



Landownership Inequality and Inequality in Education Attainment in Kenya

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August 2021 / No.765

Abstract

Unequal asset ownership accompanies other socioeconomic inequalities so that the disparity in physical possessions, particularly land, is worth a rigorous analysis. The case in point is the inverse relationship that has been reported across countries between unequal landownership and education attainment. In Kenya, inequalities in landownership vary across and within counties, households included. Using data from the Kenya Integrated Household Budget Survey and the Kenya Population and Housing Census, the study applies a fractional IV probit regression model to examine the relationship between

the Gini of landownership and education inequality across counties in Kenya. The evidence generated does not confirm the strong relationship between land inequality and inequality in education previously documented in other countries.

Inequality in primary education attainment across counties is likely due to county disparities in household size, income, urbanization rate, and participation in high level public employment, rather than to a landownership disparity. A 1% increase in county average per capita household expenditure reduces the Gini of inequality in primary education attainment by 0.1011. A one percentage increase in urban population reduces the inequality in primary education attainment by 0.161%. A similar pattern is generally uncovered for secondary education. Land inequality does not influence inequalities in education attainment. Government financing of education through bursaries and free education muffle any such influence. The findings suggest that government financing of education and policies that promote urbanization, enhance quality of families, and increase high level participation in government affairs lower inequalities in schooling. Further, an affirmative action on education for Muslims is required to reduce inequalities in schooling.

Introduction

Empirical evidence shows that landownership across sub-Saharan Africa is highly concentrated (Jayne et al., 2014; Burke & Jayne, 2014). The large farms of the former colonial settlers especially stand out conspicuously in contrast to smallholder farms in Kenya. Within the smallholder farms there are also wide disparities in land sizes. Burke and Jayne (2014) note that the landownership Gini within African smallholder farms compare favourably with Gini coefficients for Latin America. Inequitable asset ownership gives rise to disparities in income growth which could slow down overall growth and poverty reduction. Income disparities create disparities in other areas such as education attainment.

In rural areas, land size is an important consideration in income generation. Rapsomanikis (2015) estimates that about two-thirds of the developing world's three billion rural population live in about 475 million small farm households drawing livelihoods from working on land plots smaller than two hectares. In Africa, smallholder farms account for 80% of all farms and support 33 million households (NEPAD, 2013). The farms measure less than two hectares each and account for about 75% of total agricultural production and employment (Salami et al., 2010 Smallholder farms in drier areas may extend beyond two hectares, but NEPAD (2013) estimates that not more than 3% of farms in the continent measure ten hectares and above.

Self-employment in plots of less than two hectares using traditional methods may not provide financial returns capable of supporting decent livelihood. Since income is

an input in education production function, low incomes associated with working on small plots may be a limitation to education attainment in rural areas. Additionally, poor rural areas are often neglected in terms of roads, access to piped water and electricity. These constraints further undermine education attainment in rural areas.

Land inequality is an ethical as well as a policy issue. In ethical terms, the way land and other assets are shared in a society reflects fairness or otherwise in societal institutions and culture. If a section of the society is systematically favoured and holds big land sizes while the rest of the society holds only small land sizes, this land unfairness may spill over to other sectors of the economy.

Regional landownership distribution

Nearly one-third of the Kenyan households (28.9%) are landless (Republic of Kenya, 2004). Rural landlessness is highest in Northeastern region which houses the counties of Garissa, Wajir and Mandera. The counties are semi-arid with low population density of less than 30 persons per square kilometre. Communal land tenure is dominant in these regions. Rural landlessness is also high at the Coast and Rift Valley where communal land tenure is also prevalent. In communal lands, population distribution is sparse except in towns. Households in communal land systems feel landless despite land abundance. The paradox is explained by the absence of individual land titles. In contrast, landlessness in the densely populated regions, e.g., the Central region is only 12.6% where most households have a title deed. Table 1 shows landownership distribution within and across regions in Kenya.

Table 1: Landownership distribution within and across regions in Kenya (%)

Region	Landless 0.01 ha	0.01-0.99 ha	1.0-2.99 ha	3.0-4.99 ha	5+ ha
Coast	49.4	17.6	22.5	7.6	2.8
North-eastern	73.9	9.9	11.7	2.3	2.0
Eastern	11.5	35.0	33.6	11.1	8.8
Central	12.6	52.7	17.3	1.8	0.9
Rift Valley	26.8	30.1	27.1	7.8	8.1
Western	7.5	45.0	37.1	5.9	4.3
Nyanza	10.6	33.3	43.5	5.7	7.0
Nairobi	96.2	2.4	0.7	0.3	0.3
Kenya	28.9	32.0	27.5	6.1	5.3

Source: Republic of Kenya, 2003

Land inequalities began in Kenya in the 1950s when the British colonialists displaced people from Kenya's fertile highlands and either resettled them elsewhere or left them landless. Introduction of private landownership and registration laws in 1956

entrenched the inequalities. Later day land sales, illegal allocations of state and communal lands (land grabs) (Waiganjo & Ngugi, 2001), population growth and subsequent subdivisions of land have aggravated land inequality in Kenya. Group ranches create land inequality in low potential zones. Customary practices of bequeathing land to male children further exacerbate inequalities on gender lines. The Constitution enacted in 2010 gives equal rights to gender on inheritance.

The land reforms instituted in Kenya before and after independence in 1963 to address landlessness and land inequalities include the following:

- Adjudication and registration of land outside the former 'white highlands.
- Subsidized sale of some of the former 'white highlands' to natives.
- Transfer of some publicly held land to the landless.

The reforms have been half-hearted and have neither eliminated landlessness nor reduced land inequality. In some cases, the reforms have perpetuated inequalities deliberately. For example, in the transfer of ownership of former European farms to Africans at independence, the government organized two types of settlement schemes, namely, low-density schemes occupying 70,000 hectares for people with farming experience and capital, and high-density schemes occupying 430,000 hectares for the landless and unemployed (Republic of Kenya, 1964). This policy made landownership unequal by design. A few people came to own relatively big portions of land while a large majority of the peasantry settled on small portions. Courtesy of the reforms, the high potential areas have been adjudicated and registered while the marginal areas have largely been left to customary law. People accommodated by others under customary arrangements lost their right to land once the hosts got title deeds. The overall effect of the reforms is a structure of land distribution characterized by wide inequalities.

Carter et al. (1994), in a study of farm sizes in Njoro area of Nakuru County in Kenya, captures the phenomenon of land inequality in Kenya when they observe that farms of 50 acres (20 hectares) and above comprise 1% of farm ownership but take up almost 40% of the total agricultural area in Njoro. The farms occupy better quality land characterized by flatter terrain, and they are better served by infrastructure such as feeder roads, water, and electricity. In contrast, smaller farms of poorer farmers occupy hilly areas with poor soils and are in most cases poorly connected to roads and water supplies.

Most of the smallholder farms measure less than one hectare in the high potential zones, and 1-10 hectares in low potential zones. Medium-sized farms measure over five hectares in high potential zones, and over 10 hectares in low potential zones

(Republic of Kenya, 2003). Big farms or estates measure hundreds and thousands of hectares. Muyanga (2013) observes that medium-sized farms utilize, on average, only less than half of the land for agriculture. The rest of the land is idle.

Inequality in landownership suggests inequalities in other areas. In this study we analyse whether inequalities in landownership across individuals and counties explain disparities in education attainment across households and counties. To gain a better understanding of the issue, we examine the state of inequality in education attainment at primary and secondary levels across regions in Kenya.

Inequalities in primary and secondary education attainment

According to KNBS and SID (2013), one-quarter of Kenya's population has no education. Slightly over half the population has primary education only, and only 23% of the population has secondary education and above. In rural areas, one-third of the population has no education and slightly over half have primary education only. Only four out of every 25 people in rural areas have secondary education. About 38% of the people with secondary education and above live in urban areas.

The regions with the highest percentage of population with some primary school education are Western (61%), Nyanza (60%) and Central (57%). Eastern (53%), Coast (50%) and Rift Valley (49%) follow in that order. The counties with the highest proportion of the population with complete primary education are Nyandarua (18%), Nyeri (17.4%), Kirinyaga (16.7%), Murang'a (16.4%) and Taita Taveta (16.7%). The counties with the least proportion of individuals with complete primary education are Turkana (1.2%), Wajir (2.2%), Mandera (2.9%) and Garissa (3.1%). At the secondary education level, counties with the highest proportion of population with complete secondary education are Nairobi (22.2%), Kiambu (17.7%), Mombasa (17.6%) and Nyeri (16%). Counties with the least proportion of population with complete secondary education are in pastoral communities of Turkana (1.4%), Wajir and Mandera (1.5% each), Garissa (2.2%), West Pokot (2.3%), Marsabit (2.4%) and Samburu (2.6%).

Northeastern region has the lowest attainment of primary school education (22%), and the highest population of people without an education (73%). The counties with the highest proportion of the population with no education are Turkana (82.1%), Wajir (76.4%) and Garissa (74.4%) (KNBS & SID, 2013).

The Central region has the highest population of people with secondary education (30%) followed by Nyanza (22%) and Western (19%). Eastern and Rift Valley regions tie in secondary school attainment at 18% closely followed by the Coast at 17%.

Northeastern region trails in secondary school attainment with only 5% of the population having secondary level of education (KNBS & SID, 2013).

According to UNESCO (2005) educational experience is shaped by factors that are school-based, child's family, as well as community, social and cultural environment of the child. Thus, education attainment is an outcome of social, political, cultural, and economic context within which schooling takes place.

Education financing

The burden of financing education in Kenya has over time oscillated between government and parents. Immediately after independence in 1963, the burden of providing primary education was with the government (Otieno & Colclough, undated). In 1988, government financing of education took an about-turn following World Bank's recommendations of user fees in the social sector, including education (World Bank, 1988). From 1988, the burden of tuition, activity, and examination fees, as well as provision of textbooks, was transferred to parents. In addition, parents met uniform, transport, and boarding costs.

In 2003, the government, once again, took much of the burden of primary school education financing (Republic of Kenya, 1998, 2005, 2006). Ideally, parents could only meet the cost of uniform, transport, and lunch, but schools charge additional levies to date.

At the secondary school level, parents bore the financial burden of providing education until 2008. By 2005/2006, tuition fee in day secondary schools was Ksh 10,265 per year (Otieno & Colclough, undated). Schools also charged extra money for insurance, medical, ICT, electricity, water, and conservancy (EWC), sporting activities, administration, repair, maintenance, and improvement (RMI), local travels and trips, complementary learning materials, motivation, caution, identity card and personal emoluments. Boarding schools charged extra for the service. The cost of secondary education was almost out of reach for children from poor households by 2008. In this year the government introduced substantial subsidies under the "affordable secondary education" (ASE) programme, and in 2017 tuition and development fees were abolished under the "free secondary education" (FSE) programme (Otieno & Colclough, undated). The interest in this study is the period before FSE.

Another relevant parameter in education financing in Kenya is political influence. Until 2010 when a new constitution ushered major changes in the country's governance structure, pro-government regions received preferential allocation of state resources in form of school infrastructure, teachers, and learning materials. This was most pronounced during the "Nyayo" era of 1978-2002. Political influence could be proxied

by the extent of high-level participation in governance by personalities from a region. Of special importance in this regard is the office of president, prime minister, vice president and minister for education. Table 2 shows the situation over the period 1963-2006.

Table 2: Regional participation in high level governance and the associated political influence, 1963-2006

Region	President	Vice president	Prime minister	Education minister	Participants in top governance	Intensity of participation (%)	Implied political influence ¹
Nairobi (1)							
Central (2)	2	2	1	3	8	36.3	Very high (4)
Coast (3)						0	Low (1)
Eastern (4)				1	1	4.6	Low (1)
North Eastern (5)						0	Low (1)
Nyanza (6)		1		2	3	13.6	Moderate (2)
Rift Valley (7)	1	3		2	6	27.3	High (3)
Western (8)		3		1	4	18.2	Moderate (2)
Total	3	9	1	9	22	100	

Source: Compiled from <https://en.wikipedia.org-wiki> and www.education.go.ke

Inequality in landownership reflects differences in opportunities. Galor et al. (2009) theorize that landownership concentration is associated with less investment in education, lower attainment in education, and prevents the emergence of human capital promoting institutions. Deininger and Squire (1998) and Easterly (2007) find an inverse relationship across countries between land inequality and human capital formation and income growth. However, the causal link between land inequality and human capital is not outright. The pathway from land inequality to inequality in education attainment and underdevelopment of human capital needs a deeper analysis.

Much of the evidence gathered in support of this theory is used to compare inter-county and regional development. It would be useful to investigate whether the theory also applies to intra-country comparative development, especially in a country with unequal landownership as Kenya. Do inequalities in landownership matter in education attainment? In answering this question, it is also important to

1 On a Lickert scale, if intensity of participation is $\leq 10\%$, implied political influence is low; if $>10\%$ but $\leq 20\%$, moderate; if $>20\%$ but $\leq 30\%$, high; and if $> 30\%$ very high influence.

check whether inequalities in landownership have any relationship with inequalities in education attainment at the distribution, and county attainment level. This understanding would particularly be important in explaining the extent to which, if at all, land inequality explains the asymmetry in education attainment across counties and in designing policies to remedy the situation.

The general objective of the study is to examine whether inequalities in landownership explain regional inequalities in education attainment in Kenya. Specifically, the study seeks to answer whether inequalities in landownership matter in education attainment, particularly at primary and secondary levels which are critical in human capital formation. To answer the question, the study examines whether the Gini of landownership has any relationship with the Gini of education attainment in a county. This aspect examines whether the distribution of the two inequalities is related. The study also examines whether the Gini of landownership has any relationship with the proportion of education attainment (primary and secondary) in counties. Lastly, we investigate the basic question of whether landownership matters in education attainment of a household.

Data source

The data for the study was sourced from the Kenya Integrated Household Budget Survey (KIHBS) of the Kenya National Bureau of Statistics (KNBS) for 2005/06 and the National Population and Housing Census 2009. The year-long KIHBS survey covered clusters randomly selected from the National Sample Survey and Evaluation programme (NASSEP) IV. NASSEP maps the country into clusters selected with probability proportional to size from enumeration areas used during the 1999 Population and Housing Census. The sampling is stratified by district/county and urban/rural to ensure fair representation of an unequally distributed population. The survey covered 861 rural and 482 urban clusters. A sample of 13,430 households, 8,610 rural, 4,820 urban and five (5) “replacement” households for each of the 1,339 clusters were surveyed.

Conclusions and policy recommendations

The study examined whether inequalities in landownership were associated with inequalities in education attainment at primary and secondary school levels. Using data from KIHBS 2005/06 and the National Population and Housing census 2009 and fractional IV probit regression models, the study failed to find any significant relationship between landownership inequality and inequality in education attainment across counties in Kenya. Inequalities in primary as well as secondary education attainment across counties are correlated with household size, average per capita household expenditure, urbanization, participation in high level government (political influence) and the dominant faith. The influence of average household size and Muslim faith

was probably to increase inequalities in education attainment across counties. Public policies that ensure quality over quantity of a family could have important bearings on reducing inequalities in education attainment. An affirmative action on Muslim education attainment could be necessary so that they too can increase their education attainment. Inequalities in education attainment were expected to reduce with improvements in urbanization, average household income and political influence in counties. The results suggest that public policies that promote shared growth and urbanization, as well as political power balancing, could have important bearings on reduction of inequalities in education attainment across counties.

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