusalem Palestinians in the City’s Employment Market.” Technical Report. Jerusalem: Jerusalem Institute for Policy Research.

Sim, Armand, Daniel Suryadarma, and Asep Suryahadi. 2017. “The Consequences of Child Market Work on the Growth of Human Capital.” *World Development* 91 (March): 144–55.

Staiger, Douglas, and James H. Stock. 1997. “Instrumental Variables Regression with Weak Instruments.” *Econometrica: Journal of the Econometric Society* 65 (3): 557–86.

Trinh, Trong-Anh. 2020. “Mental Health Impacts of Child Labour: Evidence from Vietnam and India.” *The Journal of Development Studies* 56 (12): 2251–65.

UNESCO (United Nations Educational, Scientific and Cultural Organization). 2011. "World Data on Education, 7th edition 2010/11." Technical report. Paris: UNESCO. Available at: http://www.ibe.unesco.org/fileadmin/user_upload/Publications/WDE/2010/pdf-versions/Palestine.pdf

UNICEF (United Nations International Children's Emergency Fund). 2006. "Monitoring the Situation of Children and Women: Multiple Indicator Cluster Survey Manual." Technical Report. New York: UNICEF Division of Policy and Planning. Available at: https://mics.unicef.org/files?job=W1siZiIsIjIwMTUvMDQvMDIvMDYvMzcvMDYvMTE5L011bHRpcGxlX0luZGljYXRvcl9DbHVzdGVyX1N1cnZleV9NYW51YWxfMjAwNS5wZGYiXV0&sha=dd2e54d1ddd61cdb

———. 2022. "Child Labor Programme Homepage." Available at: https://www.unicef.org/protection/child-labour

UNSCO (United Nations Special Coordinator for the Middle East Peace Process). 2014. "Report to the Ad Hoc Liaison Committee New York." New York: UNSCO. Available at: https://unsco.unmissions.org/sites/default/files/un_ahlc_report_sept_2014.pdf.

Valiente, Carlos, Jodi Swanson, and Nancy Eisenberg. 2012. "Linking Students' Emotions and Academic Achievement: When and Why Emotions Matter." *Child Development Perspectives* 6 (2): 129.

Vishwanath, Tara, Brian Blankespoor, Faythe Calandra, Nandini Krishnan, Meera Mahadevan, and Mobuo Yoshida. 2014. "Seeing Believes: Poverty in the Palestinian Territories." Technical Report. Washington, DC.: World Bank Group.

Wolff, François-Charles. 2008. "Evidence on the Impact of Child Labor on Child Health in Indonesia, 1993–2000." *Economics & Human Biology* 6 (1): 143–69.

Woodhead, Martin. 2004. "Psychosocial Impacts of Child Work: A Framework for Research, Monitoring and Intervention." *The International Journal of Children's Rights* 12 (4): 321–77.

Zabaleta, Mariela Buonomo. 2011. "The Impact of Child Labor on Schooling Outcomes in Nicaragua." *Economics of Education Review* 30 (6): 1527–39.

Table A.1: The Correlation between Variables in the Model and the Probability a Child Worked for Money

Dep.Var: Child has worked for money during the last 12 months	(1)	(2)	(3)	(4)	(5)
School GPA in 2011–12	-0.004***	-0.003***	-0.003***	-0.003***	-0.003***
	(0.001)	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Male child		0.312***	0.317***	0.316***	0.106***
		(0.023)	(0.024)	(0.024)	(0.006)
Child's age in years		-0.003	-0.004	-0.004	-0.004
		(0.005)	(0.005)	(0.005)	(0.005)
Father's education > 12 years		-0.020	-0.018	-0.018	-0.016
		(0.014)	(0.015)	(0.015)	(0.015)
Mother's education > 12 years		0.013	0.017	0.016	0.019
		(0.018)	(0.018)	(0.018)	(0.019)
Living standard scale (10 points)		-0.002	-0.003	-0.003	-0.004
		(0.004)	(0.004)	(0.004)	(0.004)
Father is working		0.009	0.008	0.008	0.014
		(0.012)	(0.012)	(0.012)	(0.013)
Rooms at home (above median per locality)		-0.004	-0.004	-0.005	-0.002
		(0.013)	(0.014)	(0.014)	(0.014)
No. of siblings		0.002	0.001	0.002	0.002
		(0.002)	(0.002)	(0.002)	(0.003)
Household income NIS (Reference group: monthly income <1500 NIS/month)					
1,500–2,499 NIS/month		-0.033**	-0.033**	-0.033**	-0.030**
		(0.014)	(0.014)	(0.014)	(0.015)
2,500–3,999 NIS/month		-0.021	-0.014	-0.014	-0.009
		(0.021)	(0.021)	(0.021)	(0.021)
4,000–5,000 NIS/month		-0.055**	-0.054**	-0.054**	-0.041
		(0.025)	(0.027)	(0.027)	(0.028)
>5,000 NIS/month		-0.020	-0.016	-0.015	-0.003
		(0.025)	(0.026)	(0.026)	(0.027)
Proportion of locality under area C			0.039	0.039	0.270***
			(0.024)	(0.024)	(0.016)
Locality affected by separation wall			-0.020	-0.021	0.140***
			(0.013)	(0.014)	(0.010)
Rural locality (urban and refugees camp are the ref. group)			-0.012	-0.011	-0.277***
			(0.019)	(0.019)	(0.004)
Refugee camp (rural and urban are the ref. group)			-0.034*	-0.042*	-0.150***
			(0.018)	(0.022)	(0.006)
UNRWA school				0.013	
				(0.018)	
Constant	0.400***	0.314***	0.338***	0.337***	0.541***
	(0.047)	(0.085)	(0.086)	(0.086)	(0.084)

Observations	4100	3,526	3,527	3,528	3,529
R-squared	0.025	0.187	0.189	0.189	0.233
Individual-level controls	NO	YES	YES	YES	YES
Family-level controls	NO	YES	YES	YES	YES
Locality-level controls	NO	NO	YES	YES	YES
School type	NO	NO	YES	YES	NO
School fixed effects	NO	NO	NO	NO	YES

Table A.2: Reason for Working

	Obs	Percent
To participate in raising the family income	653	0.466
To help pay back the family debts	653	0.138
As a result of the Israeli actions and the deterioration of the economic situation	653	0.089
To fill in the free time of school vacations	653	0.248
To learn a profession	653	0.164
Other	653	0.075
Death of father or because the father quit his responsibilities	653	0.075
Independence	653	0.242
I don't have anything to do after school time other than work	653	0.139

Table A.3: Robustness Checks: Correlation between School Performance and Child Labor, Excluding Students with a Significant Reason for Work

Dep. Var: Probability of child having worked for money	(1) †	(2) ††	(3) *	(4) **
School GPA in 2011–12	-0.001***	-0.001***	-0.001***	-0.001***
	(0.0004)	(0.0005)	(0.0005)	(0.0005)
Observations	3,031	3,248	3,251	3,278
R-squared	0.469	0.461	0.436	0.455
Controls	YES	YES	YES	YES
School fixed effects	YES	YES	YES	YES

Notes: The robust standard errors clustered at the school level are reported in parentheses. Controls include individual-level controls, including sex child age. The family-level controls include indicators of whether child's father/mother has more than 12 years of schooling, the standard of living scale (10 points), an indicator of whether the number of rooms is above the median per locality, and the number of siblings, and household income.

† The observations that include the reason for work: to participate in rising family income are excluded.

††The observations that include the reason for work: to fill the free time during the school vacation are excluded.

* The observations that include the reason for work: to become independent are excluded.

** The observations that include the reason for work: I don't have anything to do after school time other than work are excluded.

*** p<0.01, ** p<0.05, and * p<0.1.

Table A.4: The Effect of Observed Child Characteristics on Energy Drink Consumption

Dep. Var: Energy Drink Consumption (0/1)	(1)	(2)
Mother's education > 12 years	-0.016	-0.028
	(0.026)	(0.022)
Living standard scale (10 points)	0.003	0.010
	(0.007)	(0.007)
Father is working	-0.005	-0.005
	(0.018)	(0.017)
Rooms at home (above median per locality)	-0.005	-0.005
	(0.020)	(0.020)
No. of siblings	-0.008	-0.013
	(0.010)	(0.008)
Proportion of locality under area C	-0.101*	
	(0.052)	
Locality affected by separation wall	-0.009	
	(0.035)	
Rural locality (urban is the reference group)	-0.045	
	(0.039)	
Camps' locality (urban is the reference group)	0.028	
	(0.046)	
UNRWA School	0.016	
	(0.035)	
Observations	4,053	4,172
R-squared	0.014	0.112
School fixed effects	NO	YES

Notes: The robust standard errors clustered at the school level are reported in parentheses.
*** p<0.01, ** p<0.05, and * p<0.1

Table A.5: The Effect of School Performance on the Probability of a Child Working for Money (OLS and 2SLS regressions)

Dep.Var: Probability of child working for money	(1)	(2)	(3)	(4)
	OLS		**2SLS**	
School GPA in 2011–12	-0.003***	-0.003***	-0.007**	-0.006
	(0.0004)	(0.0004)	(0.003)	(0.004)
Observations	3,526	3,526	3,526	3,526
R-squared	0.199	0.243	0.161	0.229
First-stage coefficient				
Energy drink consumption/week 0–7	-1.209***	-1.141***		
	(0.172)	(0.177)		
R-squared	0.175	0.219		
First-stage F-statistic	47.23	41.23		
Individual-level controls	YES	YES	YES	YES
Family-level controls	YES	YES	YES	YES
Locality-level controls	YES	NO	YES	NO
School type	YES	NO	YES	NO
School fixed effects	NO	YES	NO	YES

Notes: The robust standard errors clustered at the school level are reported in parentheses. The individual-level controls include the child's sex and age. The family-level controls include indicators as to whether child's father/mother has more than 12 years of schooling, the standard of living scale (10 points), an indicator as to whether the number of rooms is above the median per locality, the number of siblings, and household income. The locality-level controls contain the proportion of the locality under area C, the presence of the separation wall, and the locality type (dummy for urban). The school-level controls include school type (UNRWA or governmental). *** p<0.01, ** p<0.05, and * p<0.1.

Figure A.1: The Distribution of Energy Drink Consumption

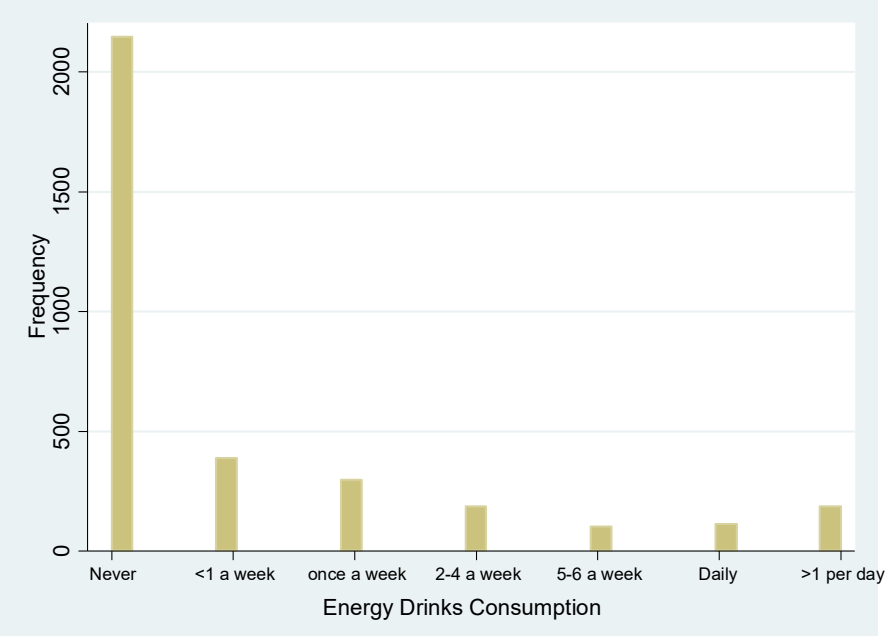


Figure A.2: The Distribution of Standardized Value of Strengths and Difficulties Questionnaires Internalized and Externalized Problems