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Are Children From Financially Included Households Less Likely to Work?

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Abstract

Several factors including poverty, productivity shocks, labor market imperfections and parental education account for the incidence of child labour. However, little is known about the impact of financial inclusion on children's propensity to work in the Ghanaian context. Using ordinary least squares and instrumental variable regressions, this study quantifies the effect of household financial inclusion on the tendency of children to work. This study finds that children from financially included households are less likely to work compared to their counterparts in financially excluded households. This negative and statistically significant link between financial inclusion and children's tendency to work becomes strong after assuaging endogeneity concerns.

1. Introduction

Child labour remains endemic across the developing world, especially in Sub-Saharan Africa which accounts for more than 50 percent of all cases. Over eighty-six million African children periodically work in different industries across the continent. Out of these, approximately thirty-nine million children in Sub-Saharan Africa engage in hazardous work that compromises their safety and cognitive development. These recent global estimates from the International Labour Office (2020) point out the agricultural sector as the dominant employer of underage children who mostly work in their own households.

Working children are in danger of poor schooling outcomes (Edmonds, 2005), ill health (Boozer and Suri, 2001; Fassa, 2003; Heady, 2003; Edmonds, 2005), exposure to dangerous agrochemicals (International Labour Office, 2020), malnutrition (Ibrahim, Abdalla, Jafer, Abdelgaldir and de Vries, 2019) and death (International Labour Office, 2017). These consequences of child labour undermine the continent's drive to alleviate poverty and to achieve the Sustainable Development Goals by 2030. As such, concerns that child labour is peripheral when the working child schools are untenable especially when the opportunity cost of working as a child, the threat to life and unintended consequences of child labour exist whether the child schools.

Many factors including poverty, land ownership, productivity shocks, labour market imperfections, household location, urbanization, and parental education are identified in the literature as determinants of child work (Basu and Van, 1998; Bhalotra and Heady, 2003; Edmonds, 2005; Dumas, 2007; Fors, 2012; Webbink, Smits, and De Jong, 2012; Bandara, Dehejia, and Lavie-Rouse, 2015; Dumas, 2020). However, little is known about the impact of financial inclusion on child labour in Ghana. In view of that, this study examines the impact of living in a financially included household on children's tendency to work. Financial inclusion is not novel in policy circles particularly when earlier studies have identified its determinants and its impact on poverty alleviation and environmental sustainability; however, its impact on child labour is not understood, and such a connection (between financial inclusion and child labor) can shed more lights on alternative policies to reduce the prevalence of child labour.

The focal setting of this study is Ghana in Sub-Saharan Africa where we see a reversal in progress, and child labour continues to increase unabated since 2016. Child labour is banned in Ghana; however, the practice is highly prevalent. More than a third of Ghanaian children work especially in rural communities, out of which approximately 13 percent are susceptible to physical abuse (Ghana Statistical Services, 2013). Despite the paucity of relevant data sets in other areas, Ghana has comprehensive household-level data which provides a rare opportunity to quantify the effect of financial inclusion on the propensity to engage in child labour.

This study is important in several important dimensions as it deepens our understanding of different mechanisms to deal with child labor. According to the International Labour Office (2020), child labour is expected to increase, thus highlighting the need to discover other mechanisms for stemming the tide. This study also contributes to the literature on financial inclusion as it sheds more light on the extent of financial deepening in a developing country context. Financial inclusion promotes income, thereby contributing to the alleviation of poverty. Households that are financially included are more likely to have access to credit on a continent fraught with imperfect financial markets. Such credit allocations can be used to expand already existing small-scale businesses or to start new ones. This phenomenon thus alleviates poverty, the main determinant of child labour, so one will expect households with additional income arising from financial inclusion to not compel their children to work. The growing nature of child work on the African continent also warrants a re-look at the determinants, and it is in this regard that this study contributes to the literature by providing an alternative channel for tackling this phenomenon.

The remainder of this study is as follows. Section 2 presents the literature review whereas a description of the data set and the methodology is presented in Section 3. The empirical results are discussed in Section 4, and Section 5 concludes.

2.   The Literature Review

2.1   Child Labour

Child labor is a long-standing practice (Asuming-Brempong, Sarpong, Asenso-Okyere and Amoo, 2007; Adonteng-Kissi, 2018), which forces children to contribute to household income. Children at early ages engage in these economic activities towards household sustenance, which forms a part of training children to obtain skills that are expected to be useful in their adult lives (Adonteng-Kissi, 2018).

Several factors account for the prevalence of child labour in Sub-Saharan Africa. Children in poor households are more likely to work to either fend for themselves or to supplement household income (Hagemann, 2002). This is particularly common in instances where adverse shocks such as inclement weather cause crop failures that erode the livelihood of adults in a household. For instance, Bandara, Dehejia, and Lavie-Rouse (2015) observe that agricultural shocks impact children's work hours after using two rounds of data on Tanzania: the first round was collected between October 2008 and October 2009, the second round was collected between October 2010 and November 2011.

They also find that credit plays a role in mitigating the effects of transitory income shocks and thus reduces the prevalence of child labour.

Earlier studies on Ghana identify several factors associated with the prevalence of child labor. For instance, Opoku and Boahen (2021) examine the impact of school attendance on child labor and other child outcomes in Ghana. After addressing concerns about endogeneity, they (Opoku and Boahen, 2021) find that there is no evidential basis for the relationship between school attendance and child labour. Meanwhile, the children's own characteristics may not be the only driver of child labour. Using an autoregressive linear probability model, Gaku and Tsyawo (2021) explore the effects of neighbor's decision on the likelihood of child labor. They (Gaku and Tsyawo, 2021) find a strong positive association between neighbors' and children's decision to engage in child labor. They (Gaku and Tsyawo, 2021) also find that child labor is positively associated with the employment level in a community. Moreover, Afriyie, Saeed and Alhassan (2018) observe that several factors including the presence of mothers in the household, location, gender and education explain child labour. Their study uses the Ghana Living Standards Survey 6 to highlight the need to target some regions including the Ashanti, Brong Ahafo, and the Eastern regions, among others. Related to Afriyie, Saeed and Alhassan (2018) are Hamenoo, Dwomoh and Dako-Gyeke (2018) who use in-depth interviews to identify factors associated with child labor in Ghana. They (Hamenoo, Dwomoh and Dako-Gyeke, 2018) find that poverty and parental absence are determinants of child labor. According to Adonteng-Kissi (2018), parents' perception is an important determinant of child labor in Ghanaian communities. While focusing on rural and urban communities in Ghana, Adonteng-Kissi (2018) use qualitative research approaches to find that sociocultural factors drive children's engagement in farming while children in artisanal fishing in urban centers are driven largely by poverty.

Other related studies enumerate important drivers of child labour. For example, the International Labour Organization (2020) asserts that gender plays a significant role in children's propensity to work. Male children are more likely to engage in child labour than their female counterparts. Out of the 160 million children that work at the beginning of 2020, 97 million are boys with higher rates than their female counterparts at every age. Meanwhile, children with educated parents are less likely to engage in child labour because these parents value education and will be more inclined to send them (their children) to school (Breen and Goldthorpe, 1997; Mukherjee and Das, 2008; Webbink, Smits, and De Jong, 2012). Female children may benefit more from mothers with some education. Such mothers are equipped to guide their children to overcome any challenges in obtaining education, and they will be positioned to bargain for their children to devote more time to education (Smits, Keij-Deerenberg, and Westert, 2005; Emerson and Souza, 2008; Basu, Das, and Dutta, 2010; Webbink, Smits, and De Jong, 2012). In addition to that, household size plays a significant role in children's propensity to work. Whereas some studies (see, for example, Patrinos and Psacharopoulos, 1997; Emerson and Souza, 2008) show that larger household size is associated with more child work, others (for example, Patrinos and Psacharopoulos, 1997) indicate that larger household size implies less work per child.

2.2   Financial Inclusion

Financial inclusion is defined in several ways in the existing literature. According to Demirgüç-Kunt and Klapper (2013), financial inclusion is the use of formal financial services. Similarly, the World Bank (2014) defines financial inclusion as the use of financial services by a share of economic agents such as firms and individuals. Sahay, Cihak, N'Diaye, Barajas, Mitra, Kyobe, Mooi, and Yousefi (2015) define financial inclusion as a multidimensional concept that comprises access to and the use of formal financial services for multiple purposes including transfers, savings, borrowing and for insurance against adverse shocks.

Financial inclusion plays a significant role in achieving the Sustainable Development Goals (SDG),

where it impacts eight out of the seventeen goals (SDG1, SDG2, SD3, SDG5, SDG8, SDG9, SDG10, SDG17) (UNCDF, 2022). These goals include ending poverty (SDG1), ending hunger (SDG2), ensuring healthy lives (SDG3), achieving gender equality (SDG5), promoting economic growth and decent work (SDG8), building resilient infrastructure (SDG9), reducing inequality (SDG10), and strengthening the means of implementation (SDG17). As a result of the nexus between financial inclusion and development, greater access to financial services and credit should be pursued by the government (Klapper, El–Zoghbi, and Hess, 2016; Koomson and Ibrahim, 2018).

Several prior studies thus examine the impact of financial inclusion on poverty and establish a strong connection between financial inclusion and income (see for example, Koomson and Ibrahim, 2018; Churchill and Marisetty, 2019). Financial inclusion increases household income and reduces inequality by enabling households' investment, consumption and dealing with adverse economic shocks (Demirguc-Kunt Klapper and Singer, 2017; Koomson and Danquah, 2020). According to Koomson, Villano and Hadley (2020), greater access to and use of financial services is associated with a lower likelihood of poverty in Ghana. Churchill, Nuhu and Smyth (2020), after employing a different methodology, find that as their measure of financial inclusion increases, poverty declines.

Child labour is largely attributable to poverty, and financial inclusion, on the other hand, tends to reduce poverty by promoting economic growth within communities and across countries (Tita and Aziakpono, 2017; Kuada, 2019). Financial inclusion also alleviates poverty by increasing access to credit, and insurance, and promoting entrepreneurship through credit access thereby increasing income and consumption (Nsiah, Yusif, Tweneboah, Agyei and Baidoo, 2021). Meanwhile, financial inclusion can promote economic growth that will expand social protection interventions to benefit the marginalized in society. Thus, the link between financial inclusion and child labor can be established through their connection to poverty. Using individual–level data sets, this study examines this link and expects that financial inclusion impacts poverty or income to influence child labor prevalence in a household. With higher income arising from improved financial inclusion, households are not expected to coerce their children to contribute to household income.

Fig. 1 presents the proportion of financially included households and child labour. The results reveal that almost half of the children in the Brong Ahafo region were engaged in child labor. The Greater Accra region records the lowest child labor share. Considering financial inclusion, 37 percent of children are from financially included households in the Brong Ahafo region, while the Northern region records the lowest with 13 percent.

Table 1: Linearity Tests

Fig. 1: Child labor and Financial Inclusion share across regions
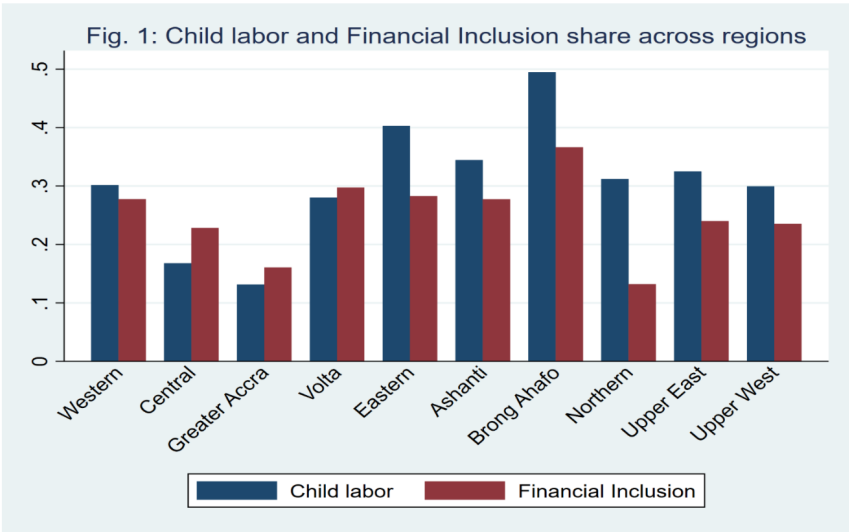
3.   Data and Methodology

Ideally, a random assignment of children aged 5–17 to households based on their financial inclusion status will be most appropriate to estimate the effect of financial inclusion on children's propensity to engage in child labour. Such an experiment is nonexistent, and its conduct may infringe on ethical principles because the associated consequences of such an assignment may be irreversible. In the absence of such an experiment to tease out the effects of financial inclusion on child labour, this study uses an identification strategy that circumvents the problem of endogeneity associated with using observational data sets like the Ghana Living Standards Survey. This strategy together with the data sets is discussed below with details to gauge the extent of financial deepening.

3.0.1   Multidimensional Index of Financial Inclusion

Following earlier studies (see, for example, Churchill and Smyth, 2020; Koomson and Danquah, 2021), this study utilizes a multidimensional index comprising four household financial inclusion measures. This measure depends on whether a household has access to a loan facility, a bank account, an insurance policy or access to remittances via mobile money or a bank account. In line with Koomson and Danquah (2021), these four measures are added and equally weighted to obtain an index which is changed into a binary variable that is one when the index is equal or above half, but zero otherwise.

3.1   Data

The Ghana Living Standards Survey (GLSS) 6 collected by the Ghana Statistical Service in 2012/2013 is the main data source [1] as it presents a representative sample of Ghanaians. This (the GLSS 6) is the only data set with comprehensive information on child labour in Ghana.

In this survey, households are in enumeration areas based on the 2010 Population and Housing Census. The survey covers all ten regions of Ghana with regions further divided into three ecological zones namely, Savannah, Coastal and Forest. To quantify the impact of financial inclusion on child labour, this study obtains data sets on relevant community, household, and individual–level characteristics of children aged 5-17. The data set covers 18,000 households with information on migration, employment, health, demography, financial inclusion, and tourism, among others. With a response rate of 93.2 percent, the GLSS with a child labour module can be considered as a representative sample of Ghanaians, thus it is reliable for child labour studies.

After dealing with nonresponse, especially in the multidimensional index for financial inclusion discussed above, there are 7,481 observations. The descriptive statistics of individual and household–level variables are segregated into two categories depending on whether their multidimensional financial index is equal to or exceeds half. As can be seen in Table 3.1, 1 out of every 3 Ghanaian children engages in child labour with financially excluded households dominating in this phenomenon. A significant proportion of Ghanaian children live in rural communities with infrastructure deficits. Children in financially included households tend to be relatively older than their counterparts in financially excluded households. The share of household heads with post–secondary education in financially included households far outweighs those from financially excluded households. Household income as measured by expenditure per equivalent adult appears to be higher in financially included households than in financially excluded households. Considering the four measures for the multidimensional financial index, a significant proportion of financially included households have access to a bank account, have an insurance policy, have access to a loan and receive remittances via financial institutions.

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1. This data set is available on the website of Ghana Statistical Services: http://www2.statsghana.gov.gh/nada/index.php/catalog/72.

Table 3.1: Descriptive Statistics of Individual and Household Characteristics

Variables	Description of Variables	Fin. Excl.	Fin. Incl.	Total
Child labour	Does the child work? Yes=1, No=0	0.332	0.298	0.323**
		(0.471)	(0.457)	(0.468)
Distance	Distance to a financial firm (km)	13.74	10.56	12.90†
		(13.75)	(11.60)	(13.29)
Rural	Household lives in rural area (Yes=1, No=0)	0.935	0.905	0.927†
		(0.246)	(0.294)	(0.260)
Female	Female child indicator	0.474	0.497	0.480
		(0.499)	(0.500)	(0.500)
Age	Age of child	10.46	10.77	10.54†
		(3.624)	(3.653)	(3.634)
H. Primary	Head has Prim. Education	0.150	0.118	0.141†
		(0.357)	(0.323)	(0.348)
H. Middle	Head has Mid. Education	0.470	0.473	0.471
		(0.499)	(0.499)	(0.499)
H. Post Middle	Head has Post Mid. Education	0.0843	0.260	0.131†
		(0.278)	(0.439)	(0.338)
Welfare	Log welfare	7.287	7.617	7.375†
		(0.652)	(0.609)	(0.657)
Size	Household size	6.656	6.871	6.713**
		(2.944)	(2.767)	(2.899)
Child	Child of household head	0.807	0.758	0.794†
		(0.395)	(0.428)	(0.405)
Bank Account	Household has access to bank account	0.326	0.931	0.487†
		(0.469)	(0.253)	(0.500)
Remittances	Household receives remittances via fin. firms	0.011	0.100	0.035†
		(0.102)	(0.301)	(0.182)
Insurance	Household has insurance policy	0.144	0.737	0.302†
		(0.351)	(0.440)	(0.459)
Loan	Household has access to loan	0.0393	0.477	0.156†
		(0.194)	(0.500)	(0.363)

Standard deviations are in parenthesis. Differences in means are statistically significant at 1, 5 and 10 percent using these respective symbols: †, **, *. Abbreviations: Mid.=middle, Prim=Primary, fin.=financial, Excl=Excluded, Incl=Included, Head = household head. H. denotes the household head's education status.

3.2   Methodology

The impact of financial inclusion on child work is examined by using an OLS regression model as follows:

$$(3.1) \qquad \gamma_i = \beta_0 + \beta_1 FIS_h + \beta_2 X_i + \epsilon_i$$

where γ_i is the binary indicator of whether an individual i engages in child labour, it is one when a child works but zero otherwise; FIS_h is a binary variable which shows whether the child lives in a financially included household (h); X_i denotes other covariates associated with both financial inclusion and the propensity to work; ϵ_1 is the error term. The other covariates include age, rural–urban location, household head's education, gender, household size, region and household per adult equivalent expenditure as a proxy for income. FIS_h is the covariate of interest as this study examines the connection between financial inclusion and child labour. As indicated earlier, this variable (FIS_h) is binary: it is one when the multidimensional index is equal to or more than 0.5, but zero otherwise. Other covariates include the age of the child. To account for differences across the rural–urban divide, a binary indicator of a rural community is included. The household head's education can influence child labor and the household's financial inclusion status. As such, this study uses the education attainment of the household head, which is classified into 4 categories namely, no education, primary, middle and post–middle education. The category for no education is used as the reference group in all regression analyses. Furthermore, household size can dilute resources available to members of the household, so this variable is included in the model. The location as measured by region is included in the model. Child labor prevalence and financial inclusion can vary across geographical units in Ghana. For instance, a geographical location that is inaccessible can affect the financial inclusion of its residents. Child labor can also be highly prevalent in such inaccessible communities because law enforcement may not be readily available in those communities. Per adult equivalent expenditure, a proxy for household income is included in the models because it can be related to both child labor and household income.

There may be concerns about the endogeneity and the biasedness of β_1 in the above OLS regression model in equation 3.1. To assuage such concerns, this paper follows earlier studies (see, for example, Koomson and Danquah, 2021) to undertake an instrumental variable regression by exploiting exogenous variation in financial inclusion. Household members can access financial services depending on the distance to financial institutions. However, an individual's propensity to engage in child labour does not depend on the distance to a financial institution. Consequently, this study uses the distance to financial institutions as an instrument to understand the association between child labour and financial inclusion

3.2.1   Underlying Mechanism

This study hypothesizes that there are several channels through which financial inclusion can impact child labour. First, financial inclusion can increase household income which in turn raises demand for children. However, households may choose quality over quantity of offspring. As a result, the household will ensure that the children do not engage in work that may jeopardize their educational and health outcomes. With an increase in income following financial inclusion, households have fewer incentives to compel their children to work.

Secondly, financial inclusion may affect the labour force participation of adult household members, especially women whose wages can alleviate poverty. Thirdly, financial inclusion, on the other hand, can promote child labour. According to Blume and Breyer (2011), small family firms that spring up as a result of financial inclusion may demand child labour for a number of reasons. One, as productivity and labour demand increase with investment in family microenterprises, family entrepreneurs may find it less rigid to engage their children than outside labour. Second, working family children do not come at an additional cost to family microenterprises as do outside labour.

Consequently, the family microenterprises cut costs by saving wages that would have been paid to outside labour because children working in the family business may not get paid. This phenomenon occurs mostly in low-skilled jobs where there is no disparity between the productivity of a child and an adult.

Third, family businesses may consider it appropriate to engage child labour in a labour market with challenges. Consequently, the affected children may fail to attend school and discontinue schooling.

This paper, however, pays attention to the impact of financial inclusion on income by estimating the following model for household heads:

$$(3.1) \qquad k_i = \alpha_0 + \alpha_1 FIS_h + \alpha_2 R_1 + \lambda_1$$

where k_i is log household income; FIS_h is a binary variable indicating whether the child resides in a financially included household (h); R_i denotes other covariates associated with both financial inclusion and income; λ_i is the error term. These other covariates include the head's education level.

4.   Results

This section discusses the main results of the above-stated model specifications using child labour as the dependent variable and the multi-dimensional measure of financial inclusion as the main covariate of interest.

The estimation results are presented in Table 4.1. Financial inclusion is negatively associated with child labour, implying children from financially included households are less likely to work all factors held constant. Financially included households may have more access to financial products that may directly or indirectly influence poverty, the main cause of child labour. With respect to its direct effects, financial inclusion may improve access to financial products and services for poor households. Increases in household income can raise the demand for children. However, women in such households, for instance, may prefer quality over quantity of children. As a result, children in these households will be encouraged not to work, which could impact their educational and health outcomes. In the literature, there is consensus that poverty is the main reason children are sent to work, and financial inclusion can increase household income such that households will have fewer incentives to compel their children to work. Secondly, financial inclusion can improve the labor force participation of household adults, which can increase income to alleviate poverty. Financial inclusion can also indirectly impact poverty as it drives economic growth. Households can have greater access to savings and credit to boost economic activities, including agriculture and family businesses, to increase income. These direct and indirect impacts of financial inclusion on poverty thus reduce the tendency to send children to work to supplement household income.

Other factors are important in explaining child labour. One such factor is the household head's education (Canagarajah and Coulombe, 1997; Bandara, Dehejia, and Lavie-Rouse, 2015; Gaku and Tsyawo, 2021). A household head's education is associated with a lower tendency of children working as demonstrated in Table 4.1. These effects are particularly stronger for male children compared to female children. Using no education as the reference category, the estimates in Table 4.1 further reveal that the association between education and child labour becomes larger as the educational attainment of the household head increases. Consistent with earlier studies including Gaku and Tsyawo (2021), a child from a rural household is more likely to work than their urban counterparts.

Table 4.1: Regression Results of Financial Inclusion and Child Labour

Dependent Variable: Child labor	Male	Female	Total
Financial Inclusion	-0.045**	-0.036*	-0.041***
	(0.017)	(0.017)	(0.012)
Rural	0.183***	0.209***	0.197***
	(0.022)	(0.021)	(0.015)
Age	0.039***	0.037***	0.038***
	(0.002)	(0.002)	(0.001)
H. Primary	-0.079***	-0.072**	-0.075***
	(0.024)	(0.024)	(0.017)
H. Middle	-0.105***	-0.079***	-0.093***
	(0.018)	(0.019)	(0.013)
H. Post Middle	-0.120***	-0.084***	-0.101***
	(0.025)	(0.026)	(0.018)
Welfare	-0.016	0.009	-0.004
	(0.012)	(0.012)	(0.009)
Household Size	0.008**	0.006*	0.007***
	(0.003)	(0.003)	(0.002)
Child of household head	-0.012	-0.046**	-0.030*
	(0.019)	(0.018)	(0.013)
Female			-0.025*
			(0.010)
Region Fixed Effects	✔	✔	✔
Observations	3888	3589	7477

Standard errors are in parenthesis. Variables are statistically significant at 1, 5 and 10 percent using these respective symbols: ***, **, *. ✔ indicates that those variables are included in the model. A constant term is included in the regressions. H. denotes the household head's education status.

This paper tests whether the covariate of interest, financial inclusion, is endogenous. Both Wooldridge's score and the regression-based tests reject the null hypothesis that the financial inclusion measure is exogenous at conventional significance levels (Robust score $chi2(1) = 11.0447$ with $p = 0.0009$ and Robust regression $F1,3868=11.4924$ with $p =0.0007$).

An instrumental variable regression is thus undertaken to assuage concerns about endogeneity in the multi-dimensional financial index. As shown in Table 4.2, the first-stage results reveal that there is a strong negative relationship between distance and financial inclusion. A weak instrument test reveals an $F = 27.96$, which is statistically significant at conventional levels.

The results show that a household is less financially included the farther it is from a financial institution. The results further reveal that the multidimensional financial index is negatively associated with children's propensity to work, and this link is stronger than earlier OLS estimates in Table 4.1.

Table 4.2: Child Labour and Financial Inclusion

Dependent Variable	Financial Inclusion		Child labor
	First Stage	OLS	IV
Financial Inclusion		-0.041***	-0.744***
		(0.012)	(0.196)
Distance	-0.002***		
	(0.000)		
Rural	0.011	0.197***	0.194***
	(0.020)	(0.015)	(0.021)
Age	0.003*	0.038***	0.041***
	(0.001)	(0.001)	(0.002)
H. Primary	0.064***	-0.075***	-0.029
	(0.015)	(0.017)	(0.024)
H. Middle	0.078***	-0.093***	-0.035
	(0.012)	(0.013)	(0.022)
H. Post Middle	0.316***	-0.101***	0.123
	(0.018)	(0.018)	(0.066)
Welfare	0.121***	-0.004	0.084**
	(0.008)	(0.009)	(0.027)
Household Size	0.014***	0.007***	0.016***
	(0.002)	(0.002)	(0.003)
Child of household head	-0.027*	-0.030*	-0.052**
	(0.012)	(0.013)	(0.017)
Female	0.008	-0.025*	-0.020
	(0.010)	(0.010)	(0.012)
Region Fixed Effects	✔	✔	✔
Observations	7477	7477	7477

Standard errors are in parenthesis. Variables are statistically significant at 1, 5 and 10 percent using these respective symbols: ***, **, *. ✔indicates that those variables are included in the model. A constant term is included in the regressions. H. denotes the household head's education status. IV denotes instrumental variable estimation. No education is the reference category.

Table 4.3: Gender Dimensions of Child Labour and Financial Inclusion

Dependent Variable: Child labor	Male(IV)	Female(IV)	Total(IV)
Financial Inclusion	-0.811**	-0.665*	-0.744***
	(0.265)	(0.287)	(0.196)
Rural	0.189***	0.199***	0.194***
	(0.031)	(0.028)	(0.021)
Age	0.041***	0.041***	0.041***
	(0.002)	(0.003)	(0.002)
H. Primary	-0.029	-0.031	-0.029
	(0.033)	(0.034)	(0.024)
H. Middle	-0.043	-0.027	-0.035
	(0.031)	(0.032)	(0.022)
H. Post Middle	0.120	0.117	0.123
	(0.089)	(0.096)	(0.066)
Welfare	0.084*	0.082*	0.084**
	(0.038)	(0.037)	(0.027)
Household Size	0.018***	0.014**	0.016***
	(0.005)	(0.005)	(0.003)
Child of household head	-0.025	-0.075**	-0.052**
	(0.023)	(0.024)	(0.017)
Female			-0.020
			(0.012)
Region Fixed Effects	✔	✔	✔
Observations	3888	3589	7477

Standard errors are in parenthesis. Variables are statistically significant at 1, 5 and 10 percent using these respective symbols: ***, **, *. ✔indicates that those variables are included in the model. A constant term is included in the regressions. H. denotes the household head's education status. IV denotes instrumental variable estimation. No education is the reference category.

The International Labour Organization (2020) observes gender differences in the prevalence of child labor. To investigate that in the Ghanaian context, this study examines whether the impact of financial inclusion is different for male and female children in the instrumental variable estimation. Table 4.3 presents the estimation results which reveal that the multidimensional financial index impacts child labor differently for male and female children. The impact of financial inclusion on male children is greater than that of their female counterparts.

Prior studies, including Gaku and Tsyawo (2021), observe disparities in the prevalence of child labor across geographic locations. To ascertain whether such patterns persist, this study examines the prevalence of child labor and its response to financial inclusion across geographical locations. This study thus classifies all ten regions into two: coastal and non-coastal regions. Coastal regions include the Volta, Greater Accra and Central regions [2], while the remaining regions are classified as non-coastal regions. The results in Table 4.4 show that financial inclusion negatively impacts child labor in the coastal regions of Ghana. However, financial inclusion has no effect on child labor in non-coastal regions of Ghana.

Including the welfare variable may be considered as a "bad control". This variable (welfare) could bias our estimates because it can serve as a dependent variable for financial inclusion. To deal with this concern, this study explores the relationship between financial inclusion and child labor without the

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2. The coast of the Gulf of Guinea was used for this classification.

Table 4.4: Geographical Dimensions of Child Labour and Financial Inclusion

Dependent Variable: Child labor	Non-Coastal (IV)	Coastal (IV)	Total(IV)
Financial Inclusion	-0.197	-2.904*	-0.744***
	(0.170)	(1.456)	(0.196)
Rural	0.241***	0.458*	0.194***
	(0.020)	(0.194)	(0.021)
Age	0.045***	0.029***	0.041***
	(0.002)	(0.008)	(0.002)
H. Primary	-0.069**	-0.043	-0.029
	(0.025)	(0.090)	(0.024)
H. Middle	-0.084**	0.012	-0.035
	(0.026)	(0.070)	(0.022)
H. Post Middle	-0.092	1.259*	0.123
	(0.052)	(0.628)	(0.066)
Welfare	0.015	0.343*	0.084**
	(0.025)	(0.158)	(0.027)
Household Size	0.001	0.050***	0.016***
	(0.003)	(0.014)	(0.003)
Child of household head	-0.047*	0.032	-0.052**
	(0.019)	(0.077)	(0.017)
Female	-0.036**	0.042	-0.020
	(0.012)	(0.059)	(0.012)
Region Fixed Effects			✓
Observations	5577	1900	7477

Standard errors are in parenthesis. Variables are statistically significant at 1, 5 and 10 percent using these respective symbols: ***, **, *. ✓indicates that those variables are included in the model. A constant term is included in the regressions. H. denotes the household head's education status.

variable, of welfare. The results in Table 4.5 indicate that there is a statistically significant relationship between financial inclusion and child labor after accounting for the bad control, welfare.

This study now focuses on a channel through which financial inclusion may impact child labour. The connection between financial inclusion and household income as stated in equation 3.2 is examined for household heads in the final sample. Table 4.6 represents the estimation results of this investigation.

This study uses consumption per equivalent adult as a proxy for income. As presented in Table 4.6, there is a positive and statistically significant relationship between financial inclusion and household income, consistent with Iddrisu and Danquah (2021). This result is also consistent with Danquah, Iddrisu, Quartey, Ohemeng and Barimah (2021). Financial inclusion can influence income in several ways. Financial inclusion can increase the production capacity of family businesses by providing access to credit, and efficient payment systems to invest in scaling up the business operations (Iddrisu and Danquah, 2021). Another channel through which financial inclusion can increase income is by providing insurance coverage to safeguard households against idiosyncratic shocks.

The financial sector in sub–Saharan Africa has changed significantly in recent times with a notable increase in penetration by different financial institutions, in addition to rural and community banks (Danquah, Iddrisu, Quartey, Ohemeng and Barimah, 2021). As the financial sector evolves, research is focused on understanding the factors driving those changes. For instance, Akudugu

Table 4.5: The Effect of Financial Inclusion on Child Labour Without Welfare

Dependent Variable: Child labor	Total (OLS)	Total(IV)
Financial Inclusion	-0.041***	-0.656***
	(0.012)	(0.165)
Rural	0.199***	0.168***
	(0.015)	(0.021)
Age	0.038***	0.041***
	(0.001)	(0.002)
H. Primary	-0.075***	-0.035
	(0.017)	(0.022)
H. Middle	-0.093***	-0.036
	(0.013)	(0.022)
H. Post Middle	-0.102***	0.125
	(0.018)	(0.065)
Household Size	0.007***	0.013***
	(0.002)	(0.003)
Child of household head	-0.030*	-0.052**
	(0.013)	(0.016)
Female	-0.026*	-0.018
	(0.010)	(0.012)
Region Fixed Effects	✓	✓
Observations	7477	7477

Standard errors are in parenthesis. Variables are statistically significant at 1, 5 and 10 percent using these respective symbols: ***, **, *. ✓ indicates that those variables are included in the model. A constant term is included in the regressions. H. denotes the household head's education status.

(2013) identifies a number of factors that drive financial inclusion in Ghana. These factors include the age of individuals, social networks, wealth class, and literacy levels, among others. Gatsi (2020) also finds that domestic remittances are positively associated with access to financial services.

Other studies in Ghana explore the nexus between financial inclusion and other socio-economic variables. For instance, Atakli and Agbenyo (2020) explore the nexus between financial inclusion, gender and agricultural productivity in Ghana. They find out that men have more access to financial services, and that there exists a strong correlation between financial inclusion and agricultural productivity. Danquah, Iddrisu, Quartey, Ohemeng and Barimah (2021) also demonstrate that rural households with access to basic financial services are significantly more likely to be non-poor than those without such access. Furthermore, some prior studies examine whether financial inclusion influences energy poverty (Koomson and Danquah, 2021), agricultural commercialization (Abu and Haruna, 2017), environmental sustainability (Musah, 2022), growth of non-farm enterprises (Koomson and Ibrahim, 2018), health-related outcomes (Gyasi, Adam and Phillips, 2019) and environmental poverty (Essel-Gaisey and Chiang, 2022). From all these, the effect of financial inclusion on the above-stated socio-economic variables is clear. However, little is known about how financial inclusion influences child labour, a gap which the current study aims to bridge and contribute to this frontier of economic inquiry. Consistent with prior studies (for example, Churchill and Smyth, 2020; Koomson and Danquah, 2021), this study uses a multidimensional financial inclusion index that captures greater access to savings mobilization and other financial products and services, which influence poverty. This current study finds that children living in financially included households are

Table 4.6: The effect of Financial Inclusion on Household Income

Dependent Variable: Household Income	OLS	IV
Financial Inclusion	0.244***	1.043***
	(0.016)	(0.222)
Household Size	-0.031***	-0.038***
	(0.003)	(0.003)
Age of Head	0.001	0.001
	(0.001)	(0.001)
H. Primary	-0.026	-0.076*
	(0.023)	(0.030)
H. Middle	0.067***	-0.006
	(0.018)	(0.029)
H. Post Middle	0.336***	0.042
	(0.024)	(0.086)
Rural	-0.360***	-0.323***
	(0.027)	(0.033)
Region Fixed Effects	Yes	Yes
Female Indicator	Yes	Yes
Observations	7477	7477

Standard errors are in parenthesis. Variables are statistically significant at 1, 5 and 10 percent using these respective symbols: ***, **, *. ✓ indicates that those variables are included in the model. A constant term is included in the regressions. H. denotes the household head's education status.

less likely to engage in child labor compared to their counterparts in financially excluded households. Unlike prior studies (for instance, Basu and Van, 1998; Bhalotra and Heady, 2003; Edmonds, 2005; Dumas, 2007; Fors, 2012; Bandara, Dehejia, and Lavie-Rouse, 2015; Dumas, 2020) that identify parental education, land ownership, productivity shocks, poverty and labour market imperfections as determinants of child labour, this study strongly establishes a link between financial inclusion and child labour.

The high prevalence of child labour in Ghana should raise concerns especially when more than 33 percent of rural children engage in the act with which about 13 percent experience physical abuse (Ghana Statistical Services, 2013). Some Ghanaian children start working at the young age of 5 (years), and they work in several sectors of the economy. There are inequalities with regard to gender, location, and household head's educational attainment, requiring government intervention and law enforcement since the practice is banned in Ghana. The results reveal that a number of policies should be implemented to protect children and reduce the prevalence of child labor.

Despite the ban on child labour and participation in international commitments, the Ghanaian government needs to review existing laws and institute stricter laws and penalties to deal with this problem. There should be periodic inspections of business organizations, especially agribusinesses to detect and penalize those that rely on child laborers. Furthermore, there should be regular education programs on child labour and its effects on educational as well as health outcomes in rural communities. Such programs should not only be focused on the children but also on the adults in the households to create more public awareness about the dangers of child labour. The role of the household head's education in explaining child labour for the OLS estimates in Table 4.5, for instance, suggests that education can be an effective tool for preventing child labour. Additionally, vocational programs should be instituted to train child labourers, especially those sold to their masters. Medical staff should be present in such training centres to attend to the health needs of the affected children.

The results of this study also revealed that financial inclusion is strongly associated with a lower probability of engaging in child labour. This study also finds that financial inclusion increases household income. These results suggest that governments must lower user fees for digital financial services that deepen financial inclusion to reduce the incidence of child labour and to achieve its Sustainable Development Goals of alleviating poverty and reducing inequality. Governments should also provide an enabling environment to deepen financial inclusion.

5. Conclusion

Child labour remains endemic across the developing world, especially in Sub-Saharan Africa which accounts for more than half of all cases. More than eighty-six million African children work in several industries, and some of these children work under hazardous conditions that compromise their safety and cognitive development. As children work, it undermines the continent's drive to alleviate poverty and to achieve the Sustainable Development Goals by 2030 because the affected children are in danger of poor schooling outcomes, ill-health and death.

Due to its adverse effects on society, the prior literature on child labour identifies its determinants including poverty, land ownership, productivity shocks, labour market imperfections, and parental education (Basu and Van, 1998; Bhalotra and Heady, 2003; Edmonds, 2005; Dumas, 2007; Fors, 2012; Bandara, Dehejia, and Lavie-Rouse, 2015; Dumas, 2020). Despite this phenomenon remains endemic, little is known about how financial inclusion impacts its (child labour's) prevalence in Ghana. This study thus examines the impact of living in a financially included household on children's tendency to work.

Using both instrumental variable and OLS estimations, this study finds that children in financially included households are less likely to work after using Ghana as a representative sample in Sub-Saharan Africa where we see a reversal in progress and child labour continues to increase unabated since 2016. Household income may rise with financial inclusion, thereby raising the demand for children. However, quality children may be chosen over the number of children. As a result, steps to promote the children's well-being will be taken to discourage working that may adversely affect their educational and health outcomes. Furthermore, financially included households may have fewer incentives to compel their children to work. Meanwhile, adults in financially included households may participate more in the labor market leading to an increase in income to alleviate poverty.

In the prior literature, financial inclusion alleviates poverty by improving access to financial products and services. Besides that, it (financial inclusion) has an untended consequence of lowering the tendency of children to work. Thus, policy should promote greater access to financial products and services to channel savings to boost economic activities including agriculture. This is particularly important since child labour is highly prevalent in Ghana with more than a third of rural children engaging in the act.

Governments can thus promote financial inclusion, and this can be done in several dimensions. Instituting a proper, universal and efficient digital identification system will be a step in the right direction. With a proper identification system, financial institutions can easily obtain and share information about users of their financial products and services. This invariably lowers the cost of obtaining such information in a country where a universal identification system does not exist. Meanwhile, mobile money can be promoted by ensuring that fees and charges are bearable for households, especially rural and poor ones that have fewer incentives to use such platforms with exorbitant user fees. It is thus important to review levies that may roll back gains made in the usage and integration of mobile money services across the world. Consumer protection agencies should leverage digital information to promote financial inclusion. Central banks should be proactive in dealing with Ponzi schemes that may erode confidence in the financial sector.

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