Neighbourhood Effects and the Incidence of Child Labour*

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Abstract

In spite of the growing interest in factors driving the incidence of child labour, little is known of the relationship between neighbours' decisions and a child's propensity to engage in paid work, i.e., the neighbourhood effect. This paper examines this relationship using the spatial autoregressive linear probability model. We find a positive and highly significant relationship. Using several subsample analyses, we find that the relationship is stronger for males and for children in rural areas. Contrary to earlier studies, the association between poverty and the incidence of child labour is relatively weak in the presence of neighbourhood effects. We also find that the propensity to engage in child labour is increasing in the level of employment at the community level.

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Availability of data and material

Data used in this project are publicly available on the website of Ghana Statistical Services.

Code availability

All estimation was conducted using the open source software `R`. All codes are available on the authors' websites.

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1 Introduction

Approximately 72 million children work in various sectors of the African economy in order to provide basic necessities and, in some cases, appease coercive individuals (International Labour Office 2017). This phenomenon is not only contrary to the aims of the Sustainable Development Goals, but it also impedes human capital accumulation as it hinders growth in educational attainment and health, among others. These adverse consequences of child labour are still grave despite the earlier notion (see, for example; Dumas, 2020) that child labour is comparatively peripheral when the affected children attend school. Working children devote less time to studies, resulting in low educational outcomes. They are more susceptible to stunted growth (Boozer and Suri, 2001; Fassa, 2003; Heady, 2003; Edmonds, 2005), and they become adults without formal education or competitive skills, thus creating and perpetuating a vicious cycle of poverty (Edmonds, 2005). These underage labourers may lose their lives as they engage in hazardous activities including illegal mining and unhooking fishing nets in deep and muddy waters (International Labour Office, 2017).

Sub-Saharan Africa, where Ghana is situated, accounts for almost half of the recorded cases of child labour in the world (International Labour Office, 2017). Although Ghana's laws (e.g., the Children's Act 560, 1998) prohibit child labour, the prevalence rate remains high, with approximately 38.3% of children engaged in economic activities, predominantly in the rural parts of the country (Ghana Statistical Services, 2013). A significant share of these working children suffer physical abuse with the Upper East Region recording the highest incidence rate of 12.5% (Ghana Statistical Services, 2013).

In the literature, several factors including poverty, land ownership, productivity shocks, labour market imperfections, and parental education are identified as determinants of child labour (Basu and Van, 1998; Bhalotra and Heady, 2003; Edmonds, 2005; Dumas, 2007; Fors, 2012; Bandara, Dehejia, and Lavie-Rouse, 2015; Dumas, 2020). In this paper, we undertake an exploratory study of the neighbourhood effect and a child's propensity to work. Our objective is consistent with the assertion that "it takes a village to raise a child." To the best of our knowledge, this is the first paper to explore neighbourhood effects and the incidence of child labour while accounting for the role of economic status among other relevant controls. To this end, we employ the spatial autoregressive linear probability model (SAR-LPM) in the spirit of Baltagi, Deng, and Ma (2018). The role of poverty is emphasized in the previous literature (see, for example; Nielsen, 1998; Canagarajah and Coulombe, 1999; Ray, 2000) as a driver of the incidence of child labour, however our approach is different from earlier studies because we consider neighbourhood effects.

Examining neighbourhood effects and the relationship to child labour is important for several reasons. First, the prevalence of child labour in one's neighbourhood lowers the stigma associated with the practice, which in itself may constitute an inducement to engage in the practice. Second, it is less likely that authorities are alerted to the practice if it is already widespread in the community. Finally, authorities are more reluctant to act when practices such as child labour are already widespread in the community. The presence of neighbourhood effects thus creates the need for policy to not only include individual-based solutions but also incorporate elements rooted in an understanding of communal culture.

We find that a child's propensity to engage in child labour increases in neighbours' decisions to engage in the practice. This result is consistent across several selected subsamples in the paper. Neighbourhood effects are stronger for males, children in the Savannah Ecological Zone of Ghana, and children in rural areas. For urban subsamples like the Greater-Accra Region, neighbourhood effects are substantially small but statistically significant. Our analyses also suggest that the

relationship between poverty and a child's propensity to work in the presence of neighbourhood effects is weak. Consistent with Ray (2000), children are more prone to work in rural communities where there is inadequate infrastructure. We also confirm Ray's (2000) finding that living in a rural area has a strong positive association with a child's propensity to work in some geographic and demographic units. Finally, we find that high employment rates in communities tend to be associated with higher incidence of child labour.

Section 2 presents the spatial autoregressive linear probability model (SAR-LPM) and its estimation using generalised two-stage least squares (G2SLS). A description of the dataset and the construction of the spatial matrix is presented in Section 3. The empirical results are discussed in Section 4, and Section 5 concludes.

2 Methodology

In the preceding section, we argue that there are at least three reasons which explain the positive relationship between neighbourhood effects and the incidence of child labour. To examine the hypothesis that a child's propensity to engage in paid work increases as more and more neighbours engage in child labour, we specify an SAR-LPM model. The model enables us to estimate and test the strength of neighbourhood effects and also examine the relationship between other variables such as *Poverty* and the incidence of child labour.

We construct a spatial matrix W using membership of communities. We assume that only members of the same community can impact each other as there is a higher probability that they share information and interact physically. Also, members of the same community are more likely to share cultural and linguistic similarities. Thus, we specify the non-diagonal entries as the inverse of the number of children surveyed in a particular community. For example, if there are 21 children surveyed in a particular community, the weight corresponding to two children (say, i and j) who belong to the same community is $w_{ij} = 1/20$ and zero otherwise. This ensures the spatial matrix is row-normalised. Although members of the same community may not know each other, the spatial matrix nonetheless captures the true community-level connectedness between children as the observations are randomly sampled, and the size of the community in the sample is proportional to the true size of the community. To allow for heterogeneity in neighbourhood effects owing to the diverse geographical, social, cultural, and linguistic landscape of Ghanaian society, we run several subsample regressions.

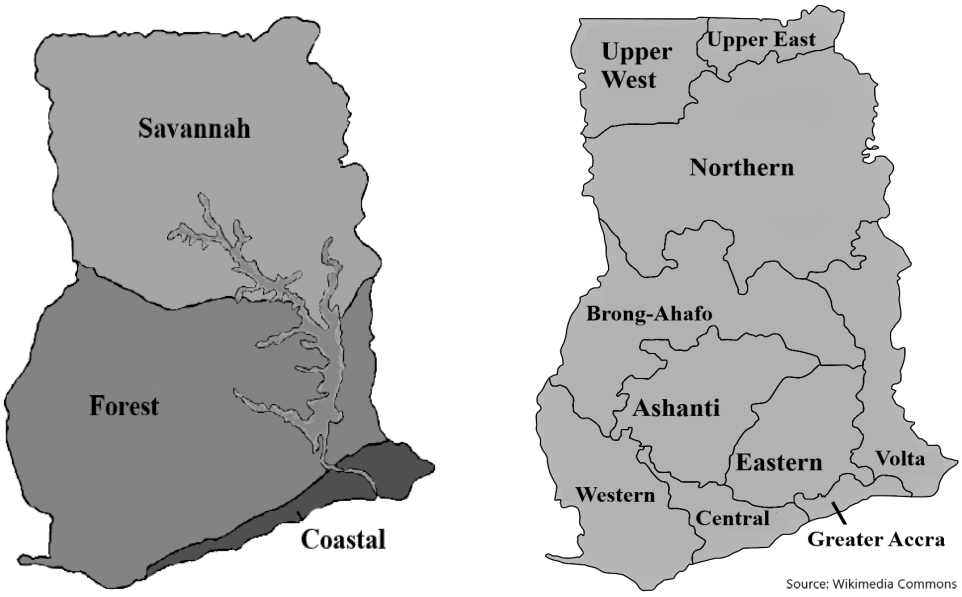
The spatial autoregressive linear probability model (SAR-LPM) we take to the data is

$$Child\_Labour_i = \rho \sum_{j=1}^{n} w_{ij} Child\_Labour_j + Poverty_i \beta_1 + X_{-1,i} \boldsymbol{\beta}_{-1} + \varepsilon_i, \;\; i = 1, 2, \ldots, n$$

where $Child\_Labour_i$ is the binary outcome indicating whether child i engages in paid work or not, w_{ij} is the (i, j)'th entry of the spatial matrix W, $Poverty_i$ is the indicator whether a child lives in a poor household, $X_{-1,i}$ collects other control variables, and ε_i is an independent error term with mean zero and variance σ_i^2. The spatial lagged outcome $\sum_{j=1}^{n} w_{ij} Child\_Labour_j$ is a weighted average of neighbours' decisions whether or not to engage in child labour. ρ is the spatial coefficient which measures the neighbourhood effect on a child's propensity to engage in child labour, and $(\beta_1, \boldsymbol{\beta}'_{-1})$ comprises other coefficients.

Endogeneity in the analyses arises since neighbours' decisions to engage in child labour are also influenced by a child's decision to do so, i.e., $\sum_{j=1}^{n} w_{ij} Child\_Labour_j$ is correlated with ε_i. To

Figure 1: Map of Ghana



(a) Ecological Zones (b) Regions

resolve the endogeneity problem, we follow Baltagi, Deng, and Ma (2018) and Kelejian and Prucha (1998) and employ the generalised two-stage least squares (G2SLS) estimator for the SAR-LPM model using the set of instruments $Z = (X, WX)$. Standard errors are heteroskedasticity-robust; see Baltagi, Deng, and Ma (2018, p. 272) for the estimation of both coefficients and standard errors.

3 Data

The data set used in this paper is sourced from the 2012/2013 Ghana Living Standards Survey (GLSS) conducted by the Ghana Statistical Services.[1] The data comprise a representative sample of the Ghanaian population stratified into communities that constitute enumeration areas (EAs). The Population and Housing Census conducted in 2010 forms the basis for the EAs. Communities fall under 10 administrative regions and three Ecological Zones, which largely influence predominant economic activities. For instance, fishing is mostly done in the coastal areas, farming of cash crops such as cocoa, logging and mining are mostly undertaken in forest areas, while farming of food crops such as yam, cereal crops, and vegetables is mostly undertaken in the Savannah areas (see Figures 1a and 1b). Children aged 5 to 17 constitute the units of observation, while household heads serve as survey respondents. After dropping observations with missing values for the variables of interest, the sample is made of 21,205 observations in 1,196 communities.[2] The size of neighbourhoods, i.e., the number of children observed per community in the sample, ranges from 2 to 66 with a median size of 21 and a mean size of 21.8.

Table 3.1 presents summary statistics of the variables used in estimation. Entries comprise sample means with standard deviations of non-binary variables in parentheses. About 27.5% of children are engaged in some form of paid work. The coastal ecological zone, which has a lower

[1] The website is http://www2.statsghana.gov.gh/nada/index.php/catalog/72.

[2] A total of 2,804 observations with missing values were dropped.

Table 3.1: Summary Statistics of Individual and Household Characteristics

		Ecological Zones			Gender		Location	
	Total	Coastal	Forest	Savannah	Male	Female	Rural	Urban
Individual Characteristics								
Child Labour	0.275	0.100	0.278	0.352	0.285	0.265	0.355	0.143
Poverty	0.363	0.166	0.248	0.564	0.377	0.348	0.490	0.152
Rural	0.623	0.338	0.596	0.778	0.638	0.607	-	-
Employment	0.762	0.700	0.794	0.759	0.765	0.759	0.791	0.714
	(0.177)	(0.138)	(0.132)	(0.218)	(0.176)	(0.177)	(0.130)	(0.194)
School Enrolment	0.985	0.981	0.982	0.990	0.986	0.984	0.987	0.981
Age	10.67	10.76	10.71	10.58	10.68	10.66	10.58	10.82
	(3.582)	(3.634)	(3.560)	(3.580)	(3.582)	(3.583)	(3.633)	(3.548)
Female	0.489	0.508	0.491	0.479	-	-	0.477	0.510
Household Characteristics								
Head of H. lps	0.490	0.304	0.310	0.750	0.496	0.483	0.315	0.595
Head of H. ps	0.075	0.089	0.102	0.042	0.073	0.077	0.077	0.072
Head of H. mid	0.303	0.381	0.450	0.124	0.307	0.299	0.259	0.376
Head of H. pmid	0.132	0.225	0.138	0.084	0.124	0.140	0.068	0.237
Head of H. employed	0.867	0.834	0.911	0.839	0.874	0.860	0.873	0.857
Child of Head of H.	0.781	0.750	0.757	0.818	0.799	0.762	0.791	0.764
Household Size	6.790	5.788	6.217	7.803	6.856	6.721	7.258	6.017
	(3.137)	(2.310)	(2.559)	(3.648)	(3.136)	(3.137)	(2.533)	(3.368)
Mother in H.	0.790	0.762	0.768	0.825	0.801	0.778	0.807	0.762
Father in H.	0.645	0.565	0.593	0.732	0.667	0.622	0.687	0.576
Religion								
Christian	0.733	0.882	0.873	0.530	0.723	0.744	0.719	0.757
Moslem	0.240	0.097	0.105	0.437	0.246	0.234	0.247	0.230
# of obs.	21205	3943	8543	8719	15971	5115	13203	8002

Data Source: Ghana Living Standards Survey (GLSS) 2012/2013. Acronyms used in the table include: H. - Household, lps - less than primary school i.e., could not finish primary school, ps - primary school, mid - middle school, and pmid - post-middle school. Standard deviations of non-binary variables are given in parentheses.

poverty rate, also has the lowest incidence rate of child labour, while the Savannah zone, which has a higher poverty rate, also has a higher incidence rate of child labour. Child labour is more than twice as prevalent in rural areas as in urban areas. About a third of the total number of children live in poor households, approximately 12.1% higher than the national average.[3] A child is considered poor if the household's total consumption expenditure per equivalent adult within the survey year is below 1,314 Cedis (Ghana Statistical Services, 2013). This is equivalent to about 1.83 US dollars per day in 2013.

The variable *Employment* is the proportion of 18-60 year-old adults in a community who engage in paid work. This variable is meant to control for employment and the intensity of economic activity at the community level. About 76.2% of the 18-60 year-old adult population in the community are engaged in some form of paid work.[4] This rate is higher in the Forest zones and rural areas where less formal forms of economic activities such as farming and fishing are common and less capital-intensive. One notices from the school enrolment variable that the vast majority of children in the sample are enrolled in schools.

There is no discernible difference in age for both gender, and the average age in the sample is 10.67 years. The majority of children in this study live with their parents and are from Christian households. Following earlier studies (e.g., Canagarajah and Coulombe (1999), Fors (2012), and Bandara, Dehejia, and Lavie-Rouse (2015)), we include measures of household heads' education as they play a significant role in a child's propensity to work and greatly affect household income. 49% of household heads did not finish primary school, while most household heads (86.7%) are engaged in paid work. Urban areas have a higher concentration of households whose heads did not finish primary school or did attain post-middle school education.

4 Results

We consider several specifications of the SAR-LPM in Table 4.1 using the full sample. Results on subsamples using specification (1) of Table 4.1 are subsequently considered in Tables 4.2 to 4.4. Besides poverty, we control for several factors including location (rural or urban area), community-level employment, school enrolment, Ecological Zone fixed effects, region fixed effects, religion, age, and household characteristics, viz. education attainment of the household head, the employment status of the household head, whether the household head is a parent of the child, whether a parent of the child is in the household, and household size. Our measure of poverty is constructed from household expenditure per equivalent adult; this implies that *Poverty* in addition to the household head's employment status essentially control for household per capita income.

We begin with the full sample results in Table 4.1. The neighbourhood effect, ρ, is positive and statistically significant at the 1% level across all specifications. A positive ρ suggests that a child's propensity to engage in child labour is increasing in neighbours' decisions to engage in child labour. In line with Ray (2000), our estimates in Table 4.1 show that a child's propensity to work is positively and statistically associated with *Poverty* and *Rural* (dummy for whether the child lives in a rural area), suggesting that a child in a poor household or a rural area is more likely to engage in child labour compared to peers in an urban area. This is not surprising because rural communities lack basic public services, including the Department of Social Welfare and law enforcement agencies such as the Ghana Police Service that deal with matters related to child labour. Moreover, poverty is more prevalent in rural areas; children in such communities

[3] The poverty rate in the entire population is 24.2% (Ghana Statistical Services, 2013).

[4] *Employment* is constructed using the employment status of 33,267 18-60 year-old individuals.

are more likely to work for economic gain. A male child is more likely to be engaged in child labour than a female child. Although this difference in association is not very strong statistically, some explanation is still in order. Girls tend to be more engaged in chores at home, which may not count as child labour, whereas boys are less engaged in domestic chores hence the availability of more time to engage in paid work outside the home. Besides, typical tasks of child labourers such as farming, small-scale mining, and fishing involve various degrees of risk to which boys are typically less averse.

Table 4.1: Empirical Results - Full Sample

Coefficients	(1)	(2)	(3)	(4)	(5)	(6)
ρ	0.673***	0.690***	0.405***	0.703***	0.757***	0.881***
	(0.040)	(0.041)	(0.062)	(0.041)	(0.036)	(0.049)
Poverty	0.012**	0.009	0.021***	0.008	0.005	0.007
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Rural	0.028***	0.027***	0.053***	0.028***	0.021***	0.000
	(0.007)	(0.007)	(0.009)	(0.007)	(0.006)	(0.008)
Employment	0.234***	0.221***	0.443***	0.211***	0.172***	0.045
	(0.036)	(0.036)	(0.052)	(0.036)	(0.032)	(0.042)
School enrolment	-0.094***	-0.091***	-0.112***	-0.086***	-0.089***	-0.159***
	(0.022)	(0.022)	(0.023)	(0.022)	(0.023)	(0.023)
Female	-0.011**	-0.007	-0.008*	-0.008*	-0.008*	-0.006
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Religion	✓		✓	✓	✓	✓
H. Characteristics	✓	✓		✓	✓	✓
Ecological Zone	✓	✓	✓		✓	✓
Region	✓	✓	✓	✓		✓
Age	✓	✓	✓	✓	✓	
# of obs.	21205	21205	21205	21205	21205	21205
R^2	0.879	0.879	0.582	0.954	0.920	0.742

The columns present specifications with different sets of fixed effects and controls. A quadratic term of *Age* is also included. Heteroskedasticity-robust standard errors are in parentheses. ✓ indicates the variable is included in the model. Significance level: *** 1%, ** 5%, * 10%.

As expected, school enrolment tends to be negatively related to a child's propensity to engage in child labour. Note that since an overwhelming majority of children are enrolled in school, a policy implication of this finding, which in itself is not surprising, is that education policy may need to transition from improving access to improving quality. This point is premised on the observation that for an already high rate of school enrolment, further investment in education access may be less cost-effective in reducing the incidence rate of child labour. Thus, there is the

need to focus on the quality dimension as that may yield higher dividends in curbing a social canker such as child labour.

Given the emphasis of previous literature (e.g., Canagarajah and Coulombe (1999), Ray (2000), and Naeem, Shaukat, and Ahmed (2011)) on poverty as a driver of the incidence of child labour, it is perhaps a little surprising that child labour, as our results suggest, appears to thrive in communities with high levels of employment. An obvious argument is that community-level employment rates can increase household incomes, reduce poverty, and thus reduce the need for children to engage in paid work. We reckon this channel in this study is weak as the relationship between poverty and the incidence of child labour is only significant in two specifications ((1) and (3)). A channel that perhaps better explains our finding is that areas of high employment, coupled with low and stagnant wages and labour market imperfections, are bustling with economic activity and are more likely to face labour shortages. Besides, most available forms of employment, especially in rural areas are informal and are thus without labour contracts. This creates the possibility that children engaged in paid work receive wages lower than prevailing market wages earned by working adults. This situation thus creates a sustained demand for the services of minors.

The results of specification (1) of Table 4.1 suggest that there is a statistically significant positive relationship between the community-level incidence rate and a child's propensity to engage in child labour. This association is economically non-trivial as the incidence of child labour is strongly influenced by common practice in the community for reasons that go beyond household poverty. This finding does have policy implications. For example, combating child labour will need community-based solutions such as introducing regular or random presence of law enforcement agencies and awareness campaigns. The National Commission on Civic Education can thus undertake targeted education of communities especially those in the Savannah ecological zones where child labour is most prevalent.

There are chiefs in every community in Ghana, who exercise power in the traditional setting. The Ministry of Gender, Children and Social Protection is, therefore, able to liaise with the National House of Chiefs to empower them to deal with this occurrence in their communities through, for example, advocacy, imposition of fines, and referring matters to law enforcement agencies.

Besides the neighbourhood effect on the incidence of child labour, the coefficient estimate of *Poverty* suggests that household poverty increases with a child's propensity to work. Although statistically significant, this relationship does not appear to be very strong economically. Nonetheless, the finding in addition to a strong neighbourhood effect, ρ, does suggest that a poverty alleviation programme, e.g., the Livelihood Empowerment Against Poverty (LEAP) programme,[5] that ignores the communal dimension of the relationship between poverty and the incidence of child labour may be sub-optimal from a welfare perspective. The Government's role is thus important especially in providing basic infrastructure such as electricity, roads and water and job opportunities through decentralization in order to improve citizens' incomes, with a greater emphasis on those in rural communities where poverty is more prevalent.

There are other significant relationships that are worthy of note: a child in a rural area is more likely to engage in child labour whereas school enrolment tends to be negatively related to the propensity to engage in child labour. The fairly high levels of the R^2 coefficient suggest variation in the outcome is well explained by the covariates considered.

We now focus on subsample results to unmask possible heterogeneities in the full sample results presented in Table 4.1. We consider subsample results by ecological zone, gender, and

[5]LEAP is a cash transfer programme to Ghanaian households in poverty (MOGCSP-Ghana, 2020).

location (rural/urban) in Table 4.2, by region in Table 4.3, and by ecological zone within regions in Table 4.4.[6] The neighbourhood effect, ρ, as presented in Table 4.1, is significant at the 1% level across all subsamples.[7] The neighbourhood effect is stronger in the Savannah relative to other ecological zones, considerably stronger for males than for females, and stronger in rural areas than urban areas. One also observes a substantially lower neighbourhood effect in the Greater Accra Region (see Table 4.3). In light of the foregoing, we argue that the relatively higher socio-cultural and linguistic cohesion in rural areas, unlike in urban areas, tends to amplify neighbourhood effects. Moreover, the Greater Accra Region is densely populated with areas such as the Accra Metropolitan, Tema Metropolitan, and Ashaiman Municipal Districts, where such socio-cultural cohesion is weak.

These results reveal heterogeneity among different subsamples in Ghana. An immediate implication is that a "one-size-fits-all" approach is not ideal to deal with the social canker. In areas where the connection between community-level incidence rate and a child's propensity to engage in child labour is stronger, a combination of an increased presence of law enforcement agencies, child protection services, involvement of traditional rulers, education, social protection policies and agricultural extension programs is ideal.

Table 4.2: Empirical Results - Subsamples - I

	Ecological Zone			Gender		Location	
Coefficients	Coastal	Forest	Savannah	Male	Female	Rural	Urban
ρ	0.750***	0.516***	0.826***	0.707***	0.196***	0.809***	0.577***
	(0.076)	(0.062)	(0.053)	(0.044)	(0.075)	(0.046)	(0.053)
Poverty	-0.007	-0.003	0.005	0.009	0.008	0.011*	0.000
	(0.012)	(0.010)	(0.008)	(0.007)	(0.013)	(0.007)	(0.011)
Rural	0.009	0.026**	0.030***	0.025***	0.068***	-	-
	(0.011)	(0.011)	(0.011)	(0.008)	(0.014)	-	-
Employment	0.021	0.295***	0.142***	0.215***	0.444***	0.134***	0.075**
	(0.039)	(0.06)	(0.051)	(0.040)	(0.063)	(0.045)	(0.037)
# of obs.	3943	8543	8719	15971	5115	13203	8002
R^2	0.614	0.623	0.907	0.838	0.453	0.897	0.401

All columns replicate specification (1) of Table 4.1 on the respective subsamples. Heteroskedasticity-robust standard errors are in parentheses. Significance level: *** 1%, ** 5%, * 10%.

[6]Only the Brong Ahafo, Central, Volta, and Western Regions have at least two ecological zones; Table 4.4 therefore only focusses on these.

[7]Estimates of ρ in the *Upper West* and *Volta* regions in Table 4.3, and the Central-Forest and Volta-Coastal zones in Table 4.4 fall outside the natural $[0, 1)$ bound of the spatial coefficient. Results from these specifications hence need to be interpreted with caution.

Table 4.3: Empirical Results - Subsamples - II

Coefficients	Ashanti	B. Ahafo	Central	Eastern	G. Accra	Northern	U. East	U. West	Volta	Western
ρ	0.895***	0.878***	0.865***	0.805***	0.388***	0.944***	0.930***	1.014***	1.004***	0.755***
	(0.100)	(0.090)	(0.043)	(0.059)	(0.114)	(0.066)	(0.077)	(0.086)	(0.079)	(0.091)
Poverty	0.024	0.006	-0.007	-0.010	0.000	-0.009	0.005	0.000	-0.008	0.005
	(0.022)	(0.018)	(0.012)	(0.019)	(0.016)	(0.014)	(0.016)	(0.019)	(0.017)	(0.021)
Rural	-0.013	0.036	-0.003	-0.004	0.010	0.014	-0.003	0.014	0.006	0.015
	(0.023)	(0.023)	(0.009)	(0.017)	(0.021)	(0.017)	(0.022)	(0.029)	(0.017)	(0.020)
Employment	0.044	0.186	0.015	0.257***	0.011	0.029	0.007	-0.050	0.034	0.070
	(0.082)	(0.130)	(0.032)	(0.090)	(0.038)	(0.048)	(0.084)	(0.093)	(0.096)	(0.077)
# of obs.	2297	2243	1915	2160	1693	2366	2069	2394	1915	2153
R^2	0.902	0.910	0.695	0.542	0.237	0.868	0.959	0.949	0.867	0.566

All columns replicate specification (1) of Table 4.1 on the respective subsamples. Heteroskedasticity-robust standard errors are in parentheses. Significance level: *** 1%, ** 5%, * 10%.

Table 4.4: Empirical Results - Subsamples - III

	B. Ahafo		Central		Volta			Western	
Coefficients	Forest	Savannah	Coastal	Forest	Coastal	Forest	Savannah	Coastal	Forest
ρ	0.871***	0.968***	0.481***	1.069***	1.221***	0.845***	0.909***	0.990***	0.784***
	(0.144)	(0.077)	(0.092)	(0.045)	(0.112)	(0.098)	(0.099)	(0.080)	(0.089)
Poverty	-0.015	0.011	0.002	-0.011	-0.023	0.011	-0.023	0.005	0.024
	(0.030)	(0.022)	(0.015)	(0.013)	(0.030)	(0.027)	(0.030)	(0.027)	(0.025)
Rural	0.051	0.005	0.003	-0.007	-0.027	-0.002	-0.067	0.011	0.014
	(0.043)	(0.024)	(0.010)	(0.011)	(0.026)	(0.019)	(0.055)	(0.019)	(0.027)
Employment	-0.016	0.147	0.011	0.017	-0.094	0.036	0.451	0.006	-0.009
	(0.191)	(0.141)	(0.031)	(0.054)	(0.101)	(0.114)	(0.317)	(0.069)	(0.091)
# of obs.	865	1378	838	1077	668	735	512	744	1409
R^2	0.948	0.899	0.363	0.787	0.663	0.662	0.928	0.870	0.576

All columns replicate specification (1) of Table 4.1 on the respective subsamples. Heteroskedasticity-robust standard errors are in parentheses. Significance level: *** 1%, ** 5%, * 10%.

The relationship between poverty and the incidence of child labour is generally not statistically significant except in rural areas. Community-level employment is strongly associated with the incidence of child labour in all specifications considered except in the Coastal Ecological Zone in Table 4.2. It is, however, not significant in selected subsamples in Table 4.4. As presented in Table 4.2, a child in a rural area, relative to peers in urban areas, is significantly more likely to engage in child labour in subsamples defined by ecological zone (specifically Forest and Savannah)

and gender. Considering the R^2 coefficient, one generally observes very good fit of the model to the data; low R^2 coefficients are mostly recorded for predominantly urban subsamples, notably the Greater Accra Region in Table 4.3.

In addition to the above, we conduct some robustness checks which are available in an online appendix on the authors' websites. We run an SAR model with autoregressive disturbances in order to control for possible spatial correlation in the errors and check the robustness of estimates reported in this text. There are also concerns about the seasonality of child labour occurrences. We follow Galdo, Dammert, and Abebaw (2018) to address such seasonality concerns by including month-year fixed effects in our model, which is consistent with the recommendation of Wooldridge (2015, Chapter 10). In both extensions, we find that the results are not qualitatively different from those reported in this text.

5 Conclusion

Child labour remains a social canker, especially in Sub-Saharan Africa, where its prevalence is high. Research that explores the neighbourhood effects and the incidence of child labour is non-existent. This paper examines the relationship using the spatial autoregressive linear probability model in line with Baltagi, Deng, and Ma (2018). Our empirical model is estimated using data sourced from the Ghana Living Standards Survey 2012/2013.

We find a strong positive relationship between neighbours' and a child's decision to engage in child labour. This finding is robust to the inclusion of several controls and several subsample analyses. Although poverty is a principal factor driving the incidence of child labour in earlier studies, its (poverty's) relationship with child labour is generally dominated by neighbourhood effects. We also find that communities with high levels of employment are associated with high incidence of child labour. This finding highlights the importance of better targeted social interventions that not only alleviate poverty and its adverse socio-economic impacts but also involve local communities and relevant government agencies since the practice of child labour appears to be communally self-reinforcing.

This paper is a first step in examining the relationship between neighbours' decisions and a child's decision to engage in paid work. The use of the linear probability model only serves an exploratory purpose in the current paper. It will be interesting in future research to, for example, employ appropriate spatial binary response models to quantify and examine marginal effects.

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