Ethnic and Political Dynamics of Poverty, Employment, and Wages in Kenya

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Abstract

The association of ethno-political bias and economic development outcomes remains central to policy considerations in most African countries, especially in the sub-Saharan region. Perceptions and realities of ethnic and political favoritism in wellbeing have been a major cause of ethnic conflicts, erosion of civic participation, and the undermining of an inclusive national identity and other aspects of social cohesion in Kenya. In turn, this has more broadly affected her socio-political and economic stability adversely.

Although it is widely accepted that observed economic wellbeing differentials can be attributed to a myriad of factors spanning geographical climate, economic factors, socio-cultural, and colonial historical impacts, it has been argued equally that the observed disparities in Kenya might have been shaped by the continued entrenchment of discriminatory policies by the successive post-independence regimes. The general perception is that political leaders, particularly those in the executive arm of the government, have tended to manipulate resource distribution in favor of their ethnic groups and/or counties, and this has been enabled by the spatial concentration of the ethnic groups across spatial units in a nonrandom manner. These claims of ethnic and political favoritism, however, largely only abound as anecdotes as prior work in this field remains inadequate. A few pieces of evidence contend that there exists a consistent systematic bias in favor of ethnic groups and Presidents' regions.

This thesis corroborates this anecdotal evidence by means of empirical investigation. The thesis seeks to identify the underpinnings of the relationship between ethnopolitics and resource distribution in Kenya. We do this by mapping ethnically based resource allocation over time in Kenya, from the 1990s through to the present, in three interrelated but independent papers: (1) Characterize the trends and patterns of multidimensional poverty levels; (2) Examine the relationship between coethnicity with the President and poverty levels and establish whether governance reforms in the post-2010 period has reduced the ethnic bias in resource distribution, and (3) Investigate the role played by ethnicity and the political regime in power at the time of entry into the labour market on present-day employment and earnings. Essentially, the thesis seeks to identify empirically the political underpinnings of poverty levels and the labor market over time.

We introduce the thesis in chapter one, proving the background and motivation for the thesis. In chapter two, we derive reasonably comparable datasets from interrelated independent large surveys; three rounds of 10% samples of the Kenya Population and Housing Censuses (1999, 2009 and 2019) and the Kenya Integrated Household Budget Surveys (KIHBS) 2016, and construct some of the key variables. This chapter pays special attention to the imputation of ethnic identity when explicit individual-level measures are absent. The ethnicity variable is not explicit in some of the datasets. This discussion lays out the primary independent variable, ethnicity, in the later analyses.

Chapter three discusses the elements and construction of the primary outcomes of interest – a multidimensional poverty measure. The chapter provides some descriptive and visual evidence of a positive correlation between Kikuyu ethnic identity and poverty measures as well as simple correlations between poverty measures and county-type. We construct the multidimensional poverty index (MPI) (from three domains: education, dwelling conditions, and access to key basic amenities-tap water, electricity, clean cooking fuel) and characterize its distributional patterns between 1999-2019. From the pseudo panel dataset of counties constructed, we can observe poverty experience over time and examine the extent to which poverty is sustained in specific regions.

The following findings emerge from this chapter: poverty experience in Kenya is persistent rather than static, for most counties. We find a high degree of persistence of poverty status of counties: 82% of counties that were the least poor in 1999 have remained the least poor in 2019; 56% of those that were moderately poor in 1999 are still moderately poor in 2019, while 66% have remained trapped in poverty, being the poorest between 1999 and 2019. While counties in the Mount Kenya region have simultaneously exhibited the lowest poverty levels and best improvement in poverty reduction, counties in the Western have remained moderately poor or moved to the bottom of the poverty distribution. Notably, counties in Northern Kenya have remained "trapped" in poverty at the tail end of the distribution as the poorest over the 25-year period.

Although poverty has declined gradually over time (the poverty rate dropped from 48.5% in 1999 to 42.5% in 2019), the cross-country disparities in poverty outcomes have persisted, exacerbating

the inequality situation that already exists. Our results also reveal contemporaneous clustering of poor counties with specific ethnic groups. Counties that have the highest share of President's coethnics are the least poor and have the greatest reduction in poverty levels over time. Counties, where the Kikuyu tribe are the majority (Central Kenya and lower Eastern Kenya), have consistently simultaneously exhibited the lowest poverty levels and the most significant reduction in poverty over time. On the contrary, the inhabitants of Western Kenya (the Luo and the Luhya tribes) have remained moderately poor and the Northern Frontier Districts have stayed "trapped" in poverty (mostly the Kenyan Somali). The key contribution of this chapter is its consideration of the dynamic poverty phenomenon, as opposed to the transient nature where poverty is experienced only at a specific point in time.

Chapter four attempts to deepen the institutional/governance mechanism discussed in chapter one, locating the source of these inequalities in politics using regression-based analysis. The main objective of this chapter is to investigate the drivers of poverty at the household level and county level, and the effect of a change of governance structure on the distribution of poverty across counties, and whether this transition has effectively redressed the ethnic-identity-based resource allocation problem that has bedeviled the country for a long time. We profile trends and patterns of material well-being in Kenya and decompose the county poverty gaps.

We find suggestive evidence that coethnicity with the president matters for household poverty outcomes. Our estimation results show that the key drivers of household poverty are the ethnicity status of the household head, the level of education, engagement in gainful employment, location of the household, gender of the household head and the number of household members. The estimations reveal that being coethnic with the incumbent President is contemporaneously associated with a lower likelihood of being poor, and much more, staying coethnic major counties confers additional benefits to the coethnic households. More importantly, the result points to the fact that even though ethnic inequalities may exist at the individual level, they could be overridden by regional redistribution. The spatial dimension of poverty imbalances seems stronger than the ethnic dimension. A household is able to gain more welfare if they moved to other regions where presumably more resources are being channelled. The implication of this finding could be that removing barriers to movement of people, or rather, strengthening social cohesion amongst communities could help reduce the ethnic inequalities, thereby improving the overall welfare.

Decomposition of the poverty gap reveals that the significant differences in poverty levels between coethnic majority counties and non-coethnic majority counties that cannot be solely attributed to differences in county characteristics which hints at potential "discrimination" or "favoritism" that benefits president's coethnics and regions where they are a majority. A significant portion of the poverty differences therefore remains unexplained.

Further analyses suggest that despite the implementation of devolution, the importance of patronage networks continues to be witnessed, implying that character of ethnic patronage politics persists. We find no doubt that president's regions disproportionately benefit from public goods and services. The Kikuyu dominant counties more especially on average have substantially lower poverty levels, higher access to employment opportunities, better road networks, high school quality, adequate health infrastructure, proper water distribution and connection to electricity (resources which are largely publicly provided) although the reasons for such disproportionate allocations remain unclear.

Although we are unable to estimate whether local politicians also influence the distribution of these resources, nor whether the outcomes would be different in politically contested areas, our evidence largely suggests that institutional reforms, through devolution in this case, has not effectively reduced practice of ethnic favoritism in the distribution of public goods. Instead, the patterns are more likely to be consistent with clientelist public investment behaviors motivated by national presidential election outcomes.

The final empirical chapter of the thesis, chapter five, extends these bias-related concerns to a new arena – the general labor market – examining differences in labor market outcomes as a function of coethnicity before and after the new dispensation in 2010. We estimate the coethnic effects, and the regime of entry effects in the labour market outcomes-wages and employment; whether sharing the same ethnicity as the President today, or indeed, sharing ethnicity with the incumbent President when one was first eligible to enter the labor force, matters for contemporaneous employment and earnings. Due to the richness of data, most of the analyses in this chapter are primarily based on KIHBS 2015 data. However, evidence from the other datasets is also presented. We utilize the quasi-experimental technique; the regression discontinuity and probability score matching in these analyses.

Our results reveal evidence of coethnic biases in different sectors and types of employment across both earnings and employment in the general labour market. Overall, we find that when Kalenjins are in power in 1999, they have higher chances of getting wage employment relative to non-Kalenjins. The same pattern is observed for the Kikuyu in 2009, and 2019, when they control the presidency. This finding suggests that coethnic biases continue to matter in the labour market, even in the post devolution, even though the magnitude has dampened.

The coethnicity status at the regime of first entry into the labour market plays a significant role in today's employment and earnings. Sharing the same ethnicity with the ruling elite at the time one enters the labour market is associated with significantly higher employment probabilities today. While the coethnic effects especially for access to paid job seem manifest at the time of entry into the labour market, these effects dampen for the coethnics who have stayed longer in the job market. The recent coethnic cohorts seem to have higher employment probabilities than the earlier regime entrants. Hence, the biggest coethnic differentials are therefore pronounced at the time of entry but do not persist for long.

This chapter also finds that the coethnic effects of employment are prevalent both in the private sector and the public sector. Different from earlier studies that do not find pronounced ethnic biases in employment in the Kenyan public sector, our findings reveal the existence of such biases across all regimes of entry. Our findings are consistent with the evidence from the administrative datasets derived from the audit of parastatals in Kenya, that find oversubscription of certain ethnic groups. We find results indicative of this evidence using the household survey dataset.

Chapter Six of the thesis provides a summary of the thesis findings, policy implications and document areas for further research, highlighting the main findings and suggested policy implications and recommendations from the thesis.

In conclusion this thesis has elucidated the pronounced tendencies of ethnic imbalances and their relationships with the political processes, to support policy formulation in redressing the longstanding challenges of poverty, equity, and inclusivity in Kenya. The findings from this thesis vitally contribute to the ongoing attempts to undo the legacy of ethnopolitical favoritism, not just in Kenya, but in sub-Saharan Africa more broadly, where these issues are widespread. We find that coethnicity with the President comes out as an important element in the conduct of social and political affairs in Kenya, with direct implications on poverty and the labour market. We also find

persistence of poverty experience within counties. Most counties have remained in the same state over the study period. Particularly, counties dominated by the President's coethnics have remained relatively richer than other counties, besides having the greatest poverty reduction, while others have remained trapped in poverty. Our findings also reveal that transition to devolved system of governance from the central government structure has not significantly altered the resource distribution based on ethnopolitics, but the coethnic wage gap has reduced significantly in the post-2010 constitutional dispensation.

Although it might be too early to comment on the effectiveness of devolution since Kenya is only at its initial stages, our evidence suggests that devolution has not reduced the ethnic favoritism in regional development. The persistence of ethnic favoritism in the post devolution era shows that the new constitutional dispensation and other legislations in pursuit of equitable access to resources and opportunities have not been effective in addressing the long-term challenges of county inequalities. Political exclusion and inequitable and unequal distribution of resources and opportunities have been longstanding issues in Kenya.

This study, however, has been subject to limitations including data and the scope of coverage. A lot of potential further research in this area remain to be desired. For example, we have only considered the effect of coethnicity with the President on the economic outcomes. We believe that expanding the investigation to include other "powerful" ethnic groups, not necessarily President's coethnics would be of value addition. In the Kenyatta regime for instance, the politically dominant ethnic groups were the Kikuyu, Embu, and Meru Association (famously known as the GEMA) and the Kalenjin. The Kikuyu produced the president while the Kalenjin produced Vice President. The Embu and Meru have historically coalesced with the Kikuyu in successive general elections in the country. Under Moi regime, they were the Kikuyu and the Kalenjin. The Kalenjin produced both the President and the Vice President. The Kikuyu also alternated the Vice Presidency position in switching regimes under Moi presidency. In the Kibaki regime, they were the GEMA, the Luo, the Luhya, and the Kamba; the Kikuyu controlling the presidency, the Luo the Prime Minister position (with equal powers as the president), and the Kamba and the Luhya held the Vice President position. Finally in the Uhuru regime, these are the Kikuyu and the Kalenjin; the Kikuyu controlling the presidency while the Kalenjin controlled the deputy presidency. In general, the

dominant tribes produced the presidency, deputy president, prime minister or politically coalesced with the ruling ethnic groups.

Another potential area of consideration could be whether political and ethnic favoritism in resource distribution play out differently in politically contested areas from the areas regarded as strongholds. Due to data limitation, we have estimated only the overall extent of favoritism, but not investigated the potential sources of these biases. However, assessing accountability channels by comparing different contexts (resources or index of resources in general) can confound other differences, posing an empirical challenge-especially when these projects are implemented in different phases. There is need to go beyond the canonical existence of political favoritism, and investigate further, the mechanisms through which the favoritism is implemented.

Moreover, our study has only relied on the on- and off-election cycles (between political regimes). It might be useful to evaluate political favoritism using data that allows us to study how public goods provision tracks political developments at a high frequency. Investments in public projects for instance may accelerate in the weeks immediately before voting, and slow down significantly in the post-election period. Rather than assuming that coethnics continue to benefit from public goods provision throughout the Presidency of the incumbent leaders, mapping out the temporal process of ethnic and political favoritism gives more granular information which does not conceal within-period biases. This would contribute to understanding the timing of fiscal spending around the election cycle Click or tap here to enter text..

Finally, one of the key limitations in this thesis is data limitation, especially with regards the ethnicity variable, which we inferred by from proxies. This might have an impact on the robustness of our result. With availability of data, over a long period of time, more accurate empirical investigations can be conducted to guide policy formulation on poverty reduction and narrowing the inequality.

Key policy implications arise from this thesis. First, there is need for significant tracking and scrutiny of government spending behaviour to curb the persistent ethnic and political biases. There is need for increased media coverage of distribution of public investments. This has an effect of increased accountability. Evidence shows that public investments which were hard to track and hidden from the public eye, especially within the implementation phases—exhibit significant

favoritism, while stages which are disclosed publicly and receive widespread media coverage. Therefore, increasingly active independent media scrutiny as well as increasingly robust democratic institutions, expanding constraints on executive power, and donor oversight may partly curb favoritism. Rigorous democratic institutions and a free and transparent press can empower citizens to hold their elected officials accountable. International donor agencies should increasingly place strict conditions on the use of their funds to restrain corruption as strict donor conditionality on donor-funded projects. Evidence shows that oversight by international aid donors (who largely funded the electrification project) may help restrain favoritism in stages when the project is under the donor's scrutiny.

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Declaration

I, Joshua Magero, declare that this thesis is my original work and that other sources have been acknowledged through referencing. I also declare that the thesis has not been submitted for the award of a Ph.D. degree at any other university.

Signature

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Dedication

To my loving wife, Ellen, my siblings, Linda, Monica, Jane, Joseph and Joy, my sister-in-law Diana, and my mum Susan.

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Chapter 1 : Introduction and Background to the Thesis

The commitment to ending extreme poverty, and reducing inequalities remain at the top of the priorities of the Sustainable Development Goals (SDGs) Click or tap here to enter text.. Although some gains in poverty reduction have been realized, there still exist wide disparities in sharing this progress Click or tap here to enter text.. A growing body of literature has shown that sub-Saharan African countries continue to be characterized by imbalances in well-being in many dimensions including regional, gender, race, ethnicity, among other dimensions Click or tap here to enter text..

The socioeconomic and political impacts of inequalities are important policy issues in the African continent. Perceptions and realities of disparities in wellbeing have been a major cause of ethnic conflicts, erosion of civic participation, the undermining of an inclusive national identity, and other aspects of social cohesion, especially in diverse societies Click or tap here to enter text.. At a macro level, wide differences in a country's development across its regions, especially when these disparities are aligned with ethnic and political dimensions, may have adverse effects on its socio-political and economic stability (Dahlberg et al., 2012; De Luca et al., 2018; Lassen, 2007; S. Lee et al., 2016a).

Kenya, like many sub-Saharan countries, continues to be characterized by imbalances in resource distribution and unequal access to livelihood opportunities in many dimensions (Stewart, 2010a), but the manifestation of inequalities in Kenya requires special attention given her unique ethnogeography[1]. Although it is widely accepted that observed wellbeing differentials can be attributed to a myriad of factors spanning geographical climate, economic factors, socio-cultural, and colonial historical impacts (Boone & Simson, 2009a; Kim, 2008; Stewart, 2008), it is argued that the patterns of disparities in Kenya might have been shaped by continued entrenchment of discriminatory policies by the successive post-independence regimes (Githongo, 2006a). The general perception is that political leaders, particularly those in the executive arm of the government, have tended to manipulate resource distribution in favor of their ethnic groups and/or counties/regions (Burgess et al., 2011; Ejdemyr et al., 2017; Gordon, 2019; Makgala, 2010; Posner & Kramon, 2011), and this has been enabled by the nonrandom settlement of the ethnic groups across spatial units.

[1] Given ethnic groups tend to be spatially concentrated in specific regions. The Kikuyu for instance occupy the slopes of Mount Kenya, in the central province; the Luos are settled in the shores of Lake Victoria, the Kamba are in the Eastern Province, while the Western province is majorly inhabited by the Luhya.

The widespread claims of ethnic and political favoritism in Kenya, however, largely abound as anecdotes as prior work in this field remains inadequate. Only a few studies have documented evidence on the prevalence and magnitude of ethnic favoritism in Kenya. For example, (Burgess et al., 2015) explored the prevalence of ethnic favoritism in road infrastructure expenditure across Kenyan regions. They find that for every kilometer of road tarmacked, the regions where the President comes from receive five times the distance tarmacked. These regions also have a disproportionate share of education resources, translating to better primary school educational attainment, relative to other regions. The findings generally suggest a consistent systematic bias in favor of ethnic groups and Presidents' regions. The magnitude of political favoritism, the persistence, and the underlying transmission channels, however, remain a research issue, as the conclusions one draws about who benefits from distributive politics depends on the outcome and the period one investigates (Posner & Kramon, 2011).

This thesis seeks to identify evidence of the practice of ethnic majoritarianism and politics of exclusion as underpinnings of county poverty levels as well as skewed Kenyan labor market outcomes over time. Since independence, Kenya has been governed by four presidents, three of whom are of Kikuyu ethnic descent, serving for a cumulative period of over 3 decades (1964-1978; 2002-2021), and one from the Kalenjin, tribe serving for 24 years (1979-2002). Members of the Kikuyu and Kalenjin tribes have also served for a significant number of years in the Vice-Presidency. Against this political backdrop, where opportunities for political patronage abound, we consider three interrelated objectives: (1) Characterize the trends and patterns of multidimensional poverty levels; (2) Examine the relationship between coethnicity with the President and poverty levels and establish whether devolution has reduced the ethnic bias in resource distribution; and (3) Investigate the role played by ethnicity and the political regime in power at the time of labour market of entry on present-day employment and earnings in Kenya.

5.2 1.1 Kenya's Economic and Political History of the Political Regimes.

Before we present a short overview of each chapter in the thesis, we briefly consider the trajectory of the political power of successive regimes in Kenya since independence, 1963. Literature shows that even in the pre-colonial era, certain regions in Kenya had been left out on the development front. Eastern and Coast province have been among the poorest regions in Kenya, partly due to the prevailing harsh agricultural conditions they face. Most of Eastern province with the exception of a few highland areas (Embu, Meru, Mbeere) is considered arid to semi-arid. Despite the harch climatic conditions, these

regions depend on rain fed agriculture for livelihood. Along with Nyanza, and Northeastern Province, these provinces are also victims of government neglect in infrastructure and support for agricultural activities (wa Githinji, 2012). For a variety of reasons these areas have been neglected by the colonial administration and the post-colonial Kenya regimes. Both the colonial administration and the successive Kenyan governments focused resources in areas they considered to have high agricultural potential, and redistribution took a back rest, akin to creating wealth before distributing wealth. This set of a vicious cycle where the most fertile areas received more government support and thus became even more successful and were thus able to influence the government for further support (wa Githinji, 2012).

Nyanza and Northeastern provinces poverty levels are potentially linked to political reasons. In the case of the Nyanza, the area has been marginalised politically since the radical position taken the Kenya Peoples Union which was led by politicians from the area in the 1960s (wa Githinji, 2012). More recently this province has been the hardest hit by the HIV/AIDS pandemic and by more recent estimates is now the second poorest province. Northeastern province on the other hand has never been truly integrated into Kenya, partially due to its remoteness and barren landscape but also partially due to the inability of Kenyan politicians to accept the Somali population that dominates this area as Kenyan. What is surprising is that despite the differences in the share of government resources going to these areas. The difference in amount of poverty between provinces is relatively small and, in many cases, may not be statistically significant. The remaining three provinces have much of the country's high potential land. Central and Rift Valley Provinces have also benefited from the philanthropy of the two first presidents of the republic who have hailed from these areas.

Figure 1.1 Political Regimes, Political Climate, and Wellbeing Patterns in Kenya

Source: Author's Conceptualization

As stated earlier, since independence in 1963, Kenya has been governed by 4 presidents from two tribes: one president (Moi) from the Kalenjin tribe and the other three (Kenyatta, Kibaki, Uhuru) from the Kikuyu tribe. The Kenyatta regime was the first post-colonial regime (1963-1978), followed by the Moi regime (1978-2002), the hen Kibaki regime (2002-2013). The current regime is the Uhuru which has been in power since 2013.

The key hypothesis is that when an ethnic group is in power, they have better outcomes owing to having control of the presidency and with power to distribute national resources. If the President practices patronage, they may channel more resources to their constituents and counties; hence the upward trend in Figure 1 when there is a coethnic President. However, when an ethnic group loses power, they assume the same pattern of well-being as the other ethnic groups that have not produced the President (counterfactual group) hence the flatter trend when the former coethnic group is out of power (horizontal trend). When the former coethnic groups are out of power (now non-coethnics), they assume the same trend of well-being (their well-being curve has the same slope as the ethnic groups that have never been

in power (non-coethnics) but with a higher magnitude due to accumulated power benefit in the previous regimes).

To illustrate this, beginning with the first regime in 1963, the Kenyatta regime, the slope of the well-being curve of Kikuyus is steeper between 1963-1978 when they are in power, indicating higher well-being outcomes. However, when they are out of power, following a regime change between 1978-2002, their well-being curve is flatter, with the same slope as the other ethnic groups that were out of power. In this period, the Kikuyu wellbeing curve is at a higher point of the vertical axis because the benefits of political power possession persist for some time even when they are out of power. With the Kikuyu exiting power, the Kalenjin assume power in 1978 and remain in control until 2002. Over this period the well-being of Kalenjins should rise according to our hypothesis (depicted by a steeper curve in the middle). In 2002, there is a change of regime, and the Kikuyu gain power again in 2002 and remain in control to date. Following the same argument, the economic wellbeing curve of Kikuyus rises again above the rest and the Kalenjin curve assumes the same trend as the other ethnic groups, although at a higher point in the vertical axis since they were in power previously.

1.2 Theoretical underpinnings of politics of exclusion and poverty.

The notion that leaders capture and divert the allocation of public goods via clientelism, and political patronage significantly shape the understanding of developing countries, especially in Africa. In purely clientelistic systems, it is assumed that leaders manipulate the distribution of public resources based on the recipients' political support for them at the expense of where those goods may be needed most (Hicken, 2011). Typically, models of distributive politics hold that politicians allocate private goods to specific constituencies to win political support instead of allocating goods in an economically efficient way (Dixit & Londregan, 1998b; Guggiola, 2012; Johansson & Dahlberg, 2002). Parties in developing diverse societies, like sub-Saharan Africa arguably form more patronage linkages with their voters, which depend on quid pro quo between the patron (politician) and the client (voter) (Kitschelt, 2000). This idea of clientelism however sits in contrast to Weberian theories which hold that policymakers follow programmatic and universalistic approaches to allocate public goods without explicitly expecting reciprocity from their constituents (Kitschelt, 2000; Kitschelt & Wilkinson, 2007a, 2007b).

Whereas more generally it is believed that there is a tendency by African leaders to allocate public resources in a skewed manner following clientelism, the precise channels remain unclear. Evidence suggests that the patterns of redistribution depend mainly on the type of public good under investigation, the type of regime (democratic or authoritarian), the state of the economy, nature of political competitiveness, and the strength of domestic institutions, among many other factors (Kitschelt & Wilkinson, 2007a, 2007b).

Politicians therefore have the choice to allocate resources either on favoritism basis or pursue development policies. The key question that arises therefore in the context of this thesis, is whether a rational economic planner could allocate resources in a way that looks similar to ethnic favoritism? Might differences in marginal productivity predict resource allocation (and downstream poverty outcomes)? We attempt to answer this question in the last section after reviewing the theories of political underpinnings of poverty and politics of exclusion.

Generally, it is widely accepted that besides social exclusion, other factors such as salience of religion, ethnic, racial, and economic factors produce poverty (Carter & May, 1999; Manseau, 2015; Offutt et al., 2016) The prevailing views of inequality's creation and perpetuation make it difficult to grasp the processes by which exclusion generates inequality and inequality in return causes poverty among excluded populations (Tilly, 2018). In particular, the view that inequality and poverty as outcomes of individual differences according to meritocracy, worthiness, or privilege, obscures the importance played by structured boundaries and interactions among members of different social groups in perpetuating inequality.

Over the years, various theories have evolved trying to explain how governments in African countries, more specifically, distribute public goods in an unequal manner. The initial theories have argued that the inequalities were class-based, and that institutional structures in the postcolonial states were shaped to suit the interests of its successors. For instance, public servants may have initiated educational barriers to job access that limited entry to those with high educational attainment, thus ensuring that public services were allotted to the children of the educational elite (Tilly, 2018). To the extent that wealth and educational attainment were unevenly distributed during the colonial era, this class-based structure would perpetuate even to a larger extent the existing structural inequalities between groups (Rothchild, 1969).

In more recent debates, researchers have moved from the class-based lens of looking at inequality and instead characterize African bureaucracies as clientelist or patronage based. They postulate that politicians

use public resources as an impetus to buy support of politically influential people or groups. The politicians allocate public resources on a quid pro quo basis, in exchange for delivering votes or other forms of support, failure to which the reward is (Robinson & Verdier, 2013a).

While most poverty analysts in their quest to explain exits from poverty emphasize that the main enablers of poverty reduction are individual endowments and entrepreneurial behavior, in reality, the availability of most assets and capabilities (material assets; good health; personal integrity; emotional integrity; respect and dignity; social belonging; cultural identity; information and education; organizational capacity; and political representation and accountability) results from economic, organizational, and political processes, most of which the typical poor individual or household exercises precious little control (Narayan & Petesch, 2007; Narayan-Parker et al., 1999; Sahoo & Sethi, 2022). These processes produce and maintain the crucial associations and social connections, and thereby cause exclusion of poor individuals and households (International Labour Review, 2002).

Studies have shown that social alignments matter significantly for exits from poverty. Cultural identities for instance, such as gender and caste, as well as patron-client networks significantly affect mobility chances (Hussain et al., 1994; Mukhopadhyay, 2023;Kitschelt & Wilkinson, 2007a), but many poor people still lack the useful social connections and favorable memberships to facilitate their exit from poverty. However, whilst cultural identities are important, they have also proven to be exclusionary. For instance, in some societies like Nigeria, the poorest of the poor are excluded from social events and ceremonies, and in some societies, it is taboo for women to enter the Court Hall (International Labour Review, 2002).

Evidence also indicates that most of the world's most vulnerable lack favourable associations and helpful connections that can facilitate their movement out of poverty a great deal as compared to individual efforts (Tilly, 2018). Any potential exits from poverty would require either acquisition of new categorical belonging and/or connections, or deliberate ecopolitical efforts that would alter the existing exclusionary groupings (Tilly, 2018; F. D. Wilson et al., 2001). Socially organized patterns of exclusion set daunting mobility barriers most poor individuals and households (Tshishonga, 2009).

In this section, we review the theoretical underpinnings of political patronage, poverty and existence of inequality. We borrow largely from the theories propagated by Tilly, (2018), which considers the interplay between social exclusion, poverty, exits from poverty, and overall processes that inequality generating processes to explain poverty persistence. The main assertion is Tilly's paper is that politics of exclusion

is responsible for the creation and perpetuation of poverty. That social exclusion is a central inequality-generating process, and exclusion on its own and promotes poverty. Exits from poverty, therefore, is dependent on eliminating the structural barriers that work to exclude people from the critical value-producing resources.

For instance, in a predominantly agricultural region, differences in access to land increase the susceptibility of households who do not own land (the crucial productivity producing resource) to absolute poverty. To the extent that an economy rewards land ownership, systemic exclusion of certain social groups from land ownership will imply that they are likely to become poor. Structural exclusions from such benefits have significant and long lasting socio-political and economic impacts. In particular, belonging to the minority/excluded groups and lack of facilitating interpersonal connections act as deterrents to exists from poverty, especially for the most vulnerable. These forms of exclusions are usually reinforced by the existing political formations and deny poor people mobility opportunities (ibid).

In order to exit from poverty therefore, the political formations and systems that generate and perpetuate inequality need to be altered, forming new systems where the previously marginalized gain control over productive resources (Layte & Whelan, 2003; Tilly, 2018; Tshishonga, 2009).

1.2.1 Individualistic explanations to Inequality: Simple queuing models

The simple queuing theory of individual contribution to inequalities compares two different perspectives on the processes that produce inequality: individual and interaction perspectives. In the individual perspective, a person's attributes (ownership of crucial assets and individual capabilities), and behavior (for example, extraordinary entrepreneurship) places that person within one or more social scales. Individual differences therefore occur by the personal influence: On one extreme, a person's acumen determines where he or she ends up within the hierarchy, while on the other hand, people who possess power decide which attributes to punish or reward, thus placing people with different attributes at different positions within the pecking order (Roche, 2009; Romero & Margolis, 2007). Whereas the individual perspectives of inequality emphasize on the significant role the previous social relationships play in shaping their attributes and behavior, the interaction perspectives stress that inequality emerges from the sorting of individuals according to their attributes and behavior (Roche, 2009).

The question that begs is how the hierarchies work. Conceptually, if we imagined a rectangular space with social standing on the vertical axis, and various social points defining its horizontal axis, in the individual view, inequality consists of differential assignments within such a space. Assuming the vertical axis represented income or wealth, any ordered arrangements of such social units—individuals, groups, categories, jobs, or other positions—is unequal to the extent that its agents are placed in different positions along the vertical grid. Principally, we can substitute the vertical axis with power, fame, prestige, and overall well-being (Tilly, 2018).

This idea leads easily to the imagination of a single ordering system within which every individual is placed in a specific location. The social stratum may therefore rank individuals according to income, wealth, power, prestige, or some combination of economic rewarding attributes. The perspective also follows clearly with the arguments in social mobility of individuals from step to another within such an ordering system. These distributions of the hierarchy positions formulate inequality; the extent to which prominent individuals enjoy preferential advantages than inferior individuals in stationary terms (Tilly, 2018). In forward-looking terms, it is the extent to which the average individual and their offsprings stay in the same locations (low-ranking or high-ranking) throughout careers, lifetimes, or generations (ibid). Therefore, in a highly unequal system, in individual perspective, advantages continue to accrue to the superior individuals intergenerationally, while inferior individuals are condemned to the low rewarding positions in the hierarchy given their initial ranks.

Such a selection process generates a queue within the hierarchy, which lines up individuals to pass a barrier which scans them; matches their various characteristics and behaviour with pre-decided matrix; and then matches them with other people with similar attributes in the different paths (Brady, 2019; Brady et al., 2017). In a queue, inclusion or exclusion operates one person at a time, even if categorical attributes of individuals such as race, gender, ethnicity or religion affect an individual's inclusion or exclusion (Tilly, 2018).

The queuing model finds home in the human capital placements where the monitor is a market or its human agents. The market assesses each individual for marginal productivity, then matches the identified human capital with a position in which it will produce a net return for the market as well as for the individual. In more complex scenarios, the market would scan for gender, race, fame, ethnicity, estimated commitment, or other attributes instead of—or in addition to—human capital/marginal productivity.

Cumulatively, such a process generates distributions of individuals fortunes with differences in current rewards and accumulations of past rewards as a function of their relationship to criteria or proximity to who builds the monitoring system. If the allocation focuses on human capital, then the unequal distribution of human capital across the population generates unequal rank and unequal mobility in the hierarchy as well (Tilly, 2018). Thus, the manager of a position in the public service for instance, hires, pays, or promotes workers on the basis of a personal preference schedule provided for by the queue.

Explanation of inequalities therefore requires identifying the productivity-rewarding resources and who in the system, those attributes reward. People who possess the crucial resources will, according to the argument, reap disproportionate gains (Brady, 2019; Roche, 2009; Tilly, 2018; Tshishonga, 2009; Wang & Guo, 2022).

1.2.2 Interaction models of exclusion: Interactive theory to inequality

Queuing models are argued to be special cases, and that they rarely feature in today's inequality studies since the queuing system is created, monitored and assigned by human beings, practices which do not conform to the simple queuing models. Collective selection and placements, rather than individual-by-individual placements, one at a time, to the hierarchy spectra (rather than individual) therefore occurs (Tilly, 2018).

As propagated in the individual perspective, markets sort individuals by the attributes (e.g., human capital) and behavior (e.g., hard work) that they bring to exchanges. Assuming that market operations play a part in creating inequality, then, we have a choice between (a) imagining the market as an impartial sensor that scrutinizes persons according to a static prescription or (b) a dynamic, negotiated, and interactive social relations. Going with the dynamic view, that is, the second option, we deviate from strict self-reliant system. In the interactive view therefore, inequality isn't merely a static outcome; it's a dynamic process shaped by multifaceted factors. It emphasizes the relational nature of inequality, recognizing that inequality isn't solely about individual attributes but emerges from complex interactions. The relational inequality delves into power dynamics, social networks, and institutional structures that perpetuate or challenge inequality Devey (2019.)

In the interactive view, inequality is a relation between persons or sets of persons in which interaction generates greater advantages for one than for another. Contexts in which the interaction models have been

applied include analyses of black–white differentials in wealth and well-being in South Africa (Aliber, 2003; Beck & Terreblanche, 2004; Lehohla & Shabalala, 2014) indicate, for example, whites, on average, great advantages over blacks. Social mobility, in interactive perspective, does not constitute single individuals moving within the hierarchy but involves significant flows of persons among clusters, especially those that differ significantly in prominence (Tilly, 2018). Long-run changes in inequality, in this view, therefore, depend on reorganizing of relations among agents. In this theory, group control over productive resources in explaining major shifts in inequality. Hence, material inequality results from unequal control over value-producing resources. In this regard, group inequalities between gender, race, results from asymmetrical relations across the group boundaries, between relational networks which unequally excludes each network from productive resources controlled by the other.

An inequality-generating process (exploitation) occurs when persons who possess a resource (a) take stock of the effort of others in the value generation by means of that resource but (b) exclude the others from the full value added by their effort. For example, where superior population segments create niches that exclude others from their benefits: for example, jobs that go only to members of a specific gender, ethnic category, or race. Enclave formation often benefits members of the hoarding category, and the fact that it excludes others from opportunities suggests that it does not reduce poverty significantly. Instead, it aggravates poverty in 2 ways: (a) by blocking access of more productive workers to the hoarded niches and (b) by locking into the enclave, members of the population who hoard the opportunities, and could actually be more productive and gain more outside the niche (Durlauf, 2011; Hoff & Sen, 2006).

Both exploitation and opportunity hoarding exclude members of subordinate categories from benefiting from the resource. This implies that exclusion usually produces categorical boundaries between us and them (Roche, 2009; Tilly, 2018).

To enhance exit from poverty therefore, there is need reduce exclusion by putting in place mechanisms that discourage the exploitation, opportunity hoarding. Social exclusion matters because it denies some people the same rights and opportunities that are afforded to others in their society. Simply because of who they are, certain groups cannot fulfill their potential, nor can they participate equally in society. A significant number of people in the world experience discrimination on the basis of their ethnic, linguistic or religious identities alone.

We apply the theories on political underpinnings on poverty to attempt to answer the question that we grapple with in this thesis, whether a rational economic planner would allocate resources the same way if he were just paying attention to differences in underlying marginal productivity? We derive adequate explanations of the existential inequalities in Kenya from these theories. Applying the simple queuing theory for instance suggests that an individual's position in the queue is allocated is based on marginal productivity, and not ethnicity. In that case, queuing theory is consistent with either. The key issue is whether there is any reason to believe that there are underlying differences in marginal productivity to begin with. The argument is that there is no a priori reason to expect productivity differences based on ethnicity. To the extent that they arise, they are likely to have been generated by some prior intervention that produces those group level differences, for instance, the colonial history; geographic location, or any other relevant productivity differences generating factors. Thereafter, those productivity differences become self-perpetuating at the group level, but they are born from an original allocation decision that generated productivity differences at the group level. Therefore, an economic planner can perpetuate inequality based on marginal productivity differences rather than ethnicity, but the underlying cause of the inequality comes from that initial discrimination.

A typical case is the South African context – under apartheid regime, where the white and black South Africans had different labour market opportunities. Black people were excluded (Gradín, 2013) (Beck & Terreblanche, 2004). This in turn had knock on effects for investment in education (Van der Berg, 2002a; Zizzamia et al., 2019a). In the later generations, labour market restrictions were removed, but we still see labour market outcomes look different for Black and white based on educational attainment. By all means, the removal of labour market restrictions in the post-apartheid does not mean we should not do anything to close the gap – do we argue that because Black people have lower education than white, they must keep lower wages? Certainly not! We recognize that the lower education levels are themselves a product of history, and so ongoing intervention is needed. In the Kenyan case, even if a rational economic planner were to allocate resources based on marginal productivity, that would mean they would be ignoring the historical origin of the productivity difference, and not have any intention of closing resource gaps that correlate with ethnicity.

1.3 Some Empirical Evidence of Political Patronage

The argument that African leaders target state resources towards a favoured ethnic group or regional groups has been long overdue. It has been argued that Kenyan presidents have over time distribute public resources to certain regions to "buy" their support in order to enable them maintain power (Dyzenhaus, 2021). Literature provides that Kenyan politicians have often used instruments such as public goods-roads, water, electricity, public service jobs, and land as a means to persuade certain ethnic groups/regions to support them (Burges, et al, 2011, Simson, 2018, Dyzenhaus, 2021). A politician may favour an ethnic group by placing schools, roads or factories in its geographic locality, but the benefits of said resource may be competitively allocated among all residents (Simson, 2018).

Several recent papers have examined whether coethnics of past or present presidents in Africa have received a disproportionate share of public goods and services, be it education, health care or roads, and many find that indeed they do. Studies of African politics (Franck & Reiner, 2012; Brass et al., 2020; Burgess et al., 2015; Kasara, 2007; Kramon & Posner, 2016; Mason et al., 2017) test whether leaders distribute goods either to ensure the support of 'core' voters or to win the support of 'swing' or unaligned voters (Dixit & Londregan, 1998a, 2006). A politician may favour an ethnic group by placing schools, roads or factories in its geographic locality, but the benefits of said resource may be competitively allocated among all residents.

The patterns of clentelistic distribution of public resources hold in different contexts with different goods, like educational benefits, government jobs and roads. While literature shows that the use of land as a patronage good is especially affected by competition dynamics, other resources may not, and politicians may stop using land as a clientelistic resource and turn to other resources to distribute goods (Andrew Harris & Posner, 2019). In public sector employment for instance, the existing literature makes a range of predictions about public sector hiring imperatives in postcolonial Africa and the resulting employment inequalities. Class-based literature assumes that those groups with an income and educational advantage will hold a disproportionate share of public sector jobs. Where economic and ethnic cleavages overlap, this may exacerbate inter-ethnic inequalities (Simson, 2018a). Clientelist theories instead views public sector jobs as rewards given to individuals or groups in exchange for overt political favours. The ethnic favouritism literature predicts that politicians will favour their own regions or groups, resulting in higher public employment shares among coethnics of the president (Ennser-Jedenastik, 2014a). Others have argued that multi-ethnic societies will seek to prevent accusations of capture by dividing the cake into

equal shares between regions or groups (Ennser-Jedenastik, 2014b). These equal shares could be achieved through patronage (where leaders of each group are given control of a share of the spoils), or through formal rules and quotas.

The Kenyan government has conducted an audit into ethnic equity in state employment. The National Cohesion and Integration Commission has undertaken a series of ethnic audits of public sector institutions (parastatals and commissions) to ascertain whether jobs are distributed fairly amongst the ethnic groups. It similarly found that the ethnic groups of past or present presidents are overrepresented relative to their population share (NCIC, 2016a, 2016c).

Accounts of clientelistic politics that see developing societies as serving the needs of these patron-client networks rely on a Weberian dichotomy between bureaucratic and patrimonial states (Rothchild, 1969). Yet new studies acknowledge that the relationship between politicians and voters is more complicated than this dichotomy. Harris & Posner, (2019)for instance, find little evidence that politicians divert resources for quid pro quo political gain, that voters respond positively to general rather than targeted goods provision. Moreover, Simson, (2018a)find that cabinet positions and educational resources are determined by historical trends of geographic resource distribution more than they are determined by contemporary political demands.

But under what conditions do policy makers pursue development and policy and under what conditions do they pursue more clientelistic goals? And what channels/instruments do they use to influence these outcomes? Harris and Posner's (2019) claim that clientelism is less of a factor in the allocation of goods in Kenya. They find that the clientelistic allocation of resources is conditioned by local, spatial factors that make it easier to direct resources to supporters. Like democratic politics, strong local elites provide a check on a government within a specific region. The absence of local rivals makes it easier for the government to invest in its own direct clientelistic control of supporters. In a nationalized political arena, politicians will be more able to allocate clientelistic resources because they have direct access to populations. When access is mediated by competition with a more local authority or broker, the government is less able to undertake purely clientelistic projects (Weitz-Shapiro, 2012), and, by default, will be more likely undertake projects with more neutral outcomes. But when there is tight national control over an area, then patronage can flourish more easily (Boone & Simson, 2009b). Dyzenhaus, (2021)however

asserts that local authority itself may be – and often is – clientelistic in its distribution of resources. Local elites are very capable and even prone to capture resources directed down from the national level.

A handful of literature have also found that some other supposedly clientelistic goods are less clientelistic than they seem. For instance, cabinet position and bureaucratic appointments may follow a path-dependent logic of educational attainment (Simson, 2016a; Simson & Green, 2020)and colonial investments in education (Ricart-Huguet et al., 2020)rather than a clientelistic logic. Others have found other strategic logics of control to local level bureaucratic appointments that move beyond mere ethnic patronage politics (Hassan & O'Mealia, 2020). Others have argued that development resources are allocated in a more needs-based manner than via political favoritism (Harris & Posner, 2019). Finally, some have argued that electrification projects that target voters can have drastically different strategies across governments (Briggs, 2021) and that they are often mediated by the concerns of local bureaucrats (Brass et al., 2020). Thus, clientelism is more often mediated by local organizations than the literature tends to assume (Thachil 2011; Garay et al, 2020). Rather, governments have adopted more hybrid approaches to accommodate local and national concerns; blending the pursuit of 'formal' policy through development with 'informal' practices through patronage driven distribution (Cheeseman & Ford, 2007) across space and time to accommodate local and national concerns (Brass et al., 2020). Further, the decision to pursue different strategies emerges from the type of political competition and the interests of a regime (Dyzenhaus, 2021b).

Dyzenhaus further argues that competition functions differently under authoritarianism and democracy. Under exclusive authoritarian rule, competition constitutes a regime which in turn raises a ruler's incentive to undertake clientelistic practices because such threats shorten time horizons. Thus, politicians a threat will be more likely to use resources to further their own survival rather than engage in long-term development, as time horizons have an impact on how a regime thinks about investment, Short time horizons may lead to nearsighted policies that emphasize investment in patrimonial networks, while longer time horizons could lead to longer term investment in development and policy. When an authoritarian leader faces a challenge, either after a coup threat, succession, or challenge, patronage may rise. In contrast, competition under democracy does not produce an existential threat. As Arriola, (2009) shows, expanding patronage is a more effective way for authoritarian African rulers to fend off challenges to their rule compared to pursuing economic development, but democratic governments do so to a lesser degree.

Clientelism in Africa has mostly been thought to be organised along ethnic lines, as ethnicity provides the trust and social sanctioning mechanisms that enable the exchange (Kitschelt & Wilkinson, 2007a). Ethnic leaders will use state resources to reward trusted members of their own ethnic groups who will in turn share resources with coethnics further down the chain, creating cascading, ethnically based patron-client networks (Kimenyi, 2006a). Clientelism is expected to lead to a public service staffed by people ill-suited for their official responsibilities and skewed towards politically influential individuals or groups, be it ethnic or otherwise (Simson, 2016a, 2018a).

A related literature considers ethnic favouritism. Although this literature often employs the term patronage, many use the concept in a loose sense to describe the targeting of state resources towards favoured ethnic, religious or regional groups, but without necessarily requiring that the patron targets specific individuals, monitors compliance or sanctions misbehaviour. Ethnic favouritism needs therefore not be antithetical to merit. A politician may favour an ethnic group by placing schools, roads or factories in its geographic locality, but the benefits of said resource may be competitively allocated among all residents (Kitschelt & Wilkinson, 2007b).

In contrast to the expectation that leaders will reward their own supporters, others have suggested that precisely because of the explosive nature of ethnic and regional inequalities, multi-ethnic societies sometimes go to greater lengths than others to promote horizontal equity in access to state resources. (Azam, (2001)has argued that to reduce the risk of active conflict, leaders in Africa can either deter potential rebels by investing in their security services or co-opt dissenters by redistributing to them. In his models this redistribution is mediated through the education system and public sector employment. Similarly, (Francois et al., 2015) studied the ethnic composition of cabinets in Africa and found them to be surprisingly inclusive, with ministerial appointments allocated in proportion to the ethnic composition of the population. They interpret this as a strategy to stave off coups or revolutions and suggest that the members of these ethnically inclusive cabinets will use the ministries over which they preside to extend flows of patronage to their respective ethnic groups. This may ensure a relatively equitable ethnic distribution of spending and employment in aggregate.

Kenya, for instance, introduced a district quota system in its national secondary schools in the 1980s and began requiring provincial secondary schools to admit most of its candidates from the local area, thereby limiting competition in underperforming areas from students outside the locality (Mwaniki, 2014).

Kenyan teacher training colleges also used district quotas, which lowered the bar for students from historically underserved regions. Most recently, in the post 2020 constitutional dispensation, the Kenya government has institutionalized the equalization fund as an affirmative action to boost the economies of counties, that have been left behind on the development front. Moreover, in Kenya the official grade-point cut-offs for government-sponsored university and college courses are lower for women, minority and marginalised groups and disabled applicants. In 2008 Kenya adopted the National Cohesion and Integration Act, which requires that 'all public establishments seek to represent the diversity of the people of Kenya,' and prohibits public establishments from hiring more than 30 percent of their employees from a single ethnic community (Finch, Christopher; Omolo, 2015a).

Whilst the marginal returns on investment principle, public policy seems plausible for allocation of public resources spatially, often public policy has been manipulated to favour presidents' coethnics as has already been established in the literature. It is hard, for example, to imagine that only certain regions would be productive and attract all forms of investment; schools, hospitals, industries and roads, just to mention but a few. Even counties that are equally viable on these fronts, with equal productivity, seem to have been left behind, in the post-colonial era (Githongo, 2006b).

Education for instance might be one place to look. All kids deserve education – if anything, that should mean under resourced areas get more education investment, since the rate of return would be higher. A similar argument probably would hold for roads. Moreover, productivity is not just an economic return but also a social return – being able to get to and from work opportunities arguably matters just as much for people in more remote areas.

In addition, the premise that a rational planner would distribute resources based on marginal returns may not hold as they are not immune to political considerations. Behavioural economics tells us that people are not always rational and can be influenced by cognitive biases, emotions, and social influences which makes it very difficult to insulate ourselves from these sorts of considerations, such that even our evaluation of marginal rates of return may not be objective – what we count, and how we weigh costs and benefits is not immune to our own group identity, location, experience for instance. A central and transformative agenda 2030 is the principle to 'leave no one behind' (LNOB), which not only compels us to transform the lives of those who are furthest behind but also fight the discrimination and the root causes of inequality. This thesis explores political patronage as one of the potential drivers of inequality.

1.4 Overview of the Different Regimes and associated exclusions

It is not only the possession of power that matters for wellbeing outcomes. There are lots of prevailing factors, both economic and political, that characterize each of the political regimes. Based on the conceptual framework above, we explore the political and the economic climate that underlie each political regime, beginning from the post-independence regime in 1963 through to the current regime, instituted in 2013.

1.4.1 Jomo Kenyatta Regime: The Post-Independence Regime

Kenya's first President after gaining independence in 1963 was President Jomo Kenyatta (Hornsby, 2013) who hailed from the Kikuyu tribe and was deputized by a Vice President from the Luo tribe. After a fallout between President Kenyatta and his Vice President, Kenyatta appointed a new Vice President, Moi, from the Kalenjin tribe from 1966 to 1978. Therefore, from political power possession, the dominant tribes under the Kenyatta regime were Kikuyu and the Kalenjin. Kenyatta regime was fairly marked by modest growth resulting from massive public investment, improved smallholder agriculture, and private industrial investment incentives (Spencer, 1976). Gross Domestic Product (GDP) grew at an annual average rate of 6.6% between 1963-1973, and at an average rate of 7.2% in the mid-1970s. The key driver of the impressive economic growth over this period was mainly agriculture Agricultural production grew by 4.7% annually during the same period, stimulated by land (estates) redistribution, crop diversification, and opening new lands for agricultural production (Swainson, 1978). Between 1974-1979, GDP grew at an average of 5.2% per annum.

Politically, the Jomo Kenyatta regime was marred by allegations of flourishing ethnic politics (Hornsby, 2013). This is partly evident in his appointments in cabinet positions. In the country with over forty tribes, the Kikuyu tribe scooped more than one third of the ministerial positions as can be seen in Table 1.1 below.

Table 1.1 Ethnic Composition by Percentage of Cabinet Positions in the Kenyatta Regime

Ethnicity	1963	1964	1966	1967	1968	1969	1971	1974	1978
Kikuyu	38	32	32	29	40	33	37	47	33
Luo	25	21	14	14	15	10	11	13	10
Luhya	6	5	9	10	5	10	11	0	10
Kamba	6	11	5	10	10	10	11	7	10
Kalenjin	0	5	5	5	5	10	5	7	5
Meru	6	5	5	5	5	5	5	7	5
Embu	0	0	5	0	0	5	5	7	5
Kisii	6	5	9	10	5	5	11	0	10
Giriama	0	0	5	10	10	5	5	0	5
Taita	0	5	5	0	0	5	0	7	5
Maasai	0	5	5	0	0	0	0	7	5
Others	13	5	5	10	5	5	0	0	0
Total	100	100	100	100	100	100	100	100	100

Source: (KHRC, 2018)

The first administration's cabinet appointments as shown in table 1.1 was dominated by the Kikuyu community (President's coethnics). Although three other major ethnic groups were represented in the ministerial appointments, the Kikuyu ethnic group claimed almost 40 percent of the cabinet positions. Jomo Kenyatta ruled for 15 years.

1.4.2 Moi Regime: The Second Regime

Following the death of Jomo Kenyatta in 1978, President Moi, who was his Kalenjin deputy then took over the leadership. Moi ruled for 24 years, between 1979-2002, This regime was marked by the worst economic performance since independence (Zeleza, 1991). Despite experiencing high growth rates during the 1960s and 1970s, Kenya's economic performance during the 1980s and 1990s was on declining trajectory, falling far below its potential. The GDP growth rates averaged 4.1% and 2.5% annually in the periods 1980–1989 and 1990–1995 periods respectively. Over the 5 years period; 1997–2001, the economy grew at an annual rate of 1.5% (Mohajan, 2013).

The government had adopted an import substitution policy (replacing foreign imports with domestic production) as a means to reduce its over-reliance on the foreign economy. This was supposed to be achieved by encouraging local production of industrialized products (Swainson, 1978; Zeleza, 1991). The

import substitution policy failed to industrialize Kenya (Bank, 1985; Swainson, 1978; Zeleza, 1991). This mainly was due to perceived government intrusion into the private sector affairs which consequently reduced the competitiveness of the manufacturing sector. Ultimately, both foreign and domestic investments reduced significantly (Bank, 1985). This was worsened by the rise in oil price and commodity prices in the late 1970s (Gerhart, 1997).

In the late 1980s, the early years of the Moi regime, the country experienced a decline in the GDP rate averaging an annual rate of 4.1%, with low economic and employment growth and a decline in productivity (Coughlin, 1985). The growth rate went further down to 2.5% in the 1990s. Agricultural production declined annually by 3.9%, inflation rate hit 100%, alongside huge budget deficit (Tiyambe, 1989). Part of the decline in growth was also occasioned by adverse weather conditions, unproductive agricultural lands, and poor industrial policies exacerbated by adverse foreign trade policies and governance weaknesses (Swainson, 1978).

In 1991, the multilateral financial institutions; the World Bank and International Monetary Fund (IMF) suspended their foreign grants to Kenya following the country's dismal performance (Gerhart, 1997; Tiyambe, 1989). Moi's government then institutionalized governance reforms, including the establishment of the anti-corruption body (the Kenya Anti-Corruption Authority) in 1997 to curb graft, and measures to improve the transparency of government procurement. Additional reforms included trade openness and abolition of trade (import) tariffs, eliminating foreign exchange controls and price controls, and reducing the wage bill by reducing the number of civil servants. In response, the IMF channeled funds amounting to $150 million to the Poverty Reduction and Growth Facility, while the World Bank granted $157 million as an Economic and Public Sector Reform credit. These were conditional loans aimed to restore the economy to a sustainable growth path.

Some gains were realized by these reforms in the short term. From 1994 to 1996, Kenya's real GDP growth rate averaged over 4% a year, but went down again in the last term of Moi's reign; 1997-2002, to an annual rate of 1.5% (Kimenyi et al., 2016). The decline in growth over this period has been attributed to further strained relations between the government and the financial institutions. The Kenyan government had failed to meet the governance reforms as was outlined by the IMF. Consequently, the IMF suspended the aid programs for Kenya for over half of Moi's last term in office (three years). The World Bank also suspended the structural adjustment credit Programme to Kenya over the period (Gerhart,

1997). The economy thus reverted to a period of slowing and/or stagnant growth (Karanja, 2017). Kenya's debt rose above the sustainable level, measured as a ratio of GDP or government revenue. In 2002, the last year of President Moi's administration, Kenya' s public debt averaged 80% of GDP. In the last decade of Moi's regime, the government was spending over 90% of all its revenue on wages and to service external debts (recurrent expenditure) (Mohajan, 2013).

In the labor market, just like his predecessor, Moi rewarded loyalty and political support with public appointments (KHRC, 2018). It is alleged that he routinely punished dissent with dismissals from appointments in public corporations. Although Moi played mixed politics in his first years of ruling, incorporating other ethnic groups, especially the Kikuyu in the ministerial positions, Moi's cabinet was dominated by ministers from the Kalenjin community, although this was not all that widespread. This is presented in table 1.2. As can be observed, while in the Kenyatta regime, the Kalenjin were marginally represented, the number of Kalenjin ministers increased two-fold when they had a co-ethnic president (in the Moi regime). The proportion of Kikuyu ministers on the other hand declined marginally from 30% in 1979, down to 25% in 1984 and 4% in 2001. As noted by (wa Gĩthĩnji, 2015), a change in ethnopolitical power may alter the chances of the president's co-ethnics being recruited into the desired sectors. Moi ruled successively for 24 years till 2002.

Table 1.2 Ethnic Composition by Percentage of Cabinet Ministers in the Moi Regime

Ethnicity	**1978**	**1979**	**1982**	**1985**	**1987**	**1994**	**1998**	**2001**
Kikuyu	27	31	26	20	14	4	4	4
Luhya	9	12	11	8	11	17	19	14
Luo	14	12	11	16	18	4	0	7
Kalenjin/Maasai	14	12	11	12	7	17	22	18
Kamba	9	8	7	8	11	17	15	14
Kisii	9	4	4	4	7	8	7	7
Meru/Embu	9	8	4	4	4	8	4	4
Mijikenda/Taita	9	8	7	8	7	8	7	7
Other	0	8	19	20	21	17	22	25
Total	100	100	100	100	100	100	100	100

Source: (KHRC, 2018)

1.4.3 Kibaki Regime: The Third Regime

When President Moi retired in 2002, the baton of leadership was passed to president (Mwai Kibaki), who was of the Kikuyu ethnic descent. President Kibaki ruled for ten years; first 5-year term until 2007, followed by a second term till 2013. Between 2003 and 2008, under the administration of President Mwai Kibaki, economic growth improved. This is also the regime when Kenya witnessed the highest growth ever; the debt-to-GDP ratio was at its lowest, inflation was relatively low, 20% and other macroeconomic fundamentals were also strong (Mohajan, 2013). The increase in inflation being linked to large government expenditures, expansionary monetary policy, and negative domestic food supply shocks.

As soon as Kibaki assumed power in 2003, the government established the National Debt Management Department to manage the debt levels that had peaked in the previous regime and reformed the revenue collection body to realize an increase in revenue. In a span of three years between 2003-2005, Kenya's debt levels had come down to only about 27%, from 80% as of 2002, expressed as a ratio of GDP. The financial sector also improved greatly; Kenyan banks were among the largest banks in East Africa. Cooperation between the financial institutions; the IMF and the World bank, was also renewed. With the ambitious economic programmes rolled out in this regime, the economy recovered. Economic growth improved from less than 3% in 2003 to 7% in 2007.

This momentum however was not sustained. The economic growth slowed down following the effects of the 2007 post-election violence, compounded by long drought and the global financial crisis in 2008 (Mohajan, 2013). As of 2008, Kenya's GDP growth rate was less than 2%. In 2009, Kenya benefited from the Exogenous Shock Facility (ESF) from the IMF, a credit facility designed to provide policy and financial support to emerging economies facing temporary exogenous. By the end of Kibaki's administration, Kenya's debt levels had risen. The debt-to-GDP ratio increased from 27% in 2007, to 40% in 2009 and to 54% by 2012. There were aspersions that these debt ratios were not sustainable against the small revenue generation. The economy registered a 2.8%, 4,.3% and 5.8% growth rates in 2003, 2004 and 2005 respectively. Kenya experiences a satisfactory growth rate of 4.3% in 2011, which is higher than Kenya's long-term growth rate of 3.7%.

In terms of cabinet composition, the first two years of Kibaki's term (2003-2004), there was a fair ethnic representation in the cabinet appointments, largely because the political power that saw him ascend to power was a coalition of ethno-regional parties (KHRC, 2018). Post 2005 however, Kibaki's

administration was dominated by his Mt. Kenya co-ethnics, the Kikuyu. His reelection for the second term in 2007 was conspicuously marred by post-election violence that saw many people displaced internally (IDPs), destruction of property and loss of lives (*Ethnic Coalitions of Convenience and Commitment : Political Parties and Party Systems in Kenya Sebastian Elischer*, 2008; Kagwanja, 2009; Kanyinga, 2009a). The disputed presidential election led to formation of the grand coalition government in 2008 (negotiated democracy); which saw the country through a regime led by the president and the prime minister with "equal" allocative powers. We present the cabinet ethnic composition and permanent secretary appointments in the Kibaki regime. Some ethnic groups: the Kikuyu and the Luhya had cabinet position shares higher than their population shares, which supports the view that there were ethnic imbalances in the public sector appointments, but not exclusively to benefit the incumbent president's coethnics. We present the cabinet shares of ethnic groups under Kibaki regime in Table 1.3.

Table 1.3 Ethnic Composition by Percentage of Cabinet Positions in the Kibaki Regime

Year	2003	2005		
Tribe	Pop share	Cabinet positions	Cabinet positions	Permanent secretaries
Kikuyu	17.2	21	19	28
Luhya	14.2	21	23	4
Luo	10.8	21	3	12
Kalenjin	13.3	5	6	8
Kamba	10.4	16	13	12
Maasai	2.2	0	6	4
Meru	4.4	5	6	4
Embu	0.9	0	6	4
coastal	5.2	11	10	4
Somali	6.4	0	6	4

Source: (KHRC, 2018)

Notably, in the early Kibaki government, more communities that initially had been left out in the previous regime were represented. For example, in the cabinet positions, the Kikuyu as so many others like the Luhya, the Luo, the Kamba, and the Coastal communities now claimed more slots. Conspicuously, the Kalenjin tribe (president's coethnics in the Moi regime previously) were now less represented; their population share was 13.3, yet they only claimed 5% of cabinet positions.

With the growing dissent of political and economic exclusion, several pieces of legislation were institutionalized to help redress Kenya's longstanding challenges to achieving equity and inclusivity: the New Constitution 2010, with a hallmark of da evolved system of governance where there is full ownership of economic and political power at regional levels; the National Cohesion and Integration Commission (NCIC) The Truth, Justice and Reconciliation Commission (TJRC) to address the historical injustices against the marginalized communities (NCIC, 2013a).

1.4.4 The Uhuru Regime: The Current Regime

The 2013 General Election saw the country's largest ethnic group, the Kikuyu, produce yet another president, deputized by a Kalenjin vice president, who was reelected in the 2017 General Election, in a country with over 40 ethnic groups.

In the period between 2013 and 2018 under the leadership of President Uhuru Kenyatta, Kenya's GDP growth averaged above 5% (Karanja, 2017; The World Bank, 2015). Growth in small businesses was also witnessed, some of which is credited to the improvement in the GDP growth. Despite this robust growth, there are still concerns about Kenya's macroeconomic indicators: debt sustainability, current account deficit, fiscal consolidation, and revenue generation and growth. In 2019, Kenya's debt had hit 51% as a ratio of GDP, rising further to 65% GDP ratio as of 2021 (Kemboi, 2020; Tiyambe, 2021).

Despite the soaring debt levels, the economy under the reign of Uhuru Kenyatta has been relatively modest. As of September 2018, economic prospects were positive with above 6% GDP growth expected. The regime has also been marked by expansions in the telecommunications, transport and construction sectors, and a recovery in the agriculture sector (Kimenyi et al., 2016). There has been growth in the pool of highly educated labor force that are techno savvy.

Uhuru regime, just like the former regimes, is reported to be the most unequal government (KHRC, 2018). As shown in Table 1.4, two ethnicities; the Kikuyu (president) and Kalenjin (vice president) jointly constituted half of the cabinet positions, leaving 50% to be shared amongst other 40 tribes. While the Kalenjin community only account for 13.3% of the country's population share, their composition in the cabinet is 25%, almost double their population share.

Table 1.4 Ethnic Composition by Percentage of Cabinet Positions in the Uhuru Regime

Ethnicity	Population Share	Ethnic Share
Kikuyu	17.7	25
Luhya	14.2	5
Kalenjin	13.3	25
Luo	10.8	5
Kamba	10.4	5
Somali	6.4	15
Coastal	5.2	5
Meru	4.4	5
Maasai	2.2	5
Embu	0.9	0

Source: (KHRC, 2018)

Perceptions of ethnic imbalances, especially in the public sector appointments remains rife to date. So pronounced was it that in the post-2010 constitutional dispensation, the government through the National Cohesion and Integration Commission commissioned an ethnic audit of the public service in 2016. We show the representation of the Civil Service in Table 1.5.

Table 1.5 Ethnic Representation in the Civil service, NCIC 2016

Ethnic Group	Population Share	% In the civil service	Variance
Kikuyu	17.7	22.3	4.6
Kalenjin	13.3	16.7	3.4
Luhya	14.2	11.3	-2.9
Kamba	10.4	9.7	-0.7
Luo	10.8	9	-1.8
Kisii	5.9	6.8	0.9
Meru	4.4	5.9	1.5
Mijikenda	5.2	3.8	-1.4
Somali	6.4	2.7	-3.7
Embu	0.9	2	1.1
Maasai	2.2	1.5	-0.7
Taita	0.7	1.5	0.8
Boran	0.4	1.2	0.8
Turkana	2.6	1	-1.6

Source: (NCIC, 2016d)

The audit shows that the Kalenjin and the Kikuyu (president's coethnics in different regimes) are over-represented in the public service. There are notable ethnic imbalances examined against their corresponding population shares. That is, the share of some ethnic groups' (Kikuyu, Kalenjin, Meru, Embu, Kisii) of the public service is more than their share of the total population, hence they are more represented in a disproportionate manner. For instance, the Kikuyu tribe constitute about 18% of the country's population, while they command about 22% of the civil service position, which gives a positive variance of about 4.6%. This although is not such a large variance indicating that coethnic bias in the public sector might be very significant. Cumulatively, the Kikuyu and Kalenjin ethnic communities together control 40% of public service jobs.

Although the audit shows that the distribution of public service jobs in the parastatals and commissions headship does not breach the provisions of the 2010 Constitution which requires that all state organs must not be occupied by more than one third of a single ethnic group (Kanyinga, 2016a), a clear picture of this distribution is missing for the entire labour force which can be used to generalize the findings for the country as a whole. Kenya's five most populous ethnic groups (Kikuyu, Kalenjin, Luhya, Luo and Kamba) continue to dominate the top civil service jobs in a country of about 48 tribes, whereas some 15 tribes do not have a single representation in the top management in civil service (National Council for Law Reporting, 2010a).

These inequalities are even more pronounced in high-level appointments in senior government positions, such as the permanent secretaries, cabinet secretaries and army generals (NCIC, 2016b, 2016d). For illustration of the extent of inequality in other positions, we present the ethnic composition of leadership of all state parastatals in Table 1.6.

Table 1.6 Ethnic Composition of Parastatals in Kenya

Parastatal	Largest group	Pop. Share	CEO
Kenya Ordnance	Kalenjin	49.8	Kalenjin
Kenya Power and Lighting Company	Kikuyu	26.5	Kalenjin
National Travel and Safety Authority	Kikuyu	32.5	Maasai
Kenya Medical Research Institute	Kikuyu	26.8	Maasai
Kenya Airports Authority	Kikuyu	23.8	Kikuyu
Kenya Civil Aviation Authority	Kikuyu	27.3	Kikuyu
Kenya Revenue Authority	Kikuyu	30.7	Kikuyu
Kenya School of Governance	Kikuyu	39.1	Luhya
Kenya Institute of Curriculum Development	Kikuyu	38.9	Luo
Kenya Roads Authority	Kikuyu	34	Luo
Higher Education Loans Board	Kikuyu	21.1	Meru
Kenyatta National Hospital	Kikuyu	32.9	Kalenjin
Moi Teaching and Referral Hospital	Kalenjin	68.1	Kalenjin
Kenya Forest Service	Kikuyu	24	Kikuyu
Kenya Wildlife Service	Kikuyu	17.3	Kalenjin

Source: (NCIC, 2016d)

The audit results show that for most parastatals headed by a Kikuyu CEO, they have Kikuyu employees as the major ethnic group, or the Kalenjin. Similarly for most Kalenjin headed parastatals, the majority of the employees are either the Kalenjin or the Kikuyu. For instance, the Kenya Revenue Authority has a majority of employees of Kikuyu ethnic descent, constituting over 30% ethnic share, and the CEO is also a Kikuyu. In general, out of the 417 senior level management in ministries and departments, the Kikuyu community (president's co-ethnics) hold 120 of the 416 senior positions in government (about 30% share). They are closely followed by the Kalenjin tribe (Deputy president's co-ethnics). These proportions are even higher for high cadre jobs in ministries, embassies, missions, State agencies and parastatals (National Council for Law Reporting, 2010a). Other positions include head of Public Service, Cabinet Secretaries, and Chief Administrative Secretaries, principal secretaries, Principal Administrative Secretaries (PAS), Director General, CEOs, Ambassadorial positions /foreign missions, and heads of state departments. The comprehensive audit of the public service verified that in all post-independence administrations, the ethnic group to which the president of the time belonged, was over-represented in the public service (NCIC, 2013).

We have shown that there have been variations in the political regimes and the underlying political climate governing the country at each point in time. This variation enables us to test whether ownership (or the

loss) of political power-having a coethnic President- is associated with wellbeing outcomes. We undertake this analysis in three interrelated chapters in the thesis. A brief overview of each chapter in the thesis is discussed in the section that follows.

5.3 1.5 Overview of Each Chapter in the Thesis

The foregoing chapter (Chapter 1) provides historical background and evidence of the practice of ethnic majoritarianism and politics of exclusion as underpinnings of county poverty levels as well as skewed Kenyan labor market outcomes over time, while the second chapter presents the data and variables construction from three rounds of 10% census samples from the 1999, 2009 and 2019 censuses and a household survey, Kenya Integrated Household Budget Survey, 2016. This chapter pays special attention to the imputation of ethnic identity when explicit individual-level measures are absent. This discussion lays out the primary independent variable in the later analyses. Chapter 3 uses the data discussed in chapter 2 to motivate the MPI construction and usage and to describe spatial (at the county-level) variation in poverty across a number of indicators that track outcomes related to public goods. Chapter four attempts to deepen the institutional/governance mechanism discussed in chapter one, locating the source of these inequalities in politics. We apply more sophisticated statistical models to the county-level data and show how changes in coethnicity between citizens/counties and the president shapes county-level outcomes. In addition, the chapter aims to examine how this relationship changes post-2010, when the new constitution began coming into effect. Chapter five extends these bias-related concerns to a new arena – the general labor market – examining differences in labor market outcomes as a function of coethnicity before and after the new dispensation in 2010. Chapter 6 summarizes and concludes the study.

We discuss brief overview of each of the chapters below. The goal of chapter one is to provide historical background and evidence underpinning the broad contention of the thesis – "to identify evidence of the practice of ethnic majoritarianism and politics of exclusion as underpinnings of county poverty levels as well as skewed Kenyan labor market outcomes over time". It brings together a number of macro-political outcomes (e.g., civil service composition, political appointments, para-statal composition) from a number of sources (NCIC, KHRC) to establish a pattern of ethnic bias in the distribution of important political/bureaucratic positions across time in Kenya. We attempt to discuss the mechanisms that might link the political/bureaucratic appointments to the ultimate outcomes examined in later chapters. Specifically, the decisions of these bureaucrats might translate into more or fewer public goods, shaping

both poverty outcomes as well as labor market outcomes. This historical background is important because it establishes a behavioral baseline of the appointment of decision-makers and lower-level bureaucrats that is consistent with ethnic bias.

Chapter two provides information on the data used in the analysis and, crucially, how we measure ethnicity, the key independent variable in the thesis. In many countries, data on ethnic or racial identity is collected routinely, and used to identify ethno-racial inequalities in the population. Not so in Kenya, as government agencies (the KNBS in particular) regularly suppress ethnicity information in order to stymie precisely these kinds of comparisons. We use county of birth as an ethnic proxy (for the census data) and the community survey responses in the KIBHS, addressing common concerns. The low levels of geographic mobility in Kenya, provides a justification for the use of present-day county-level ethnic composition to categorize individuals ethnically. This approach follows common practice, and the mobility analysis adds a new justification for it. While this introduces some measurement error, it does so randomly and should not systematically distort any downstream estimates.

In chapter 3, the thesis expands prior discussions on ethno-spatial distributions of poverty to a much finer level of geographical disaggregation. Analysis of poverty at these lower levels of aggregation unmasks potential inequalities within regions, as opposed to the macro-level analysis (Shifa & Leibbrandt, 2017). Whereas the previous studies have mostly focused their discussions along provincial, rural-urban, and gender dimensions, and often used single cross-sectional data, this chapter assesses the distribution of multidimensional poverty at the county level. We characterize the trends and patterns of poverty over time. The study constructs a multidimensional poverty index comprising a set of variables that reflect the socioeconomic status (unobserved wealth). The construction of the multidimensional poverty index (MPI) follows the Global Multidimensional Poverty construction and decomposition techniques by (Alkire & Sumner, 2013a; Santos & Alkire, 2011).

Our analysis, using three datasets spanning the period between 1999-2019, shows that the gains in poverty reduction have been unequally shared across counties, and reveal disparities in resource distribution across Kenyan counties. Nairobi county and counties in Central Kenya and lower Eastern province seem to have disproportionate shares of the country's resources relative to their population shares. These counties have consistently exhibited the lowest poverty levels and/or are among the most improved in

poverty reduction over time. In contrast, counties in Western and Nyanza provinces have remained moderately poor, whilst the Northern Frontier counties seem trapped in poverty.

An apparent pattern emerges from the poverty distribution. Regions where the Kikuyu tribe are the majority, or the second major tribe in terms of population share (Nairobi, Central part of Kenya and the lower Eastern) consistently exhibit the lowest poverty levels and/or are among the most improved in poverty reduction over time. While the majority of the inhabitants of the Western part of Kenya (the Luo and the Luhya tribes) have remained moderately poor, the Northern Frontier Districts are "trapped" in poverty (mostly the Kenyan Somali). Literature has shown that regions perceived to be presidential strongholds, that is, home to a majority of citizens who are Presidential co-ethnics, and neighbouring communities have benefited from proximity to the ruling class, through targeted investments (Burgess et al., 2011, 2015a; Posner & Kramon, 2011).

Having laid the groundwork by mapping out the trends and distribution of poverty outcomes across counties, in chapter 4, we examine the extent to which these observed patterns could have been shaped by discriminatory distributive politics depending on the tribal characteristics of governments. The assumption here is that patronage flows indirectly along the spatial channel to benefit the president's backyard, and regions that supported the president to ascend to power. We decompose the county poverty gaps into their constituent parts that is explained by the relevant factors and portion that remain unexplained. This gives an indication of the potential existence of favoritism.

Since (Kramon & Posner, 2013) underscore that conclusions on distributive politics drawn from empirics on the pattern of distribution of a single patronage good - for example, cash transfers, roads, education spending, electrification, or targeted grants - can be misleading as governments may favor constituencies through the targeting of multiple public and private goods, this thesis considers multidimensional poverty outcomes, as opposed to each good separately.

In contrast with previous studies, the analysis of poverty in this section incorporates a dynamic perspective into the study by pooling comparable independent cross-sections. In the literature on poverty traps, poverty is not static but rather a dynamic phenomenon, experienced over time, rather than at a point in time. People move into and out of poverty over time, remain trapped in poverty or manage to stay rich. Doing poverty analyses using individual cross-sectional data allows us to only get an indication of the extent of the depth and severity of poverty at a single point in time, and thus is limited in understanding

the nature and determinants of persistent poverty (Zizzamia et al., 2019b). By observing the same counties over multiple time periods, we can quantify the extent to which experience of poverty is sustained in specific regions over time, as opposed to a short-lived state, as well as an indication of the transmission channels through which poverty persists.

In Chapter 4, we estimate the relationship between having a coethnic president and county poverty levels. Our findings show that possession of political power is key for county poverty outcomes. After controlling as far as is possible given available data constraints for all the relevant county characteristics, including climate, ethnic diversity level, population density and other economic factors, the association of ethnicity and poverty remains definitive. The decomposition of the poverty gap over time shows a significant gap that cannot convincingly be attributed to differences in economic endowments. Oaxaca-Blinder decomposition reveals that 47% of the county poverty gap remains unexplained, even after considering the differences in the potential observed factors (proportion of working age population, average education level-at the county level, extent of urbanization, average household size, the colonial legacy status, climatic factors, economic location of the county, extent of ethnic diversity, proportion of people working for pay, among other factors) associated with poverty experience.

Besides investigating the existence of ethno-political favoritism in poverty levels, Chapter 4 also examines whether governance reforms, in the form of political and economic devolution has countered the political patronage legacies witnessed in the earlier regimes. Our findings suggest the existence of continued favoritism in resource distribution along the ethnic and county lines. Coethnicity with the president still plays a significant role in the extent of county poverty in the post devolution era. A higher share of President's coethnics in a county (county) is associated with a disproportionately higher share of publicly provided goods (education resources, electricity, piped water). Although it might be too early to comment on the effectiveness of devolution since Kenya is only at its initial stages, our findings suggests that devolution has not reduced the ethnic favoritism in county's material wellbeing as was the case in the centralized governance system.

Chapter 5 of the thesis estimates whether individuals enjoy any benefit in the labour market from being Presidential coethnics and/or having proximity to the ruling elite both at present and at the time of their first entry into the labour force. The public sector particularly has been a significant source of gainful employment in the post-independence Kenyan economy, providing more than half of formal employment

characterized by job security and tenure. Although ethnicity, akin to names, is a socially constructed phenomenon that, on its own, should not confer advantage to any individual, it has long been alleged that political clientelism plays a key role in the allocation of public sector jobs to reward influential individuals and ethnic groups (Hale, 2007; Kitschelt & Wilkinson, 2007c).

The perceptions of ethnic bias have been so strongly held, that the government of Kenya commissioned a series of public sector audits into ethnic equity and representation in state employment. The audits revealed that in almost all parastatals and public appointments, there was over-representation of particular ethnic groups, especially those that produced the president and the Vice Presidents (NCIC, 2016d). The biases were even more pronounced in high-level appointments in senior government positions, such as the ambassadors, cabinet ministers (secretaries) and army generals, among others. (Padró i Miquel, 2007) notes that in Kenya, ethnicity plays a salient role in access to education and positions in the bureaucracy and military. Similarly, (Holmquist & Githinji, 2009; wa Gĩthĩnji, 2015) reveal that being a member of a dominant group (in terms of population share and also political representation) is associated with participation in highly remunerated sectors, and this, in turn, is tied to political power.

We investigate whether sharing the same ethnicity as the President today, or indeed, sharing ethnicity with the incumbent President when one was first eligible to enter the labor force, matters for contemporaneous employment and earnings. In addition, we also explore whether the time for first entry into the labour market (pre-and-post (2010) constitutional dispensations) and coethnicity status at the time of entry matters for individual's current labour market fortunes. Our results reveal evidence of Kikuyu (coethnic) premia in wages and probability of employment in the entire labour force, the private sector, and the public sector. The employment premium is highest in the public sector, suggesting that favoritism has shifted to the private following anti-favoritism reforms implemented in the public sector in the current dispensation. We also find that the hourly wage differentials between the Kikuyu and non-Kikuyus is highest in the public sector. Thus, the Kikuyu who are already employed in the public service continue to earn significantly higher wages than non-Kikuyus in the same sector. Further results reveal that the time of entry into the labour market also matters for today's earnings and employment. For post devolution entrants, whereas in general they enjoy wage and employment premiums as opposed to their pre-devolution counterparts, the Kikuyu entrants in this period enjoy significantly higher employment likelihood both in the private sector and the public sector. As far as hourly wage is concerned, the Kikuyu post devolution entrants earn significantly higher wages in the public sector, but significantly lower in the

private sector. Thus, the regime of entry into the labour market and coethnicity status of entrants matter for today's labour market outcomes.

We find overarching evidence that coethnicity with the President both at present and when one entered the labour market is associated with higher employment probabilities and larger monthly earnings today. The implication of the labour market findings is that although in the past the efforts to reduce ethnic inequalities in the labour market has been on the public sector, it seems that there are deeply entrenched inequalities in the other sectors: self-employment, own account work, employment within the household and the non-formal sector more broadly. Other than direct recruitment into the formal sector, the previous political regimes have created an enabling environment for their own to conduct businesses and be engaged in gainful economic activities in other sectors.

In summary, the empirical analyses in this thesis use multiple data sets to map the process of ethnically based resource allocation over time in Kenya, from 1990s through to the present, and to highlight the political implications that this has had for disparities in wellbeing outcomes along both regional and ethnic dimensions. The thesis elucidates the pronounced tendencies of ethnic imbalances and their relationships with the political processes, with an aim to support policy formulation in redressing the longstanding challenges of poverty, equity, and inclusivity in Kenya. The findings drawn from the thesis vitally contributes to the ongoing attempts to undo the legacy of ethnopolitical favoritism, not just in Kenya, but in sub-Saharan Africa more broadly, where these kinds of issues are fairly widespread.

The introduction makes an important contribution in demonstrating the role of ethnic dominance (through favoritism of a co-ethnic president) in shaping the evolution of boththe level and inequality of wellbeing in a multiethnic community The rest of the thesis is organized as follows: We present a technical section on data description and measurement of key variables in all the datasets in chapter two. In chapter three, we characterize the patterns and trends in multidimensional poverty in Kenya. Chapter four extends this discussion by decomposing the and county poverty gap, ascertaining the role ethnicity plays in poverty levels and whether governance reforms through devolution has countered the legacies of political favoritism as witnessed in the previous regimes. Chapter five explores the relationship between coethnicity with the President and labour market outcomes. Finally, chapter six summarizes and concludes the study, highlighting the main findings and suggested policy implications and recommendations from the thesis.

Chapter 2 : Description of Data and Measurement of Variables

2.1 Introduction

This chapter provides an overview and description of the four nationally representative, independent cross-sectional datasets used throughout the thesis, namely: (1) Kenya Population and Housing Census (KPHC), 1999; (2) KPHC, 2009; KPHC 2019; and (3) Kenya Integrated Household Budget Survey (KIHBS), 2015/16. Whilst the three census datasets each provide a total count of the population, the KIHBS 2015/16 is a household survey dataset. These four datasets contain information on demography; fertility; education status; economic activities; mortality; housing conditions and amenities; and livestock and asset ownership among other variables.

Data collection for each of the datasets involved face-to-face interviews, with these being administered to each person in all households in the Census surveys, and sampled households in the KIHIBS, to collect individual level, household level, and community level information. The KIHBS 2015/16 had an additional separate community questionnaire which was used to gather specific community level information from the community representatives. Community questionnaire was administered through Focus Group Discussions (FGDs) comprising at least five knowledgeable community members who were selected with the assistance of the local administration in each cluster. This questionnaire was administered by supervisors and was used to collect information about the community in which the sampled households reside. Such information included community sociodemographic, basic physical infrastructure, access to and quality of public services, economic activities, agriculture, community welfare, security and safety. Comprehensive interview manuals were prepared to guide personnel during survey training and implementation.

For our analysis, we merge the individual and household level information (and in the case of KIHBS, the community level data too) to draw representative outcomes from the data at the county level. Although the 1999, 2009, and 2019 Censuses and the KIHBS (2015/16) have wellbeing indicators that are broadly consistent with each other, the fact that separate sets of cross-sectional survey data are being compared means that methodological differences could cloud the comparison of wellbeing measures over the time period in question (Fields, 2011). Therefore, estimations are undertaken at a cross-sectional level as opposed to longitudinally for cohorts. However, quantitative comparisons of well-being over time are useful only to the extent that the data being used to make the comparisons are actually comparable (Gradín, 2016). It is therefore important to clarify some of the issues in the datasets that could

confound such comparisons over time and explain how the measurement of key variables have been adjusted in order to make them consistent and as comparable as possible, even if the analysis is at a cross-sectional level.

Our analyses are restricted only to variables that are largely comparable across all three datasets. Notably, most of the questions on variables of interest in this thesis have been framed consistently across the surveys. Though coded differently, after cleaning, the variables are recoded to be as comparable as possible. Some of the issues, including measurement that might confound our results due to matters of comparability of the datasets are discussed in more detail below.

2.2 Sampling Methodology and Population Size of the Datasets

Beginning with the Kenya Population and Housing Censuses (KPHC) of 1999, this is a nationwide census, a total count of the population. The 1999 KPHC dataset contains a total of 2 737 561 individual observations from 625 411 households. This is information from every tenth household in the country. After weighting, the output derived from KPHC 1999 is representative of 27 375 610 individuals and 6 254 110 households, which was the country's population[2]. Similarly, the KPHC 2009 is a total count of the population and contains 867 201 households and 3 634 070 individuals, which is representative of a population of 36 634 070 individuals and 8 672 010 households countrywide[3]. Comparing the population size estimates across our four datasets, we estimate population to be 28.7 million in 1999, increasing by about 10 million in 2009 to 37.7 million, 45.4 million in 2016, and a total of 47.2 million individual observations from 2019 KPHC dataset. These estimates track closely with estimates released by the Kenya National Bureau of Statistics.

The KPHC 2019 estimates Kenya's population to be 47,564,296, signifying a 10 million increase from the 2009 population size, and is in line with the increasing population trend we observe in these four datasets.

[2] The household and individual weights are provided with the dataset. The weights are computed by the Kenya National Bureau of Statistics (KNBS)
[3] These estimates are for individuals with full information. We have gotten rid of missing observations and duplicates.

2.3 Sample Design and Selection for 201/16 KIHBS

The 2015/16 KIHBS was a population-based survey designed to provide estimates for various indicators representative at the national level, each of the 47 counties, and place of residence (rural and urban areas). The 2015/16 KIHBS sample was drawn from the fifth National Sample Survey and Evaluation Programme (NASSEP V) household sampling frame. This is the frame that the Bureau uses to conduct household-based surveys in Kenya. The frame consists of 5,360 clusters split into four equal sub-samples. The clusters in the frame were drawn from approximately 96,000 enumeration areas (EAs) of the 2009 Kenya Population and Housing Census. The frame is stratified into urban and rural areas within each of 47 counties resulting in 92 sampling strata with Nairobi city and Mombasa counties being wholly urban. The sample size was determined independently for each county, resulting in a national sample of 24,000 households. This sample was further distributed to the urban and rural strata as shown in Table 2.1.

The sampling for the survey was done in three stages. In the first stage, a total of 2,400 clusters (988 in urban and 1,412 in rural areas) were sampled from NASSEP V sampling frame while the second stage involved selection of 16 households from each of the clusters. The third stage involved the sub-sampling of 10 households (from the 16 households) for the main KIHBS with the remaining 6 earmarked for the Continuous Household Survey Programme (CHSP). Further, five households from each cluster were randomly selected among the 10 KIHBS households for the administration of diaries. To capture seasonality, the 2015/16 KIHBS sample was divided into four quarters (a consecutive 3-month period). Each of the 2,400 clusters were randomly assigned into a quarter to generate nationally representative quarterly samples of approximately 600 clusters that can be analyzed independently.

Table 2.1: Sample Allocation for 2015/16 KIHBS

County Code	County	Number of Clusters			Number of Households		
		Rural	Urban	Total	Rural	Urban	Total
1	Mombasa	0	52	52	0	520	520
2	Kwale	32	20	52	320	200	520
3	Kilifi	28	24	52	280	240	520
4	Tana River.....	32	16	48	320	160	480
5	Lamu.....	24	20	44	240	200	440
6	Taita/Taveta	32	16	48	320	160	480
7	Garissa	32	20	52	320	200	520

8	Wajir	28	20	48	280	200	480
9	Mandera	32	16	48	320	160	480
10	Marsabit	28	16	44	280	160	440
11	Isiolo	24	20	44	240	200	440
12	Meru	40	16	56	400	160	560
13	Tharaka-Nithi	32	16	48	320	160	480
14	Embu	32	16	48	320	160	480
15	Kitui.....	36	16	52	360	160	520
16	Machakos	24	28	52	240	280	520
17	Makueni	36	16	52	360	160	520
18	Nyandarua	32	16	48	320	160	480
19	Nyeri	32	20	52	320	200	520
20	Kirinyaga.....	32	20	52	320	200	520
21	Murang'a	36	16	52	360	160	520
22	Kiambu.....	24	34	58	240	340	580
23	Turkana	32	16	48	320	160	480
24	West Pokot	36	12	48	360	120	480
25	Samburu.....	28	16	44	280	160	440
26	Trans Nzoia	32	20	52	320	200	520
27	Uasin Gishu.....	28	26	54	280	260	540
28	Elgeyo / Marakwet.....	32	16	48	320	160	480
29	Nandi.....	36	16	52	360	160	520
30	Baringo	32	16	48	320	160	480
31	Laikipia	32	20	52	320	200	520
32	Nakuru	28	30	58	280	300	580
33	Narok.....	36	12	48	360	120	480
34	Kajiado	24	24	48	240	240	480
35	Kericho.....	28	24	52	280	240	520
36	Bomet	36	16	52	360	160	520
37	Kakamega	36	16	52	360	160	520
38	Vihiga	28	20	48	280	200	480
39	Bungoma.....	36	16	52	360	160	520
40	Busia.....	36	16	52	360	160	520
41	Siaya	32	20	52	320	200	520
42	Kisumu	24	30	54	240	300	540
43	Homa Bay	32	20	52	320	200	520
44	Migori.....	28	24	52	280	240	520
45	Kisii	36	20	56	360	200	560
46	Nyamira	36	16	52	360	160	520
47	Nairobi City.....	0	72	72	0	720	720

Source: KNBS, 2018.

2.4 Data Weighting for 2015/16 KIHBS

The weighting of the 2015/16 KIHBS was based on the selection probabilities in each domain. The design weights were adjusted using the survey response to give the final weights. This was necessitated by the survey data being not self-weighting since the sample allocation was not proportional to the size of the strata. Additionally, some of the sampled households did not respond to the interviews while others could not be accessed. The resulting data has therefore been weighted to be representative at the national level as well as at county level (KNBS, 2018).

The sampling weights W are calculated simply as the inverse of the product of these selection probabilities. The probability *(P)* of selecting a 2015/16 KIHBS household is the product of four factors:

$$P = \prod_{i=1}^{4} p_i$$

Where:

P_1 = the probability of selecting the EA for the NASSEP V master sample among all the EAs in the2009 Population and Housing Census;

P_2 = the probability of selecting the EA segment to form a cluster among all segments in the EA;

P_3 = the probability of selecting the cluster for the 2015/16 KIHBS, among all the clusters in the NASSEP V master sample; and

P_4 = the probability of selecting the household among all the households listed in the cluster.

In the process of weighting, the sample required adjustments to cater for non-proportional distribution of clusters and non-response to provide estimates that are representative to thetarget population. The cluster weights were computed as the product of sample cluster designweight, household and cluster response adjustment factors as follows:

$$W_{ij} = w_{ij} \frac{H_{ij}\, C_j}{h_{ij}\; c_j}$$

Where;

W_{ij} = overall final cluster weight for cluster i in stratum j;

w_{ij} = sample cluster design weight obtained from inverse of cluster selection probabilities for cluster i in stratum j;

H_{ij} = number of listed households in cluster i in stratum j;

h_{ij} = number of responding households in cluster i in stratum j;

C_j= number of clusters in stratum j; and

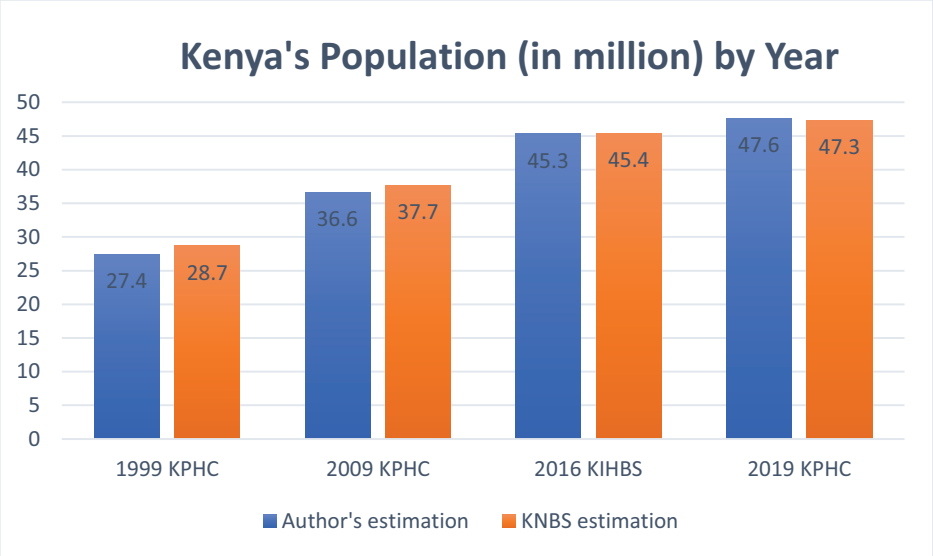
c_j = number of clusters selected from stratum j.

The weights were calibrated so that the aggregate matches the projected population (as at mid of 2016).

After adjusting for household weights, the derived output from KNBS represents a population size of 45,382,100 and 11,414,543 households. Our estimates approximate the KNBS figures very closely.

Figure 2.1 shows a comparison between our estimations and extract from the Kenya National Bureau of Statistics (KNBS) showing population trends in the successive national censuses and KIHIBS 2015/16.

Figure 2.1 Comparing Population Estimates by Year (1999-2019)



Source: Author's Calculation and Extracts from KNBS

2.4.1 Comparability of the Datasets

All the datasets used in this thesis have been designed to produce representative outputs in given domains and have wellbeing indicators that are broadly consistent with each other. In this section, we show that the data being used to make quantitative comparisons over time are actually comparable to a large degree. Any nuanced differences that arise should not be too much of an issue since most of our analysis is done using separate cross-sections from the respective datasets at specific points in time.

Table 2.1 presents the summary statistics for the selected variables available in all three datasets. Comparing the outcomes gives a sense of knowing whether the demographics have changed dramatically over time. The KPHC 1999, KPHC 2009, and KPHC 2019 asked every member of the household to provide information on their age, relationship to the household head, sex, nationality/tribe, religion, marital status, district of birth, district of residence in the previous year prior to the survey, when they moved to their current place of residence and finally, whether or not their parents were alive. Related information was sought from the KIHBS 2015/16 as well.

The summary results suggest populations of similar age structure and gender composition, and other demographics. The mean age of the population remains below 25 years old across all four datasets. The age group composition across all the age categories seems fairly stable. For instance, people aged between 19-35 years comprised 26% of the total population in 1999, 2009, 2016, and 2019. Similar consistency is seen in the other age categories. The gender composition remains relatively similar across the study period, with males comprising about half (50%) of the population in all three datasets over time. In terms of urbanization, the majority of Kenyans live in rural areas, with between 31-34% of Kenyans being recorded as living in urban areas in all three datasets.

Our results are consistent with the Kenya National Bureau of Statistics report of the 2019 Population and Census results which report that 75% of the population is under the age of 35. On the other end of the scale, the elderly population (65 years+) accounts for a mere 3.9 per cent of the total population. These statistics are close to the proportional age composition in the datasets considered in this study. For instance, adolescents (10-19 years) were 24.5 per cent in 2019 compared to 23.8 per cent in 2009. The youth population (18-34 years) constitute 29.0 per cent in 2019 compared to 28.7 per cent in 2009. The

population of working age (15-64 years) was 57.1 per cent in 2019 compared to 53.6% in 2009 according to the 2019 census report.

Table 2.2 Summary Statistics of constructed/selected variables[4]

Dimension/Indicator	**Means of Indicators**			
Year	**1999**	**2009**	**2016**	**2019**
	Mean	Mean	Mean	Mean
Average Age	21.51	22.00	23.59	23.74
% Under_5	15.00%	16.00%	11.00%	12.70%
% Children (5-18)	33.00%	35.00%	37.00%	35.59%
% Youth (19-35)	26.00%	26.00%	26.00%	28.50%
% Adults (36-64)	17.00%	18.00%	20.00%	19.33%
% Old Age (> 64)	3.00%	3.00%	4.00%	3.89%
Individual is Male	49.00%	50.00%	49.00%	49.35%
Residential Features				
Number of years lived in current residence	10.97	25.20	32.53	19.96
Individual has moved from their place of birth/residence	19.00%	26.00%	16.00%	17.44%
Individual lives in urban location	34.00%	31.00%	34.00%	30.87%
Education				
Primary school attendance rate	0.726	0.841	0.938	0.950
Secondary school attendance rate	0.633	0.777	0.862	0.930
School completion				
Primary school completion rate	0.202	0.248	0.330	0.58
Secondary school completion rate	0.108	0.228	0.255	0.373
Water and Sanitation				
Access to Flush Toilet	0.084	0.086	0.095	0.097
Access to Piped Water	0.264	0.253	0.298	0.341
Dwelling/Housing Conditions				
Modern Roofing Material	0.666	0.766	0.876	0.900
Modern Flooring Material	0.322	0.367	0.465	0.559
At most 2 people per sleeping room	0.651	0.616	0.621	0.884
Modern Walling Material	0.275	0.341	0.480	0.528
Access to amenities				
HH has Electricity connection	0.114	0.194	0.359	0.432
HH has access to Clean Cooking Fuel	0.154	0.130	0.166	0.330
Observations	2,785,595	3,624,780	92,122	4,716,067

[4] Employment Statistics are described in detail in the employment chapter of the Thesis, Chapter Five.

Source: Own Estimations from 1999 KPHC, 2009 KPHC; KPHC 2019 & 2016 KIHBS.

In general, the variables derived from the four datasets used in this thesis have a high degree of comparability over the different time periods as shown in table 2.2. This thesis mostly exploits the cross-sectional dimension of the data rather than focus too strongly on the longitudinal cohort effects.

2.4.2 Construction of Ethnicity/ Coethnicity, Coethnic Major Counties.

A central variable in this thesis is ethnicity, and the arguments made hinge crucially on the measurement and construction of this variable. Since ethnicity is not made publicly available in these datasets (save for 2019 Census), we follow the approach of constructing ethnicity by a proxy of the largest ethnic group in one's place of birth (in the 1999 and 2009 census) (KHRC, 2018; Simson, 2018b); and the dominant ethnic language spoken in one's current county of residence (KHRC, 2018; Simson, 2018b).

We construct a proxy of ethnicity based on a number of variables: individual's county of birth, current county of residence, number of years in the current place of residence, and the dominant language spoken in one's county of residence. Whilst the censuses have often asked respondents to indicate their tribe (ethnicity) or nationality, this piece of information is not made available for public use owing to it being a "sensitive and emotive" issue in Kenya (KHRC, 2018). The information on ethnicity, however, was made available in the 2019 Census.

Over the years, the release of official population figures of ethnic groups has often been accompanied by controversy (KHRC, 2018). The preliminary results of the 1989 KPHC for instance, were bitterly disputed for having shown that the highest population growth rates were amongst those ethnic groups aligned to the government at the time (Kalenjin, Maasai and Luhya tribes). Another issue that was contested revolved around the fact that the Kalenjin had displaced the Kamba as the fourth largest ethnic group (Hornsby, 2013; WALLER, 2014). Consequently, the results of the census that was conducted in August 1989, were only released in 1994 (four years later), a fact that led many to believe that the (Kalenjin) government had adjusted the true results for partisan political reasons (KHRC, 2018)

Similarly, in 1999, the government chose to not publish data relating to ethnic groups. The results of the 2009 census also elicited considerable controversy Click or tap here to enter text., concerns which made the government withhold the ethnic results entirely. The 2009 census report, for instance, states that

"Perceived sensitivity of certain questions, particularly on ethnicity (tribe) generated significant controversy. However, heightened advocacy on the importance and spirit of the question, mainly through the census communication machinery, helped the public understand and appreciate the usefulness of the question". Despite this, these issues remained rife even in the outcomes of 2019 Census.

Consequently, information on an individual's ethnic orientation is not explicitly revealed by the 3 out of the 4 datasets used in this thesis. The datasets, however, contain enough information from which ethnic descent can be inferred, albeit imperfectly. For the KPHC 1999 and KPHC 2009 datasets, we assign an individual the ethnicity similar to that of the dominant ethnic group in their place of birth. For KIBHS 2015/6, we proxy ethnicity using the dominant language spoken by a majority of residents in their current community of residence[5]. In Kenya, an individual's native language is synonymous with their ethnic identity Click or tap here to enter text.. For example, the Luo tribe speak Luo, the Kikuyu speak Agikuyu, the Meru speak Meru, Luhya speak Abaluhya, the Akamba speak Kamba and so on. Thus, from the dataset, we can easily relate the dominant language spoken by a majority of community members to the tribe/ethnic group that reside therein.

This ethnic identification approach receives a lot of empirical backing from related studies. Several published papers follow a similar approach, and we adopt these precedents in our own work. For example, in a study on ethnic favoritism in the public sector in Kenya using KPHC 2009, Simson (2018) assigns to an individual the ethnicity similar to that of the major ethnic group in their county (district) of birth. Simson (2018) asserts that while self-reported ethnic identity is not included in the census sample, place of birth in Kenya is a strong proxy for ethnic identity, and respondents can therefore be classified in accordance with the dominant ethnic group in their region of birth (in multi-ethnic regions where no ethnic group constitutes above 50% of the population such as Nairobi, the region is classified as 'mixed') Click or tap here to enter text..

Similarly, the Kenya Human Rights Commission, 2018, for instance, reports that in the official government documents, derivation of ethnic statistics often rely on individual's district of birth self-declaration as captured in the national census surveys. This approach is also similar to Kramon and Posner in their study on ethnic favoritism in primary education in Kenya Click or tap here to enter text.. "A

[5] KIBHS does not ask about county of birth, and conversely, the Census does not ask about language spoken, which means different approaches must be adopted.

disadvantage of the census data is that the Kenyan government withholds individual-level information about ethnicity due to its political sensitivity. Hence, we combine information about district-level ethnic demographics (gathered separately) with respondents' district of birth to create a district ethnic match variable. This measure captures whether or not each respondent was born in a district in which the majority ethnic group shared an ethnicity with the president" ((Kramon & Posner, 2016a). Using the same dataset, KPHC, 2009, the socioeconomic atlas of Kenya, 2009 follows the same approach in determining the ethnic composition of Kenya's counties in the absence of ethnicity data. A similar approach is also used by (Burgess et al., 2015) in their investigation into ethnic favoritism in road building in Kenya. The claim that someone's district/county of birth is analogous to their ethnic identity therefore has received a lot of empirical buttressing as demonstrated by these studies.

We follow the same procedure here in relation to the 1999 and 2009 census data. Of course, this only makes sense if one is reasonably sure that the ethnic composition of the county has not changed dramatically over time. Similarly, if we are able to demonstrate relatively low mobility of individuals over time, this lends credence to using dominant language spoken to proxy for ethnicity in the 2015 data (the assumption being that the ethnic group speaking that language has been dominant and stable in that county over time). We can corroborate the results of our ethnicity construction, using the KPHC 2019, which in addition to the variables covered in the previous censuses, includes an explicit ethnicity variable. We can show that the ethnic proportions derived from the proxy variable closely matches the proportions computed from the explicit ethnicity variable provided in the dataset.

2.4.3 Geographic Mobility

It is possible to assess geographic mobility in the Census data. The 1999, 2009 and 2019 Census asked individuals to indicate if they have moved from their place of birth. We use the information on current residence and compare it to place of birth as captured in the KPHC 1999 and KPHC 2009. In our recoding, if an individual's current county of residence is the same as their place of birth, then they have not moved from their place of birth. From our computations, 80%, and 74% of individuals had not migrated from their place of birth as of 1999 and 2009 respectively, that is, their current residence is the same as their place of birth. Of course, it is possible that they might have moved and then returned in the intervening period, but this information is not available in the Census data.

There is some evidence to suggest that individuals tend to remain in the same place for a significant length of time. In the Census, individuals are asked directly how long they have stayed in their current residence, with a mean duration of 11 years and 25 years in 1999 and 2009 respectively[6]. Whilst the censuses asked individuals directly to state how long they had stayed in their current residence, KIHBS 2015/16 did not contain this information. Instead, community representatives (aged at least 15 years old) were asked, "how many years have you lived in this community?" On average, the community representatives had stayed in the community for an average of 32 years. The limitation with the KIHBS 2015/16 is that we may not derive inter-household differences in the responses relating to this question as this question was administered to a group of respondents, not necessarily drawn proportionally from households.[7]

Table 2.2 presents the number of years lived in the current residence/community by age cohort. We disaggregate the data by age and show that mean length of residence by age cohorts is comparable across the datasets, despite the very different response sizes, and the different methods used to elicit this information (individual response versus community representative response).

Table 2.3 Number of years lived in the residence/community by age cohort.

Age of respondent	**KPHC 2009**		**KIBHS 2015/16**	
	Mean	**Standard dev**	**Mean**	**Standard dev**
15-25	15.13	8.24	16.84	10.26
26-35	20.62	12.44	20.66	11.52
36-45	29.42	15.02	27.09	13.80
46-55	39.08	17.00	33.89	16.48
56+	55.06	23.02	47.14	19.82
Overall	25.20	18.71	32.53	18.70

Source: Author's Calculation

[6] This question had lots of missing observations for KPHC 1999. 80% of respondents did not answer this question. For a more reliable comparison, we use the KPHC 2009 and KIHBS 2015/116 datasets. These datasets recorded 100% response rate for this question.

[7] The survey defined a community as a village or a group of villages within the enumeration area, and an urban location within the enumeration area in the case of urban areas. The selected areas for the community questionnaire were as representative as possible of the enumeration area as a whole. The community questionnaire was administered to "a group (minimum of 5) of several knowledgeable residents of the village(s) or urban location, such as the village headman and spouse, headmaster of the local school, agricultural field assistant, religious leaders, local merchants, health workers, or simply long-term knowledgeable residents." The chosen informants are those who had lived in the community for a number of years. Furthermore, this group of respondents was as diverse as possible with respect to sex, age, religion, and ethnicity, so that it is representative of the population in the community. The community respondents group answered all the questions through consensus.

As expected, we see that the mean number of years lived in the residence/community is higher for the older cohorts, and there is some correspondence amongst the age cohorts, which suggests that these results are comparable to a higher degree. Although KIHIBS 2015/16 asks a small sample of people for this data, their answers are very similar to what we get when everyone is asked the same question in the KPHC 2009. It suggests the community respondents are representative of the county. The, the mean responses given by the community representatives surveyed in KIBHS 2015/16 are quite similar to the mean responses of survey respondents in KPHC 2009, which is cause for comfort in our approach.

Similarly, the KIHBS 2015/16 also asked respondents to state if "in the last five years, there have been more people who moved into or out of the community." This allows us to only have an overall picture of how people have moved. However, we are not able to derive the precise response by all individuals as this information is not directly revealed[8]. The computations from KIHBS 2015/16 shows that while there were arrivals into the communities, 84% of respondents reported that people had not moved out of their community in the last 5 years. This is similar to the results reported above for the Census data concerning migration of individuals from their place of birth. These ratios suggest that generally, there is limited movement of people across the community/district/county boundaries. People are therefore likely to stay in the same region for relatively long periods of time.

2.4.4 Ethnic Identification of Individuals

To re-iterate, for the KPHC 1999 and KPHC 2009 datasets, we proxy an individual's ethnic identity by the dominant ethnic group or dominant language in their place of birth. In many countries, data on ethnic or racial identity is collected routinely, and used to identify ethno-racial inequalities in the population. Not so in Kenya, as government agencies (the KNBS in particular) regularly suppress ethnicity information in order to stymie precisely these kinds of comparisons.

Since county of birth is exogenous, we attribute (current) ethnicity of birthplace to the individual. To be clear, we attribute ethnicity of birthplace based on the current ethnic composition of the county birthplace since we do not observe it historically. However, as already demonstrated, levels of geographic mobility are fairly low, and this is a reasonable choice in the absence of actual individual data on ethnicity. This

[8] We assume that the community's response is representative of the individual responses.

approach of ethnic identification as shown earlier has been used by several empirical studies (Burgess et al., 2011, 2015b; Kramon & Posner, 2016a; Simson, 2018b). Unfortunately, we cannot implement this same approach with the KIHBS data. The KIHBS 2015/16 does not contain information on Birthplace County. For KIHBS 2015/6, we proxy ethnicity using the dominant language spoken by a majority of residents in their current community of residence (again, leveraging the evidence that geographic mobility over time is low). The KIHBS 2015/16 community questionnaire asked the respondents to provide "the first dominant language spoken in the community" together with the proportion of community members that speak the language." As already noted, in Kenya, an individual's native language is synonymous with their ethnic identity Click or tap here to enter text.. Hence, we assign ethnicity based on the proportions of people speaking the first and second dominant languages in the individual's current county of residence. So, if in a county, the dominant language is Kikuyu and is spoken by 80% of people and 20% is Kalenjin, the second dominant language, we randomly assign 80% of individuals the Kikuyu ethnicity, and 20% are randomly assigned the Kalenjin ethnicity. This allows us to take into consideration the linguistic variations within the communities. Following this approach to assigning ethnicity, Table 2.3 below presents derived ethnic shares over time at the national level. The ethnic groups have maintained consistent national population shares over the years. Our proxies of ethnicity across the datasets give reasonably similar results and are largely consistent with other studies. In particular, the observed ethnicity variable estimate in KPHC 2019 and the proxy constructed using birthplace seem pretty similar as can be seen in Table 2.4.

Table 2.4 National Population shares (%) of selected Ethnic Groups over time

Individual Ethnicity	**1999 (proxy)**	**2009 (proxy)**	**2019 (observed)**	**2019 (Proxy)**
Luo	10.28	9.6	11	10.14
Meru/Embu/Mbeere	6.59	5.83	5.87	4.46
Kamba	8.83	7.81	9.82	8.64
Kikuyu	18.38	16.66	17.12	16.38
Kisii/Kisii	5.11	4.56	6.36	5.02
Maasai	1.87	2.21	2.51	2.29
Samburu	0.49	0.58	0.7	2.04
Taita/Taveta	0.86	0.73	0.77	0.76
Turkana	1.38	2.19	2.33	1.84
Luhya	13.92	13.44	15.22	14.88
Mijikenda	4.64	4.55	5.47	5.05
Kalenjin	11.83	11.84	11.62	12.05
Kenyan Somali	2.94	5.63	6.78	5.39

Source: Author's calculation from KPHC 1999, KPHC 2009 & KPHC 2019

In 1999, the Kalenjin constituted 18% of the national population. Their numbers grew only slightly to 19% in 2009 and 2016. The population shares of the rest of the groups also do not display any significant deviations that should be flagged; thus, these ratios are largely reliable. Across all the years, the Kikuyu speaking group command a majority of the national population, around 22% of the national population, closely followed by the Kalenjin or the Luhya speaking groups. These ethnic groups have often constituted over 60% of the national population Click or tap here to enter text..

Table 2.5 shows that the dominant ethnic group by county remains strongly stable over all three datasets, despite differences in how the measure is computed. The results show fairly consistent ethnic population shares of the dominant ethnic groups within counties over time. This suggests low migration probabilities across the ethnic boundaries, hence the spatial concentration of given ethnic groups within the specific counties. Thus, taken together, albeit imperfect, the data suggest low levels of mobility from place of birth, and that the dominance of particular ethnic groups in specific counties is stable over time. In fact, our results seem pretty strong; there is not a single county where major tribe changes. The almost identical ethnicity estimates between the proxy and the revealed variables lends credence to the ethnicity proxy variables constructed (in the absence of explicit measurement) in the earlier datasets (1999, 2016, 2009). With the exception of a few ethnicities that have been lumped together, the big 7 ethnic groups constituting over 70% of the country's population have largely similar proportions of the population from the 2 variables.

Table 2.5: Dominant Tribe by County and Ethnic Population Share

Year	**1999**		**2009**		**2016**		**2019**			
County	Major Tribe	%Share	Major Tribe	% Share	Major Tribe	% Share	Major tribe	% Share	Second tribe	Third tribe
Baringo	Kalenjin	75%	Kalenjin	79%	Kalenjin	80%	Kalenjin	88%	Maasai	Kikuyu
Bomet	Kalenjin	93%	Kalenjin	95%	Kalenjin	95%	Kalenjin	96%	Kisii	Luo
Bungoma	Luhya	89%	Luhya	86%	Luhya	79%	Luhya	83%	Kalenjin	Teso
Busia	Luhya	80%	Luhya	82%	Luhya	79%	Luhya	57%	Teso	Luo
E. Marakwet	Kalenjin	96%	Kalenjin	95%	Kalenjin	93%	Kalenjin	93%	Luhya	Others
Embu	Embu	78%	Embu	76%	Embu	88%	Embu	50%	Mbeere	Kamba
Garissa	Somali	95%	Somali	92%	Somali	84%	Somali	80%	Others	Kamba
Homa Bay	Luo	98%	Luo	92%	Luo	93%	Luo	88%	Basuba	Kisii
Isiolo	Borana	80%	Borana	82%	Borana	88%	Borana	37%	Somali	Samburu
Kajiado	Maasai	40%	Maasai	41%	Maasai	45%	Maasai	45%	Kikuyu	Kamba
Kakamega	Luhya	84%	Luhya	86%	Luhya	90%	Luhya	92%	Luo	Kikuyu
Kericho	Kalenjin	89%	Kalenjin	92%	Kalenjin	94%	Kalenjin	88%	Luo	Kikuyu
Kiambu	Kikuyu	82%	Kikuyu	82%	Kikuyu	76%	Kikuyu	81%	Kamba	Luhya
Kilifi	Mijikenda	85%	Mijikenda	80%	Mijikenda	81%	Mijikenda	87%	Kamba	Swahili
Kirinyaga	Kikuyu	97%	Kikuyu	93%	Kikuyu	95%	Kikuyu	95%	Kamba	Embu
Kisii	Kisii	96%	Kisii	94%	Kisii	92%	Kisii	97%	Luo	Kenyan
Kisumu	Luo	89%	Luo	89%	Luo	81%	Luo	89%	Luhya	Kalenjin
Kitui	Kamba	98%	Kamba	98%	Kamba	93%	Kamba	97%	Tharaka	Others
Kwale	Mijikenda	71%	Mijikenda	73%	Mijikenda	75%	Mijikenda	83%	Kamba	Luhya
Laikipia	Kikuyu	65%	Kikuyu	65%	Kikuyu	85%	Kikuyu	63%	Maasai	Kalenjin
Lamu	Kikuyu	28%	Kikuyu	22%	Kikuyu	23%	Swahili	30%	Kikuyu	Mijikenda

Machakos	Kamba	88%	Kamba	90%	Kamba	91%	Kamba	91%	Kikuyu	Luhya
Makueni	Kamba	98%	Kamba	96%	Kamba	95%	Kamba	98%	Kikuyu	Others
Mandera	Somali	97%	Somali	92%	Somali	85%	Somali	98%	Gabra	Others
Marsabit	Borana	88%	Borana	86%	Borana	88%	Gabra	29%	Borana	Rendile
Meru	Meru	93%	Meru	93%	Meru	93%	Meru	94%	Kikuyu	Kamba
Migori	Luo	67%	Luo	67%	Luo	73%	Luo	60%	Kuria	Luhya
Mombasa	Mijikenda	46%	Mijikenda	44%	Mijikenda	49%	Mijikenda	30%	Kamba	Luo
Murang'a	Kikuyu	95%	Kikuyu	96%	Kikuyu	98%	Kikuyu	94%	Kamba	Luhya
Nairobi City	Kikuyu	19%	Kikuyu	22%	Kikuyu	26%	Kikuyu	29%	Kamba	Luo
Nakuru	Kikuyu	56%	Kikuyu	54%	Kikuyu	57%	Kikuyu	52%	Kalenjin	Luhya
Nandi	Kalenjin	76%	Kalenjin	76%	Kalenjin	95%	Kalenjin	77%	Luhya	Luo
Narok	Maasai	44%	Maasai	44%	Maasai	85%	Maasai	51%	Kalenjin	Maasai
Nyamira	Kisii	94%	Kisii	96%	Kisii	92%	Kisii	97%	Luo	Kenyan
Nyandarua	Kikuyu	98%	Kikuyu	96%	Kikuyu	94%	Kikuyu	96%	Luhya	Kisii
Nyeri	Kikuyu	93%	Kikuyu	95%	Kikuyu	93%	Kikuyu	94%	Meru	Kenyan
Samburu	Turkana	94%	Turkana	92%	Turkana	90%	Samburu	79%	Turkana	Kikuyu
Siaya	Luo	99%	Luo	99%	Luo	97%	Luo	95%	Luhya	Others
Taita/Taveta	Kamba	95%	Kamba	85%	Kamba	93%	Taita	63%	Kamba	Taveta
Tana River	Somali	68%	Somali	72%	Somali	69%	Pokomo	28%	Orma	Wardei
Tharaka-Nithi	Meru	97%	Meru	95%	Meru	94%	Meru	55%	Meru	Mbeere
Trans Nzoia	Luhya	81%	Luhya	80%	Luhya	79%	Luhya	52%	Kalenjin	Kikuyu
Turkana	Turkana	90%	Turkana	82%	Turkana	88%	Turkana	94%	Others	Luhya
Uasin Gishu	Kalenjin	75%	Kalenjin	73%	Kalenjin	77%	Kalenjin	58%	Luhya	Kikuyu
Vihiga	Maragoli	65%	Maragoli	67%	Maragoli	66%	Luhya	96%	Luo	Kalenjin
Wajir	Somali	99%	Somali	99%	Somali	94%	Somali	99%	Gabra	Others
West Pokot	Pokot	94%	Pokot	94%	Pokot	90%	Kalenjin	95%	Luhya	Turkana

Source: Own Calculation from 1999 KPHC, 2009 KPHC, 2016 KIHBS and Socioeconomic Atlas from 2019 KPHC.

From the foregoing illustrations, the ethnic ratios have remained fairly constant, both at the national level and within counties. Table 2.5 shows that there are 30 counties in which the largest community has a clear majority, constituting upwards of 75% of the population; there are also ten counties in which a given community constitutes 50 to 66% of the county's population. Finally, there are seven counties without a majority community of 50% or more: Marsabit (largest community: 28%), Tana River (28%), Nairobi (29%), Lamu and Mombasa (both 30%), Isiolo (37%), and Kajiado (44%).

The socioeconomic atlas suggests that lack of a clear majority could mean on the one hand that communities share a broad area in which they alternatingly dominate different neighbouring sub-locations (e.g. in Marsabit or Tana River). On the other hand, it is the result of counties containing many sub-locations in which no one community is dominant. This is clearly the case in Nairobi and Mombasa counties, but also in Kajiado, near Nairobi. This indicates that Kenya's economic centres and hubs are very ethno-linguistically diverse. Nairobi's high degree of diversity extends all the way down to the sub-location level. Nairobi is an interesting case: some of its sub-locations seem to function as entry points for migrants from specific communities, who eventually assimilate into the broader mix. In addition, county ethnic composition shows that most of Kenya's major towns are ethno-linguistically diverse. Finally, urban locations are more ethno-linguistically mixed than rural contexts: sub-locations whose largest community does not exceed 50%, or even 30%, are overwhelmingly urban, while sub-locations whose largest community exceeds 90% are found almost exclusively in rural settings. This mix of communities appears to be a key issue worthy of additional analysis. We have undertaken further construction of an ethnic proxy variable based on one's county of birth and compare how close the estimates are to the estimates constructed from the revealed ethnicity variable in the data, both from KPHC, 2019. Our results (as shown in the table) seem pretty much comparable to each other, except for a few ethnic groups, which have been lumped to constitute the larger ethnic group.

2.4.5 Coethnic Major Regions

Another variable of interest in this thesis is coethnic major regions. These are counties whose major population share is held by the incumbent President's coethnics. An inspection of ethnic ratios across counties shows that for most counties, except Nairobi, Mombasa, and Kiambu which are cosmopolitan, the dominant ethnic language accounts for over 80% share of the total population in the area. Click or tap here to enter text.in their study of ethnic favoritism in road expenditure in Kenya classify Presidential regions as those having over 50% population share of coethnics in the region[9]. We follow the same approach in this study, identifying coethnic major regions as counties where the incumbent President's coethnics account for over 50% of the population share[10]. As clearly illustrated in Fig 1.1, the Kalenjin are the coethnics in KPHC 1999 dataset as the country is governed by a Kalenjin president in this period. Similarly, the counties with Kalenjins as the majority are the "coethnic major" counties. In KPHC 2009, KIHBS 2015/16, and KPHC 2019, the Kikuyu are the coethnics since the country was ruled by a President from Kikuyu community, and the counties with Kikuyu as the majority in terms of population share are the "coethnic major" counties. Coethnic major counties therefore switch depending on the dataset under consideration. However as demonstrated earlier, although the coethnicity status of individuals and counties switch, the population shares of the dominant ethnic groups do not vary significantly. For example, if a county was dominated by the Kalenjins in 1999, the population share of the Kalenjins in the county does not vary significantly even though they no longer have a coethnic President. Thus, coethnic (Kalenjin) major counties during Moi presidency are Baringo, Bomet, Elgeyo Marakwet, Nandi, Kericho, Uasin Gishu, West Pokot. On the other hand, the coethnic major areas switch to become Kiambu, Nyeri, Nyandarua, Murang'a, Kirinyaga, Laikipia and Nakuru during Kikuyu presidency (Kikuyu dominant in 1999, 2009 and 2016). This categorization is a one-to-one match with Click or tap here to enter text.. In the empirical analysis, we compare the poverty outcomes of these coethnic major counties (whether current or past) relative to other counties (non-coethnic major) to assess evidence of ethnic favoritism. This county

[9] Coethnics here is defined by having the same ethnicity as the President. During the Presidency of Kenyatta, Kibaki and Uhuru, coethnics are Kikuyu ethnic group since the Presidents are Kikuyu. Similarly, under the Moi regime (Kalenjin), coethnics are the Kalenjin. We use this definition throughout this thesis.

[10] In 1999, the Kalenjin had an incumbent President. From 2002-2022, Kenya has been governed by Kikuyu Presidents.

level analysis will be based on 40 counties, with major ethnic communities constituting 50% share of the county's total population. We leave out the 7 non dominant counties (Nairobi, Mombasa, Kajiado, Marsabit, Tana River, Lamu and Isiolo) with the largest ethnic group constituting less than 50% of the county's population.

2.5 Potential Data Issues

The core concern in this thesis is that the key variable of interest, ethnicity, is not directly revealed in some datasets, and consequently are constructed as proxies, although the indices are highly comparable. From KPHC 1999 and KPHC 2009, we derive ethnicity from the dominant ethnic group in one's birthplace, whereas in the KIHBS 2015/16, it is derived from the dominant language spoken by majority members in the community where one lives. We have presented enough justifications for this identification and highlighted the buttressing we gain from the relevant studies using this identification approach Click or tap here to enter text.. Our identification produces indicators that are highly consistent with the figures as reported by these studies that have used similar datasets.

We acknowledge that the ethnicity proxy, since it is imperfect, could be subject to some measurement errors, which can conceivably bias our results. For example, the issue of whether (or not) and of what nature bias might arise if movement out of one's birth county were predicted by one's ethnicity, if the actual (unobserved) ethnicity predicts movement from birth county. While fixing such a problem is clearly beyond the scope of this thesis, consideration of how such data problems might affect the result of this study is warranted.

Hypothetically speaking, a measurement error in the ethnicity variable affect will bias our results, especially if the error is non-random (systematic). Measurement error in the independent variable (ethnicity) will bias our results since the covariance between the variable and the measurement error is no longer zero. If the covariance is positive, then the effect of ethnicity will be overestimated; but if it is negative, the effect of ethnicity on the outcome variable would be underestimated. The validity of our results therefore relies on the underlying assumptions that any errors are randomly distributed, and that the covariates are uncorrelated with the error term.

However, if the covariates are correlated with the measurement error, the regressor will be attenuated. That is, if ethnicity variable is collinear with other explanatory variables, the problem becomes worse, it increases the attenuation problem.

We do not however have any reasons to believe that any measurement errors in ethnicity is non-random. In this thesis, based on the ethnic composition, we have shown that the 40 counties out of the 47, have remained stably homogeneous within, but there is heterogeneity across counties. Moreover, as asserted by (E. Miguel, 2006), distribution of ethnic groups across the spatial units, has persisted over time, since independence. The fact that county ethnic composition has remained stable for a long time suggests that minority ethnicities are more likely to leave than dominant groups. Moreover, from geographical mobility, we have shown that there is minimal movement across counties. The Census 2019 data reveals that about 84% of Kenya's population have not moved from their counties of birth, that is, their current county of residence is the same as their county of birth. We therefore believe that these results drawn from this thesis are valid given that most of the underlying assumptions hold. It is important to derive statistically sound conclusions from this study, particularly given both the policy-relevance of this work and its potential to be politically sensitive. The 2019 KPHC gives this study a backing on the estimations of ethnicity given that this variable is observed and easily compares with the proxy.

Another enduring feature of Kenya's ethnic geography is ethnic segregation. Even in urban areas, many small neighborhoods evince that "like seeks like." While many counties are effectively homogenous, many have wide degrees of diversity locally. Thus, measurement error via random assignment of ethnicity will be higher in more heterogeneous places than in more homogenous places. Variation in ethnic diversity at the sub-county level may also undermine arguments about the county as the appropriate unit of analysis in analyses like those in this thesis. This begs the question whether we are missing sub-county diversity or targeting of resources at the sub-county level? Put differently, why would we choose the county as the right level of unit rather than the sub-county? Would we get a different picture if your analysis was at the sub county level?

Given the data available, we cannot at this point do the evaluation at sub-county level. With the limitation of constructing the ethnic diversity index at sub-county level, we can only assess these outcomes at a higher level, the county level. Data shows with the exception of 7 counties which are ethnically heterogenous (mostly big towns), most Kenyan counties, 40, are highly

homogeneous. In addition, in the new constitutional dispensation, Kenya is administratively divided into 47 counties with economic and political autonomy. Resources are channeled to county governments, and not to the sub-county, so any allocation decisions are made at the county level, and political power rests at the county level as opposed to subcounty. Given the datasets, we can derive valid estimates at the county level.

But the main question is why we should even try to do this work in the absence of unambiguous ethnicity data? We painstakingly undertake this exercise because of the conviction that the benefit of trying to do this work outweighs the cost of not doing it at all. Ethnicity matters in Kenya so we must try and analyse it. As literature shows, ethnic identity is one of the most important variables that has socio-economic implications. Ethnicity directly affects voting outcomes and wellbeing of Kenyans Click or tap here to enter text.. Ethnicity and ethnic settlements have provided a framework for discriminative allocation of resources by incumbent regimes and such imbalances often result in ethnic conflicts which threatens the stability of the country (Githongo, 2006a; Makgala, 2010; Stewart, 2000). This study therefore is vitally important in providing evidence to help undo these legacies of ethnic favoritism and foster social cohesion among the Kenyan diverse ethnic groups.

Another issue of concern in our dataset is that the questions asked across the datasets are not identical but are very closely related, for example education levels and economic activities. The categorization of some variables like access to amenities, is not uniform. Nevertheless, we have undertaken the non-trivial exercise to clarify some of these issues in the datasets that could confound such comparisons over time and explain how the measurement of key variables have been adjusted (recoded) in order to make them consistent and as comparable as possible.

Although the datasets have been designed to produce representative outputs in given domains and have wellbeing indicators that are broadly consistent with each other, the fact that we are comparing independent sets of cross-sectional data between 5-20-year period means that methodological differences could cloud the comparison of wellbeing measures. As indicated earlier, quantitative comparisons of well-being over time are useful only to the extent that the data being used to make the comparisons are actually comparable (Finn & Leibbrandt, 2013). This however should not be much of an issue since our analysis is at done at separate cross-sections at each data point.

2.6 Conclusion on Data Description and Measurement of Variables

We have shown that our estimations largely agree with the national figures by the KNBS, especially in terms of population counts. We have also shown that even though the data is sourced from surveys far apart, the samples from which the information is drawn have reasonably similar demographic features such as age, gender, religious affiliation, and type of area of residence. In addition, the samples also have reasonably comparable socioeconomic trends: education attainment and employment status. Notably, most of the questions on variables of interest in this thesis have been framed consistently across the surveys. Though coded differently, after cleaning, the variables are coded as comparable as possible. For the variables that have been derived from proxies, for example, ethnicity have reasonable degrees of similarities. The derived dataset is representative at national, county, and urban-rural domains (KNBS, 2014).

Some of the issues, including measurement that might confound our results on matters comparability of the datasets have been explained adequately. We have shown that the datasets used in this thesis have been comparable to a high degree and that the results drawn from them are convincingly true. A cursory inspection of the variables of interest indicates that high levels of similarities can be drawn from the questions asked by the surveys. It is therefore justifiable to draw comparisons from the estimates of key indicators in this study across all geographical levels.

Narrowing down to specific variables, apart from the ethnicity variable which we construct, the rest of the variables utilize information retrieved from questionnaires that were administered to all households. The individual questionnaires collected basic information on the characteristics of each person in the household, including age, sex, education, and other characteristics. For those who were not able to answer for themselves due to age limitations, the household representative responded on their behalf. In addition, the household questionnaire collected information on characteristics of the household's dwelling unit, such as the source of water, type of toilet facilities, materials used for the floor and roof of the house, ownership of various durable goods, and ownership. Although coded differently in the 4 datasets, we recoded the variables for consistency.

Chapter 3 : Who, and where are the Poor in Kenya? Characterizing the Trends and Patterns of Multidimensional Poverty.

3.1 Introduction

The goal of this chapter is to use the data discussed in Chapter 2 to motivate the MPI construction and usage and to describe spatial variation in poverty across a number of indictors that track outcomes related to public goods. Given the tight relationship between region and ethnicity in Kenya, these spatial associations provide some insight into disparities not only across region, but across identity groups in Kenya.

One consequence of ethnic clustering in Kenya is that targeting of certain areas with public goods/spending predestines those public goods to a given community. Ethnic inequalities in economic outcomes have been a major cause of persistent ethnic conflicts in many countries (Stewart, 2000). In Kenya particularly, these conflicts are fueled by perceptions of ethnic and/ political favoritism (KHRC, 2018). In this chapter, we examine the distributional patterns of multidimensional poverty in Kenya. We construct a multidimensional poverty index and decompose it by counties. We also establish the persistence of poverty experience within counties by constructing poverty transition matrices.

The commitment to ending extreme poverty, food insecurity, and reducing inequalities remains top priority Sustainable Development Goals (SDGs) (Sustainable Development Solutions Network, 2014; United Nations, 2016). Although some progress has been achieved, there still exists wide disparities in attaining these goals. For instance, while the global poverty headcount ratio fell by approximately 3.7% between 2011-2015, more than half of the world's extremely poor in 2015 lived in sub-Saharan Africa, translating to approximately 9 million people (World Bank, 2016).

Wide and persistent disparities in wellbeing have far-reaching implications. A growing body of literature has shown that perceived or real differences in wellbeing are responsible for the erosion of civic participation, inclusivity, national identity and belonging, tolerance, and other aspects of social cohesion (Boro & Bedamatta, 2017; Muhula, 2009; Stewart, 2008, 2010b). At a macro level, wide differences in a country's development across its counties may have adverse effects on its socio-political and economic stability (Gutiérrez-Romero, 2013; Kanbur & Venables, 2005).

In Kenya, although poverty has declined substantially, not every segment of the population has benefited from this, and there are still marked spatial disparities in wellbeing across provinces and counties. Our preliminary estimation, for example, shows that poverty incidence declined by 7 percentage points between 1999 and 2009, but this was unequally shared across the provinces, and between rural and urban areas, with rural areas hosting the majority of poor population. The 2009 KPHC reveals that as of 2009, the headcount poverty ratio in the rural areas stood at 60.5% compared to 52,2% in peri-urban areas and 38% in core urban areas.

There has also been a disparate share of the poverty burden across provinces. The 2009 census results from our estimation show that the national poverty share borne by the poorest province, North-Eastern, was 4.5%, which was greater than its population share (3%), pointing to the fact that North-Eastern province disproportionately bore a higher burden of poverty. In contrast, Nairobi, Central and Eastern provinces' population shares were greater than their relative poverty shares. Moreover, while most counties in Central province have realized the greatest poverty reduction alongside exhibiting the lowest poverty rates, counties in the Western counties remain moderately poor, while the northeastern frontier districts display the highest poverty ratios. Conspicuously, the poverty profile reveals that poor counties are clustered together.

Studies have analyzed the existence and causes of various forms of spatial inequality observed in a number of dimensions in Kenya. (Geda et al., 2005) for instance studied the evolution of income poverty and inequality in Kenya, relating its existence to changes in factor endowments and changes in economic and employment structures. Their study showed that poverty is positively correlated with household size, employment in the agricultural sector, but negatively correlated with educational attainment for both urban and rural households. However, urban households displayed relatively lower income poverty and other forms of material deprivation levels compared to rural households.

Similarly, (Shifa & Leibbrandt, 2017) find remarkable differences in multidimensional poverty outcomes and inequality between urban areas, rural settlements and across counties using the 2009 Kenya Population census. Analysis of maternal and child wellbeing by (Kabubo-Mariara et al., 2011) demonstrated noticeable differences in the distribution of poor women and children across groups, space and time using the Kenya Demographic and Health Surveys of 1993, 1998 and 2003. In addition, their results showed that residing in a rural household positively correlated with

material deprivations. The Society for International Development in "Pulling Apart Facts and Figures in Kenya" finds marked county differences in access to public resources such as transport, electricity, piped water, health facilities and other physical infrastructure (Githongo, 2006a; Kanyinga, 2009b). The existence of such disparities matters - a series of post-colonial ethnic conflicts and political instabilities have been witnessed in Kenya and have largely been attributed to perceptions of ethnic inequalities in material deprivations and in access to services (Muhula, 2009).

Building on a number of studies that have analyzed multidimensional poverty in different contexts (Alkire & Sumner, 2013a; Santos & Alkire, 2011), this paper adds to the existing literature in several important ways. First, the construction of multidimensional poverty in this paper is based on indicators of publicly provided goods. In addition, this paper extends the prior discussions on poverty and inequality in Kenya to a much finer level of aggregation, namely, the county level. Unlike the existing studies that have explored the levels of poverty at provincial levels, or in the rural-urban dimensions, this work uses the most recent datasets (Kenya Population and Housing Census of 1999, 2009, 2019; and Kenya Integrated Household Budget Survey, 2016) representative at the new administrative level, that is, the county level. The analysis of poverty at lower levels of aggregation unmasks potential inequalities within counties, as opposed to the more typical macro-level analysis (Shifa & Leibbrandt, 2017).

Although Battersby et al., (2017) have profiled the trends and patterns of multidimensional poverty in Kenya, our work differs in significant ways. First, to reiterate, we use different indicators of wellbeing in constructing the MPI. Secondly, this chapter explores the persistent rather than static nature of poverty by considering multiple cross-sections over time. In the literature on poverty traps, poverty is not static but rather a dynamic phenomenon, experienced over time, rather than at a single point in time. Households either move into or out of poverty over time, remain trapped in poverty or manage to stay rich. Poverty analysis using a single cross-sectional dataset is therefore limited in understanding the nature and determinants of persistent poverty. Cross-sectional data allows us to only get an indication of the extent of the depth and severity of poverty at a time (Zizzamia et al., 2019b). Pooling independent cross-sections, however, provides a way of incorporating a dynamic perspective into the analysis of poverty (Zizzamia et al., 2019b) .

Our analysis considers datasets at multiple points in time to track changes in multidimensional poverty over 3 different time periods. The datasets span over a period of 35 years. We also pool these datasets to run pooled estimation at some point in the analysis (in Chapter Four). Observation of the same counties at multiple time periods makes it possible to quantify the extent to which an experience of poverty is sustained in these counties over time and enables inquiry into the possible transmission channels through which poverty persist.

In addition, we add to the existing body of literature on poverty and inequality by examining the ethno-spatial dimensions of poverty in Kenya. Such an investigation is particularly important for Kenya to help redress Kenya's historical ethnic tensions over wide inequalities. Our study, in a deeper way, explores potential associations of the observed poverty patterns and ethnic settlement patterns across counties. The clustering of poor counties coterminous with clustered tribes in specific locations suggests the existence of a potential relationship between ethnicity and poverty outcomes. We highlight any apparent trends in the distribution of public goods (proxied by the MPI) by ethnicity. Specifically, this chapter aims to characterize the spatial trends and patterns of multidimensional poverty in Kenya and explore any ethno-spatial correlations that might occur.

The rest of the chapter is organized as follows: In section 2, we provide a description of data for the study, while section 3 presents the methodology of constructing the multidimensional poverty index and decomposing the ethnic gap. Section 4 details the findings, with section 5 summarizing and concluding the chapter.

3.2 Data Description and Measurement of Variables.

As documented in Chapter Two[11], our empirical estimation utilizes four nationally representative, independent cross-sectional datasets; Kenya Population and Housing Census (KPHC), 1999; 2009; 2019; and Kenya Integrated Household Budget Survey (KIHBS), 2015/16. While the 3 rounds of censuses are a total count of the population, the KIHBS 2015/16 is a household survey dataset. For each dataset, we derive the weighted mean aggregate of the selected indicators at the county level. This gives 4 rounds of pseudo panel observations at the county domain across 3 different

[11] A detailed description and manipulation of the data to make them consistent over the study period is provided for in chapter 2 (the technical section) of this thesis.

datapoints: 1999, 2009, 2016 and 2019. Given that Kenya has 47 counties and each county in this case is observed three times, the final derived data gives 188 observations (47 in each time period). This final data is representative at the county domain. We refer the reader to Chapter 2 for extensive discussion of the data used in this chapter.

3.3 Constructing the Multidimensional Poverty Index

Chapter two has provided a comparison of the relevant indicators across all the datasets and made the case that datasets are largely comparable. This section discusses the procedure of constructing the MPI (See additional notes in the footnote[12]). The MPI is based on indicators that capture living standards (housing -materials used for flooring, roofing, walling and number of people per

[12] The MPI is computed by first calculating the incidence of poverty which is measured as the headcount ratio of the multidimensional poverty index:

$$H = \frac{q}{n}$$

Where q is the number of people who are multidimensionally poor and n is the total population.
From the poverty incidence, we derive the intensity of poverty (A), which reflects the average proportion of deprivations faced by the poor. This is expressed as:

$$A = \frac{C_i\,(k)}{q}$$

Where $C_i\,(k)$ is the deprivation score of the poor, q is the number of people who are multidimensionally poor, and k is the poverty cut-off.
The MPI value is the product of poverty incidence (H) and poverty intensity (A), that is, the product of the headcount multidimensional poverty ratio(H) and the average proportion of deprivations faced by the poor (A).

$$MPI = H * A$$

The MPI represents the share of the population that is multidimensionally poor adjusted by the intensity of the deprivation suffered. An alternative way to interpret the MPI is that it is the proportion of weighted deprivations that the poor experience in a society out of all the total potential deprivations that the society could experience.
The MPI can then be decomposed by sub-populations. The relative contribution of given sub-group *j*, is given by:

$$contribution_j = \{\frac{(n_j/n) * MPI_j}{MPI}\}$$

Where (n_j/n) is the population share of the sub-population group *j*.

Besides its decomposability, the MPI is known for its simplistic computational advantage as complementary to traditional income-based poverty approaches. The MPI is a counting index; it simply counts the number of weighted items that households lack. All households for which this number is at least 33.33% are considered poor. All other households are considered non-poor. Moreover, the MPI is viewed as a better measure of wellbeing due to minimal measurement errors, as individuals do not have to remember their income and/expenditure and most indicators of wellbeing are observable. The MPI also measures multiple deprivations that households face at the same time. Regardless of these appealing properties, the MPI approach has been critiqued as having costly methodological issues. The MPI construction technique as employed in this study takes solace in the fact that these methodological differences are largely considered small nuances and, in most cases, the MPI gives reasonable country poverty estimates which justifiably compare with the income poverty estimates.

habitable room used for sleeping; access to electricity, proper sanitation, clean drinking water, clean cooking fuel) education (attendance and completion of both primary and secondary school); and health (death of any household member in the last 12 months and absence/presence of biological parents within the household). Even though some of these variables were originally categorical, they have been discretized to derive binary forms of the variables.

Each of the dimensions is equally weighed, that is, contributes equally to the overall MPI. Each dimension (education, living standards, health) therefore receives 1/3. This means that a household without access to basic facilities, for example, is deemed to be facing an equal deprivation level as those households without adequate access to education. Within each dimension, the indicators are also equally weighed. In the education dimension for instance, there are 4 indicators (primary school attendance, primary school completion, secondary school attendance, secondary school completion) each with 1/4 within the dimension. Overall, each indicator accounts for ¼ multiplied by 1/3 =1/12 of the total weight. In the living standards dimension, there are 5 indicators, each weighed 1/5 within the dimension, and 1/15 overall (1/5*1/3). Finally, in the health dimension, there are 2 indicators, each weighed 1/2 within the dimension, and 1/6 overall (1/3*1/2). The weights of the indicators here have no normative values, but simply reflect the extent to which a household is deprived in an indicator. For each household, the scores of deprivations (wellbeing) are calculated. A household is classified as deprived if their achievement in a specific indicator is below the deprivation threshold.

A person/household is identified as multidimensional poor if they live in a household that is deprived in at least one third of the weighted indicators shown above; in other words, the cutoff for poverty (k) is 33.33%. The intensity of poverty is a measure of the average proportion of indicators in which poor people are deprived (A). The MPI is calculated by multiplying the incidence of poverty (headcount poverty) by the average intensity of poverty: MPI = H x A. As a result, it reflects both the share of people in poverty and the degree to which they are deprived. This is the multidimensional poverty index.

Table 3.1 summarizes the precise way in which these indicators have been discretized, the threshold levels used to indicate deprivation, and the weight of each variable to the MPI. The binary variables reflect whether a household has adequate access to the specific indicator or is

considered deprived. This methodology receives analytical backing from the Oxford Poverty and Human Development Initiative (OPHI) methodologies consistent with the Sustainable Development Goals (SDG) standards (Alkire et al., 2010).

Table 3.1 The dimensions, indicators, deprivation thresholds and weights of the MPI

Dimensions of Poverty	**Indicator**	**Deprived if living in the household where…**	**Weight**
Education	**Primary school enrolment**	Any school-aged child is not attending school up to the age at which he/she would complete grade 6.[13]	1/12
	Secondary school enrolment	Any child of secondary school going age; between 12-17 years old, not enrolled in a secondary school (lower and senior secondary.	1/12
	Primary school completion	At least one member aged above 13 years with highest qualification level below primary school or at most 8 years of schooling.	1/12
	Secondary school completion	At least one member of the household aged 17 years and above with less than 12 years of schooling or with highest level of education below secondary qualification.	1/12
Standard of living	**Electricity**	The household has no electricity.	1/15
	Sanitation	The household's sanitation facility is not improved (according to SDG guidelines) or it is improved but shared with other households[14].	1/15
	Drinking Water	The household does not have access to improved drinking water (according to SDG guidelines) or improved drinking	1/15

[13] The current Competency Based Curriculum (CBC) in Kenya, one was expected to spend 3 years in lower primary (grade 1, 2 & 3), 3 years in upper primary (grade 4, 5 & 6), 3 years in junior/lower secondary and 3 more years in upper secondary/senior school. By age expectation, a grade 1 child should be aged 6 years, and by age 17 should have completed senior school.

[14] A household is considered to have access to improved sanitation if it has some type of flush toilet or latrine, or ventilated improved pit or composting toilet, provided that they are not shared.

		water is at least a 30-minute walk from home, round trip[15].	
	Cooking Fuel	The household cooks with dung, wood or charcoal/coal.	1/15
	Housing[16]	At least one of the three housing materials for roof, walls and floor are inadequate: the floor is of natural materials and/or the roof and/or walls are of natural or rudimentary materials. In addition, the household does not have an adequate number of habitable rooms, that is, no separate room for cooking, and/or has a room for sleeping shared by more than 3 individuals.	1/15
Health	**Death shock in the household**	The household has experienced mortality in the last 12 months.	1/6
	No father/mother in the household	The biological father/mother in the household is dead.	1/6

Source: UNDP & OPHI, (2022)

In the standard literature, we would include asset ownership in the construction of MPI. The household would be considered deprived of asset ownership if it does not own more than one of these assets: radio, television, telephone, computer, animal cart, bicycle, motorbike, or refrigerator, and does not own a car or truck. For the purposes of consistent comparison, we have left out asset ownership indicator for lack of data in one of the datasets.

We use similar indicators for all the years and follow the updated version of the UNDP's MPI specification (S. Jahan, T. Palanivel, M. Kovacevic, J. Assa, A. Bonini, C. Calderón, Y. Hsu, C. Lengfelder, T. Mukhopadhyay, S. Nayyar, C. Rivera, 2018) in determining deprivations. For the sake of greater comparability of results across the study period, we use only common indicators in all the years.

Although the construction of MPI in this study is largely consistent with the global MPI, there are slight differences, especially with the indicators included. The indicators within the dimensions are slightly different from the global MPI specifications conditioned on the data available. For instance, while in the global MPI the health dimension includes nutrition indicator, in our

[15] A household has access to improved drinking water if the water source is any of the following types: piped water, public tap, borehole or pump, protected well, protected spring or rainwater, and it is within 30 minutes' walk (round trip).

[16] A household is considered deprived if the dwelling's floor is made of mud/clay/earth, sand or dung; or if the dwelling has no roof or walls or if either the roof or walls are constructed using natural materials such as cane, palm/trunks, sod/mud, dirt, grass/reeds, thatch, bamboo, sticks or rudimentary materials such as carton, plastic/ polythene sheeting, bamboo with mud/stone with mud, loosely packed stones, uncovered adobe, raw/reused wood, plywood, cardboard, unburnt brick or canvas/tent.

construction, we do not include nutrition as we do not have information on nutrition (Alkire & Santos, 2010); (Alkire & Robles, 2016). For each household, the scores of deprivations (wellbeing) are calculated.

A household is classified as deprived if their achievement in that specific indicator is below the deprivation threshold. The deprivation scores for each indicator are then weighted to identify individuals who are multidimensionally poor. Individuals with a score below 33.3% (deprived in at least one of the three dimensions) are classified as being multidimensionally poor.

For the sake of greater comparability of results, the estimation of the index is restricted on a common set of variables across all the data sets even though there may be loss of information in the recent datasets (KIHBS 2016, KPHC 2009 and KPHC 2019). The "wealth" variables considered are therefore made as comparable as possible. For example, in the case of clean drinking water, there are a number of options. However, this is not consistently captured across all the datasets. Therefore, we consider only "water piped into dwelling or household" as it is consistently covered in all the datasets. This allows us to have an indication of relative poverty measure rather than absolute.

3.3.1 Education

Beginning with indicators in the education dimension, in the 8.4.4 education curriculum[17], the official school entrance age in Kenya for compulsory primary education is 6 years. Thus, individuals with complete primary education range in age from 6-14 years. It takes an additional four years to complete secondary school.

The current Competency Based Curriculum (CBC) in Kenya, one was expected to spend 3 years in lower primary (grade 1, 2 & 3), 3 years in upper primary (grade 4, 5 & 6), 3 years in junior/lower secondary and 3 more years in upper secondary/senior school. By age expectation, a grade 1 child should be aged 6 years, and by age 17 should have completed senior school.

[17] Prior to the new education curriculum, Competency Based Curriculum (CBC) in place currently, there was 8.4.4 curriculum where one was expected to spend 8 years in primary school, 4 years in secondary school and 4 more years in

In this regard, the entire household (meaning every individual in the household) is considered deprived of school attendance if there is at least one individual of school going age (primary or secondary) not attending school. A household is therefore deprived in primary school attendance if there is any school-aged child is not attending school up to the age at which he/she would complete grade 6; deprived in secondary school attendance if there is any child of secondary school going age; between 12-17 years old, not enrolled in a secondary school (lower and senior secondary; deprived in primary school completion if there is at least one member aged above 13 years with highest qualification level below primary school or at most 8 years of schooling; and deprived in secondary school completion if there is at least one member of the household aged 17 years and above with less than 12 years of schooling or with highest level of education below secondary qualification. This approach is standard and has been used by (Santos & Alkire, 2011; Shifa & Leibbrandt, 2017).

3.3.2 Access to clean drinking water

A household has access to improved drinking water if the water source is any of the following types: piped water, public tap, borehole or pump, protected well, protected spring or rainwater, and it is within 30 minutes' walk (round trip). In terms of source of drinking water, household members are not deprived if the water is piped into the house or in the yard or at a standpoint or public taps; or the source is boreholes or tube-wells; protected dug wells; protected springs; packaged water; delivered water and rainwater which is located on premises or is less than a 30-minute walk from home roundtrip (Alkire et al., 2010). Broadly by SDG standards however, unsafe water sources include open water sources such as unprotected well, unprotected spring, tanker truck, surface water (river/lake, etc) or cart with small tank.

3.3.3 Cooking fuel and lighting fuel

With regards the source of lighting energy and cooking energy, the SDG 7 envisages a world with "Affordable & Clean Energy". Accordingly, household members are deprived in lighting if the household does not have access to electricity or solar energy. Similarly, for cooking energy, clean sources include electricity, liquified petroleum gas, natural gas, biogas, kerosene. Households that report "no food cooked in household" are also included as part of the "clean energy" household group. Household members are therefore considered deprived in this indicator if the source of

cooking energy is coal/lignite, charcoal, wood, straw/shrubs/grass, agricultural crop, or animal dung.

3.3.4 Sanitation

The household's sanitation facility is not improved (according to SDG guidelines) or it is improved but shared with other households. A household is considered to have access to improved sanitation if it has some type of flush toilet or latrine, or ventilated improved pit or composting toilet, provided that they are not shared. By SDG standards, improved sanitation facilities include flush or pour flush toilets to sewer systems, septic tanks or pit latrines, ventilated improved pit latrines, pit latrines with a slab, and composting toilets. These facilities are only considered improved if it is private, that is, it is not shared with other households. This standard classification holds true for every set of indicators (Alkire & Robles, 2017; Alkire & Sumner, 2013b). Thus, members of a household are deprived if they use "non improved" sanitation facilities including pit latrine uncovered, bucket latrine, bush, Cess Pool, or "flush to somewhere else" and "flush don't know where". Household members are also deprived in proper sanitation if they use improved types of human waste disposal but share the toilet facility with other households. For the sake of comparability in this study, households are considered deprived if the household does not have flush toilet.

3.3.5 Housing materials and habitable rooms

A household is considered deprived if the dwelling's floor is made of mud/clay/earth, sand or dung; or if the dwelling has no roof or walls or if either the roof or walls are constructed using natural materials such as cane, palm/trunks, sod/mud, dirt, grass/reeds, thatch, bamboo, sticks or rudimentary materials such as carton, plastic/ polythene sheeting, bamboo with mud/stone with mud, loosely packed stones, uncovered adobe, raw/reused wood, plywood, cardboard, unburnt brick or canvas/tent. In addition, the household does not have an adequate number of habitable rooms, that is, no separate room for cooking, and/or has a room for sleeping shared by more than 3 individuals.

3.3.6 Health

A household is deprived of health if the household has experienced death of any household member in the last 12 months and at least one of the biological parents has died.

The deprivation levels of households in each domain and each indicator within the domains are presented in Table 3.2 below.

Table 3.2: Proportions of Households Deprived in Each Indicator

Domains and Indicators and Deprivation Proportions			
	1999	**2009**	**2019**
Indicator at the household level	% Households Deprived	% Households Deprived	% Households Deprived
Domain 1 (Education)			
Primary school completion	76.7%	72.02%	47%
Secondary school completion	86%	81.64%	70%
Primary Attendance	13.5%	19.84%	9.0%
Secondary Attendance	17.3%	28.55%	10%
Domain 2 (Dwelling Conditions)			
Housing materials	90.6%	84.45%	68%
Connection to Electricity	86.6%	82.33%	57%
Clean lighting energy	51.3%[18]		
Cooking Energy	78.8%	86.89%	76%
Sanitation facility	17.5%[19]	40.6%	56%
Access to clean water	36.2[20]%	46.3%	31%
Domain 3 (Health)			
At least one biological parent in the household is dead	34.5%	31.65%	42.1%
The household has experienced mortality in the last 12 months	1.98%	2.61%	2%
Poverty Indices			
Multidimensional Poverty Index (MPI)	56%	44%	31%
Number of observations	629,223	435,147	4,673,982

Source: Author's calculation from 1999, 2009, 2019 KPHC & 2016 KIHBS

[18] In clean lighting energy, we include electricity, solar, pressure lamp and lantern

[19] For 1999, since it is not not clear whether the pit latrine is covered or not, we assume that it is covered, hence pit latrine meets the SDG standards in our classification.

[20] Clean water sources include piped water, borehole, wells, springs and jabia tanks. For the 1999 dataset, we do not have suffient information on whether or not these sources are open or closed.

The key message from this table is that deprivation levels seem to be declining over time. In all the years, poor households were mostly deprived in dwelling conditions (flooring and walling conditions) and access to basic facilities (electricity, piped water, source of cooking energy and ownership of flush toilet). Going by the most recent data, KPHC 2019, there are high levels of deprivations in primary school completion, secondary school completion. For primary school completion, 47% of households had at least one individual aged above 14 years with highest level of qualification below primary level and were no longer attending school. The deprivation level is even higher for secondary school completion (households with at least an individual aged above 18 years with highest qualification level below secondary school, or less than 12 years schooling in single years), which stood at 70% in 2019. It is worth noting however that the proportion of households deprived in school completion has declined significantly over the years, an improvement which can be attributed to reforms in the education reforms such as free primary and secondary education (Abuya et al., 2015; King et al., 2015; Lucas & Mbiti, 2012a, 2012b; Nishimura & Yamano, 2008, 2013; Oketch et al., 2010). The declining trend is also observed in other indicators.

Our estimation shows that the MPI for Kenya was 56%, 44% and 31% as the MPI for Kenya in 1999, 2009 and 2019 respectively. This is the overall poverty index. In other words, in 2019, the poor in Kenya experience 31% of the total potential deprivations that the society could experience. As can be observed, the poverty levels have declined over time.

3.4: Poverty Persistence and Mobility over Time by Counties

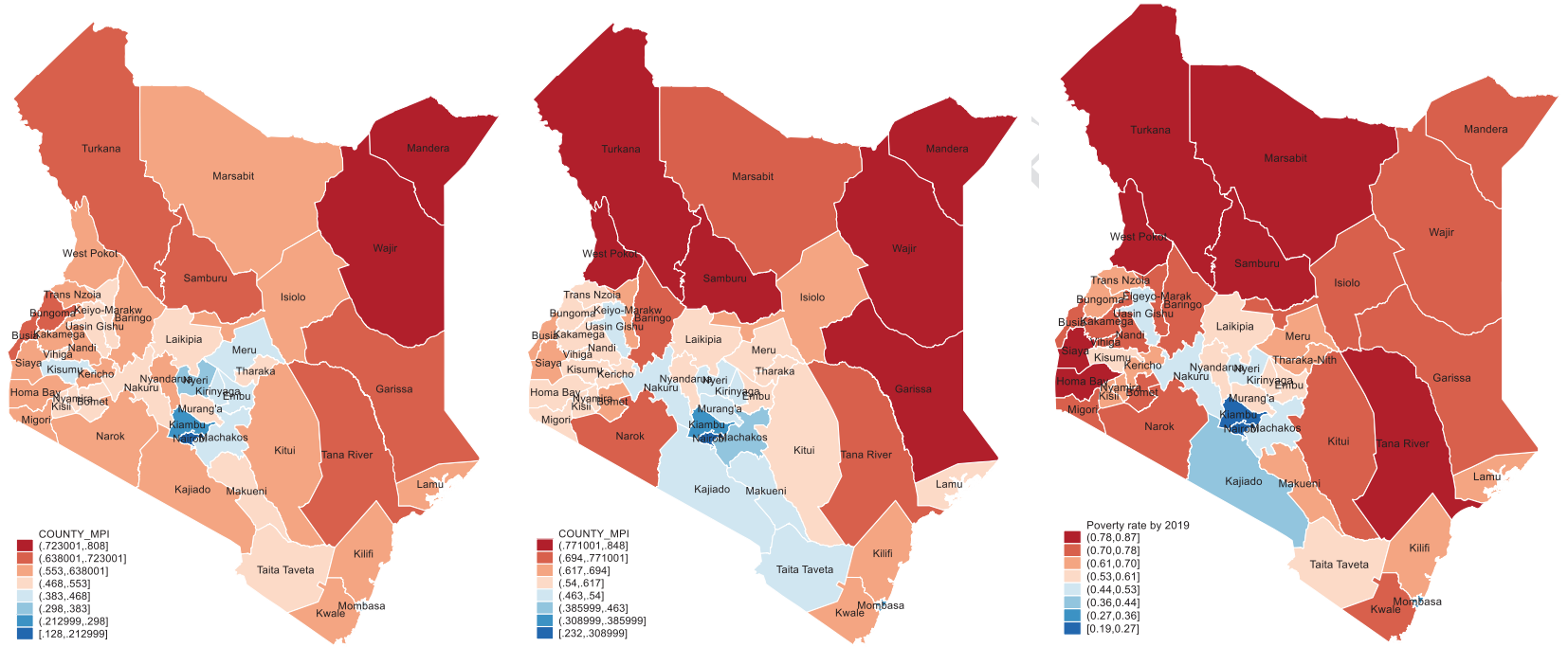
This section presents descriptors of the levels of multidimensional poverty for each county. We undertake poverty analysis at the county level and examine the extent to which poverty is sustained in each county. The aggregate poverty trends and figures mask a great deal of economic mobility both into and out of poverty. These datasets allow us to examine poverty at a much finer level of detail.

In Figure 3.1, we map the trends and patterns of the multidimensional poverty index across Kenyan counties from 1999 to 2019. The map shows multidimensional poverty index by county. The darker the red shading, the higher the poverty rate. In contrast, the darker the blue shading, the

lower the poverty rate[21]. The map shows a bifurcation of counties by poverty level. Richer counties are clustered together as are poor counties. We see that there is clustering of poor counties together- Turkana, Samburu, Marsabit, Isiolo, Garissa, Tana River, Mandera; and rich counties alike- Laikipia, Meru, Murang'a, Kiambu, Nyeri, Machakos, Nairobi. Counties in the Central part of Kenya are less poor (richer)-shaded blue, while the rest of the counties are poorer, especially in the Eastern and Northeastern parts (shaded red in high intensity). Moreover, there is a fair degree of consistency in terms of poverty status over time, that is, counties that are poor (rich) in 1999 typically remain poor (rich) through 2019.

[21] The poverty levels for the 47 counties for each dataset can be found in Table A1 in the Appendix.

Figure 3.1 Multidimensional Poverty Trends and Patterns Across Kenyan Counties



Author's Calculations from KPHC 1999

Author's Calculations from KPHC 2009

Author's calculation from KPHC 2019

A closer look at the trends and patterns of the distribution of poverty over time reveals that initially poor counties (based on 1999 status) have either stayed the same or become poorer, while on the other hand, the rich counties have remained rich or become richer. In the Central part of Kenya and neighbouring counties for instance, the intensity of the blue shading has increased (become darker) meaning that the counties have become less poor. Counties that were shaded red initially (1999 and 2009) like Laikipia, Embu, Meru, for example are now shaded blue. In contrast, counties in the upper Eastern and Northeastern, and Western Kenya-Samburu, Turkana, Wajir, Mandera and West Pokot, Homabay, Siaya, Migori, Busia, Bungoma- have become poorer between 1999-2019, or remained poor. This is shown by an increase in the intensity of the shading, dark red for poorer counties. These patterns suggest that although the trends show that overall, there is a gradual decline in poverty levels over time, the poverty gaps between counties seem to have widened or remained the same.

Table 3.3 presents a simple poverty transition matrix for counties – comparing their status in 1999 to their status in 2019[22]. This matrix distinguishes between states representing three categories of economic wellbeing based on terciles – the poorest counties, the moderately poor counties, and the least poor counties– and illustrate the extent of movements between these states. The values on the leading diagonal of the transition matrix indicate the share of counties who maintained their initial status over time, whereas those below the diagonal were downwardly mobile, and those above the diagonal exhibited upward mobility[23].

Table 3.3 Poverty Transitions Matrix (1999-2019)

Period	**2019**			
1999	Least Poor	Moderately Poor	Poorest	Total
Least Poor	**81.25**	12.5	6.25	100
Moderately Poor	18.75	**56.25**	25	100
Poorest	0	33.33	**66.67**	100

Source: Author's Estimation from KPHC, 1999 and 2019

[22] Transition matrices for the periods 2009 to 2019, and 1999 to 2009 are appended in tables A2

[23] In each year, we estimate the MPI and then rank counties from the least poor to the poorest. We then categorize the counties into terciles (three groups). Two terciles contain about 16 counties, and one tercile contains 15 counties, since we have 47 counties in total. A cross tabulation of the tercile groups in any 2 periods gives the transition matrix.

Table 3.3 shows the proportion of counties in each row. For example, 81.3% of the counties that were classified least poor in 1999 have remained least poor in 2019. Similarly, two thirds of counties that were in the bottom tercile of the distribution in 1999 remained there in 2019. These results indicate a high degree of economic immobility. From the transition matrices, we derive the following categories of counties:

1. **Stable Rich**

This category includes counties that were least poor in 1999 and are still least poor in 2019. The least poor counties display a greater degree of stability. Over the full time-horizon, 82% per cent of the least poor counties remained in the same state. These are counties that are predominantly urban and proximate to Nairobi (mostly counties in the lower Eastern and Central Kenya- commonly referred to as the Mt. Kenya). Counties in Central province, and more urbanized counties consistently displayed lower poverty levels simultaneous with the highest improvement in poverty reduction over time. Six out of the top ten counties are from Central province (Mt. Kenya counties).

2. **Stable Middle**

About 56% of the counties that were moderately poor in 1999 have remained stable in this cohort as of 2019. The upper Eastern, and Nyanza counties (in the middle-not displayed in Table 5) remained moderately poor.

3. **Stable Poor Group**

Counties that are classified as stable poor are those that over the entire time horizon (1999-2019), have remained in the poorest group (that is, the bottom tercile in terms of the MPI). We find that, on average, 67% of these counties have remained trapped in poverty between 1999-2019. These mainly are counties in the Northeastern[24] and upper parts of Rift Valley provinces. They rank bottom of the poverty profile over the period 1999-2019.

4. **Upwardly Mobile Group**

Aside from counties who maintained the same relative status over time, there are those counties who change their relative position, experiencing either upwards or downwards mobility. Counties whose

[24] The Northern Frontier Districts are largely inhabited by the Somali community and face adverse weather conditions. They are also prone to sporadic cattle rustling and external invasions by terrorists.

relative position improved over time are upwardly mobile, while those who experienced downward mobility are termed vulnerable.

Table 3.5 shows that 12.5% of counties that were moderately poor in 1999 moved upwards to the least poor group. Similarly, 25% of counties that were amongst the poorest in 1999, moved to the moderately poor group, whereas 6.25% moved to the least poor category in 2019. These counties are mainly located in Central province. The gains realized in the northern frontier counties can be linked to affirmative action by the government. The Northeastern Kenyan counties have received a lot of intervention programs in the form of cash transfers to protect the population against the effects of harsh climatic conditions, and cattle rustling (Society for International Development, 2006a).

5. Vulnerable Group (Downward Mobility)

In contrast to the upwardly mobile counties, a group of counties experienced downward mobility, and we classify them as vulnerable. A third of counties that were moderately poor in 1999 experienced downward mobility and descended to the poorest category by 2016. It also includes counties that were least poor in 1999 but moved downwards to the moderately poor category (18.75%), or the poorest category in 2019. Most of these counties are from the Western part of Kenya.

A caveat exists when interpreting these results. Although the trend in poverty dynamics over time suggests a gradual reduction in poverty, bearing in mind the inconsistency between cross-sectional poverty estimates and the trends displayed, this optimistic finding should be interpreted with caution. An obvious limitation is that the transition matrices table does not say anything about the poverty status of counties in between any two time periods, meaning it is possible that some of the counties observed to be poorest (or least poor) in two consecutive surveys were actually transitioning into and out of poverty between the points in time in which these households were surveyed (Zizzamia et al., 2019b).

From the transition matrices, the patterns reveal persistence of poverty status. A high proportion of counties have maintained their positions in the poverty profile. Table 3.4 presents a classification of counties based on the movements observed in the transition matrix. This classification allows for consideration of whether or not there is a link between poverty levels and ethnic composition of counties.

Table 3.4: Classification of Counties in the Transition Matrix by majority population share[25]

Stable Rich	Stable Middle[26]	Stable Poor	Non-Vulnerable (Upward Mobility)[27]	Vulnerable (Downward Mobility)
Nairobi (Kikuyu)	E. Marakwet (Kalenjin)	Kilifi (Mijikenda)	Kisumu (Luo)	Migori (Luo)
Kiambu (Kikuyu)	Nyamira (Kisii)	Kwale (Mijikenda)	Laikipia (Kikuyu)	Busia (Luhya)
Nyeri (Kikuyu)	Kisii (Kisii)	Narok (Maasai)	Machakos (Kamba)	Bungoma (Luhya)
Murang'a (Kikuyu)	Uasingishu (Kalenjin)	Turkana (Turkana)	Meru (Meru)	Kakamega (Luhya)
Machakos (Kamba)	Bomet (Kalenjin)	Garissa (Somali)	Embu (Embu)	Bungoma (Luhya)
Kirinyaga (Kikuyu)	Vihiga (Luhya)	Mandera (Somali)	Nyandarua (Kikuyu)	Siaya (Luo)
Nakuru (Kikuyu)	Lamu (Mijikenda)	Samburu (Samburu)		

Source: Author's Calculation from census datasets

Visibly, almost all the counties that have remained stably rich are dominated by Kikuyu as the major ethnic group.

Is there a link between ethnic composition of counties and poverty levels?

Our computations reveal spatial clustering of richer counties, coterminous with clustering of specific ethnic groups in given locations. Counties that are predominantly and contemporaneously coethnic

[25] The ethnic group in the in bracket is the major ethnic group in the county. We append the MPI scores for each county alongside the dominant ethnic group in Table A3.
[26] Other counties in this category include Marsabit, Kericho, Trans Nzoia, Kajiado, Kitui, Isiolo, Nandi, Siaya, Homabay, Kilifi, Kakamega.
[27] More counties: Nyeri, Laikipia, Kiambu, Embu, Kisumu, Kirinyaga, Embu.

(Kikuyu /Kalenjin) major[28] (shaded orange in the map on the right) exhibit lower poverty levels (shaded light blue in the map on the left). This suggests some form of contemporaneous association between the share of the incumbent president's coethnics in a county and wellbeing outcomes. In the technical chapter (Chapter two) we showed that the ethnic composition of most counties has not changed significantly between 1999-2019. Counties continue to be dominated by specific ethnic groups in high shares, suggesting that this contemporaneous relationship between coethnicity and the associated poverty levels within counties may be persistent. Such cases where imbalances are aligned with ethnic and political dimensions may have adverse effects on political and economic stability of a country (Ajulu, 2002a; Berman, 1998; Oucho, 2003).

Evidence from the 2016 KIHBS data also shows observable large differences in poverty indicators between counties dominated by the Kikuyu and counties dominated by other ethnic groups. The estimates that we append in Table A7, based on the KIHBS (2016), reveal marked disparities in socioeconomic outcomes by coethnicity status of counties that appear persistent over time.

Table 3.6: Rank of Counties from Richest to Poorest across Time and Ethnic Composition:[29]

Rank	1999	Major Tribe	2009	Major Tribe	2019	Major Tribe
Top 10 richest counties						
1	Nairobi	Mixed	Nairobi	Mixed	Nairobi	Mixed
2	Mombasa	Mixed	Mombasa	Mixed	Kiambu	Kikuyu
3	Kiambu	Kikuyu	Kiambu	Kikuyu	Nyeri	Kikuyu
4	Nyeri	Kikuyu	Machakos	Kamba	Mombasa	Mixed
5	Machakos	Kamba	Nakuru	Kikuyu	Meru	Meru
6	Kirinyaga	Kikuyu	Muranga	Kikuyu	Embu	Embu
7	Taita Taveta	Kamba	Makueni	Kamba	Kirinyaga	Kikuyu
8	Muranga	Kikuyu	Kirinyaga	Kikuyu	Kisumu	Luo
9	Nakuru	Kikuyu	Taita Taveta	Kamba	Machakos	Kamba
10	Embu	Embu	Nyeri	Kikuyu	Laikipia	Kikuyu
Bottom 10 poorest counties						
37	Kilifi	Mijikenda	Kwale	Mijikenda	Narok	Maasai
38	Kwale	Mijikenda	Baringo	Kalenjin	Kwale	Mijikenda
39	Narok	Maasai	Narok	Maasai	Migori	Luo
40	Marsabit	Mixed	Marsabit	Mixed	Busia	Luhya
41	West Pokot	Pokot	Tana River	Somali	Bungoma	Luhya
42	Garissa	Somali	Garissa	Somali	Turkana	Turkana

[28] For a tribe to be classified as the majority, they must have over 50% population share in the county.
[29] The ethnic shares of the dominant ethnic group by county is appended in Table A4. The ranks of poverty reduction levels by county are also appended in Table A5 and A6.

43	Tana River	Somali	Samburu	Turkana	Garissa	Somali
44	Samburu	Turkana	West Pokot	Pokot	Tana River	Somali
45	Mandera	Somali	Mandera	Somali	Mandera	Somali
46	Turkana	Turkana	Wajir	Somali	Samburu	Turkana
47	Wajir	Somali	Turkana	Turkana	Wajir	Somali

Source: Author's Estimation.

The Kikuyu ethnic group for example, over time, has accounted for an average of 96% ethnic share of Central Kenya, the stable rich counties, whereas Nyanza province (stable middle) is dominated by the Luo, with over 90% population share. The Kamba tribe on the other hand, have a comparable ethnic share (90%) in the Eastern Kenya counties (stable middle), and the Kalenjin community account for over 75% of the Rift Valley province population (moderately stable or non-vulnerable). Western Kenya is inhabited by the Luhya community while the Kenyan Coast is largely occupied by the Mijikenda community and many of the country's Asians and Arabs. This begs the question of whether the economic wellbeing imbalances between counties in Kenya reflects ethnic inequalities?

Table 3.5 presents additional evidence from the 2016 KIBHS data, that considers mean infrastructure and service outcomes for counties where coethnics (Kikuyu) dominate in terms of population share compared to those where they do not. Considering road distribution and density, counties with a majority of the President's coethnics (coethnic counties) have better transport networks, better school quality, adequate care for pregnant mothers, higher vaccination rates for children, lower instances of chronic illnesses, and lower mortality rates for middle aged people. Furthermore, coethnic counties have higher access to clean water and have a higher number of financial institutions and non-agricultural credit, better medical and support services.

Table 3.6: Weighted Descriptive Statistics, by Coethnicity Status of Counties

Types of Road Networks	Full Sample	Coethnic	Non-coethnic	star
Earth Road dominant	0.457	0.476	0.448	***
Gravel Road dominant	0.106	0.118	0.100	***
Tarmacked Road dominant	0.102	0.138	0.086	***
Murram Road dominant	0.336	0.268	0.366	***
Roads Passable throughout the year	0.74	0.78	0.73	***
Roads Passable by Car	0.62	0.73	0.57	***
Roads Passable by Lorry	0.62	0.73	0.57	***
Regular Transport Available	0.51	0.58	0.48	***
Average Hours Waiting for a Bus	10.64	1.39	14.79	***
Bus fare to the nearest bust stop	270.01	172.73	316.22	***
Schools Infrastructure				
Male Teachers in Primary School	6.63	6.04	6.89	***
Female Teachers in primary School	10.69	13.40	9.50	***
Number of Pupils	680.14	732.30	657.32	***
Teachers in Primary School	17.33	19.43	16.40	***
Teacher-Pupil Ratio	39.20	36.23	40.50	***
Separate Male-Female Toilets	0.96	0.99	0.95	***
School Has Feeding Programme	0.23	0.23	0.23	
Proportion of Children in the food prog	88.16	86.84	88.74	***
Distance to Secondary School	5.30	2.22	6.64	***
Secondary School Male Teachers	8.52	7.45	8.95	***
Secondary School Female Teachers	6.81	7.77	6.43	***
Adult Education Programme	0.24	0.28	0.23	***
Health Infrastructure				
Pharmacy available nearby	0.77	0.83	0.75	***
Distance to Pharmacy	5.61	3.85	6.17	***
Health Facility Available	0.59	0.66	0.56	***
Distance to the Health facility	4.81	3.44	5.29	***
Medicine available at the pharmacy	0.49	0.54	0.47	***
Distance to the Nearest doctor	17.97	9.92	21.57	***
Government Doctor Available	0.83	0.77	0.85	***
Private Doctor Available	0.12	0.16	0.10	***
Doctor availed by religious organization	0.05	0.06	0.04	***
Government providing insecticides	0.13	0.09	0.14	***
Mosquito nets available	0.57	0.35	0.66	***
Cost of Mosquito nets	44.92	55.76	42.40	***

Source: Author's Calculation from the KIHBS 2015/16

In addition, the Central Kenya counties (home of Kenya's three Kikuyu Presidents) which are dominated by the President's coethnics have a higher density of tarmacked roads and gravel roads, whilst the dominant road types in other counties, dominated by other ethnic groups are either earth or marram roads. The roads in coethnic major counties are also more passable by both cars and lorries throughout the years. Thus, individuals in coethnic major counties wait fewer hours for public transport, pay lower fares, and have greater access to more regular public transport. In terms of schools, there is a higher concentration of schools in coethnic counties; children in non-coethnic counties walk three times the distance (in kilometers) walked by their counterparts in coethnic counties to the nearest secondary school. Schools in coethnic major counties are of better quality, and have more teachers, for both primary and secondary schools. This means that schools in coethnic major counties have a smaller teacher-pupil ratio. On average every primary school or secondary school in coethnic counties have three additional teachers relative to non-coethnic counties. It is therefore unsurprising that coethnic students have better education outcomes measured in terms of total years of education accumulated, age-adjusted school enrolment and progression and school attendance.

Considering health outcomes, coethnic counties have pharmacies and health centers nearby, most owned by government, whereas in non-coethnic counties, individuals have to walk twice the distance walked by their counterparts in non-coethnic counties to access health services. The distance travelled is even longer to the nearest health facility with a government doctor; while in coethnic counties people travel 9 kilometers to see a medical doctor, for non-coethnic counties, the nearest government doctor is located 21 kilometers, on average.

Whilst the evidence presented thus far points to a contemporaneous association between better socio-economic outcomes and coethnicity status of counties, there is also evidence to suggest this relationship has persisted over time. As shown in Figure 2, counties that are dominated by the incumbent President's coethnics and the neighbouring counties exhibit lower poverty rates over time while counties that are dominated by other ethnic groups have remained relatively poorer.

A central focus of this thesis lies in ethnic differences in MPI across counties and ethnic groups. A direct estimation of poverty rates by ethnic groups provides similar results. The Kikuyu tribe are the least poor relative to other tribes. Consider the results in table 4.1 for instance which shows that as of 2019, only 24% of Kikuyu were considered poor. This rate is significantly lower than that of Kalenjin, Luo, Kamba, Luhya and Kisii for instance at 65%, 48%, 46%, 50%, 50% respectively. The national

average stood at 49%. The Kikuyu also seem to do better in other indicators like school completion, having a gainful employment, proper dwelling conditions, asset ownership and access to household amenities.

Having now established that at the very least there are contemporaneous differences between coethnics of the President and non-coethnics; and coethnic major counties and non-coethnic major counties, and that these have persisted over time, the question arising is what factors explain these gaps? Mainstream literature provides a number of possibilities including colonial factors, economic factors, geographical climate and institutional factors, just to mention but a few. We have shown general trends of poverty on selected variables non-parametrically. However, these patterns and trends would be more convincing if we controlled for some of these factors that are likely to contribute to these differences. It would be interesting to estimate parametric regressions with linear controls for multiple variables (multiple regression analysis).

We undertake such empirical estimations in the next chapter, Chapter four, of this thesis. We apply more sophisticated statistical models to the county-level and individual-level data, and, in the spirit of the excellent figure 1.1, show how changes in coethnicity between citizens/counties and the president shapes county-level outcomes. The chapter aims to examine how this relationship changes post-2010, when the new constitution began coming into effect.

Chapter 4 : Coethnic Patronage, Poverty Persistence and Devolution in Kenya.

4.1 Introduction

One consequence of ethnic clustering in Kenya is the targeting of certain areas with public goods/spending predestines those public goods to a given community. This chapter examines the possible factors that could contribute to the contemporaneous association established in the earlier chapter, between poverty and coethnicity. We estimate the magnitude of the effect of coethnicity with the President on poverty outcomes and examine whether governance reforms through devolution have helped bridge the ethnic poverty gap in a multivariate setup.

Ethnic and political exclusion in the distribution of resources and opportunities have been longstanding issues in Kenya, especially in the pre-2010 period characterized by a form of governance where power was concentrated in the executive, serving at the interest of the President. Pre-2010, the central government had the absolute authority of deciding which county gets what amount of money and for what purpose. As such, if an ethnic group produced a president from one of their own, they are assumed to have an advantage over other counties or ethnic groups, as they benefit disproportionately from this proximity to power (Kanyinga, 2016a). Previous studies have shown that coethnicity with the President comes out as a single most important element in the conduct of social and political affairs in Kenya, with direct implications on the socioeconomic outcomes (KHRC, 2018).

In this study, further, to ascertaining the existence of ethno-political favoritism in poverty levels, we examine whether governance reforms, in the form of devolution, has countered the political patronage legacies witnessed in the earlier regimes, pre-2010. Imbalances in the distribution of publicly provided goods poses a threat to the stability and development of the country, especially when these are aligned with ethno-political dimensions (Stewart, 2008).

Countries in sub-Sahara Africa continue to grapple with the challenge of disparities in wellbeing in many dimensions including county, gender, ethnicity, and race among other dimensions (Stewart, 2010a). Kenya is no exception in this regard, with prior studies documenting remarkable differences in income distribution across its counties and population (KNBS, 2013; Shifa & Leibbrandt, 2017).

Although it is widely accepted that the observed wellbeing differentials in Kenya can be attributed to a myriad of factors, including climatic, economic, socio-cultural, historical, and colonial impacts, it

has also been argued that these disparities, to a large extent, could be due to underlying ethno-political dynamics (Society for International Development, 2006b).

The popular perception is that successive regimes have tended to manipulate resource distribution in favour of ethnic groups and/or counties that produce Presidents, or those with ease of access to the Presidency (Githongo, 2006a). Political competitions therefore often amount to competition by ethnic groups to control resources (Lynch, 2006), and ethnicity stands out as a key factor in the conduct of social and political affairs, with direct implications on the formation of political parties or coalition of parties and voting patterns (KHRC, 2018).

However, despite these widespread perceptions, only a few studies have documented evidence on the prevalence and magnitude of ethno-political favoritism in Kenya. For example, there is empirical evidence on the prevalence of ethnic favoritism along the dimensions of road infrastructure expenditure ((Burgess et al., 2015)[30]; primary school education attainment and public service employment (Simson, 2018b)[31]. Kramon and Posner (2014) find that having a coethnic as president during one's school-age years is associated with an increase in the schooling that children acquire. Kikuyus are significantly favored, spending an average of 1.4 more years in primary school than other Kenyans. Luo and Kamba are disfavored, spending 1.2 fewer years in primary school than other Kenyans.

Perceptions of ethnic and political patronage affecting wellbeing have been a major cause of ethnic conflict, erosion of civic participation, the undermining of an inclusive national identity and other aspects of social cohesion in diverse societies (Gutiérrez-Romero, 2013). In particular, horizontal imbalances in wellbeing aligned with ethnic and political affiliations in Kenya have adversely affected the socio-political and economic stability of the country (Stewart, 2010a).

Alongside other reforms that aim to enhance equitable access to resources and livelihood opportunities, Kenya has implemented governance reforms in the form of a transition from a centralized governance system, where power is concentrated in the hands of the executive arm of the government, to a devolved system, where lower administrative (county) governments have

[30] They find that coethnics of the president receive more roads; the counties from where the President comes gets 5 times the kilometers of roads tarmacked in other counties.
[31] Co-ethnics of past or present presidents, the Kikuyu, are not overrepresented in public employment. Rather, they have public employment levels roughly at the national mean. The Kalenjin are slightly overrepresented.

autonomous political power and control of economic resources. The hope was that a devolved system of governance could effectively help redress the longstanding challenges of inequalities stemming from ethnic identity-based resource allocation. Under devolution, the constitution allocates at least 35% of national resources to the 47 counties serving as devolved administrative units, which are independent. Funds are allocated to the county governments and decisions and accountability about the use of the resources rest with these local administrative units (Finch, Christopher; Omolo, 2015b). The heads of the counties (governors) are also directly elected by the people, just like the President. Although there existed some form of decentralization in the pre-2010, decision-making authority however remained with the central government and the President's appointees served at their pleasure (Kanyinga, 2016a). The Presidents had the power to use (or misuse) state authority to access and channel resources, public goods, services and other benefits almost exclusively to one's own ethnic or the relevant coalition of ethnic groups due to the centralization of executive power (Kanyinga, 2016a).

Proponents of devolution argue that devolution brings the government closer to the people in both spatial and institutional terms, making government actions more visible (Crook, 2003), and allowing government to be more responsive to the needs of the poor than the central government (Collier, 2007). In addition, devolution provides inherent opportunities for higher public participation and increased efficiency in public service delivery, and thus may lead to pro-poor growth (Asante & Ayee, 2010; Reddy & Govender, 2018). Therefore, whereas the centrality of the state and top-down bureaucracy is often associated with ineffective allocation of resources within a society, decentralization is argued to be an essential precursor for efficient poverty reduction and development.

On the other hand, devolution might be counter-productive with exacerbating effects on poverty levels (Devas & Delay, 2006; Falola & Odey, 2017; Hyden, 2007; Jütting et al., 2005). In highly fractionalized states, decentralization might worsen tensions and conflict between local leaders and central government authorities. In addition, low levels of accountability, insufficient human and financial resources, corruption, patronage, and central resistance to decentralization may impede the success of devolution in realizing poverty reduction targets (Steiner, 2007).

This chapter evaluates whether devolution has reduced the ethnopolitical nature of county poverty gaps in Kenya. Despite the transition to legislative and institutional frameworks aimed at reducing inequalities, claims of ethnic and regional favoritism remain fairly rife to date (Nyabira & Ayele, 2017a). The maps presented in Chapter 3 also suggest a persistent correlation between ethnicity and country

poverty levels, even post devolution, suggesting that governance reforms have either been insufficient or have not yet been in place long enough for real change to take effect.

The empirical evidence on the underlying relationship between decentralization and poverty gaps remains largely inconclusive and there is scant evidence which focuses on Kenya, which currently is at its initial stages of devolution (since 2010). As (Kanyinga, 2016b) asserts, devolution in Kenya might not necessarily have removed practices of political patronage and rent seeking but rather "devolved" it down to the local levels. Ethnic identity continues to feature, for instance, in public service appointments and distribution of infrastructure across the country and some have argued that it has not improved relative to pre-devolution (Nyabira & Ayele, 2017b).

Data reveals marked disparities of socioeconomic outcomes by coethnicity. The mean estimates indicate significant differences in the means of various indicators of wellbeing between coethnics and non-coethnics of the President. For instance, from the KIHBS, 2015 data, communities hosting majority of the President's coethnics reported to have better transport network, better school quality; adequate care for pregnant mothers; vaccination for children; lower instances of chronic illnesses; lower mortality rates for middle aged people; lower poverty and inequality levels; among others over the last 5 years. Further, coethnics have buildings made of proper building materials, better access to clean water and have a higher number of financial institutions and non-agricultural credit, better medical and support services.

In addition, while coethnic regions have a higher density of tarmacked roads and gravel roads, the dominant road types in non-coethnic regions are either earth or marram roads. The roads in coethnic regions are also more passable by both cars and lorries throughout the years. Coethnics also wait less hours than non-coethnics for public transport, the bus fare to the nearest bus stop is also twice that of non-coethnics. Regular transport is 10 times more available for coethnics. These are besides a higher concentration of schools in coethnic regions; children in non-coethnic regions walk 3 times the distance (in kilometers) walked by coethnic counterparts to the nearest secondary school. These schools are of better quality, have more teachers, both male and female for both primary and secondary schools. This means that the coethnic schools have a smaller teacher-pupil ratio. On average every primary school or secondary school in coethnic communities have 3 more teachers relative to non-coethnic regions. It is therefore unsurprising that coethnics have better education outcomes for coethnics measured in terms of ultimate years of education accumulated, age-adjusted school

enrolment and progression and school attendance. In addition, more schools have separate male and female toilets; and classes built of bricks. Moreover, coethnic regions have more adult education programmes.

Considering health outcomes, coethnics have pharmacies and health centers nearby, most owned by governments. For non-coethnics, they have to walk twice the distance the coethnics walk to access health services. The distance travelled is even longer to the nearest health facility with a government doctor; while coethnics travel 9 kilometers to see a medical doctor, for non-coethnics, the nearest government doctor is located 21 kilometers. Private doctors are also more available for coethnics compared to non-coethnics. Mosquito nets, however, are twice more available for coethnics than it is for non-coethnics. For every non-coethnic household with treated mosquito net, there are 2 coethnic households with mosquito nets. Mosquito nets are preventive measures against malaria infection, a leading cause of maternal mortality in Kenya. Besides, there are more government officers providing insecticides to coethnic households and mosquito nets are more Ksh.10 more expensive for non-coethnics. Kenya is malaria prone country, to prevent malaria infection, households use treated mosquito nets. Coethnic households therefore are more likely to avoid malaria and other preventable morbidity than non-coethnic households. Further, 2019 KPHC, data, almost a decade after devolution also shows marked disparities in livelihood outcome and opportunities by ethnicity.

The maps in Chapter 3 especially Figure 3.1 suggest a correlation between ethnicity and poverty, that is, counties that are dominated by coethnics do better. We explore this correlation more explicitly, in a regression context, trying to account for as many of the other possible confounding factors that might produce this result, for example, colonial legacy, climate, geographical climate and other economic factors. The empirical analysis is done in three steps. In the first step, we estimate the contribution of coethnicity with the President in driving the poverty differentials at the household level. The next set of estimations is then run at the county level. We also consider whether there is any shift in the association pre- and post-devolution, evaluating whether governance reforms through the institutionalization of devolution, post 2010, has redressed the ethno-political biases in resource distribution in any way. We do this by looking at differences in poverty outcomes between President's coethnic majority counties and non-coethnic majority counties. Finally, having identified the potential correlates, we evaluate the portion of the poverty gap that is explained by these factors and the part

that remains unexplained. The part that remains unexplained by the relevant factors is indicative of existence of potential "ethnic discrimination."

4.2 Ethnic effects of household poverty

We begin by examining how ethnicity determines poverty outcomes at the household level. We estimate the key drivers of poverty at the household level in the cross-sectional context, represented by the household head. We estimate the likelihood that a household is poor, conditioned on the household head's characteristics, household characteristics, and some regional features.

In our estimations, we first investigate the role coethnicity with the President plays on household's poverty outcome, and then move to a more general analysis of the ethnic effects of county poverty levels. Later in the chapter, we examine whether the change in governance structure has mediated the political biases perceived to be at play in the centralized political regime.

Our data inspection shows that on average, Kikuyu households have better economic outcomes than other households. These differences are not convincingly driven by the demographic differences as the demographics seem fairly similar. Household size, age profile, duration of residence in area, for example, are almost identical for ethnicities, all other demographics being constant. Table 4.1 shows the summary statistics of selected variables for the major ethnic groups, namely, Luo, Kikuyu, Kamba, Luhya, Kalenjin, Kisii, Maasai, Mijikenda, Somali, and others.

Looking at years of education, for example, Kikuyu household heads have the highest accumulated years of education, 6.37, relative to the Somali. Similar result holds for secondary school completion, the Kikuyu have the highest proportion of households with post-secondary school qualification. Other outcomes where the Kikuyu households (president's coethnics) seem to do better are: having paid work, connection to electricity, piped water into households, and residing in houses made of modern materials. Most importantly, Kikuyu households are the least poor as compared to other ethnic groups. They also have the least deprivation in the indicators considered. Consider table 4.1, 4.2, and 4.3 (for 1999, 2009, and 2019) below which show massive disparities between ethnic groups. Quite conspicuously, Kikuyu households have significantly better outcomes than other ethnicities.

Table 4.1: Mean outcomes of poverty and related indices by ethnicity (1999)

Ethnic group	Luo	Kikuyu	Kamba	Luhya	Kalenjin	Kisii	Maasai	Mijikenda	Somali	Others	Total
% Pop share	10.72	18.53	10.37	14.06	15.92	6.33	2.23	6.33	3.36	12.14	100
Household size	5.6	5.4	6.3	6.0	6.5	6.2	6.1	7.7	6.8	5.9	6.10
Age	22.19	23.27	22.87	21.88	19.91	21.00	18.12	21.22	20.08	20.15	21.51
Years lived in the current residence	9.07	10.20	7.77	8.34	9.38	7.46	6.02	7.40	6.35	6.37	8.63
Biological father dead	36%	27%	27%	26%	22%	27%	23%	28%	25%	22%	26%
Biological mother dead	21%	14%	15%	15%	12%	13%	11%	16%	17%	12%	14%
Years of education completed	5.27	6.37	5.27	5.26	4.16	5.70	2.38	3.49	1.14	5.43	5.04
Secondary school completion	26%	32%	26%	28%	26%	30%	24%	23%	17%	32%	28%
Working age population	52%	55%	52%	51%	47%	52%	42%	50%	48%	49%	51%
Has paid work	13%	16%	17%	14%	10%	12%	7%	12%	5%	14%	13%
Adequate rooms	47%	60%	53%	49%	39%	62%	29%	40%	16%	47%	48%
Proper floor	61%	93%	70%	61%	50%	70%	30%	32%	17%	83%	66%
Proper wall	9%	27%	13%	7%	6%	5%	4%	7%	6%	23%	13%
Proper floor	32%	40%	41%	24%	21%	23%	11%	24%	14%	46%	31%
Clean drinking water	48%	59%	63%	77%	52%	67%	40%	61%	68%	72%	62%
Has piped water	18%	33%	20%	17%	14%	11%	8%	38%	10%	54%	25%
Proper sanitation	75%	97%	81%	95%	68%	95%	30%	50%	24%	92%	80%
Clean cooking fuel	16%	22%	17%	13%	7%	10%	5%	13%	6%	32%	16%
Connected to electricity	9%	16%	8%	7%	6%	6%	3%	7%	7%	23%	11%
Clean lighting fuel	31%	63%	61%	35%	47%	41%	25%	28%	36%	54%	47%
Proper housing materials	3%	13%	6%	3%	2%	2%	1%	2%	1%	9%	6%
Primary school completion	16%	24%	15%	16%	10%	17%	4%	7%	1%	21%	16%
Secondary school completion	9%	14%	8%	10%	6%	12%	3%	4%	1%	14%	10%
Multidimensionally deprived	87%	71%	76%	80%	85%	80%	94%	86%	95%	75%	80%
Extent of deprivation	61%	48%	52%	54%	59%	54%	67%	62%	71%	51%	55%

Source: Authors' estimation from KPHC, 1999

Table 4.2: Mean outcomes of poverty and related indices by ethnicity (2009)

Ethnic group	Kisii/Kuria	Luo	Luhya	Kalenjin	Kikuyu	Mijikenda	Somali	Meru/Embu	Kamba	National
% pop share	4.6	9.61	13.55	11.85	16.5	4.54	5.76	5.83	7.84	100
Household size	13.39	12.46	14.22	13.03	14.50	18.62	18.35	9.78	12.33	17.44
Average age	21.60	21.12	21.13	20.96	24.80	21.02	18.77	24.40	23.53	22.15
Years lived in the residence	19.24	17.20	17.74	17.47	18.26	18.05	17.73	22.44	20.64	17.36
Biological father is dead	28%	37%	25%	22%	29%	26%	16%	26%	29%	27%
Biological mother is dead	15%	22%	15%	12%	16%	15%	12%	15%	16%	15%
Household experienced mortality	2%	4%	3%	3%	2%	3%	5%	2%	3%	3%
Working age population	50%	47%	47%	49%	56%	48%	43%	54%	49%	51%
Has paid work	7%	9%	9%	11%	17%	12%	5%	12%	13%	13%
Employed in the formal sector	5%	5%	5%	7%	10%	7%	1%	6%	6%	8%
Modern housing materials	9%	10%	7%	8%	13%	5%	1%	9%	25%	9%
Adequate rooms for sleeping	50%	40%	36%	42%	47%	35%	9%	55%	51%	37%
Modern roofing material	90%	80%	79%	71%	96%	40%	16%	96%	87%	76%
Modern walling material	27%	37%	26%	27%	50%	35%	13%	23%	82%	42%
Modern flooring material	21%	30%	20%	26%	48%	26%	10%	34%	43%	36%
Clean water for drinking	51%	39%	66%	40%	67%	62%	59%	62%	38%	59%
Water piped into household	1%	1%	1%	4%	8%	4%	1%	7%	2%	6%
Proper sanitation facility	65%	49%	76%	60%	76%	37%	15%	72%	57%	61%
Clean cooking fuel	3%	4%	3%	3%	14%	7%	1%	4%	5%	13%
Connected to electricity	6%	7%	5%	9%	28%	11%	5%	10%	7%	18%
Clean lighting fuel	44%	33%	36%	59%	69%	27%	47%	47%	70%	53%
Post secondary qualification	25%	21%	21%	22%	26%	18%	17%	20%	19%	23%
Has completed primary school	12%	9%	7%	10%	16%	3%	1%	12%	10%	9%
Has completed secondary school	4%	2%	2%	3%	4%	1%	1%	3%	2%	2%
Multidimensionally poor	46%	50%	45%	47%	41%	49%	58%	43%	45%	46%

Source: Author's estimation from KPHC, 2009.

Table 4.3: Means outcome of poverty and selected indicators by ethnicity as of 2019

Ethnic group	Luo	Kikuyu	Kamba	Luhya	Kalenjin	Kisii	Maasai	Mijikenda	Somali	Others	National
% Pop share	11.28	17.11	10.07	15.6	11.62	6.36	9.39	6.69	4.97	6.91	100
Hhsize	5.30	4.49	4.96	5.45	5.90	5.16	6.78	6.69	7.95	6.33	5.53
Age	22.49	27.12	26.14	23.42	22.75	23.47	19.54	22.97	18.60	22.09	23.74
Biological father dead	37%	34%	33%	28%	27%	30%	22%	28%	18%	23%	30%
Biiolgical mother dead	21%	18%	17%	17%	13%	16%	13%	16%	14%	14%	17%
Mortality experience last 12 months	2%	1%	2%	2%	2%	2%	1%	2%	2%	2%	2%
At least one parent dead	41%	38%	37%	32%	30%	34%	26%	32%	22%	27%	34%
Years of education completed	6.99	8.04	7.57	6.83	6.97	7.43	5.30	5.99	5.79	6.61	7.16
At least post sec qualification	31%	39%	34%	30%	30%	37%	10%	20%	9%	28%	29%
Working age population	53%	60%	59%	55%	54%	55%	46%	53%	45%	51%	55%
Has paid work	18%	22%	26%	21%	20%	19%	18%	19%	15%	16%	20%
Proper roof	96%	97%	96%	95%	91%	96%	47%	77%	54%	88%	88%
Proper wall	48%	61%	76%	38%	28%	43%	20%	44%	34%	28%	46%
Proper floor	56%	67%	64%	44%	38%	45%	19%	42%	28%	32%	49%
Clean water for drinking	69%	83%	64%	80%	49%	62%	44%	73%	59%	52%	68%
Water piped into household	7%	19%	6%	5%	5%	5%	3%	7%	5%	5%	9%
Proper sanitation	37%	53%	48%	48%	60%	45%	19%	33%	19%	51%	44%
Clean cooking fuel	26%	38%	30%	23%	9%	26%	6%	17%	12%	6%	23%
Connection to electricity	42%	67%	39%	40%	32%	49%	11%	38%	28%	26%	43%
Modern housing	33%	46%	47%	27%	21%	31%	11%	27%	16%	17%	32%
Sufficient assets	57%	65%	58%	52%	41%	46%	21%	39%	29%	37%	50%
Primary completion	50%	59%	53%	44%	42%	57%	65%	39%	75%	40%	53%
Secondary completion	23%	28%	23%	21%	21%	30%	61%	20%	71%	20%	30%
Extent of deprivation	38%	33%	34%	36%	38%	36%	43%	38%	44%	40%	37%
Multidimensionally deprived	46%	24%	48%	54%	65%	50%	79%	48%	58%	69%	49%

Source: Author's estimations from KPHC, 2019

4.3 Regression results: Ethnic premium on household poverty

We estimate the drivers of the observed differences in poverty outcomes between coethnics of the Presidents (Kikuyu and Kalenjin) relative to other ethnicities that have not produced Presidents. In the first set of regressions, we estimate the effect of coethnicity (whether current or past) with the president in each regime on household's likelihood of being poor. The kikuyu had produced president from their own community since 1963 up to 1978 (Jomo Kenyatta), when a Kalenjin president (Moi) took over till 2002. The Kikuyu then ascended to power again in 2002 to 2022. We estimate these effects in a cross-sectional set up. The empirical models are specified as follows:

$$MPI_{h,t} = \beta_{11,t} + \beta_{12,t}kikuyu + \beta_{13,t}age + \beta_{14,t}education + \beta_{15,t}employment + X_i\beta + v_{c,t} \quad (4.1)$$

$$MPI_{h,t} = \beta_{21,t} + \beta_{22,t}kalenjin + \beta_{23,t}age + \beta_{24,t}education + \beta_{25,t}employment + X_i\beta + v_{c,t} \quad (4.2)$$

Equation (4.1) estimates, using pooled data (2009, 2009, and 2019 datasets), whether households whose heads are Kikuyu (same as Presidents) have lower likelihood of being poor compared to other households. The outcome variable, MPI_h is dummy variable with a value 1 if the household is poor, and 0 otherwise. The coefficient of $kikuyu$ represent the benefits that accrues to a household solely because of being president's coethnic, holding all else constant. If the coefficient of $kikuyu$ variable is significant, having controlled for other intervening variables like education, having a paid job, staying in urban area, among other variables, in a multivariate setting, then ethnicity alone determines poverty outcomes of the household. $X_i\beta$ is a vector of other control variables including household head's characteristics, household features and type of area of residence of the household, and other household headship characteristics. Finally, v_c is robust standard error, clustered at the household level.

Similarly, equation (4.2) estimates the benefits that accrue to Kalenjin households, solely for having a Kalenjin president in the said regime. The poverty effects for Kalenjin households, attributable purely to them having a Kalenjin president in 1999 (ethnic effect) is captured by the coefficient $\beta_{22,t}$. $X_i\beta$ is a vector of other control variables aggregated at the household level.

Table 4.4: Ethnicity and poverty outcomes at the household level (1999)

Variables	(1) Kalenjin 1999	(2) Kikuyu 1999	(3) Kalenjin 2009	(4) Kikuyu 2009	(5) Kalenjin 2019	(6) Kikuyu 2019
Kalenjin household	-0.0252***		0.0173***		0.0477***	
	(0.00)		(0.00)		(0.00)	
Kikuyu household		-0.0696***		-0.0580***		-0.151***
		(0.00)		(0.00)		(0.00)
Post secondary qualification	-0.0809***	-0.0834***	-0.292***	-0.296***	-0.0548***	-0.0476***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Urban resident	-0.148***	-0.140***	-0.126***	-0.152***	-0.457***	-0.397***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Head is female	0.0281***	0.0299***	0.00565***	0.00177	0.0141***	0.0112***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Has paid work	-0.0386***	-0.0330***	-0.0301***	-0.0365***	-0.0856***	-0.0865***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.02)	(0.01)
Household size	0.0153***	0.0200***	0.00622***	0.00686***	0.0207***	0.0206***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	0.551***	0.505***	0.750***	0.725***	0.702***	0.644***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Observations	161,863	190,011	148,648	166,777	980,096	1,156,989
R-squared	0.214	0.221	0.279	0.279	0.418	0.396

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Our estimation results show that the key drivers of household poverty are the ethnicity status of the household head, the level of education, engagement in gainful employment, location of the household, gender of the household head and the number of household members.

We find suggestive evidence in table 4.4, that coethnicity with the president matters for household poverty outcomes. Beginning with Kalenjin households, in 1999, when they produced the president (Moi), they exhibit significantly lower poverty levels than non-coethnic households, other than the Kikuyu (excluded from the regression since they were previously coethnics). The likelihood of Kalenjin households being poor in 1999, was 3 percentage points lower than that of non-Kalenjin households. In 2009 and 2019 however, after the Kalenjins lose power (change of regime) to a kikuyu president, their likelihood of becoming poor for the Kalenjin households was 2 percentage points higher the non-coethnics, holding all else constant. The Kalenjin households were about 2 percentage points, and 5 percentage points more likely to fall into poverty relative to non-Kalenjins (excluding kikuyus) in 2009 and 2019 respectively. This suggests that there were political power premia to the Kalenjins when they had one of their own at the helm of country's leadership.

Similarly, for the Kikuyu households, despite the fact that they have stayed the least poor, having coethnic presidents across the regimes have significantly reduced their likelihood of becoming poor. Put differently, having a coethnic president has increased the likelihood of Kikuyu households escaping poverty, all else held constant. In 2009 and 2019, when Kikuyu presidents ruled the country, Kikuyu households experienced least likelihood of being poor, as compared to other ethnic groups. The likelihood of Kikuyu households being poor was 15 percentage points lower than other ethnic groups, in 2019, for instance.

More generally, therefore, coethnicity with the President in any regime lowers the likelihood of a household being poor, and its loss increases their susceptibility to higher poverty.

Besides being coethnic with the president, other individual characteristics that also matter for poverty outcomes at the household are post-secondary school qualification, having paid work, staying in urban areas and being headed by a male. For example, as of 2019, household heads who have a paid job were, on average, 9 percentage points less likely to be poor, compared to other household heads who did not have a paid job.

In addition, having a post-secondary school qualification is also associated with lower likelihood of being poor. The likelihood of households where the household heads had post-secondary qualification being poor was 5 percentage points lower than the households whose heads did not have less than secondary school educational qualification, in 2019.

Finally, we also observe the premia to living in the urban areas for poverty reduction. Households that are located in the urban areas on average have one third the chances of rural households being poor, all else held constant. Additional results show that female headed households are poorer than male headed households. Households with many household members are poorer than their counterparts of small household sizes.

These findings however are based on single period data estimation which may only be indicative but conclusive on any causal underpinnings of ethnopolitical effects of poverty.

In addition to the ethnic dimension of favouritism, we further explore the spatial dimension. There is a general feeling that the ethnic group that produces the Presidency have resources targeted in their favour, enabled by the spatial concentration of ethnic groups in given locations. Accordingly, we consider the poverty effects of staying in coethnic dominant regions, that is, counties where the Presidents' coethnics are the majority.

4.4 Empirical estimations of spatial dimension of ethnic favoritism.

This second set of regressions estimate the effect of coethnicity with the president in a given regime on household's likelihood of being poor, alongside staying coethnic dominant counties, that is, counties where the presidents coethnics are the majority. The econometric models are specified as follows:

$$MPI_{h,t} = \beta_{11,t} + \beta_{12,t} kikuyu + \beta_{13,t} kikuyu\#kikregion + X_i\beta + v_{c,t} \quad (4.3)$$

$$MPI_{h,t} = \beta_{21,t} + \beta_{22,t} kalenjin + \beta_{23,t} kalenjin\#kalregion + X_i\beta + v_{c,t} \quad (4.4)$$

The first equation (4.3) estimates, using pooled data (1999, 2009, and 2019 datasets), whether

households whose heads are of Kikuyu ethnicity (same as Presidents) have lower likelihood of being poor compared to other households, while controlling for the population shares of their coethnics in the region. As before, the outcome variable, MPI_h is dummy variable with a value 1 if the household is poor, and 0 otherwise. The coefficient of $kikuyu$ represents the benefits that accrues to a household solely because of being president's coethnic, holding all else constant. On the other hand, the coefficient of $kikuyu\#kikregion$ measures the poverty effects for coethnics staying in coethnic regions, that is, Kikuyu households staying where the Kikuyu have the largest population share. If the coefficient of $kikuyu$ variable is significant, then ethnicity alone affects poverty. On the other hand, if the coefficient of the interaction term is significant, then this is a signal that there exists a spatial dimension of favoritism (Kramon & Posner, 2014). $X_i\beta$ is a vector of other control variables including household head's characteristics, household features and type of area of residence of the household, among other variables. Finally, v_c is robust standard error, clustered at the household level.

Equation 4.3 similarly estimates the effect of Kalenjin presidency on poverty outcomes for Kalenjin households. The poverty effects for Kalenjin households, attributable purely to them having a Kalenjin president in 1999 (ethnic effect) is captured by the coefficient $\beta_{22,t}$, while $\beta_{23,t}$ measures the difference in poverty outcomes for households staying in the regions where the Kalenjin are the majority, compared to those to those staying non-Kalenjin and non-Kikuyu dominant counties. This captures the spatial dimension of favoritism-the Kalenjin regional effect. $X_i\beta$ is a vector of other control variables aggregated at the household level.
The results for these estimations are presented in table 4.5.

Table 4.5: Regression results for household poverty, controlling for coethnic population

Variables	(1) Kalenjin 1999	(2) Kikuyu 1999	(3) Kalenjin 2009	(4) Kikuyu 2009	(5) Kalenjin 2019	(6) Kikuyu 2019
Staying in Kalenjin major county	-0.0233***		0.08***		0.0333***	
	(0.00372)		(0.00)		(0.00175)	
Household head is Kalenjin	-0.00224		0.104***		0.0825***	
	(0.00192)		(0.0362)		(0.00178)	
Kalenjin in Kalenjin major county	-0.0110***		0.00741***		0.0207***	
	(0.00145)		(0.00210)		(0.00131)	
Staying in Kikuyu major county		-0.100***		-0.213***		-0.163***
		(0.00339)		(0.00117)		(0.00131)
Household head is Kikuyu		-0.0836***		-0.146***		-0.174***
		(0.00436)		(0.00215)		(0.00169)
Kikuyu household in Kikuyu County		-0.0802***		-0.0709***		-0.244***
		(0.00132)		(0.00202)		(0.000942)
Has paid work	-0.0367***	-0.0291***	-0.0350***	-0.0308***	-0.0247***	-0.0155***
	(0.00140)	(0.00139)	(0.00317)	(0.00304)	(0.000850)	(0.000786)
Formal sector employee			-0.0485***	-0.0655***	-0.0152	0.00151
			(0.00757)	(0.00756)	(0.0272)	(0.0256)
Paid employee in the formal sector			-0.113***	-0.116***	-0.160***	-0.126***
			(0.00379)	(0.00359)	(0.00282)	(0.00250)
Has at least post sec qualification	-0.209***	-0.204***	-0.293***	-0.289***	-0.240***	-0.208***
	(0.00179)	(0.00167)	(0.00323)	(0.00294)	(0.000969)	(0.000864)
Lives in the urban area	-0.139***	-0.130***	-0.100***	-0.123***	-0.498***	-0.397***
	(0.00211)	(0.00197)	(0.00258)	(0.00247)	(0.000928)	(0.000836)
Head is female	0.00234**	0.00213*	0.000707	-0.00167	0.00243***	0.00208***
	(0.00107)	(0.00110)	(0.00166)	(0.00168)	(0.000833)	(0.000768)
Household size	0.0140***	0.0149***	0.00879***	0.00968***	0.0190***	0.0184***
	(0.000185)	(0.000196)	(0.000145)	(0.000137)	(0.000174)	(0.000169)
Observations	421,385	449,895	134,254	152,383	1,009,401	1,130,984
R-squared	0.190	0.214	0.247	0.268	0.329	0.357

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Corroborating our earlier results, the regressions reveal that being coethnic with the incumbent President is contemporaneously associated with a lower likelihood of being poor, and much more, staying coethnic major counties confers additional benefits to the coethnic households. In both cases, staying in kikuyu dominant counties or Kalenjin dominant counties is beneficial to the coethnic households, when they are in power. Our results show that generally, residing in counties where the presidents' coethnics have the largest population share is associated with lower poverty outcomes.

Beginning with Kalenjin major counties, in 1999, in the reign of a Kalenjin president, households that stayed in these counties had about 2.3 percentage points lower likelihood of being compared to the households in the non-Kalenjin counties. However, in 2009 and 2019 when the president is no longer Kalenjin, staying in Kalenjin major counties increased the chances of a household being poor by 8 percentage points and 3 percentage points higher, respectively.

The benefits and losses for staying in Kalenjin major counties however are greater for Kalenjin households than non-Kalenjin households. When one of their own is in power, they reap from the coethnicity, and when they lose power, their chances of becoming poor increases. We deduce this from the interaction term; Kalenjins staying in Kalenjin major counties. The coefficient is negative and significant in 1999, but positive and significant in 2009 and 2019 when they are out of power. The coefficient for being coethnics with the president for Kalenjin households becomes insignificant when we control for the share of Kalenjins in the county when they are in power but stays positive and significant when they are out power.

Similarly, staying in Kikuyu major counties is linked to lower poverty outcomes. The likelihood of households in kikuyu major counties being poor was 10, 21 and 16 percentage points lower than those of households staying in non-Kikuyu dominant counties, in 1999, 2009, and 2019 respectively, all else held constant. Moreover, in addition to Kikuyu households having lower likelihood of being poor, staying in counties where they are the majority lowers this likelihood further. The coefficient of the Kikuyu coethnicity remains significant after controlling for the county ethnic shares in the region. For instance, the likelihood of Kikuyu headed households being poor was about 8, 14 and 17 percentage points lower than that of non-Kikuyu headed households, in 1999, 2009 and 2019 respectively.

These findings continue to buttress the assertion that there are payoffs to having the same ethnicity with the President in poverty reduction. Controlling for a string of factors, ethnicity status of the household head remains a significant determinant of household's poverty outcome. This is indicative of discrimination in resource distribution along the ethnic lines.

One potential link besides the political influence that could explain these differences in the outcome between Kikuyu dominant areas and the Kalenjin dominant areas is the geographical differences. Even though both the Kalenjin and the Kikuyu have controlled the Presidency institution, the Kalenjin are mainly settled in the Rift Valley, which experiences harsh climatic conditions, mostly classified as arid lands and semi-arid lands, while the Kikuyu community are settled in the slopes of Mount Kenya, famously known as the white highlands, and are categorised as wetlands by agroecological zones. Hence, coupled with other associated factors, a household that moves to the Kikuyu dominated area is likely to do better than the households that are settled elsewhere. Based on the Rift Valley's geography, the opposite might hold for the migrants into the Kalenjin dominated areas.

More importantly, the result points to the fact that even though ethnic inequalities may exist at the individual level, they could be overridden by regional redistribution. The spatial dimension of poverty imbalances seems stronger than the ethnic dimension. A household is able to gain more welfare if they moved to other regions where presumably more resources are being channelled. The implication of this finding could be that removing barriers to movement of people, or rather, strengthening social cohesion amongst communities could help reduce the ethnic inequalities, thereby improving the overall welfare.

Studies have shown potential transmission mechanisms between ethnic diversity and regional poverty. Ethnic heterogeneity is correlated with a number of policy variables, such as quality of governance, institutional quality and some indices of development (A. Alesina, Baqir, & Easterly, 1999; Alberto Alesina, Baqir, & Easterly, 1999; Alberto Alesina, Devleeschauwer, Easterly, Kurlat, & Wacziarg, 2003; Alberto Alesina & Zhuravskaaya, 2011; Barro, 1996). While on one hand ethnic diversity is associated with prevalence of poor governance and weaker institutional quality (A. Alesina & Zhuravskaaya, 2011); lower provision of public goods (de Oliveira, Eckel, & Croson, 2010; Ejdemyr, Kramon, & Robinson, 2017; Gisselquist, Leiderer, & Niño-Zarazúa, 2016; Habyarimana, Humphreys, Posner, & Weinstein, 2007b, 2007a; Habyarimana et al., 2016a; Karreth, 2017; Kimenyi, 2006a; A. Lee, 2017; S. Lee, Lee, & Borcherding, 2016; E. A. Miguel, 2000;

Schündeln, 2013; Wimmer, 2016); and higher poverty incidence, on the other hand, homogeneous societies are characterized by high prevalence of patronage goods.

The high prevalence of patronage goods could be because of political favoritism (A. F. Alesina & La Ferrara, 2004; Habyarimana et al., 2016b; Kramon & Posner, 2016b; E. A. Miguel, 2000), or because such societies are assumed to have shared identities that facilitate cooperation among coethnics (de Oliveira et al., 2010; Green, 2009; Habyarimana et al., 2007b, 2016b; Lieberman & McClendon, 2013). The potential mechanism is the differences in the social preferences among non-coethnics in fragmented societies, which makes it difficult to decide on the types and optimal level of provision of public goods. Thus, such goods tend to be underprovided (E. Miguel & Gugerty, 2005). Less supply of public goods widens inequality and increases poverty levels. With weaker institutions, poverty incidence is higher (Perera & Lee, 2013).

Ethnic diversity can also yield poverty reducing effects. (Awaworyi Churchill & Smyth, 2017) argue that ethnic diversity correlates with better innovation, higher income, and a pool of quality entrepreneurial skills. (Fafchamps, 2000) elaborates on this, suggesting that it facilitates a talent pool of high-quality entrepreneurs which then yields higher individual incomes, although these may be associated with social imbalances. Coethnics tend to be spatially concentrated in geographical areas, identified with a host of specific economic activities (K. L. Wilson & Portes, 1980).

Majority of Kenyans however do not move across ethnic counties, they tend to stay where they were born. Kenya Population and Housing Censuses show that less than 10% of people had moved from their place of birth in the last 10 years. Drawing from the place of birth and current place of residence of individuals, we note that less than 5% of individuals live in different counties from where they were born, thus the ethnic homogeneity within Kenyan counties and heterogeneity across counties. A plausible explanation for lack of cross-ethnic migration is fear of ethnic conflicts, especially during electioneering periods. People therefore tend to move only temporarily, and mostly settle where their coethnics are the majority. This potentially contributes to the persistent ethnic poverty traps.

Going by our results, when an individual is born in a county with low resource base therefore, they are likely to be trapped in poverty, and those born in resource endowed counties are likely to do better. This exacerbates the inequality situation. (Edjemyr et al., 2017) asserts that regional disparities can be linked to the migratory patterns and the differences in economic and resource endowment of the

regions where ethnic groups settled, as well as how the cultural practices influenced their capitalistic capacity to generate wealth and support population. People may generally have lower wealth for the fact that they are overrepresented in the least developed regions or in the rural areas (Miguel, 2000).

We have uncovered the existence of political favoritism along both the regional and ethnic dimensions in the first set of estimations. The magnitude however is stronger along the regional lines. While being coethnic (kikuyu or Kalenjin) is associated with lower likelihood of becoming poor, residing in coethnic regions confers even higher magnitude of poverty reduction. In fact, non-coethnics residing in coethnic major regions are even better off than their non-coethnics counterparts in the other regions. More interestingly, non-coethnics benefit more than their coethnic counterparts if they lived in coethnic major regions.

4.5 The spatial dimension of political favoritism: County level analysis

Having examined the poverty dynamics of coethnicity at the household level, we turn to a broader analysis of the interplay of ethnicity on poverty at the county level. We examine the role that the share of coethnics in given counties plays in the county poverty gaps. As shown earlier, the persistent patterns of differential poverty levels by county and ethnic population share seem stark (see Chapter Three) even in the post 2010 devolution era.

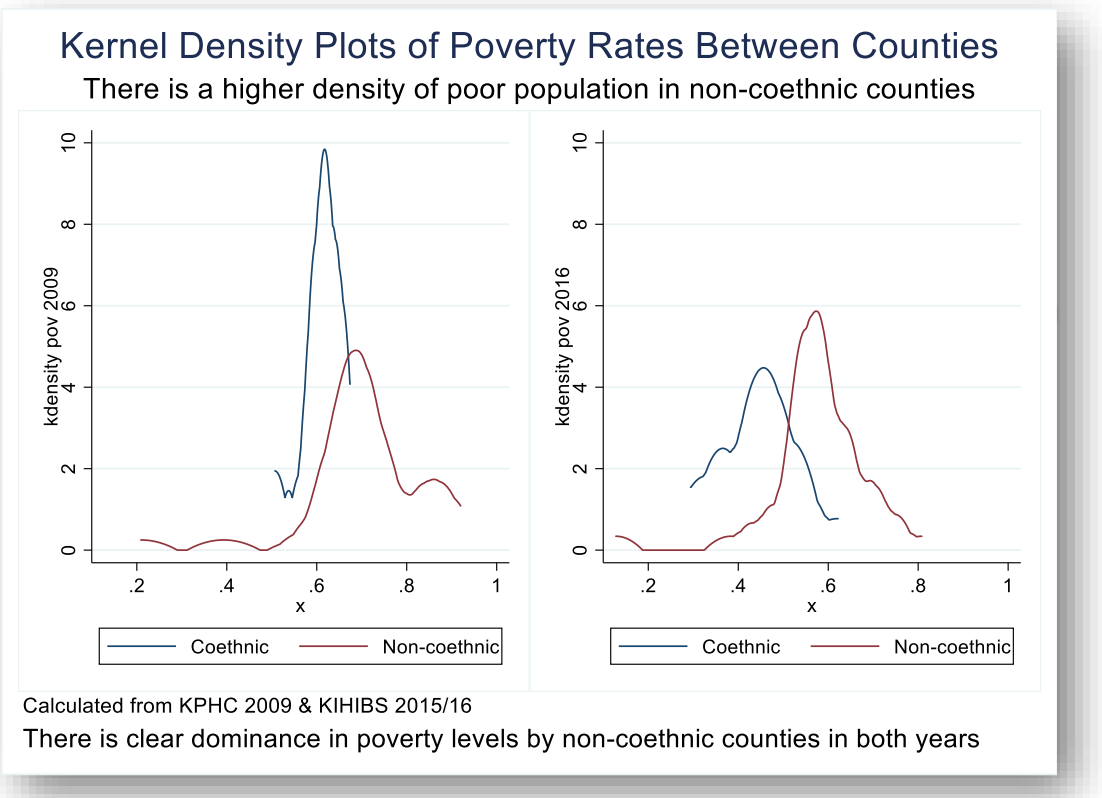
Descriptively, large differences in poverty levels can still be observed as of 2019 between coethnics and non-coethnics, and between their county of residence. Moreover, whilst the evidence presented thus far points to a contemporaneous association between better socio-economic outcomes and coethnicity with the incumbent President, there is also evidence to suggest this relationship has persisted over time. To reiterate, in 2009, the coethnic major counties were Kiambu, Nyeri, Muranga, Kirinyaga, Nyandarua, Nakuru, Laikipia, Tharaka Nithi, Embu and Meru counties. These counties were mostly dominated by the Kikuyu tribe and have remained so even in 2019.

Consider Figure 4.1 which shows the extent of poverty gaps conditioned on whether or not the county is coethnic major, that is, where the majority of the county population shares ethnicity with the incumbent President. As demonstrated in Chapter Two (Measurement and Description of Variables) and in accordance with prior literature, the ethnic composition of counties has not changed

significantly over time (E. A. Miguel, 2000). In Figure 4.1, we present the kernel density distribution plots of poverty levels in 2009 (pre-devolution) and 2015/6 (post-devolution) for counties dominated by the Kikuyu (the incumbent Presidents in 2009 and 2015/16) versus counties dominated by other ethnic groups.

The plots show that the poverty gaps between coethnic majority counties and non-coethnic majority counties has persisted over time, both pre- and post-devolution, with coethnic majority counties (Mt. Kenya counties) having a lower density of poor people. The blue line shows the kernel plot for coethnic counties, while the red line is the kernel plot for the non-coethnic counties. In both years, the kernel plots of poverty rates for non-coethnic counties (red) is to the right of the plots for coethnic counties (blue), and only cuts the blue line once. This means that the there is clear dominance of higher poverty rates in the non-coethnic counties.

Figure 4.1 Kernel Density Plots of Poverty by Coethnicity Status of Counties

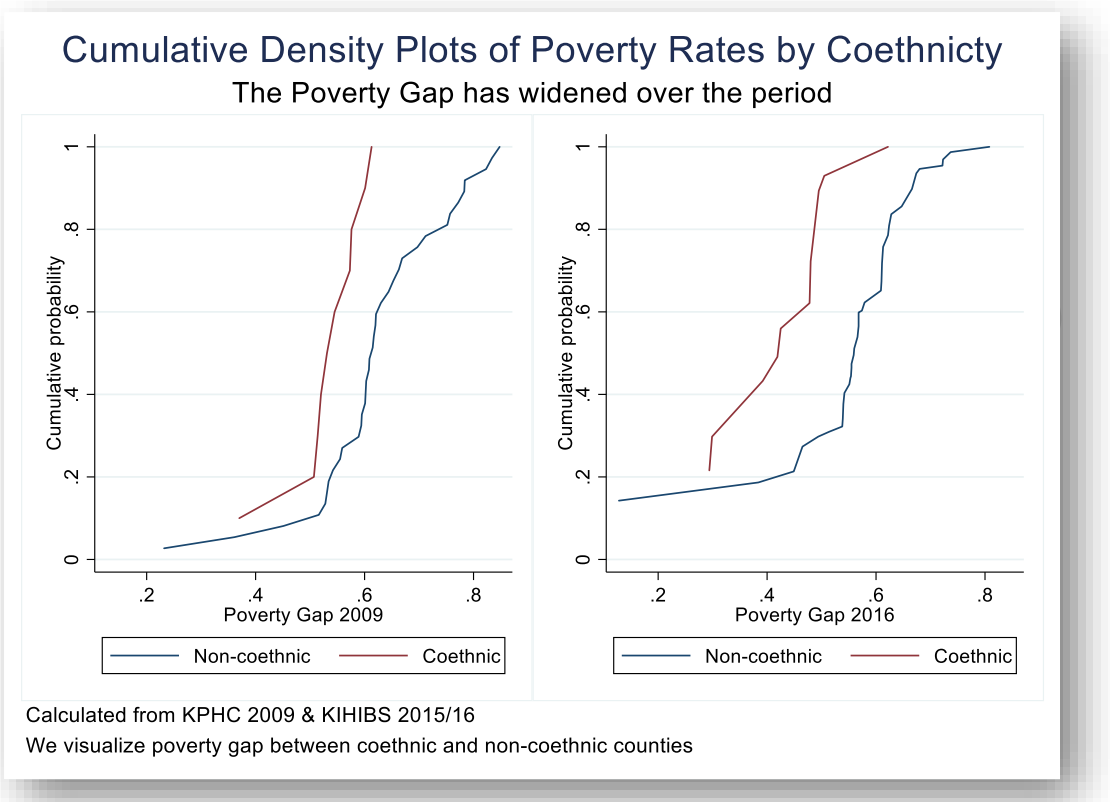


Source: Author's Computations from KPHC 1999, KPHC 2009 and KIHBS 2015/2016.

These persistent patterns of differential poverty outcomes between counties that have a majority population share of the President's coethnics and those that are dominated by other ethnic groups are corroborated by the spatial plots (maps) of poverty levels over time presented in Chapter 3 (see Figures 3.1 and 3.2).

The cumulative density plots of poverty rates show similar results. Figure 4.2 indicates that the poverty gaps between these coethnic major and non-coethnic counties has widened over time. There is a higher density of poor people in non-coethnic counties compared to coethnic counties, and this gap has widened.

Figure 4.2 Cumulative Density Plots of Poverty Rates by Coethnicity Status of Counties



Source: Own Estimation from KPHC 2009 & KIHIBS 2015/16

4.6 Possible drivers of spatial poverty differences

Having established that at the very least there are contemporaneous differences between coethnic majority counties, and non-coethnic majority counties, and that these have persisted over time, the question arising is, what factors explain these poverty gaps? Whilst political patronage operating along ethnic lines is one possibility, other possibilities include colonial history, climatic geography and settlement patterns, and ethnic diversity, among other factors. We briefly discuss the possible factors that could confound the contemporaneous association between poverty and coethnicity and explain how we will control for them in the estimations.

4.6.1 Ethnicity

The focal point of this chapter is the role of ethnicity, operating through politics via the institution of the Presidency, on a county's poverty outcomes. Politics and institutions play a key role in facilitating or impeding the pace of local development (Koster, 2007). State and policy institutions influence the distribution of resources and have the potential to produce a situation where even with equal opportunity, there would still exist differences in wellbeing arising from unequal access to national resources (Daniels, 1989; Petersen & Roemer, 1997). In countries with weak institutions, there is a high likelihood of public spending being diverted to favor communities of the bureaucratic executives, thus aggravating the inequality problem. These factors become more pronounced in environments where taxation, public expenditure policies, budgeting and governance institutions are weak and susceptible to political and bureaucratic manipulations (Dollar & Kraay, 2003; Tebaldi & Mohan, 2010). Inequalities produced by historical injustices can be exacerbated when the state institutions are being used to perpetuate the differences in the sharing of political and economic welfare (Sunley, 2008). It has been shown that public policy has been manipulated to benefit certain counties, especially where the presidents come from (Githongo, 2006a), enabled by the centralization of executive power that has been reinforced by the post-colonial regimes (Society for International Development, 2006b)

Building on this literature, we investigate whether the share of Presidents' coethnics in a county matter for household and county poverty levels, especially in the post-2010 era of devolution.

Related to this, another potential factor is the extent of ethnic diversity of a county. Studies have shown potential transmission mechanisms between ethnic diversity and county poverty. Ethnic heterogeneity is correlated with a number of policy variables, such as quality of governance, institutional quality and some indices of development (A. Alesina et al., 1999b, 1999a, 2003; A. Alesina & Zhuravskaaya, 2011; Barro, 1996). While on the one hand, ethnic diversity is associated with prevalence of poor governance and weaker institutional quality (A. Alesina & Zhuravskaaya, 2011); lower provision of public goods (de Oliveira et al., 2010; Ejdemyr et al., 2017; Gisselquist et al., 2016; Habyarimana et al., 2007b, 2007a, 2016a; Karreth, 2017; Kimenyi, 2006b; A. Lee, 2017; S. Lee et al., 2016b; E. A. Miguel, 2000; Schündeln, 2013; Wimmer, 2016); and higher poverty incidence, on the other hand, homogeneous societies tend to be characterized by high prevalence of patronage goods. The high prevalence of patronage goods could

be because of political favoritism (A. F. Alesina & La Ferrara, 2004; Habyarimana et al., 2016b; Kramon & Posner, 2016b; E. A. Miguel, 2000), or because such societies are assumed to have shared identities that facilitate cooperation among coethnics (de Oliveira et al., 2010; Green, 2009; Habyarimana et al., 2007b, 2016b; Lieberman & McClendon, 2013). The potential mechanism is the differences in the social preferences between coethnics and non-coethnics in fragmented societies, which makes it difficult to decide on the types and optimal level of provision of public goods. Thus, such goods tend to be underprovided (E. Miguel & Gugerty, 2005). Less supply of public goods widens inequality and increases poverty levels.

Ethnic diversity can also yield poverty reducing effects. (Awaworyi Churchill & Smyth, 2017) argue that greater ethnic diversity correlates with better innovation, higher income, and a pool of quality entrepreneurial skills. (Fafchamps, 2000) elaborates on this, suggesting that it facilitates a talent pool of high-quality entrepreneurs which then yields higher individual incomes, although these may be associated with social imbalances. Coethnics tend to be spatially concentrated in geographical areas, identified with a host of specific economic activities (K. L. Wilson & Portes, 1980).

4.6.2 Colonial History

The role of colonial history in county development patterns may be explained in terms of the geographical model as in (Martin & Sunley, 1996). A county's welfare today may be a consequence of its initial conditions and unanticipated events that prompt patterns of industrial development over time and space, and in terms of the subsequent self-reinforcing effects of "lock in" patterns. Such cumulative causations mean that shocks or adjustments are expensive and difficult to turn-around and may persist in the long run, and thus the tendency of more concentration of economic activities and population in few locations (Martin & Sunley, 1996).

Those areas of Kenya such as Central and Nyanza provinces that had earlier penetration of capitalism developed earlier than the isolated ones that did not experience the colonial influence. Development was concentrated in Central province; (Kirinyaga, Nyeri and Kiambu) Eastern province; (Machakos and Meru); Western (Kakamega and Bungoma); Nyanza (Kisumu and Kisii); and selected urban areas; Nairobi, Mombasa, Kisumu and Nakuru (Hornsby, 2013). This form of development left behind most

areas in the Rift Valley, Coast, and Northeastern provinces. The exploitative and exclusionary capitalism by the colonial government occasioned selective development across Kenyan counties (KHRC, 2018). Consequently, these isolated areas had the least investment in education, agricultural development and other social infrastructure, despite being viable in these fronts (Society for International Development, 2006b). Thus, at independence, Kenya had remarkably large inequalities in development and modernization along county, ethnic and class dimensions. In our estimations, to control for the colonial legacy effects, we include a dummy variable for counties that reportedly benefited disproportionately from the colonial administration (Githongo, 2006a; KHRC, 2018; Society for International Development, 2006a). The counties include Nairobi, Nakuru, Mombasa, Kisumu, Kiambu, Nyeri, Kirinyaga, Meru, Machakos, Kakamega and Bungoma, five out of which are coethnic major counties.

4.6.3 Geography and Settlement Patterns

Scholars have also pointed out the contribution of a county's climatic geography and urbanization, migratory and settlement patterns. A county's geography significantly influences its fortunes in a direct manner. Location and climate have significant effects on income levels and income growth through their effects on transport costs, disease burdens, resource endowment, and agricultural productivity, or its accessibility, and economic policy choices among other mechanisms (Malmberg & Krugman, 1996; Venables, 2010). Regions located far from coasts and ocean-navigable rivers, for example, are at a disadvantage and face high transport costs associated with international trade. The tropical regions, on the other hand, bear a heavy burden of disease.

However, geography in isolation has not much influence; only when coupled with economic and political institutions does it matter for economic development (Gallup et al., 1999).

In our estimations, we compare the poverty outcomes of counties by agroecological/climatic zones. In this classification counties experiencing similar climatic/weather patterns are grouped together. Going by the Kenya meteorological department's classification, Tana River, Garissa, Wajir, Mandera, Marsabit, Isiolo, Tharaka Nithi, Kitui, Turkana and Samburu counties are classified as arid lands. Similarly, Mombasa, Kwale, Kilifi, Lamu, Taita-Taveta, Meru, Embu, Machakos, Makueni, West Pokot, Baringo, Laikipia, Narok, and Kajiado counties classified as semi-arid lands. Finally, most

counties in Central, Nairobi, Nyanza and Western provinces, that is, Nyandarua, Nyeri, Kirinyaga, Murang'a, Kiambu, Trans Nzoia, Uasin Gishu, Elgeyo-Marakwet, Nandi, Nakuru, Kericho, Bomet, Kakamega, Vihiga, Bungoma, Busia, Siaya, Kisumu, Homabay, Migori, Kisii, Nyamira, Nairobi are classified as wetlands.

If climatic conditions are the only determinant of a region's economic outcomes, then counties in the same agroecological zones should have similar poverty rates. If the poverty outcomes are different, it implies that other factors, in addition to the climatic conditions, significantly contribute to counties' poverty outcomes.

County disparities can also be linked to the migratory patterns and the differences in economic and resource endowment of the counties where particular ethnic groups settled, as well as how the cultural practices influenced their capitalistic capacity to generate wealth and support population (Edjemyr et al., 2017). Members of particular ethnic groups may have lower wealth due to the fact that they are overrepresented in the least developed counties or in the rural areas. For example, the ethnic groups (the Kikuyu, the Meru and the Embu, and the Kalenjin) that settled in the "white highlands" in Central Kenya and parts of the Rift Valley (Uasin Gishu county) which were developed, for instance, are more likely to have better wellbeing relative to the groups that settled elsewhere that did not experience earlier industrialization in the colonial era (Kanyinga, 2009a). Coupled with favorable weather and climatic conditions, these counties have a higher potential for wealth accumulation. These counties also had a disproportionate concentration of infrastructure such as schools, hospitals, and industries, which are ingredients for development. Moreover, since there is low migration across the county boundaries (E. A. Miguel, 2000), some ethnic groups are likely to be "trapped" in underdeveloped areas[32].

4.6.4 Economic location and proximity to Nairobi

Nairobi is the economic hub of Kenya, contributing to 60% of the country's GDP. In addition, given its significance in the national political and power discourse, it is believed that counties that are closer to Nairobi benefit from this political and economic significance of the city (Battera, 2013; Holmquist & Githinji, 2009; Shilaho & Shilaho, 2018). For politicians across Kenya, Nairobi is a priceless ornament, and to the business elite, Nairobi is seen as a merchant city, where one can make

[32] We have tested for correlations between colonial legacy, geographical climate and ethnic composition of counties and found very low coefficients. There is therefore enough variation that these variables singly pick up different things when put together in a regression setting.

money and enter deals with politicians. Being the capital city, it is the site where sovereign authority is concentrated. To capture this proximity, we include the distance to Nairobi from each county's capital.

As a robustness check, we control for economic geography of the counties, being on the main highway, Nairobi-Mombasa-Kampala, bordering another country as in (Burgess et al., 2011). Being located along Mombasa-Nairobi-Kisumu-Kampala Road is beneficial as this road hosted a lot of economic activities and was instrumental for development of the regions. Most urban cities sprung up along this transport line.

4.7 Data and Descriptive Statistics

As noted earlier, the empirical evidence on the underlying relationship between decentralization and county poverty gaps remains largely inconclusive and there is scant evidence that focuses on Kenya, which currently is in its initial stages of devolution (since 2010). It also remains unclear to what extent the observed county poverty differences continue to be driven by ethnopolitics as before, or whether other factors are at play.

The descriptive statistics (See Table 4.1) show significant differences in household poverty levels (as described in Chapter 2) and other variables for households located in counties dominated by the Kikuyu (incumbent Presidents coethnics) compared to other counties dominated by other ethnic groups. Given our focus on ethnicity and presidential patronage, we compare the household poverty outcomes between counties where ethnic share of the incumbent president's tribe is in majority (>50%) versus counties where they are not a majority. Since the Kikuyu is the Presidential ethnic group, we make areas where they enjoy dominance in population shares, the reference group. The Kikuyu dominant counties, commonly referred to as Mount Kenya region, include Nyeri, Kirinyaga, Kiambu, Muranga, Nyandarua, Nakuru, and Laikipia. If political patronage is at play, any discriminative allocation of the country's resources is likely to be channeled to these counties. The Central counties where the Kikuyu reside are nearest to Nairobi, the country's capital. We compare the poverty outcomes of these particular counties relative to other counties.

Table 4.6:Descriptive Statistics of Selected Variables-aggregated at County Level

Dataset	KPHC 2009			KIHBS 2016		
Variables	**Kikuyu county**	**Non-Kikuyu**		**Kikuyu county**	**Non-Kikuyu**	
Multidimensionally poor HH in the county	0.53	0.62	***	0.44	0.57	***
Male Population in the county	0.48	0.52		0.51	0.49	
County's Urbanization rate	0.25	0.23		0.3	0.24	**
County's Proportion of paid employees	0.20	0.13	**	0.23	0.15	**
Age Structure						
Average Age (years)	20	23	***	22	26	***
No. of dependents in HH (5 <age >65)	0.14	0.17	***	0.09	0.12	***
County's Working Age Population	0.52	0.45	***	0.58	0.52	***
Education Attainment						
> secondary school in the county	0.26	0.22	**	0.38	0.30	**
Average years of schooling	7.42	5.26	***	7.06	6.31	***
Household variables						
HH with electricity in the county	0.26	0.12	***	0.45	0.23	***
HH with piped Water in the county	0.36	0.17	***	0.48	0.28	***
HH with clean fuel in the county	0.09	0.04	***	0.18	0.09	***
Average household size in the county	6.02	7.89	***	7.66	9.92	***
Ethnic Diversity Index of the county	0.16	0.25		0.23	0.37	
County's Annual Temperature	18.92	22.1	***	18.28	24.95	***
County has colonial legacy	0.50	0.19	***	0.50	0.19	***
Economic Location	0.60	0.16	***	0.60	0.16	***

Source: Authors' Calculation from KPHC 2009 & KIHBS 2015/16.

Age, gender, education level, employment status is collected for each individual but aggregated at the county level. For example, in Table 4.1, the proportion of paid employees in Kikuyu majority counties was 20% in 2009 and 13% for non-Kikuyu majority counties. These numbers rose slightly in 2016 to 23% and 15% for Kikuyu majority and non-Kikuyu majority counties respectively. In a similar manner, we consider the proportion of the counties' population with at least secondary school qualification, proportion of working age population, the proportion of urban population, proportion of

males, the dependency ration (proportion of people aged below 15 years and above 65 years), average years of schooling in the county, proportion of households with access to key infrastructure-piped water, electricity, clean cooking fuel and modern dwelling conditions-and counties' multidimensional poverty level, besides other county characteristics. We proxy climatic condition of the county with temperature and the average amount of precipitation for each county. The data on rainfall and temperature are sourced from the Kenya Meteorological Department. The inclusion of these factors has empirical backing from and other literature (see for example, (Burgess et al., 2011; Gordon, 2019; Posner & Kramon, 2011).

The t-tests of significance of the differences in the means of variables suggest that there are significant differences in the mean outcomes of key indicators by coethnicity status of the county; whether the county has the incumbent president's tribe (coethnic) as the majority ethnic group or where the president's coethnic are not the majority (non-coethnic).

Households in counties that have majority of president's coethnics in the respective years have a higher accumulation of most characteristics; better education; higher engagement in gainful employment (work for pay); larger working age population; smaller household sizes; are more urbanized; have better dwelling conditions and greater access to household amenities.

For instance, the proportion of those working for pay in counties dominated by the Kikuyu (coethnics in 2009 and 2016) is higher than the proportion of those in non-coethnic counties. Similarly, the proportion of individuals with at least secondary qualification is significantly higher in coethnic counties (26% and 38% in 2009 and 2016 respectively) compared with non-coethnic counties (22% and 30% in 2009 and 2016 respectively). This difference is statistically significant at all conventional levels. Notably, coethnic counties have substantially higher access to key infrastructure including access to electricity, and piped water. Yet again, these differences are statistically significant. A higher proportion (50%) of coethnic counties also have benefited from early colonial penetration relative to non-coethnic counties (19%), besides getting economic boost by virtue of being located along the Kenya-Uganda (Burgess et al., 2011). While 60% of coethnic counties are proximate to the Kenya-Uganda transport corridor (either roads or rail), only 16% of non-coethnic counties are along these routes. These differences are statistically significant at the conventional levels.

The fact that the coethnic majority counties have better endowment of poverty-reducing features like better education, higher employment, more urbanized could partly explain why they have consistently

exhibited lower multidimensional poverty levels; 53% and 44% for coethnic counties against 62% and 57% for non-coethnic in 2009 and 2016 respectively. However, as noted earlier, these differences may also reflect historical trends related to colonial administration, geography, climate, and migration and settlement patterns, and so we explore this further in a multivariate regression setting.

4.8 Empirical specification

The regression model for the drivers of county level poverty is specified as follows:

$$MPI_c = \beta_{11} + \beta_{12}Year + \beta_{13}kikuyu\ major + \beta_{14}clonial\ legacy + \beta_{14}distance\ to\ nairobi + \beta_{14}economic\ location + X_i\beta + v_c \quad (4.5)$$

$$MPI_c = \beta_{11} + \beta_{12}Year + \beta_{13}kalenjin\ major + \beta_{14}clonial\ legacy + \beta_{14}distance\ to\ nairobi + \beta_{14}economic\ location + X_i\beta + v_c \quad (4.6)$$

Equations 4.5 and 4.6 estimates the Kikuyu and Kalenjin effects on county poverty levels respectively. MPI_c is the county level poverty rate, $Year$ captures economy's time trend, $clonial\ legacy$ is a dummy variable taking a value 1 if the county benefited from the colonial regime, and 0 otherwise. We also control for possible spillover effects of development from the country's capital to the specific counties by including distance to Nairobi in the regression, as well as being located along Nairobi-Kampala highway. $X_i\beta$ is a vector of other controls including the share of the population with post-secondary schooling, share of population with paid work, and county level urbanization rate, as defined before. The regression results for these estimations are presented in table 4.7 and 4.8.

Table 4.7: Drivers of county level poverty: Cross-sectional and pooled OLS estimates

Variables	(1) Kikuyu 1999	(2) Kikuyu 2009	(3) Kikuyu 2019	(4) Full sample	(5) Kalenjin 1999	(6) Kalenjin 2009	(7) Kalenjin 2019	(8) Full sample
Kikuyu major county	-0.0465**	-0.0377***	-0.132**	-0.0775***				
	(0.0192)	(0.0116)	(0.0482)	(0.0171)				
Kalenjin major county					0.00363	-0.00417	0.0306	0.0122
					(0.0126)	(0.0118)	(0.0215)	(0.0121)
Time effects								
Year 2009				-0.00225				0.00624
				(0.0132)				(0.0126)
Year 2019				-0.221***				-0.161***
				(0.0243)				(0.0200)
Population with post-secondary qualification	-0.723***	-0.951***	-0.676***	-0.873***	-0.748***	-0.707***	-0.712***	-0.716***
	(0.176)	(0.148)	(0.165)	(0.153)	(0.199)	(0.186)	(0.134)	(0.143)
Population with paid work	-0.910***	-0.964***	-0.811*	-0.565**	-.746***	-0.974***	-0.570	-0.806***
	(0.214)	(0.152)	(0.462)	(0.220)	(0.161)	(0.161)	(0.407)	(0.194)
County level urbanization	0.0214	-0.0971**	-0.496***	-0.237***	-0.0410	0.0499	-0.679***	-0.282***
	(0.0690)	(0.0378)	(0.0958)	(0.0764)	(0.102)	(0.0472)	(0.0984)	(0.0783)
Observations	33	33	33	99	33	33	33	102
R-squared	0.898	0.918	0.835	0.897	0.855	0.820	0.791	0.868

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

As with the household regressions, results in Table 4.7 show compelling evidence that counties that are dominated by the Kikuyu community, on average, are less poor than counties dominated by other tribes that have not been in power. This is shown by the coefficients of "Kikuyu major county" which are negative and significant. Kalenjin major counties however do not show any evidence of poverty reducing effects across the study period. The time trend effects suggest that between 1999 -2009, and 2009-2019, poverty has reduced significantly, by 21% and 16% respectively, all else held constant. Other poverty reducing factors include having paid work, having at least post-secondary school qualification, and increase in urbanization.

In table 4.8, we present the results of regressions that in addition to the factors considered in table 4.7, control for the county specific characteristics; colonial legacy, distance to Nairobi, and being located along Nairobi-Kampala Road. To capture the climatic conditions, we estimate equations 4.5 and 4.6, separately for arid lands, semi-arid lands and wetlands. As hypothesized in the earlier section, if climate alone individually determines county's poverty outcome, then counties in the same agroecological/ climatic zone should not have any significant differences in the poverty rates as they face similar weather conditions. However, if after controlling for climatic zone, we still find that there are significant differences in county poverty rates, then other factors, other than climate are driving these differences.

We find that in addition to the factors discussed in table 4.7, only colonial legacy individually significant affects county poverty rates. Colonial legacy as a measure of initial conditions that might determine a region's wealth fortunes. Counties that benefited from the colonial legacy have significantly lower poverty rates than those that were neglected by the colonial regimes. Counties' initial endowment therefore matters for its future poverty trajectories. Interestingly, relative to other non-Kikuyu major counties that equally benefited from colonial legacy the Kikuyu major counties with colonial legacy have the least poverty rates. This means that even though colonial legacy matters, being a Kikuyu major county matters more for poverty reduction.

Table 4.8: County level controlling for county characteristics (pooled OLS regression)

Variables	(1) Proximity to Nairobi	(2) Economic location	(3) Colonial legacy	(4) Wetlands	(5) Arid lands	(6) Semi-arid lands
Colonial legacy			-0.136***	-0.0788***	-0.0595	-0.0983***
			(0.000)	(0.000)	(0.000)	(0.000)
Kikuyu major county	-0.0764***	-0.0759***	-0.0800***	-0.128**		-0.0295
	(0.0175)	(0.0177)	(0.0239)	(0.0633)		(0.0381)
Kikuyu major county and colonial legacy			-0.0556**	-0.0771***		
			(0.0269)	(0.0147)		
Time effects						
Period 1: 2009	-0.00141	-0.00134	-0.00135	-0.0558**	-0.0173	-0.0115
	(0.0141)	(0.0140)	(0.0142)	(0.0241)	(0.0353)	(0.0350)
Period 2: 2019	-0.224***	-0.226***	-0.227***	-0.250***	-0.223	-0.248***
	(0.0256)	(0.0264)	(0.0268)	(0.0337)	(0.140)	(0.0528)
Population with post-secondary qualification	-0.857***	-0.839***	-0.857***	-0.829***	-0.348	-0.101**
	(0.179)	(0.181)	(0.185)	(0.301)	(0.388)	(0.527)
Population with paid work	-0.533**	-0.514**	-0.495**	0.0394	-0.238	-0.262
	(0.232)	(0.238)	(0.248)	(0.379)	(0.930)	(0.725)
County urbanization rate	-0.242***	-0.238***	-0.245***	-0.132	-0.168	-0.244
	(0.0799)	(0.0809)	(0.0810)	(0.0892)	(0.203)	(0.224)
Distance to Nairobi	0.0107	0.01085	0.00977	-0.0066	0.0260	-0.0325
	(0.0135)	(0.0137)	(0.01403)	(.0195)	(0.0318)	(.0267)
Nairobi-Kampala road location		-0.00969	-0.0250	-0.0211		-0.0502
		(0.0166)	(0.0185)	(0.0295)		(0.0487)
Observations	99	99	99	51	21	30
R-squared	0.897	0.898	0.899	0.946	0.806	0.909

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Reportedly, the counties that benefited from the colonial legacy received disproportionate infrastructural development in different fronts: schools, hospitals, industries and roads (Society for International Development, 2006b). Even though the Mount Kenya counties (Kikuyu coethnic major area: Kirinyaga, Nyeri, Kiambu) have disproportionately benefited from the colonial legacy, it may not be concluded that it is the key driver of regional poverty to date. Counties that equally benefited from the colonial and missionary entrenchment (Kisumu, Mombasa, Bungoma, Kakamega and parts of Rift Valley) have continued to lag behind and are among the poorest counties to date. When we include the interaction term between the Kikuyu major region and having benefited from the colonial legacy, we find no significant differences in the poverty outcomes for the colonial counties based on whether they are Kikuyu major regions or not.

Time trends still remain significant, especially post 2009, as well as urbanization rate, educational attainment and having paid job, as was the case earlier. We do not find any significant effects of climate, proximity to Nairobi and being located along Nairobi-Kampala Road on poverty outcomes for the county. After we take into account all the other relevant characteristics, the coefficient of these factors remains insignificant. For instance, a regression of county poverty rates restricted to agroecological zones indicate that the other factors, most importantly, the share of coethnics in a county (being coethnic major), especially the share of Kikuyus still matters significantly for a counties fortune. This is true for the wetlands (Nyandarua, Nyeri, Kirinyaga, Murang'a, Kiambu, Trans Nzoia, Uasin Gishu, Elgeyo-Marakwet, Nandi, Nakuru, Kericho, Bomet, Kakamega, Vihiga, Bungoma, Busia, Siaya, Kisumu, Homabay, Migori, Kisii, Nyamira, Nairobi) and semi-arid lands (Mombasa, Kwale, Kilifi, Lamu, Taita-Taveta, Meru, Embu, Machakos, Makueni, West Pokot, Baringo, Laikipia, Narok, and Kajiado counties), but not for the aridlands (Tana River, Garissa, Wajir, Mandera, Marsabit, Isiolo, Tharaka Nithi, Kitui, Turkana and Samburu counties are classified as arid lands. None of these counties is Kikuyu major, nor Kalenjin major).

In the next estimations, we examine whether the existence of ethno-spatial inequalities in poverty persist post the devolution period, post 2010, against a robust body of legislations that are meant to enhance equality and inclusivity.

4.9 Kenya Devolution, Resource sharing and implications for poverty reduction

According to the Kenya Law Reform Commission, the introduction of devolution in Kenya marked a significant shift in governance, marked by decentralization of power to lower levels of governance, with the aim to promote democratic practices, enhance national unity and inclusivity, empower local communities, and ensure equitable resource distribution (National Council for Law Reporting, 2010b).

The goal for the devolved system of government is to improve service delivery and equity in public resource allocation. The Constitution of Kenya outlines the objectives of devolution to include promoting social and economic development, providing accessible services, facilitating the decentralization of state organs, and enhancing checks and balances and the separation of powers (National Council for Law Reporting, 2010b). Scholars have summarized the purpose of devolution as an enabler to: Promoting democratic and accountable exercise of power, Fostering national unity by recognizing diversity, Giving powers of self-governance to the people and enhancing their participation in governance, Recognizing the right of communities to manage their own affairs, Protecting and promoting the interests and rights of minorities and marginalized communities, Promoting social and economic development and providing accessible services throughout Kenya, Ensuring equitable sharing of national and local resources, Facilitating the decentralization of State organs, functions, and services from the capital, Enhancing checks and balances and the separation of powers (KSG, 2015; Onyango, 2013).

These objectives were set to guide the governance of counties and ensure that devolution in Kenya leads to optimal service delivery, social change, and shared prosperity. The devolution process aimed to create a system where both the national and county governments work collaboratively, with each level having distinct but interdependent functions, respecting the constitutional status and institutions of the other level (KSG, 2015; Ministry of Devolution, 2016; Onyango, 2013).

To guide its implementation, the devolution process in Kenya was accompanied by various policies. One such key policy document is the "Policy on Devolved System of Government," developed by the then Ministry of Devolution and Planning to align government policies with the devolved system as outlined in the Constitution of Kenya 2010 and the Sessional Paper of

Devolved Government 2012 .[33] The Sessional Paper on devolved government 2012 informed the establishment of systems for the transition to devolved government, which became operational after the General Elections in March 2013 (Government of Kenya (GOK), 2012).

The implementation of the devolved system of government has been characterized by both successes and challenges. Some of the successes include the enactment of the five devolution laws, the establishment and operationalization of County Government structures, successful transfer of functions, and sustained allocation of resources to county governments (Government of Kenya (GOK), 2012). Kenya's new constitution, 2010, devolves powers to the country's 47 counties wherein each county government is responsible for providing and delivering services—such as elements of health care and pre-primary education— for its citizens (Kimenyi, 2013).

To help fund the services for the county level functions, each county receives funds from Kenya's central government. The allocation of resources to county governments follows on the agreed upon revenue allocation criteria and is based on specific weights on selected parameters (Ministry of Devolution, 2016). The county governments are also expected to mobilize revenue from other sources within their counties, such as taxes on property and entertainment (Kimenyi, 2013).

The formula for sharing the revenue between the national government and the county government is determined by the commission for revenue allocation (CRA) (Government of Kenya (GOK), 2012). Kenya's Commission on Revenue Allocation (CRA) is to recommend to the National Assembly the basis for equitable sharing of revenues raised nationally. Specifically, it decides how much revenue is divided between the national government and the county governments, and how much each county government receives (Onyango, 2013).

[33] The Sessional Paper of Devolved Government 2012 is a significant document that plays a crucial role in guiding the implementation of devolution in Kenya. This paper, along with the Constitution of Kenya 2010, forms the legislative framework for the devolved system of government in the country. It outlines key laws enacted to support devolution, such as the Urban Areas and Cities Act 2011, The Transition to Devolved Government Act 2012, County Governments Act 2012, Intergovernmental Relations Act 2012, and Public Finance Management Act 2012. These laws provide the structure, operations, and guidelines for the functioning of county governments, the transition to devolved government, intergovernmental relations, and public financial management within the devolved system. In summary, the Sessional Paper of Devolved Government 2012, in conjunction with other key laws, provides the necessary legal framework and guidelines for the effective implementation of devolution in Kenya, aiming to empower county governments, enhance public participation, and ensure efficient governance at both the national and county levels.

Currently, approximately 15% of national revenue goes to devolution in Kenya, as stipulated in the allocation of resources to the county governments. This allocation is part of the system of devolved government established by the 2010 Constitution, where county governments receive a share of national revenues to oversee functions such as healthcare, pre-primary education, and local infrastructure (maintaining local roads) that were previously managed by the national government (National Council for Law Reporting, 2010b).

Since the approval of the 2010 Kenya Constitution, 84.5 percent of the revenues is allocated to the national government while 15 percent is allocated to county governments. The remaining 0.5 percent is designated as an equalization fund (Kimenyi, 2013). The commission's main task additionally includes trying to determine how much of the 15 percent each of the 47 counties gets and how to distribute this share in an equitable and fair way. Given the differences across the counties and the fact that any allocation criterion is likely to favor some counties over others, this remains an uphill task.[34]

A greater share of the revenue is given to population share of the county, 45%, followed by the county's poverty rate, 20%. The larger a county is in terms of land mass accounts for 8% of the share, while 25% is the weight attached to basic equal share-that is 25% of the revenue is shared equally among the counties, and 2% covers fiscal responsibility, and is initially shared equally among counties (Government of Kenya (GoK), 2021). Thus, counties that manage their resources better and are more effective in mobilizing their own resources are rewarded by receiving a higher share of the resources under the fiscal responsibility parameter(Kimenyi, 2013). By selecting alternative weights for the various parameters, however, allocations can change and vary across the counties.

The approach for allocating resources described above has been praised to have several merits. For one, it is quite simple and transparent. Secondly, it seeks to equalize allocations based on proximate measure of deprivation (poverty rates) and costs of delivering services (land area, size of

[34] The Commission on Revenue Allocation in Kenya, established under Article 215 and 216 of the Constitution of Kenya, plays a crucial role in recommending the basis for equitable sharing of revenues between the National and County Governments, as well as among the County Governments. One of the notable recommendations made by the Commission is the formula for sharing resources among county governments, which includes factors like population, basic equal share, poverty index, land area, and fiscal responsibility.

population). Finally, the approach takes into account the fixed costs of operating county governments and allocates an equal share for this purpose (Kimenyi, 2013). The resource allocation formula therefore harbors efforts being made to ensure that the allocations are fair and equitable, considering the diverse needs and capacities of different counties in Kenya (ibid).

However, many questions remain as to the suitability of such an approach. Any allocation criteria necessarily involve trade-offs, meaning that gains with one weighted aspect implies a loss if we shifted the weights to the other item. In addition, in transferring resources and responsibilities to county governments, there is a need to evaluate not only the cost of the services but also the capacity of the county governments to deliver those services.

Secondly, it is necessary that the allocation criteria should go beyond the unbundled services approach and instead focus more specifically on the cost of delivering specific services that are under the management of the county governments (Kimenyi, 2013). It is imperative, therefore, that the commission not only focus on allocations based on broad categorization, such as pre-primary education, but rather examine specific services such as teacher training, and other key infrastructure provisions like books and school amenities. This however will require an in-depth analysis of data to capture the variations in the delivery costs across various counties, which is scarce now. In addition to providing a rational approach to resource allocation, line-item budgeting is crucial to assisting in monitoring and evaluation of resource use (Kimenyi, 2013).

Contentions have emerged regarding the appropriate amount of the total revenues that should be shared by the Kenya's 47 county governments, and the county governments have been keen to petition the central government to increase the amount of funding they receive. While the percentage of national revenue allocated to devolution has remained relatively stable over time, there have been ongoing discussions and evaluations to optimize the allocation process and ensure that resources are distributed effectively to support local governance and service delivery across the counties in Kenya. County governments have often advocated for an increase in the sharable revenue allocated to the counties.

In addition to estimating the contribution of coethnicity with the incumbent President in driving poverty differentials, we evaluate whether governance reforms through the institutionalization of devolution in the post 2010 constitutional dispensation, has reduced the ethno-political biases in

resource distribution. We do this by looking at differences in poverty outcomes between President's coethnic counties and non-coethnic counties in the pre- and post-devolution.

In this section, having ascertained the existence of ethnic favoritism in poverty distribution, we investigate whether the change in the structure of governance from a system where power is concentrated in the hands of the executive to a system where power is devolved to lower geographical administrative levels, herein referred to as devolution, has changed this legacy of ethnic and regional exclusion.

In particular, we investigate whether the share of Presidents' coethnics in a region still matter for a region's economic wellbeing. If the share of Presidents' coethnics in a region and coethnicity still play a significant role in its wellbeing, then devolved system of governance has not countered the ethnic-identity based resource allocation problem. We have observed that imbalances in key socio-economic outcomes persist even in the post devolution era. The empirical analysis examines whether coethnicity with the incumbent political regime continue to drive these differences across counties. We focus on the Kikuyu ethnic group, since they are the incumbent President's coethnics in the devolution era. We employ 2 sets of regressions, difference-in-differences model, and panel data models-random effects- that control for county fixed effects (unobserved endogeneity).

Model 1: Difference-In-Differences Estimator

$$MPI_c = \beta_{11} + \beta_{12} post2010 + \beta_{13} kikuyu\_region + \beta_{14} post2010\#kikuyu\_region + X_i\beta + v_c \quad (4.7)$$

$$MPI_c = \beta_{11} + \beta_{12} post2010 + \beta_{13} kale\_region + \beta_{14} post2010\#kale\_region + X_i\beta + v_c \quad (4.8)$$

The dependent variable is county's average poverty rate -a measure of county's socioeconomic status, which is an average of poverty score of households within the county. We regress the multidimensional poverty index on county dummies which take 1 if more than 50% of the county population is coethnic.

Model 4.7 estimates the magnitude of each variable on the county poverty rate, the main coefficient being that of the interaction term between post 2010 observations and being a kikuyu dominant region. Similarly, model 4.8 estimates the magnitude of each of variable on the county poverty rate, the main coefficient being that of the interaction term between post 2010 observations and being a Kalenjin dominant region. Besides the main variable of interest, coethnic majority, we also control for a vector of other variables that determine a region's wellbeing captured under $X_i\beta$. These variables include colonial history of the county, climatic conditions, the extent of urbanization, employment, education qualification, among other factors defined as before in the earlier regressions. The inclusion of these factors also receives empirical backing from literature as reviewed in the previous section and more specifically from (Burgess et al., 2011). The coefficients of each of these variables indicate their respective contribution to the county's poverty level. $kikuyu\_region$ denotes a county with over 50% Kikuyu population share. (Burgess, Jedwab, Miguel, Morjaria, & Padro i Miquel, 2011)classify coethnic major regions as having over 50% population share of coethnics in a region. We follow the same approach in this study. In all the models, $post2010$ dummy captures the time effects, showing the difference in poverty levels between the pre-devolution (before 2010) and the post-devolution (after 2010) era. The extent of urbanization here is a proxy for county's development level. Finally, we include the county's cluster effects, since this is where treatment is implemented.

Although political clientelism may determine a region's development, as in Click or tap here to enter text., the devolved system governance works to dampen these effects. Hence, we expect smaller coethnic effects of poverty in the 2019 period, the post devolution period. We present the regression results for difference-in-differences estimation in Table 4.9.

Table 4.9: Difference-In-Difference Results: Kikuyu Coethnicity and Regional Poverty

Covariates	(1) Kikuyu Effects	(2) Kalenjin Effects
Observed in the post-2010 period	-0.196***	-0.183***
	(0.0276)	(0.0245)
County is kikuyu major	-0.0356**	
	(0.0157)	
County is Kalenjin major		-0.00911

		(0.00981)
Kikuyu major county post 2010	-0.126***	
	(0.0417)	
Kalenjin major county post 2010		0.0584*
		(0.0298)
County has colonial legacy	0.0158	0.0182
	(0.0179)	(0.0207)
Population with post-secondary schooling	-0.673***	-0.745***
	(0.157)	(0.148)
Population with paid work	-0.609**	-0.725***
	(0.255)	(0.219)
Urbanization rate	-0.210***	-0.273***
	(0.0662)	(0.0751)
Distance to Nairobi	0.0117	0.00224
	(0.0125)	(0.0126)
Located along Nairobi-Kampala Road	-0.0250	-0.0243
	(0.0156)	(0.0163)
Colonial legacy	Yes	Yes
Observations	102	102
R-squared	0.913	0.875

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4.9 displays the difference-in-differences regression results. Overall, the results show that being a Kikuyu region in the post devolution era still matters for regional wellbeing. The estimation results show that coethnic or presidential counties-counties dominated by Kikuyu, are significantly richer than other counties. These counties are on average, 3% less poor than counties where the President's tribe (the Kikuyu) are not the majority. We do not observe any Kalenjin dominance effect. In fact, in the post 2010 period, Kalenjin major counties are poorer than other con-coethnic major counties.

The time effects coefficient (being observed post 2010), before, suggests that counties have become richer in 2019 than they were in 1999 and 2009 , all other factors held constant. The coefficient of favoritism (the interaction term between the post 2010 dummy and the being a presidential county) suggests that the coethnic regions, especially the Kikuyu dominant, are still disproportionately richer. The Kikuyu coethnic regions post 2010 are 13% less poor compared to the non-coethnic counties in the same period, considering all the relevant factors. This result suggests that we cannot reject the null hypothesis of the existence of political favoritism in the post devolution era. Put differently, devolution has not been effective solving the ethnic identity-based

resource allocation in Kenya. Presidential counties continue to benefit from the country's resources in a disproportionate manner based on their proximity to political power. Suggestively, the Kikuyu regions seem to have more resources disproportionately mobilized in their favour, hence the lower poverty outcomes.

From the other controls, an increase in the share of population working for pay by 1% would on average reduce county level poverty by 60%. Increase in the share of population with post-secondary school qualification and urbanization rate also have significant poverty reduction impacts. Counties that benefited from the colonial legacies are significantly less poor compared to other counties that did not experience colonial power.

Our evidence suggests that coethnicity still plays a significant role in county poverty outcomes even in the post-devolution era. This suggests that governance reforms, by transitioning from central governance to a devolved system has not effectively redressed the longstanding challenge of ethnic imbalances that has continued to bedevil Kenya. Therefore, we find no doubt that the Presidents coethnic regions continue to receive more poverty-reducing resources than other counties. This is captured by the interaction term between the post 2010 constitutional period and the coethnic major variables. Thus, the exercise of favoritism has not changed across the systems of governance, transition from central governance to devolution.

We subject these findings to robustness checks by running panel data estimator which controls for the unobserved time-invariant county fixed effects.

4.10 Panel Data Model-Random Effects Estimation.

Pooled OLS estimators may give results that are biased and inconsistent since they may suffer from correlation between the explanatory variables and the composite idiosyncratic errors. We therefore utilize more robust estimators; the Random Effects (R.E) that account for the unobserved effects and cluster correlations Click or tap here to enter text.. The OLS model fails to capture some of the unobserved factors that potentially affect the poverty outcomes. These may include all other variables that potentially we have not controlled for like wages, conditions of work, differences in the quality of education or direct labour market discrimination, among other variables.

Our panel estimates are derived from strongly balanced panels, which guarantee the best linear unbiased estimators. In addition, since we control for variables which used to derive the analytical weights (age, gender, urban), we believe that there are not any variables left which might be strongly correlated with the explanatory variables Click or tap here to enter text.. With these controls, any leftover heterogeneity only induces serial correlation in the composite error term, but it does not cause correlation between the composite error term and the explanatory variables Click or tap here to enter text.. The panel models are specified as follows:

$$mpi_{c,t} = post\_2010 + kik\_major_{c,t} * post_{2010} + \alpha_{c,t} + X_i\beta_{i,t} + \varepsilon_{c,t} \quad (4.9)$$

$$mpi_{c,t} = post\_2010 + kale\_major_{c,t} * post_{2010} + \alpha_{c,t} + X_i\beta_{i,t} + \varepsilon_{c,t} \quad (4.10)$$

The panel models are similar to the difference-in-difference models specified previously, save for the fact that they have the time connotation for each variable in the model in reference to a specific point in time and exclude time invariant factors. In addition, they include the county-specific heterogeneity (α_{ct}) which captures the unobserved factors that are within-county specific and are time invariant. α_{ct} drops out of the estimation when estimated with random effects or fixed effects model Click or tap here to enter text.; the choice depends on the assumptions made on the α_{ct}. The most appropriate model is the Random Effects. We do not consider the Fixed Effects Model because the time invariant variables of interest (whether a region is coethnic major or not) drop out when we run our estimations (they are fixed). These variables are fixed, for instance, the classification of a region as coethnic major remains stable over time. The advantage of random effects estimation over OLS models is that the random effects model considers both the cross-sectional and time dimensions in the estimation. The random effects models therefore are more efficient and result in correct inferences (Cameron & Trivedi, 2005a, 2005b; Dang et al., 2014; Hsiao et al., 2019; Schunck, 2013). The Difference-In-Difference model only considers the cross-sectional nature of the data.

The variables are defined as before, for example, $mpi_{c,t}$ is the poverty level for county c, in period t; $kik\_major_{c,t}$ /$kale\_major_{c,t}$ is a dummy variable capturing whether the county in question is categorized as Kikuyu/Kalenjin major region or not, being observed in 2019 dummy ($post\_2010_{ct}$) to capture the transition from centralized governance structure to devolution

system. Since we control for the post 2010 regime, we do not need to control for the year dummies, as they both capture the time trends.

Table 4.10: Random effects estimation of county poverty rates

Random effects estimation of county poverty rates

Covariates	(1) Kikuyu presidential effects	(2) Kalenjin presidential effects
Observed in post 2010	-0.189***	-0.182***
	(0.0262)	(0.0249)
Kikuyu major county	-0.0905***	
	(0.0292)	
Kikuyu major county in the post-2010 period	-0.125***	
	(0.0468)	
Kalenjin major county in the post-2010 period		0.0584*
		(0.0317)
Extent of urbanization	-0.417***	-0.516***
	(0.0726)	(0.0625)
Population with post-secondary schooling	-0.851***	-0.704***
	(0.236)	(0.242)
Population with paid work	-0.676***	-0.737***
	(0.222)	(0.198)
Distance to Nairobi	-0.0249	-0.0257
	(0.0256)	(0.0232)
County has colonial legacy	0.0170	0.0102
	(0.0295)	(0.0326)
County is Kalenjin major		0.0106
		(0.0140)
Observations	66	66
Number of counties	33	33

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The results of the R.E model are similar to those derived from the difference-in-difference model in terms of direction and magnitude, except that they are more efficient. Since we are observing each of the counties in 3 different time periods, and the variable of concern is whether the share of President's coethnics in a region matters for the county's poverty outcomes.

The main result we draw from the R.E model is that the change in the governance structure has not eliminated the poverty effect of the share of coethnics in a county. This means that ethno-regional favoritism continues to thrive in the post 2010 constitutional dispensation which has a hallmark of the quest for equal and equitable access to the country's resources.

In addition to the fact that Kikuyu dominated counties are significantly less poor than other counties, devolution seems to have exacerbated this inequality, Kikuyu dominant areas have become less poor in the post devolution era, about 12.5% less poverty incidence.

Secondly, the RE model predicts poverty reducing time effects; the coefficient of post the year 2010 dummy is negative and statistically significant in both specifications;-0.186; -0.182. This means that poverty has declined in the post 2010 period. This could be because of overall economic growth in the country, increased investment or any poverty-reduction interventions by the government.

Overall, we find that the share of coethnics in a region to date, significantly determines its fortunes, all else held constant. Also, the fact that the coethnic major regions have continued to exhibit lower poverty levels and simultaneous highest reduction in poverty while the rest of the counties remain trapped in poverty means that the county poverty gaps have widened. Also, these gaps as have been shown are significantly contributed to by ethnic characteristics. This suggests that devolution has not effectively countered the potential ethnic bias in resource distribution at the national level.

While we have attempted to control for all the possible empirical factors given our data-time trend, extent of urbanization, being Presidents coethnics, the proportion of the population with post-secondary schooling, and the proportion of the population with paid work, the empirical data may not convincingly rule out many other potential explanations. Some of these unobserved factors in our data may include better equipped bureaucracies, stronger representation in the national assembly, more effective county executives, among other factors, which we have not controlled for. Although we have convincingly provided evidence of persistence of ethnic imbalances beyond the governance reform period, future studies may consider adding additional empirical material that could support the assertions in this thesis.

Although these findings are indicative, we note that it might be too early to comment on the effectiveness of the devolved system of governance. Kenya is barely a decade into devolution, which could be a short period to undo any stark patterns of inequalities.

The last bit of analysis involves decomposing the observed poverty gaps which we have now ascertained, into portion that is explained and portion that remains unexplained. In this case, we can attribute the unexplained portion to “political favoritism”.

4.11 Decomposing the Ethnic Gaps in the county-level MPI

As shown in the earlier section of this chapter, Figure 4.1 and 4.2, the cumulative density and kernel density plots of poverty incidence between counties dominated by the Kikuyu and those populated by other majority ethnic groups reveal the existence and persistence of a poverty gap between these sets of counties. Relative to counties dominated by other tribes, counties where the Kikuyu are the majority in terms of population share have consistently exhibited lower levels of poverty.

This section explores further the observed correlation between ethnicity and county poverty outcomes documented in Chapter 3 by decomposing the ethnic poverty gap at the household level, and controlling for additional possible confounding variables including colonial legacy, climatic conditions-proxied by agroecological/climatic zones, coethnicity with the president-share of president's coethnics in a region, level of urbanization, distance to Nairobi (the country's capital), and economic factors-employment, education, among other relevant variables.

Having identified the potential drivers of this gap, from the linear regressions, we now decompose the poverty gaps into parts explained by these potential correlates and those that remain unexplained, by means of an Oaxaca-Blinder decomposition based on linear regressions (Jann, 2008). We use the significant factors; colonial legacy, being coethnic (Kikuyu), extent of urbanization, ethnic diversity, staying in coethnic majority county, climatic factors-temperature, amount of precipitation, economic factors-education level, employment status and demographic characteristics-age and gender, identified in the earlier regressions at the household level in this decomposition.

Counties dominated by the Kikuyu[35] are the reference categories and those dominated by other ethnic groups are the control (minority) categories. We run the estimations while including all the other counties in the control group (minority group) at one point, then excluding counties dominated by the Kalenjin since they have had a President for about 25 years (1978-2002) before the next rounds of Kikuyu Presidency. These historical benefits might confound our results.

[35] 10 counties.

The Oaxaca-Blinder decompositions at the means essentially differentiates two parts of the poverty gap as follows:

$$\bar{\bar{mpi}}_{\bar{kik}} - \bar{\bar{mpi}}_{\bar{oth\bar{er}s}} = (X_{kik} - X_{others})\beta_{others} + X_{kik}(\beta_{kik} - \beta_{others}) \qquad (4.4)$$

On the left-hand-side, mpi_{kik} is the multidimensional poverty level of Kikuyu dominated counties, while mpi_{others} is the multidimensional poverty level of counties dominated by other ethnic groups. We compute the averages of each of these groups of counties and then find the difference in the poverty levels. Oaxaca-Blinder decomposition technique seeks to explain this difference "gap" by decomposing it into part that is explained by the relevant factors and part that is not attributable to the observable features. On the right-hand-side, the first component ($(X_{kik} - X_{others})\beta_{others}$) is the "explained" component. It attributes the poverty gaps to the differences in characteristics between counties dominated by the Kikuyu and those dominated by other ethnic groups weighted by other ethnic groups' coefficients-coefficients of HHs in counties dominated by other ethnic groups; β_{others}. The second component of the gap ($X_{kik}(\beta_{kik} - \beta_{others})$) is the "unexplained" part, which reflects the portion of the poverty gap that cannot be attributed to the observed explanatory factors. This is the coefficient effect of the poverty gap. It is also referred to as the discriminatory component.

The characteristics/explained effect gives an indication of how much the differential in poverty is explained by one group (Kikuyu dominant counties) having better attributes (education, employment, living in urban settlements, colonial history, geographical climate, ethnic diversity) relative to the other group (non-Kikuyu dominant counties) (Graddn, 2016). The coefficients effect, on the other hand, quantifies the extent to which the poverty differential is associated with differences in rewards to similar characteristics for both the reference group and the minority group (one group may be harmed or favoured by these attributes).

By running a regression-based counterfactual analysis (comparing the actual difference with what remains when the minority group is given the characteristics of the majority), the study estimates the characteristics and coefficients effects of the ethnic gap. Essentially, the minority group is given the characteristics (on average) of the reference group while keeping their own coefficients constant. This estimates the impact of the observed characteristics on poverty (Graddn, 2016). This estimation can be repeated at different percentiles of the poverty distribution (Firpo et al., 2018). A

detailed decomposition provides a quantification of the contribution of specific attributes to each of these effects. In this study, we do the decomposition based on linear regressions.

4.12 Ethnic Poverty Gap Decomposition Results

An examination into the poverty gap by decomposition reveals that across all data points, there exists a significant poverty gap which remains unexplained between the reference group (households in Kikuyu dominant counties) and the minority group (households in counties dominated by other majority ethnic groups). It is worth noting that the unexplained proportion of this gap, which is the focal point of interest in this study, remains significant over the study period.

We present the results for the regression-based decomposition of the regional poverty gap in Table 4.11.

Table 4.11: Decomposition of Intergroup Poverty Gap at Means

Variables	(3) MPI 2009	(4) Gap 2009	(5) MPI 2019	(6) Gap 2019
Prediction for "the minority group"	0.617*** (0.000)		0.568*** (0.000)	
Prediction for "the reference group"	0.519*** (0.000)		0.438*** (0.001)	
Difference	0.098*** (0.000)		0.130*** (0.001)	
Explained		0.052*** (0.000)		0.029*** (0.001)
Unexplained		0.046*** (0.000)		0.101*** (0.001)
Observations (Households)	492,712	492,712	1,130,984	1,130,984

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In this decomposition, we control for several factors: county climate, colonial legacy[36] (Burgess et al., 2011), ethnic diversity (measured through the ethnolinguistic fractionalisation index), proportion of people with post-secondary school qualification, proportion of people engaged in gainful employment, and population structure (age and gender) at the county level. The results show that while controlling for these observed factors, the predicted poverty rate for the minority group in 2009 (households in counties dominated by other major ethnic groups) is 62%, while only 52% of the households in coethnic counties are poor. This means that the difference in poverty rates between these counties is about 10%. Households in counties dominated by Presidents' coethnics are 10 percentage points less poor than non-coethnic counties. Decomposing this gap reveals that 47%[37] of the poverty gap remains unexplained, even after considering the differences in the potential observed factors. In 2019, 57% of the residents in non-coethnic counties are predicted to be poor. This compares with the 44% prediction for coethnic residents. This shows that there exists about 13 percentage points difference, signifying an increase in the gap from 2009. Of this gap, unexplained proportion accounts for 77.7%[38].

The focal point of this analysis is the unexplained proportion of the county poverty differential. This hints to potential existence of "discrimination or favoritism" where the higher poverty levels for counties dominated by other ethnic groups (minority) other than the Kikuyu could be largely attributed to different payoffs to similar characteristics. More explicitly, similar characteristics seem to reward Kikuyu dominated counties more than counties dominated by other majority ethnic groups.

Our findings reveal that there exist significant differences in poverty levels between coethnic majority counties and non-coethnic majority counties that cannot be solely attributed to differences in county characteristics. A significant portion of the poverty differences therefore remains unexplained. Decomposition of the poverty gap reveals that this portion of the gap that cannot be attributed to any observable factors is significant across the study period, which hints at potential

[36] Colonial legacy takes a value 1 if the county benefited from the infrastructural investment by the colonial administration and 0 otherwise.
[37] (0.046/0.098*100)
[38] (0.101/0.130*100)

"discrimination" or "favoritism" that benefits president's coethnics and regions where they are a majority.

4.13 Summary of results and suggested policy implications

The main objective of this chapter was to investigate the drivers of poverty and the effect of change of governance structure on the distribution of wellbeing across counties, and whether this transition has effectively redressed the ethnic-identity based resource allocation problem. The conduct of politics in Kenya has been alleged to channel resources to areas that have proximity to political power, and this has been enabled by the spatial concentration of ethnic groups in specific locations.

The following key findings emerge from this study:

1) We have uncovered the existence of political favoritism along both the regional and ethnic dimensions in the first set of estimations. The magnitude however is stronger along the regional lines. While being coethnic (kikuyu or Kalenjin) is associated with lower likelihood of becoming poor, residing in coethnic regions confers even higher magnitude of poverty reduction. In fact, non-coethnics residing in coethnic major regions are even better off than their non-coethnics counterparts in the other regions. More interestingly, non-coethnics benefit more than their coethnic counterparts if they lived in coethnic major regions.
2) The share of coethnics in a region to date significantly determines its fortunes, all else held constant. Also, the fact that the coethnic major regions have continued to exhibit lower poverty levels and simultaneous highest reduction in poverty while the rest of the counties remain trapped in poverty means that the county poverty gaps have widened. This suggests that devolution has not effectively countered the potential ethnic bias in resource distribution at the national level.

Our results suggest that despite the implementation of devolution, the importance of patronage networks continue to be witnessed, implying that character of ethnic patronage politics persists. We find no doubt that president's regions disproportionately benefit from public goods and services. The Kikuyu dominant counties more especially on average have substantially lower poverty levels, higher access to employment opportunities, better road networks, high school

quality, adequate health infrastructure, proper water distribution and connection to electricity (resources which are largely publicly provided) although the reasons for such disproportionate allocations remain unclear. Even though we do not have sufficient information linking the Presidents' coethnic regions and them receiving more public goods, the sheer fact that there exist remarkable imbalances from distribution of resources poses a threat to the stability and development of the country.

We have shown that far more coethnic households and coethnic major counties have significantly lower poverty outcomes, even conditional on a wide range of covariates and estimation approaches, and that the bias persists despite the major constitutional reforms. Although we are unable to estimate whether local politicians also influence the distribution of these resources, nor whether the outcomes would be different in politically contested areas, our evidence largely suggests that institutional reforms, through devolution in this case, has not effectively reduced practice of ethnic favoritism in the distribution of public goods. Instead, the patterns are more likely to be consistent with clientelist public investment behaviors motivated by national presidential election outcomes.

While the aggregate political bias we estimate is meaningful, it is smaller in magnitude than that documented previously-in the pre-2010 period- this effect is not large enough to offset the inequality of the initial distribution. Thus, the results suggest that existing oversight from different sources to constrain presidential power has not been sufficient to reduce the social and economic costs of ethnic and political favoritism in public resource distribution.

Policy implication arising from this study may not be straightforward upfront. The persistence of ethnic favoritism even as late as 2019 shows that the new constitutional dispensation and other legislations in pursuit of equitable access to resources and opportunities have not been effective in addressing the long-term challenges of regional inequalities. There is need for the relevant government ministries and institutions to implement these equity and redistribution policies to help undo this legacy of skewed distribution of resources across ethno-regions.

Although overall investments in economic growth may well produce collective exits from poverty, as has been demonstrated by the time effects in our estimation, political exclusion makes it likely that very poor people will benefit from such interventions. In the short and medium runs, in the face of exclusion, any broad investment programs that succeed will commonly increase inequality

and therefore the relative deprivation of the very poor. In particular, membership in stigmatized categories and lack of facilitating interpersonal connections (lack of political power in this case) regularly combine to exclude very poor people from mobility opportunities. Existing political arrangements, furthermore, usually reinforce those forms of exclusion.

Effective policies geared towards narrowing of inequality and poverty reduction will necessarily need to alter the existing political interests. Goodwill from the political class, especially in the executive arm of government, will go a long way into realizing sustainable poverty reduction across ethno-regions. An example of such interventions is the Building Bridges Initiative, (BBI), which saw the President (Uhuru Kenyatta) and the opposition leader (Raila Odinga) come together. It is argued that this move, though ruffled feathers among the political class, saw significant improvement in public goods, especially roads in the opposition dominant counties, that had previously been politically excluded by the earlier regimes.

In order to promote individual exits from poverty, there needs to be deliberate facilitation of poor people's crossing of previously effective exclusionary boundaries, especially boundaries separating poor people from those who control crucial resources and benefit from them by means of exploitation and opportunity hoarding. It has been found out that the ruling elite who control resources have often capitalized on ethnicity and the clear cut ethno-regional boundaries to facilitate skewed distribution of resources. With greater difficulty but larger consequences for existing political arrangements, collective exits from poverty will also occur through facilitated movement of whole categories across boundaries from exclusion to inclusion, including the previously marginalized communities in country's leadership, appointments into state parastatals and the general labour market, for example. This may also require different ethnic coalitions from the historical to encourage civil participation and rekindle a sense of belonging for the ethnic minorities. Incorporating previously poor people into the political, social and economic sectors of the economy are likely to benefit whole categories of poor people more directly and rapidly.

Chapter 5 : Coethnicity Premium in the Labour Market and the Regime of Entry Effects

5.1 Introduction

This chapter extends these bias-related concerns to a new arena – the general labor market – examining differences in labor market outcomes as a function of coethnicity. The chapter aims to discern whether or not a coethnicity premium exists in the labor market today. We estimate the coethnicity premiums in 1999,2009,2016 and 2019.

Relying on the KIHBS, 2015, given the granular labour market data it contains, we also estimate the regime of entry effects in the labour market outcomes-wages and employment. The chapter examines outcomes of a wage employment indicator and wages. The empirical strategy examines how coethnicity with the president during a respondent's entry into the labor market shapes these labor market outcomes.

The Kenyan labour market is alleged to be skewed along ethnic lines, with a disproportionate reward accruing to coethnics of the President. Having established that indeed coethnicity matters for household and regional poverty distributions in previous chapter of the thesis, Chapter four, we now extend the discussion of coethnic biases to investigate whether sharing the same ethnicity as the President today, or indeed, sharing ethnicity with the incumbent President when one was first eligible to enter the labor force, matters for contemporaneous employment and earnings. In addition, we explore whether the time for first entry into the labour market (pre-and-post (2010) constitutional dispensations) matters for individual's current labour market fortunes. As of today, the existence of ethnopolitical bias in the labour market and its link to economic development remains largely unexplored in Kenya despite such anecdotes being widespread.

Indeed, the labour market has been shown to be the primary institution for determining many socio-economic welfare measures (Dursun & Ogunleye, 2016; Otsuka et al., 2010; Page & Shimeles, 2015; United Nations, 2013). Having a formal sector job for instance is strongly correlated with exiting from poverty, and conversely, the lack of a formal sector job often predisposes being trapped in poverty (Hujo & Gaia, 2011; Jütting & Laiglesia, 2009; Karnani, 2017). Thus, having a formal sector job

is itself an important aspect of a household's general well-being (Rogan & Cichello, 2017; United Nations, 2009; Williams, 2014); (Jütting & Laiglesia, 2009). Formal sector employment is associated with job security, and thus, lower poverty (Van der Berg, 2002b; Williams, 2014; Woolard & Klasen, 2005), while employment in agricultural sector and self-employment is associated with higher poverty (Ranchhod & Daniels, 2021; Rashid, 2001). Private sector employment is much more flexible than in the public sector-average tenure is short and contracts are verbal (Rashid, 2001).

Evidence also shows that those in larger households where no one has access to, or experience in, the labour market is more likely to be trapped in chronic poverty (Chen et al., 2005; Katungi et al., 2006; Lang, 2012; United Nations, 2009). In addition, in many countries in the world, the primary driver of economic inequality is mediated through access to formal sector employment (Ranchhod & Daniels, 2021; Van der Berg, 2002b). The labour market therefore has always been central to understanding welfare.

Yet not much attention has been given to the distributional aspects in the Kenyan labour market context despite the claims of imbalances. For example, Click or tap here to enter text. while investigating the sources of ethnic identification in Africa, found that ethnicity plays a salient role in competition for employment and for political power in Africa. Recruitment, especially in the public service, and political appointments in lucrative positions of influence has been used as a reward for patronage, a much more direct channel of transmission of favoritism since the political benefits target individuals much more directly (Hale, 2007).

A study by Click or tap here to enter text. also indicates that in Kenya, being a member of an ethnic group that produces the President is associated with participation in highly remunerated sectors, and this, in turn, is tied to political dominance. He shows that being co-ethnic with an incumbent president makes a difference in accessing public sector jobs if there is a vacancy. If this is a robust result, then a change in ethnopolitical power might alter the chances of a member of a particular ethnic group being recruited into their desired sectors.

More studies have also reported overrepresentation of some ethnic groups in the Kenyan labour market. This is especially true for those that are perceived to have proximity to the ruling political

class (Ahmed, 2016; Kramon & Posner, 2016a). Studies have also shown the existence of biased appointments in high profile jobs in the public service (NCIC, 2016d, 2016b). Whether these biases cascade downwards to the entire labour force, however, remains an under-studied research issue.

The Kenya public sector audit revealed that these ethnic imbalances are mainly reflected in the appointments of political positions in the public service: ministerial positions, state parastatals and permanent secretary positions (NCIC, 2016d) with over 50% of positions going to the Kikuyu (the President's group at the time) and 30% going to the Kalenjin (Deputy President's group at the time). (Padró i Miquel, 2007) asserts that in highly centralized and unequal states, ethnic favoritism often is exercised via preferential employment to co-ethnics, with claims that these tendencies are particularly more pronounced in the public service (Simson, 2016b).

But imbalances are not restricted to the labour market. Kenya has a long history of ethnic discrimination which has impacted many areas of life: declines in wealth for the less powerful communities, worse labour market opportunities, worse school opportunities and political exclusion (Gordon, 2019). These imbalances result in erosion of human capital, social exclusion, crime, and civil-conflict social instability (Burgess et al., 2011).

Moreover, empirical investigations suggest that regions that have produced many presidents have had a disproportionately high share of national resources in education infrastructure. In the earlier chapter of this thesis (paper 2), we find evidence of ethnic and regional imbalances in the distribution of piped water, access to electricity, distribution of schools' infrastructure, health facilities, and tarmacked road network in studying the drivers of regional poverty gaps in Kenya. Such imbalances further exacerbate inequalities in the labour market.

There is a vast literature that documents how marked differences in the pre-labour market characteristics that arise due to discrimination can have implications for the labour market through their effect on productivity (Fields, 2011; Jütting & Laiglesia, 2009; Ranchhod & Daniels, 2021). (Kimenyi, 2006c) attributes different levels of education provision across Kenya to discriminative allocation of resources by the government which is made possible by the excessive powers of the executive. Similarly, having a co-ethnic as president or as a minister in charge of education for primary school going children (aged 7-15 years) is associated with an increase in years of

schooling (Kramon & Posner, 2016b; Li, 2018)[39]. More specifically, having a coethnic President during one's primary schooling age leads to an increase in schooling by 0.22 years and an increase in school completion by approximately 5 percentage points. In addition, they find that being coethnic with a minister of education during one's primary schooling is associated with 0.039 more years of schooling for every year in which the coethnic minister holds office[40]. This provides evidence that ministerial appointments come with real power to impact distributive politics. Disparities in educational resources translate to differences in education outcomes and ultimately human capital accumulation (Bardhan et al., 2013). Moreover, educational attainment is an important predictor of labour market outcomes, and as such can be used as a pre-market discriminatory tool (Van der Berg, 2002b).

Methodologically, the study by (Li, 2018) serves as precedent to what we do in this chapter except that we are looking at the effect of being coethnic with the President and not a minister as in their case. In addition, we focus on labour market dynamics and not education. Scholars and practitioners have for long argued that coethnicity with the President has played a significant role in the Kenyan labour market in terms of employment and earnings. For instance, so pronounced were ethnic imbalances in the public service in the pre-2010 era that the new 2010 constitution included clauses advocating for ethnic and regional inclusivity in the labour market. For example, section 7(1) and (2) of the Kenya Employment Act states that all offices shall seek to represent the diversity of the people of Kenya in the employment of staff, and that no public institution shall have more than one-third of its staff from the same tribe (NCIC, 2016d). This begs the question whether the post 2010-constitutional reform has been effective in addressing the inclusivity problem that has bedeviled Kenya for a long time. Against the explicit constitutional provision on ethnicity diversity, there are still claims of ethnic favoritism in the broader labour market.

In this study, we investigate three objectives:

i. The role that being a member of the incumbent President's ethnic group plays in the likelihood of getting a job and on wages today.

[39] Kikuyus are significantly favored with respect to their primary educational attainment, spending an average of 1.4 more years in primary school than other Kenyans. Luo and Kamba on the other hand are disfavored, spending 1.2 fewer years in primary school than other Kenyans.

[40] In fact, the magnitude of having a coethnic minister of education is slightly larger than that of having a coethnic as president, corresponding to an estimated 4.8 percent increase in a child's primary school years if the minister of is a coethnic during the entire period that the child is of primary school age.

ii. The role that being a member of the President's ethnic group at the time of first entry into the labour market plays in the likelihood of getting a job and on wages today.
iii. Whether the constitutional reforms have reduced the ethnic biases in the labour market pre- and post-devolution. In other words, are there discernible differences in labour market returns for cohorts that enter in the pre- and post-2010 constitutional reform?

We find overarching evidence that, as has been alleged in the past, coethnicity with the President today matters for employment and earnings today, that is being Kikuyu in the labour market is associated higher likelihood of getting a job both in the private sector and public sector, as well as higher pay, holding all else constant. It also matters today in employment and earnings, who the President was when someone first entered the labour market. Coethnics of the President at the first time of entry have significantly higher earnings today. This suggests that once someone is employed, they continue to enjoy the coethnic premiums above their non-coethnic counterparts. Although these benefits exist in the post 2010 constitutional dispensation, the magnitude has declined significantly over time-the younger cohort (latest regime) entrants have smaller employment and earnings gaps. Hence the governance reforms have at least been effective in reducing ethnic biases in the labour market.

The perception that successive post-colonial regimes have tended to manipulate resource distribution in favour of their ethnic groups and/or regions has been a major cause of conflict in Kenya (Ajulu, 2002b; Oucho, 2003). In turn, this has more broadly affected her socio-political and economic stability adversely, making this paper a vitally important contribution to ongoing attempts to undo this legacy, not just in Kenya, but in sub-Saharan Africa more broadly, where these kinds of issues are widespread. Prior work in this field, however, is limited and these claims only abound largely as anecdotes. This paper focuses on the political and ethnic dynamics of the labour market, with an aim to inform and promote policies fostering social cohesion. The socioeconomic and political impacts of ethnic diversity are important policy issues especially in the African continent.

The rest of the paper is organized as follows: We highlight the data used in section two. The empirical estimation and discussion of results are presented in section three, while section four summarizes and concludes the study.

5.4 Data Description, Measurement of Variables and Overview of Selected Indicators

This specific chapter of the thesis uses mainly the Kenya Integrated Household Budget Survey (KIHBS) of 2015, a household survey. We also utilize the other datasets (1999,2009,2019 KPHC) to the extent that they have relevant information on employment[41]. The survey design and data collection approach has been discussed in detail in the earlier chapter (the technical chapter) of this thesis. Here, we only highlight the relevant variables to this chapter and refer the reader to Chapter 2, the detailed technical chapter on the data description and measurement of variables for more details. KIHBS 2015 gathered information from 92, 870 individuals and 23880 households from 2,388 clusters: from 92 strata. After adjusting for household weights computed by the Kenya National Bureau of Statistics, the derived output from KNBS represents a population size of 45,382,100 and 11,414,543 households.

Amongst other indicators, KIHBS dataset contains information on the distribution of workforce by status of employment, that is, the proportion of employed persons (a) working for wages or salaries; (b) running their own enterprises, with or without hired labour; or (c) working without pay within the family unit. The International Classification of Status in Employment categorizes employment status into five main categories (ILO, 2018), but more broadly can be grouped under two main types of jobs: paid employment jobs (employees) and self-employment jobs (employers, own-account workers, contributing family workers and members of producers' cooperatives). Based on the ILO classification, employed individuals include all persons of working age who during a specified brief period, such as one week or one day, were in paid employment jobs (employees) or in self-employment (employers, own-account workers, contributing family workers and members of producers' cooperatives) (Hoffmann, 2003). The self-employed are those who are running their own enterprises. Table 5.1 provides a breakdown of the individuals by employment status.

[41] KIHIBS 2015/2016 dataset, in addition to whether or not one is employed, has rich data on the other labour market related variables, hence allows us to explore this richness.

5

Main Statistics	Frequency	Percent
Working Age Population	24,889,775	54.86
Labour Force Participation	19,300,641	77.54
Not in the Labour Force	5,589,134	22.46
Employed	16,546,559	80.92
Unemployed	2,754,082	19.08
Breakdown of those employed by the type of employer		
Public sector		
Civil service ministries	163,086	0.99
Judiciary	3,343	0.02
Parliament	338	0
Commissions	12,952	0.08
State-owned enterprise/institution	152,641	0.92
Teachers service commission (TSC)	277,867	1.68
County government	680,979	4.12
Private sector enterprise	3,685,142	22.27
International NGO	62,072	0.38
Local NGO/CBO	29,720	0.18
Faith-based organization	69,024	0.42
Self-modern	375,286	2.27
Informal enterprise sector-Jua-kali (scorching sun)	1,302,850	7.87
Self-employed - informal	2,919,216	17.64
Self-small-scale agriculture	4,372,002	26.42
Pastoralist activities (employed)	141,206	0.85
Self-pastoralist activities	278,611	1.68
Individual/private household	1,903,162	11.5
School Boards (BOM) Employees	117,062	0.71
Public Sector, Private Sector, and Self-Employment Sectors		
Public sector	1,408,268	8.51
Private sector	3,685,142	22.27
NGOs/CBOs	160,816	0.97
Self-employed	11,292,333	68.25
Total	**16,546,559**	**100**

Source: Own calculation from KIHBS 2015/16

We begin with the working age population. Out of the individuals who were surveyed, 54.86%, representing 24,889,775 of the total population is of working age (20-65 years). Although the conventional labour market age is between 15-64 years, our analysis showed that over 70% of

those aged between 15-20 years are still in institutions of learning, hence the choice of choosing a lower age bound of 20 years. Of those of working age, 77.54% are in the labour force, while 22.46% are not in the labour force.

Amongst the labour force participants, 80% are employed. Further breakdown of those employed indicates that a cumulative proportion of 32% are working for the civil service ministries, judiciary, parliament, commissions, state-owned enterprises, teachers service commissions, county government-public sector, school boards BOM (employees), and private sector enterprises-private sector. On the other hand, those with own account work, informal small enterprises, self-employed, self-small-scale agriculture, pastoralist activities, self-pastoralist activities, and individual/private household enterprises accounted for 64% of those employed.

Public sector and Private sector analyses are of interest in this paper. We therefore ignore self-employment and own account workers categories because we are interested in situations where political patronage can be exercised or awarded. From Table 5.1, public sector type of activities includes working for: civil service ministries, the judiciary, parliament, public commissions, state-owned enterprises/institutions/parastatals, the teachers service commission, and county governments. These comprise 8.51% of those who are employed. Private sector activities include those who reported that they are working for private sector enterprises, 22.3% as a proportion of those who are employed. We have categorized self-employment to include those who reported that their main economic activity being self-employed modern, self-small-scale agriculture, pastoralist activities, individual/private household, informal enterprise sector (jua kali), and self-modern. This category commands the lion's share of those who are employed, 68.3%. However, we are unable to classify those working for International NGOs, local NGOs or Community Based Organizations (CBOs), Faith Based Organizations, and School Board Management (BoM) to belong to either private, public or private sector. Unemployed persons comprise all persons of working age, participating in the labour market, who were without work during the reference period, that is, people who were not in paid employment or self-employment, but currently available for work (ILO, 2018).

In the empirical analysis of this chapter, we consider only the outcomes of working for wages (wage employment) as this is directly revealed in the data and does not need further derivation, as

opposed to the "employed" variable whose construction stems from bringing different types of engagements in gainful employment, which may be prone to error.

Those who are not in the labour force reported that they did not work in the last 7 days because: they were unable to work due to disability, had housewife/family responsibilities, had lost hope of finding any work (economically discouraged), had childcare responsibilities, were student/pupil, in retirement, sickness/injury, or did not need work. A dive into the reasons for not participating in the labour force reveals that the majority (66%) of the non-participants reported being in learning institutions as the main reason, while about 17% reported having housewife/family responsibilities. A small number of people also reported sickness or injury as the reason for not being in the labour force. Worker discouragement does not seem much of a problem in Kenya, as fewer than 1% of the non-labour force participants reported that they had lost hope of finding any type of job. Pregnancy and disability are also amongst the reasons for non-participation. The reasons for non-participation in the labour force by proportion is shown in table 5.2.

Table 5.1: Reason not working or not looking for work during the last 7 days

Reason unemployed	**Percent**
No jobs available in the area	4.12
Unable to work (persons with disability)	1.06
Unable to find work requiring his/her skills	0.86
Housewife/family responsibilities	17.23
Lost hope of finding any kind of work	0.35
Childcare problems	0.94
Employers think too old/too young to work	0.81
Student / pupil	66.07
Awaiting the season for work	0.24
Waiting to be recalled to former job	0.08
Have already found a job which will start later	0.08
Transportation problems	0.02
Pregnancy	1.06
Sickness/injury	3.67
Do not need work	0.93
Business closed	0.15
In retirement	0.53
Waiting to attend an interview	0.12
Other (specify)	1.68
Total	100.00

5.5 Descriptive Statistics

In this section, we consider discernible statistical differences in some labour market outcomes and some selected variables by coethnicity status for those employed in the private or public sector (excluding the self-employed). We compute the means of the selected variables and test for any significant differences using appropriate tests. The descriptive statistics are shown in Table 5.3.

Table 5.2:Statistical Differences in Means of Selected Variables by Coethnicity Status

	Coethnic	Non-coethnic	
Age of the Individual	26.01	21.78	***
Percent of individuals who are of working age (WAP)	47.60	38.87	***
Percent of WAP who are in the labour force (LFP)	91.36	84.56	***
Percent of LFP employed	86.53	78.28	***
Percent of labour force participants working for wages	42.75	33.86	***
Percent of the employed in own agricultural enterprise	33.16	33.65	
Percent of those employed running own account businesses	22.99	18.14	***
Proportion of those employed working for wages in the Private Sector	64.39	26.45	***
Proportion of those employed working for the Public Sector	7.34	9.5	
Percent of those employed in Self-Employment	26.01	24.19	***
Percent of employees employed on Full Time basis	53	40	***
Percent of employees Working in Urban area (All types of jobs)	71.81	58.43	***
Percent of employees Working in Urban area (Working for wages)	29.41	22.30	***
Proportion of working age population with post-secondary qualification	14.73	11.91	***
Actual Hours worked per day	9.26	7.26	***
Hourly Wage-Overall (Ksh)[42]	28.89	15.87	***
Hourly wage (own account workers)	99.81	61.11	***
Hourly wage (working for wages)	76.44	68.06	***

[42] We take cognizance of the fact that there could be many varied determinants of hourly wage, the key being the sector of employment. For example, if Kikuyu and non-Kikuyu work in different sectors, then comparing hourly wages may be misleading because it's more about different occupational/sectoral choices than discrimination. We therefore need to know if whether Kikuyu and non-Kikuyu, working in same sector have similar/different outcomes. We therefore compute average hourly earnings by sector. In the regressions, we focus on the differences in hourly earnings in the public and private sector since these are the sectors where it could be much easier to implement discrimination.

Hourly wage (agricultural workers)	34.89	29.91	***
Hourly wage (self-employment)	61.36	36.00	***
Hourly wage (Private sector)	61.04	22.00	***
Hourly wage (Public sector)	5.31	3.42	

Source: Author's Calculation from KIHBS 2015/16

The results in table 5.3 show more generally that individuals of Kikuyu ethnic descent-current coethnics have significantly higher representation in better rewarding labour market characteristics. A higher proportion of individuals who are salaried are Kikuys, with about 9 percentage points higher than non-Kikuyu individuals. Coethnics (Kikuyu) are also more likely to have full time jobs, work longer hours, have jobs with employee benefits, and earn higher hourly wages. For hourly wages, there are noticeable differences in earnings across the different occupations, save for those employed in the public sector, which has the least hourly wage.

Considering people working for wages in the private sector, there seems to be a significant difference in the proportion of Kikuyus and non-Kikuyus working for wages in the private sector (64% vs 26%), but no significant difference for those employed in the public sector, with the Kikuyu being more represented in the public sector (10% vs 7%). On the basis of employment, there are noticeable differences in the number of employees in full-time employment. More coethnics (53%) are employed on a full-time basis relative to 40% of non-coethnics. The 13-percentage points difference suggests that the non-coethnics seem to have been relegated to part time jobs. It is therefore unsurprising that the non-coethnics (non-Kikuyus) work for 2 hours less per day relative to coethnics (Kikuyu). Kikuyus also have more years of education as compared to non-Kikuyus.

We have seen from the pairwise differences in the descriptive statistics that the differences in the proportions of the outcomes of the selected variables in Table 5.3 are significant. However, there is need to test for the significant contribution of each of these variables to the outcome variable. We examine the individual variable contributions by means of empirical estimations in a multivariate setting in the next section. This allows us find out to what extent these labour market differentials could be linked to having proximity to political power by producing a coethnic President besides other covariates.

5.6 Year of birth, coethnicity, regime of entry, and 2010 Constitutional reform

In addition to current coethnic effects, we explore whether there is any evidence that the 2010 Constitutional reforms may have reduced such ethnic biases in the labour market. We consider two different aspects in this regard, namely, the association between ethnicity and the probability of being employed, and secondly, ethnicity and earnings. We also consider whether the ethnicity effect is only present contemporaneously, that is, individuals who are currently in the labour market and share ethnic status with the incumbent President have better labour market outcomes, or whether we are also able to observe such an effect based on coethnicity status with the incumbent President at the time of first entry into the labour market.

This latter exercise explores whether coethnicity with the incumbent President may be especially important for first time labour market entrants, allowing them to gain a foothold in the labour market, which in turn, translates to better future labour market outcomes. We do this in two ways – we look currently – what is the premia associated with being kikuyu now with labour outcomes now, and what is the effect of being kikuyu and entering under a kikuyu versus non-kikuyu president.

5.7 Constructing coethnicity at the time of first entry into labour market

From the dataset, 72% of 15-20 years old individuals are still in school, and 60% of 20-year-old individuals are still attending school. In contrast, only 10% of 25-year-old individuals are still attending school[43]. Amongst those 25 years and older, about 95% of individuals are no longer in learning institutions and are eligible to participate in the labour market. As such, we choose 20-25 years as the most reasonable age bracket for entry into the labour market. On the upper age bound, 82% of people in the age bracket 60-65 years are still in the labour force. We therefore categorize the working age population as 20 years old as the minimum working age and 65 years old as the maximum working age. Kenya has had 4 Presidents: 3 from the Kikuyu tribe (Kenyatta, Kibaki and Uhuru), and one from the Kalenjin tribe (Moi). Hence, for those who entered the labour market during the Kenyatta regime, Kibaki regime, or Uhuru regime, Presidential coethnics are the Kikuyu since these three Presidents are of the Kikuyu ethnic group. Under the Moi regime, on the

[43] This suggests that the conventional classification of eligible labour markets by the International Labour Organization (ILO) standards that the working age population is between 15-65 years may not be accurate for this case study.

other hand, the coethnics are the Kalenjin – since Moi was from the Kalenjin tribe. We present the coethnic first-time eligible entrants (aged 20-25 years old) in the specific regimes in Table 5.4. To reiterate, in each regime, we consider individuals aged 20-25 years when the President assumed office. As we will show later, we can use current age categories (in 2015/16) as a proxy for first-time eligible entrants. We identify the eligibility of individuals in each regime of entry by their year of birth. It is argued that possibly, ethnic biases may manifest mostly in the first years when a new President assumes power. When a new regime comes into power, new people are in power with their own policies and manifestos to implement within 5 years before another regime is elected. If the political leaders favor their own in the labour market, they might have a disproportionate share of their coethnics absorbed in the labour force, either through direct appointments or recruitment, or creating an enabling investment/business climate in places where their coethnics are the majority.

Table 5.4: Coethnicity, Political regimes, and First Entry into the Labour Market

Election Cycles	**President (Regime)**	**Coethnics**	**Birthdate for first entrants by regime**	**Age cohort/bracket in 2015 (How old now)**
1963-1968	Kenyatta	Kikuyu	1938-1942	(73-77)
1969-1973	Kenyatta	Kikuyu	1943-1947	(68-72)[44]
1974-1978	Kenyatta	Kikuyu	1948-1952	(63-67)
1978-1982	Moi	Kalenjin	1953-1957	(58-62)
1983-1987	Moi	Kalenjin	1958-1962	(53-57)
1988-1992	Moi	Kalenjin	1963-1967	(48-52)
1993-1997	Moi	Kalenjin	1968-1972	(43-47)
1998-2002	Moi	Kalenjin	1973-1977	(38-42)
2003-2007	Kibaki	Kikuyu	1978-1982	(33-37)
2008-2012	Kibaki	Kikuyu	1983-1987	(28-32)
2013-2017	Uhuru	Kikuyu	1988-1992	(23-27)

Source: Author's construction.

[44] This cohort, and the first cohort (73-77 years old) will be excluded from the regressions as they are not in the mlabour force (15-65 years).

Table 5.4 presents the election cycles alongside who the President was, the coethnic tribe, and the age cohorts of first-time eligible entrants into the labour market. In the first Kenyatta regime (1963-1968), the sample of interest comprises individuals born in 1938-1942; currently 73-77 years old, that is, they were 20-25 years old at the time Kenyatta assumed power. To be clear, Kikuyu individuals born in this time were coethnics of the President at the time they were first eligible to enter the labour market. In the second regime of Kenyatta (1969-1973), the sample of interest are individuals born in 1943-1947. These are 68-72 years old. The same logic follows for the other political regimes within each election cycle. Notably, there are no overlaps across the regimes in these dates of birth, that is, no individual appears in more than one political regime (the fourth/fifth column of table 5.4).

It is worth noting that the individuals who entered the labour market in the first 2 regimes of Kenyatta are highly unlikely to be in the labour market today as they are above the working age, over 65 years old. We therefore exclude them from the analysis. For the last regime, Uhuru regime (2013-2017), we are interested in the sample of individuals born in 1988 up to 1997; 23-27 years old currently.

The first-time labour market entrants in the Kenyatta regime (electoral regimes: 1963-1978; birthyear 1938-1952), Moi regime (electoral regimes: 1979-2002; birthyear: 1953-1977) and Kibaki regime (birthyear 1978-1985), coincide with the pre-2010 constitutional era-they entered the labour market before the constitutional change in 2020.[45] On the other hand, the Kibaki regime-second term and Uhuru regimes (birthyear: 1986-1992) constitute the post-2010 constitutional regimes.

In addition, we are also interested in examining whether entering the labour market in the post 2010-constitutional dispensation significantly differs from the pre-2010 entrants. We define pre-2010 entrants as individuals who entered the labour market for the first time in the Kenyatta (last election cycle), Moi and Kibaki (first election cycle) regimes (birthyear 1948-1982), or individuals who currently fall in the age brackets 33-65 years. On the other hand, the post-2010 first-time entrants are those who entered the labor market first during the second election cycle of Kibaki and Uhuru regimes (birthyear 1986-1992); those who fall in the age bracket 23-32 years old.

[45] In the second term of Kibaki, the first 2 years of Kibaki are 2008-2010, hence the 1985 is cutoff.

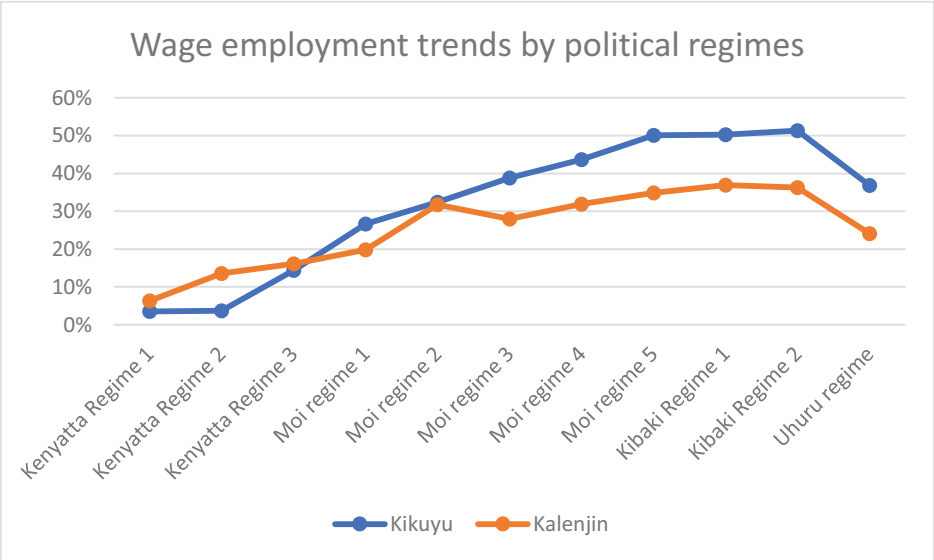
5.8 Comparing coethnic premia across the regimes of entry

In this section, we focus on how employment premia for the Kikuyu and Kalenjin (the coethnics) have changed across the regimes, moving from the Kenyatta era to Uhuru era. Theoretically, we would expect a fairly discontinuous increase for the Kikuyu employment across these regimes and a potential decline for the Kalenjins. We plot time series maps showing public service employment as a fraction of total wage employment by coethnic groups, private sector employment ratios and overall wage employment. Moreover, we add the same plots of the employment ratios for the coethnic counties versus non- coethnic counties. These plots illustrate the rough "success rates" by group of getting a public sector job.

The second county-type plot specifically provides a sense of the relative sizes of the wage-based public vs private sectors in these two different types of counties allowing us to observe the trends in employment across time and space.

We begin by exploring the wage employment ratios for the Kikuyu and Kalenjin individuals of working age.

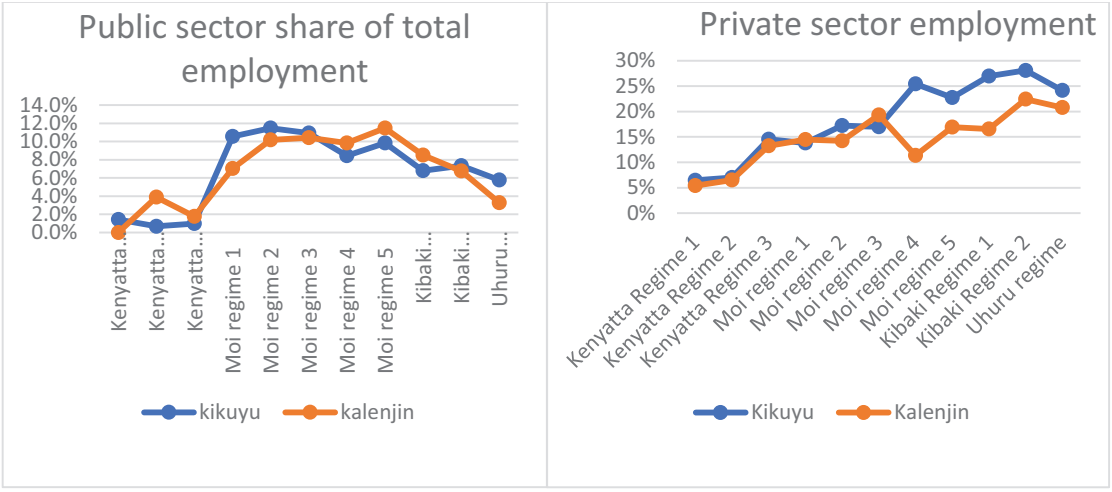
Figure 5.1: Trends of wage employment across regimes



Source: Author's estimation

The trend shows that while there has been an overall increase in the employment rates for the coethnic first time entrants across the shifts in political regimes, Kikuyu individuals still have a higher wage employment rate when compared to the Kalenjins. In general, regardless of whether the Kikuyu first time entrants had one of their own in power, their employment chances have continued to rise. The graph flattens in the post Moi administration and even decreases in the Uhuru regime. This hints at the potential effectiveness of the post 2010 constitutional reforms in dampening the coethnic biases observed in the labour market in the previous regimes.

Figure 5.2: Share of private sector and public sector employment by regimes



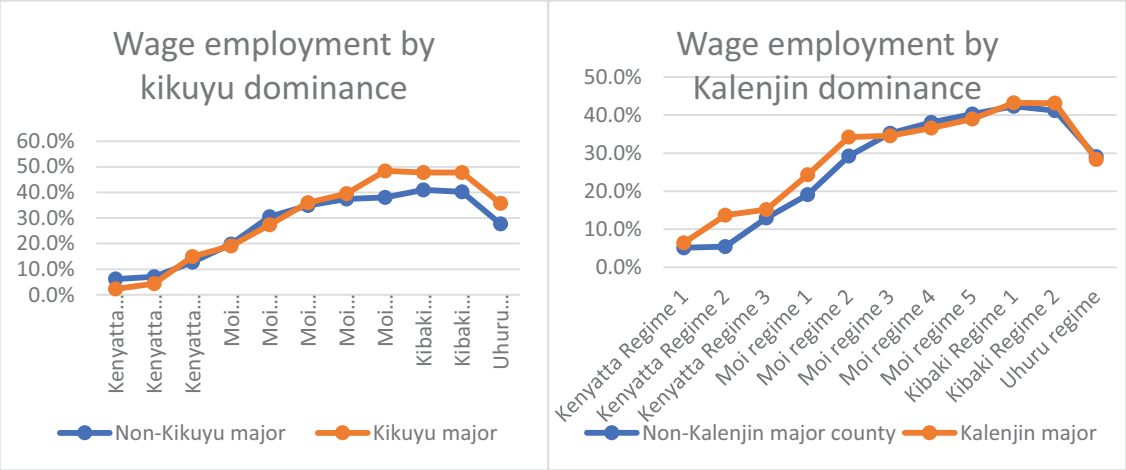
Source: Author's estimation from KIHBS 2015.

We observe a different trend for public sector employment. The employability of Kikuyu entrants remained higher than that of Kalenjins during the earlier Moi presidency regimes but tin the last regimes of Moi and the first Kibaki regime, the Kalenjin share of total employment in the public service remained higher than that of Kikuyu, albeit with a declining trend. This conforms to theory as we would expect a downward trend of employment of coethnics towards the end of their regime.

We see a different pattern for the private sector. There is a somewhat corresponding upward trend of employment for both the Kikuyu and Kalenjin. This suggests that the fall in public sector share has been offset by the rise in the private sector employment.

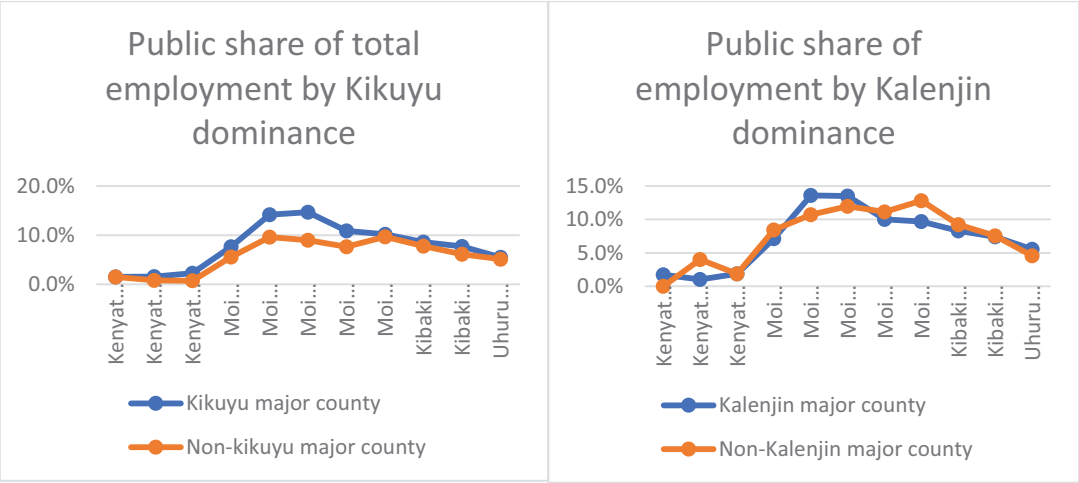
Plots of employment rates and wage distribution by share of coethnics in a county show that coethnic dominance is associated with rising shares of wage employment, up until the Kibaki regime when it starts to fall. These results suggest that opportunities of wage employment are more concentrated in the coethnic dominant counties relative to other counties.

Figure 5.3: Wage employment trends across regimes by coethnic regions



Source: Author's computation from KIHBS 2015.

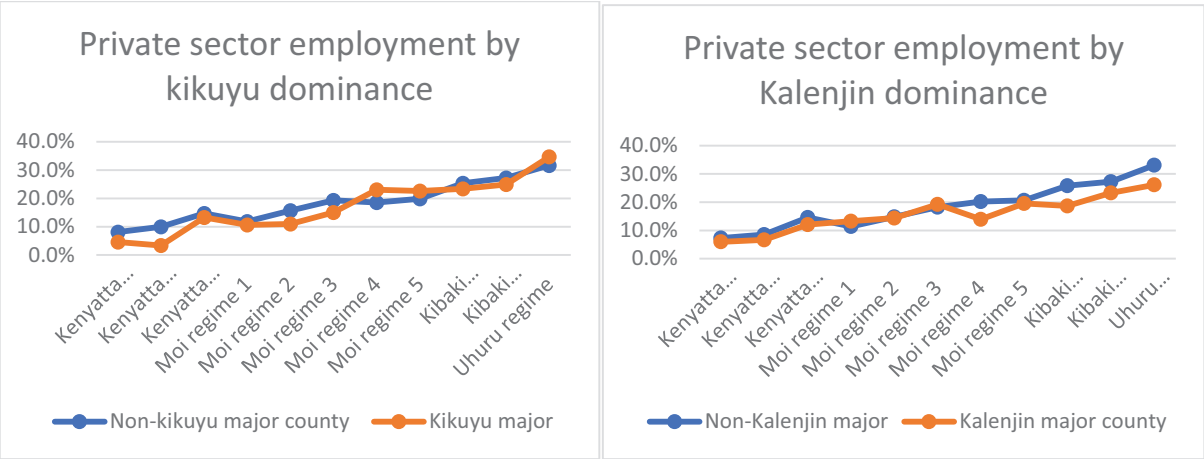
Figure 5.4:Share of private sector and public sector employment by regimes



Source: Author's computation From KIHBS 2015.

For both Kikuyu dominant ad Kalenjin dominant counties, the share of public sector jobs as a ratio of total employment has been falling, regardless of the political regime at play.

Figure 5.5:Share of public/private employment across regimes by coethnic regions



Source: Author's computation from KIHIBS 2015

As highlighted earlier, the share of private sector employment has been rising (across the regimes over time) in counties that are dominated by the Kikuyu and/ the Kalenjins-the presidents coethnics. This matches the corresponding decline in the share of public service jobs.

In summary, the plots show that there are positive benefits to sharing the same ethnicity with the President in given regimes, but not much of the benefits seem to be concentrated in the areas they dominate. Put differently, whereas the Kikuyus and the Kalenjin may have an advantage in the labour market, their dominant counties do not have a higher concentration of public service jobs for instance. This means that spatially, public sector jobs are somewhat fairly distributed.

5.9 Empirical Estimations of Employment Problems

We begin by examining whether co-ethnicity plays a significant role in getting a job in the different sectors and within the different types of jobs. It has been shown that recruitment in the formal sector (especially public) is one of the direct ways of rewarding political patronage (Padró i Miquel, 2007). Once someone is already absorbed in the labour market, this is what matters for their future trajectory, which can be observed in outcomes like earnings. We estimate the likelihood of

individuals getting a paid job in the labour market today, conditioned on their coethnicity status in the regime of entry and a set of characteristics by means of probit models[46].

$$Employed = \beta_0 + \beta_1 coethnic + \beta_2 age\_category + \beta_3 + \beta_4 education + \beta_6 X_i \Delta + \mu_i \quad (5.1)$$

We estimate equation 5.1 first for the entire sample, then for each regime of entry into the labour market. $Employed$ is a dummy variable denoting whether or not an individual is employed today; $coethnic$ denotes the coethnicity status of the individual, whether or not one shared the same ethnicity with the President, at the time of first entry into the labour force. We first estimate the equation generally to establish the association between coethnicity with the President and the probability of getting employed. We then run the estimations separately for each regime of entry, across different sectors and types of employment. $age\_category$ Variable captures the nonlinear effects of age. X_i is a vector of other control variables including other individual's characteristics such as gender, and location features. We also control for the county (district) of work fixed effects. μ_i is robust standard errors of estimation.

Table 5.5: Coethnicity Status and Employment Probabilities

	(Column 1) Both Kikuyu and Kalenjin	(Column 2) Kikuyu only	(Column 3) Kalenjin only
Coethnic	0.05**[47]	0.11***[48]	0.09***[49]
	(0.043)	(0.000)	(0.002)
Age of the individual	0.0765***	0.0796***	0.0807***
	(0.000)	(0.000)	(0.000)
Individual's age squared	-0.00105***	-0.00109***	-0.00107***

[46] We double check the results with the Linear Probability Models, to check if the results are somewhat reasonable and remain unchanged.

[47]The coefficient is for both Kikuyu and Kalenjin combined (Presidential groups)

[48] The coefficient is for the Kikuyu only. We have included the specific regimes when one entered the labour force. These effects only manifest in the second term of Kibaki (2007) (5 percentage points higher) and in the Uhuru regime (2013) (7 percentage points higher), the latest regimes.

[49] The coefficient is for the Kalenjin only. The coethnic effects in the Moi regime manifest in the last 2 regimes (1992-2002). This however is in the negative direction, they are less likely to get a job today, about 5 and 7 percentage points lower respectively.

	(0.000)	(0.000)	(0.000)
Years of education	-0.152***	-0.147***	-0.164***
	(0.000)	(0.000)	(0.000)
Years of education squared	0.00922***	0.00883***	0.0106***
	(0.000)	(0.000)	(0.000)
Rural resident	-0.394***	-0.392***	-0.369***
	(0.000)	(0.000)	(0.000)
Individual is Male	0.592***	0.602***	0.633***
	(0.000)	(0.000)	(0.000)
Household head is employed	0.824***	0.864***	0.855***
	(0.000)	(0.000)	(0.000)
Household's head average education	0.0198***	0.0223***	0.0248***
	(0.004)	(0.003)	(0.001)
Observations	42,011	32,206	36,296

Source: Own Estimation from KIHBS, 2015/16
p-values in parentheses
$p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 5.5 presents regression results of employment on coethnicity status of the individual. The outcome variable is the probability of an individual working for wages. The sample contains individuals people aged 20-60 years-all eligible labour market participants. The data shows that 97% of individuals aged 25 years are not in any learning institution hence 25 years is the appropriate school-to-labour market transition age. In addition, 82% of people aged between 60-65 years are not in the labour force. This suggests that quite a number of over 60-year-old individuals are retirees or have dropped out of the labour market. The regressions are estimated with robust standard errors and adjust for cluster effects. The results in column 1 are for both Kikuyu and the Kalenjin ethnic groups. The results in column 2 on the other hand are for the Kikuyu ethnic group only while column 3 displays the results for the Kalenjin group only. The Kalenjin and the Kikuyu are the only ethnic groups that have produced Presidents since Kenya attained independence.

Table 5.5 Column (1) shows that in general, the ethnic groups that have produced the Presidents, either in the past or currently serving President, taken together, have significantly higher probabilities of getting employed today by 5 percentage points relative to non-coethnics. Put differently, individuals who were coethnic with the President in the year they first entered (or were eligible to enter the labour market)-Kikuyu and Kalenjin are more likely to be employed in the current period than those who were not coethnics with the President at first entry.
In columns (2) and (3) we estimate the regression separately for Kikuyu and Kalenjin individuals, since these two groups have produced Presidents in the time period under consideration. Under the Kikuyu presidency, the coethnics who entered the labour market under an incumbent Kikuyu President are nearly 11 percentage points more likely to be employed currently than individuals who were not coethnic with the incumbent President when they first entered the labour market. Similarly, under the Kalenjin presidency, Kalenjins who first entered the labour market when they had an incumbent President, are 9 percentage points more likely to be currently employed than non-coethnics who entered the labour market in the same regime.

We undertake additional analyses for coethnicity with President effects for the labour market using the census datasets (1999, 2009, and 2019). The richness of these datasets allows us to observe the labour market characteristics at each datapoint over 3 decades across change in political regimes. We estimate the same equation, 5.1, but for the three datasets. The results of these regressions are presented in table 5.6. Overall, we find that when Kalenjins are in power in 1999, they have higher chances of getting wage employment relative to non-Kalenjins. The same pattern is observed for the Kikuyu in 2009, and 2019, when they control the presidency. This finding suggests that coethnic biases continue to matter in the labour market, even in the post devolution, even though the magnitude has dampened.

Table 5.6: Coethnic premiums in the labour market, 1999; 2009; 2019

Variables	(1) Kikuyu emp 1999	(2) Kalenjin emp 1999	(3) Kikuyu emp 2009	(4) Kalenjin emp 2009	(5) Kikuyu emp 2019	(6) Kalenjin emp 2019
Individual is Kalenjin		0.0123***		0.03***		0.0196***
		(0.00255)		(0.0029)		(0.00184)
Individual is Kikuyu	-0.128***		0.0638***		0.082***	
	(0.00312)		(0.00225)		(0.0195)	
Resides in urban area	0.188***	0.199***	0.118***	0.101***	0.0130***	0.0267***
	(0.00212)	(0.00231)	(0.00255)	(0.00272)	(0.00101)	(0.00113)
Individual is female	-0.229***	-0.226***	-0.172***	-0.166***	-0.0918***	-0.0795***
	(0.00131)	(0.00131)	(0.00186)	(0.00190)	(0.000737)	(0.000765)
Has post-secondary qualification	0.171***	0.189***	0.121***	0.135***	0.0487***	0.0456***
	(0.00189)	(0.00203)	(0.00279)	(0.00305)	(0.000883)	(0.000938)
Comes from a poor household	-0.0559***	-0.0696***	-0.129***	-0.148***	-0.0488***	-0.0598***
	(0.00228)	(0.00242)	(0.00322)	(0.00365)	(0.000880)	(0.000892)
Constant	0.412***	0.409***	0.328***	0.334***	0.356***	0.356***
	(0.00267)	(0.00283)	(0.00355)	(0.00393)	(0.00105)	(0.00109)
Observations	402,253	379,415	186,724	168,344	1,615,726	1,495,790
R-squared	0.163	0.177	0.120	0.113	0.025	0.022

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The results in table 5.6 show that coethnics (Kikuyu and Kalenjin) have had consistently significant higher chances of finding a paid job after ascending to power, relative to the other ethnic groups, all else held constant. Taking the Kikuyu for example, in 1999, when they were out of power, they had about 12 percentage points lower chances of getting paid job. Their probabilities of getting wage employment, however, accelerated in 2009 and 2019, after ascending to power in 2002. In 2019, Kikuyu individuals had about 9 percentage points higher chances of getting paid work, all else held constant, which points to the existence of coethnic benefits in the labour market.

In addition to the coethnicity variable, we find that living in urban areas is positively correlated with wage employment. This is similar to having at least post-secondary school qualifications. We also find gendered effects of wage employment. Females, on average, have lower chances of getting wage employment compared to men, holding all else constant.

As has been propagated in literature, the role of wage employment in poverty reduction, we find a reverse course. Individuals who live in poor households (multidimensionally) have significantly lower chances of getting paid work, relative to their counterparts from non-poor households, all else held constant.

5.10 5.7 Coethnicity with the President at first entry into the labour market and outcomes today.

In this section, we explore whether it matters who the President was at the time when someone first entered the labour market, and their employment and earnings outcomes today. We identify the specific regimes of entry by the age categories of entrants, constructed from the year of birth. The age categories coincide with specific political regimes and are defined as in the earlier sections. We estimate the employment and wage differentials between coethnics and non-coethnics for different political regime entrants for first-time.

There are 4 distinct age categories: 20-27 years old; 28-37 years old; 38-62 years old; and 63-65 years old, constructed carefully to coincide with the specific regimes. As of the year 2015 (the current year dataset), those aged 20-27 years old currently entered the labour market during Uhuru regime (2013-2022). Similarly, those aged 28-37 years currently entered the labour market during

the Kibaki regime (2007-2013). Following the same logic, Moi regime (1978-2002) first time entrants, currently are aged 38-62 years old, and Kenyatta regime first time entrants are the oldest cohorts (63-65 years old)-majority of whom are out of the labour market. We estimate whether coethnicity with the President for entrants in these regimes confer any benefits in the labour market today.

Beginning with probability of being in paid employment today conditioned on the regime of entry and the coethnicity status, we specify the empirical model as follows:

$$Working\ for\ wages = \beta_0 + \beta_1 kik + \beta_2 age\ category + \beta_3 kik\#age\ category + \beta_i X_i + \mu_i \quad (5.2)$$

The outcome variable is whether one has a paid job or not conditioned on their regime of entry, captured by age category, defined in the foregoing section. Another coefficient of interest is the interaction term between being Kikuyu and the age category. This captures the effect of coethnicity status at time of entry on today's employment outcomes. The model is estimated by means of probit regression. We present the results in table 5.7.

The results show the probability that one gets a job today if they entered the labour market in a specific regime, conditioned on whether or not they are coethnics of the President when they first entered the labour market. Each column represents results for separate regressions for each political regime, from the Kenyatta regime in the first column (the first regime) through to the Uhuru regime (the most recent/current regime) in the last column. Coethnic, as before, is defined with reference to the specific regime under consideration. In the Kenyatta regime, Kibaki regime and Uhuru regime, an individual classified as coethnic is a Kikuyu since the Presidents are/were Kikuyus. On the other hand, in the Moi regime, coethnics are Kalenjins since the President then was a Kalenjin. The result of coethnicity in column (1) for example shows the probability of an individual getting a paid job today if they entered the labour market in the Kenyatta regime, controlling for whether they are Kikuyu or not.

Table 5.7:Coethnicity Effects of Employment and Regime Eligibility

	(1) Kenyatta Regime	(2) Moi Regime	(3) Kibaki Regime	(4) Uhuru Regime
Coethnic	0.047[50]	0.01[51]	0.043**	0.075***
	(0.248)	(0.370)	(0.016)	(0.002)
Age of the individual	0.213***	0.198***	0.206***	0.239***
	(0.000)	(0.000)	(0.000)	(0.000)
Age squared	-0.00264***	-0.00228***	-0.00250***	-0.00272***
	(0.000)	(0.000)	(0.000)	(0.000)
Years of education	-0.0872***	-0.0816***	-0.0829***	-0.109***
	(0.000)	(0.000)	(0.000)	(0.000)
Education squared	0.00637***	0.00605***	0.00641***	0.00757***
	(0.000)	(0.000)	(0.000)	(0.000)
Urban resident	0.371***	0.368***	0.380***	0.390***
	(0.000)	(0.000)	(0.000)	(0.000)
Individual is Male	0.548***	0.548***	0.547***	0.557***
	(0.000)	(0.000)	(0.000)	(0.000)
Head is employed	0.570***	0.563***	0.563***	0.588***
	(0.000)	(0.000)	(0.000)	(0.000)
Average education hh	0.0348***	0.0360***	0.0277***	0.0215**
	(0.000)	(0.000)	(0.000)	(0.006)
Observations	1139	5503	5165	3073

p-values in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The sample is for individuals aged 20-25 years-only first-time eligible labour market entrants in the specific regimes. The regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects. The dependent variable is the probability of getting

[50] The result remains the same when we control for the specific year of entry within the same regime. This potentially controls for the macroeconomic dynamics characterizing the regime within which one entered the labour market. There are no significant differences in the year of entry within the Kenyatta regime. The coefficient remains insignificant.

[51] The coefficient remains robust to the year of entry within the Moi regime in the 5 election cycles.

paid job and the main variable of interest is the coethnicity status within each regime of entry into the labour market. The columns present the results for each political regime. The coefficients are marginal effects which denote changes in probabilities from the baseline.

The results show more generally that coethnics of the Presidents that first entered the labour market in the more recent regimes (Kibaki regime and Uhuru regime) have higher probabilities of being employed today. For example, coethnics (Kikuyu) of the President during the reign of Kibaki, have higher probability of finding a job today relative to non-coethnics who entered the labour market in the same regime, by about 4.3 percentage points higher. Similarly, coethnic first entrants during Uhuru regime have 7.5 percentage points higher probability of getting a job today compared to first-time non-coethnic entrants in the same regime. These findings suggest that coethnic effects of employment manifest more strongly in real time.

A core concern in this paper is that employment variables might be correlated with a number of variables which the dataset does not capture. This potentially affects our identification. People enter the labour market at different times in different regimes. With the different political regimes, the economy is in a different place and there are lots of other contextual factors which are correlated with time that we may not control for exhaustively in this study. A lot of literature shows that graduating into the labour market in a recession period affects an individual's trajectory of earnings in the long term. (Rothstein, 2021) for instance, finds that those who entered the labour market during the great recession had lower wages and employment than those who joined the labour market earlier. Hence, the economic conditions within which one enters the labour market matters for their future income trajectory. Our interpretation of the coethnic factor therefore may include all the other confounding factors associated with the regime at a particular point in time and may fail to measure the true effects of each of the variables, thus biasing our results.

Differences in policies by regime affect the income and employment profiles of people. These initial factors matter for the labour market and might be completely different from the regime and should be controlled for. Adverse early conditions permanently reduce new entrants' employment probabilities. The specific underlying economic conditions for each political regime have been extensively discussed in the introductory chapter of the thesis.

To potentially ameliorate these challenges, we control for the prevailing macroeconomic conditions when one entered the labour market proxied by the election cycle of entry within the specific regimes-the election cycles when the President assumed power. Even within the specific regimes, people enter the labour force at different times marked by different underlying eco-political conditions[52].

Our results remain robust to macroeconomic controls. The coefficients have the same signs, and the statistical significance remains valid even after incorporating the specific year of entry within the same regime-a proxy for the underlying macroeconomic environment when one first enters the labour force. There are no significant differences in the year of entry within the political regimes.

Table 5.8: Coethnicity with the President and Sectoral Employment Probabilities

	Column 1	**Column 2**	**Column 3**	**Column 4**
Sector	**Kenyatta Regime**	**Moi Regime**	**Kibaki Regime**	**Uhuru Regime**
Formal[53]	-0.07 (0.334)	-0.004 (0.992)	0.062** (0.02)	0.098*** (0.000)
Informal[54]	0.016 (0.149)	0.03** (0.013)	0.103*** (0.003)	0.142*** (0.000)
Public[55]	0.074 (0.360)	0.038* (0.071)	-0.07 (0.237)	0.091** (0.03)
Private[56]	-0.045 (0.708)	-0.027 (0.658)	0.099*** (0.000)	0.106*** (0.000)

Source: Own calculation from KIHIBS 2015/16
p-values in parentheses

We run the regressions for individuals when they were first eligible to enter the labour market in the respective regimes in each election cycle (age 20-25 in each specific regime) and later for everyone who is eligible labour market participant (age 20-60). The coefficients are the derived

[52] 3 out of the 4 the presidents have served for more than one term: Kenyatta served for three terns, Moi served for five terms, Kibaki two terms, and Uhuru one term.

[53] Table A8 in the Appendix
[54] Table A9 in the Appendix
[55] Table A10 in the appendix
[56] Table A11 in the appendix

marginal effects for each probit model estimated in each column. Coethnicity refers to only the tribes that have been at the core of political power, producing the presidency in the respective regimes. In the Kenyatta, Kibaki and Uhuru regimes, they are the Kikuyu, while for Moi regime, these are the Kalenjin. Other covariates in these regressions include age, age squared, gender, years of education, education squared, type of place of residence (urban/rural) and the regime of entry dummies to control for macroeconomic fundamentals at the time. The regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects. The results remain robust (both in terms of direction and significance) for both first regime entrants and the entire eligible labour force participants.

Table 5.8 presents the coefficients for coethnicity with the President in employment probabilities across the different sectors in specific regimes. Columns 1, 2, 3 and 4 present the results for being coethnic with the President at the time of first entry into the labour force during the Kenyatta regime, Moi regime, Kibaki regime, and Uhuru regime respectively.

The rows represent the different sectors over which the coethnicity entry effects of current employment are examined. Overall, our results reveal significant coethnic effects, especially for the entrants during the Kibaki and Uhuru regimes. The results are strongly significant in all the sectors, for the latest first-time coethnic entrants. These findings could mean that the coethnic benefits flow both in terms of direct gainful employment in the paid sectors or through creating an enabling environment for coethnics to do businesses.

For instance, the Kikuyu who entered the labour force for the first time during the reign of Kibaki are 6.2 percentage points more likely to get a job today in the formal sector. This compares to 9.8 percentage points higher likelihood of employment for the first-time entrants in the Uhuru regime. In contrast, while on average Kikuyus are more likely to find a job in the formal sector, the Kalenjin (who have been coethnics in the past) are less likely to be employed in the formal sector. This supports the view that that losing grip of the political power is associated with poorer outcomes in the formal sector, while having it is associated with getting employed in high remuneration sectors (Padró i Miquel, 2007).[57]

[57] The Kalenjin had significantly higher likelihood of getting employed during the Moi regime (when they had power).

Latest regime coethnic first entrants also more likelihood to be employed in both the private and public sector, but the magnitude for private sector employment probability is bigger. There are also strong coethnic effects of employment in the informal sector, with increasing magnitudes and strength across the regimes over time.

Although there is evidence of coethnic effects of employment in the public sector, these effects are not as widespread as claimed. This result is similar to (Simson, 2016a, 2018a).As a matter of fact, the effects are more pronounced in the private sector. What is also interesting is that the private sector coefficient goes from being negative to positive. Perhaps what has happened is that as coethnic patronage in public sector came under scrutiny (as might have been the case in the earlier regimes), and new laws were passed, that basically it passed into the private sector, with markets coming to reward Kikuyu attributes "differently".

This goes against the common presumption that patronage effects of employment are more likely pronounced in the public sector than in the private sector, since it is easier to reward (Simson, 2016c). While this may be true for the high-profile jobs like ministerial positions and other political appointments (NCIC, 2016b, 2016d; Nyabira & Ayele, 2017a), our results suggest that the coethnic effects are in fact more prevalent in the private sector. Our findings compare closely with (Simson, 2018b) who finds no evidence of ethnic favoritism in the public sector employment in Kenya using large quantitative dataset. Although the report of the audit of national parastatals revealed significant ethnic imbalances in the public sector (NCIC, 2016d), we do not find any direct revelations of ethnic favoritism towards the Presidents' coethnics in the said sector. And while the imbalances in public sector have been visible in the high-profile jobs like ministerial positions and national commissions (KHRC, 2018; Nyabira & Ayele, 2017a), we do not find existence of such evidence amongst the ordinary workers.

Extending the analysis of coethnicity effects to different types of jobs, we examine whether non coethnics are relegated to some types of jobs in comparison to the coethnics. We consider non-formal types of employment (own account workers, self-employment, small agriculture holdings, contributing family workers) and formal types. Our results remain robust to these considerations. Coethnics of the Presidents are still better off regardless of the type of jobs and regime of entry.

We find that the coethnic effects remain robust across the different types of employment; coethnics have significantly higher likelihoods of getting paid jobs both in the salaried and non-salaried

sectors. The non-salaried sector includes those who are working on own account, small agricultural holding, contributing family worker, the Jua-kali (hot sun) artisans and self-employed. Kikuyus on average have about 8.5 percentage points higher probability of finding a job, while Kalenjins have about 6.5 percentage points higher probability relative to other ethnic groups with similar characteristics. These are not necessarily eligible first-time entrants, instead, they have been in the labour market and are still eligible to participate in the labour force (aged 20-60 years old).

On the other hand, in the formal sector, while the Kikuyu on average are 8.8 percentage points more likely to find a job in this sector relative to other ethnic groups, the Kalenjin are 5 percentage points less likely. These results are significant at 1% level. Coethnics (both the Kikuyu and Kalenjin) have significantly higher chances of getting an employment opportunity in the non-salaried type of work, being employed within the household or outside the household, own account work, self-employment, and small-scale agriculture holdings, than non-coethnic counterparts with similar characteristics.

A lot of studies have shown that patronage effects of employment are more likely pronounced in the public sector than in the private sector, since it is easier to reward (Eynde et al., 2018; Franck & Rainer, 2012; Kanyinga, 2016b; Posner & Kramon, 2011). Our finding goes against this presumption as we do not find any significant pronounced biases in public sector employment, the magnitude is very small, and not economically significant. This could mean two things: (1) that the implementation of anti-discriminatory policies in the public sector has been effective, or (2) that since the constitutional provisions against discrimination are meant for the public sector, strictly speaking, because it is easier to enforce these policies here, there is a shift of ethnic imbalances to the other sectors that are not on the government's radar.

While the ethnic biases in the public sector may be true for the high-profile jobs like ministerial positions and other political appointments (NCIC, 2016b, 2016d; Nyabira & Ayele, 2017a). This could mean that either the post 2010 constitutional reforms of ethnic inclusion in the labour market have been effective and the President's coethnics (Kikuyu) are no longer disproportionately overrepresented in the public sector. The presence of coethnic biases in the private sector suggests that this sector may be out of government's radar on the implementation of ethnic inclusion, or it may be that there are stronger ethnic networks in the private sector, or there has been a deliberate effort in creating an enabling environment to conduct businesses in Kikuyu dominated areas.

5.11 Coethnicity and Wage Estimations.

Having looked at the coethnic effects of employment, we now focus on the wage differentials for those who are currently employed. We examine whether the regime at time of entry into the labour market and being coethnic with the incumbent President matter for one's level of income today in Kenya. (Padró i Miquel, 2007) claims that recruitment in the public sector is one of the direct ways of rewarding political patronage. But once someone is already absorbed in the labour market, this is what matters for their future trajectory, and the differences in their fortunes can be observed in earnings.

We estimate a selection model (Heckman's selection model) to quantify the magnitude of the each of the covariates, since the data has a significant number of respondents with zero incomes (Kahn et al., 2019). With many zero outcomes for the dependent variable, OLS estimates are biased and inconsistent (Cameron & Trivedi, 2005a).

We explore changes in the outcome variable (log of monthly wages) as a function of coethnicity status with the regime when one entered the labour market, the specific election cycle within the given regime, alongside other explanatory factors including age, age squared, years of education, the square of education variable, sex, among other variables. The specific model is expressed in *equation 5.3.*

$$\log of\ income = \beta_0 + \beta_2 coethnic + \beta_3 age + \beta_4 poverty\ status\ of\ the\ hh + \beta_4 education + \beta_6 X_i \Delta + \mu_i \quad (5.3)$$

We estimate this selection equation, conditioned on being employed. Log $of\ income$ is the log of total monthly earnings, which is self-reported sum of all earnings received by an individual from main and secondary economic activities[58]. As before, X_i is a vector of other control variables including number of hours worked per month, individual characteristics such as gender, education, place of residence, number of hours worked, among others. Number of hours worked per month in both the main job and secondary job is converted as number of hours worked in the last 7 days

[58] We derive the log of income getting the inverse of the hyperbolic sine function of the income variable. In Stata, this is given by (asinh(x) = ln {x+sqrt (x*x + 1)}); where x is the income variable.

*30/7. This conversion is important since earnings (dependent variable) is captured per month. We convert the dependent variable (earnings) into its log form, to get a close to normal distribution and to get rid of potential outliers in the data (Greene, 2012). μ_i is the error of estimation.We also control for the county (district) of work fixed effects. The sample for the estimation is also defined as before. We estimate equation 5.3 for the entire sample, and then for the different sectors of employment, and income categories.

We begin by presenting the overall results in Table 5.9, having a coethnic President and earnings today. We look at both incumbent coethnics (Kikuyu) and those who have been coethnics in the past (Kalenjin).

Table 5.9: Coethnicity with the President and Monthly Earnings Today

	(1) Kikuyu	(2) Kalenjin
Coethnic	0.069**	-0.096***
	(0.029)	(0.000)
Individual is Male	0.400***	0.145*
	(0.000)	(0.022)
Years of education	-0.0837***	-0.153***
	(0.000)	(0.000)
Education squared	0.0101***	0.0130***
	(0.000)	(0.000)
Age of the Individual	0.0536***	0.0217
	(0.000)	(0.220)
Urban resident	0.333***	0.0331
	(0.000)	(0.614)
Selected variables: Coethnic, Age, Age squared, Male, Education, Education squared, Urban resident.		
/Inverse mills ratio lambda	-0.654***	-2.360***
	(0.000)	(0.000)
Observations	25165	14794

p-values in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The sample is for people aged 20-60 years participating in the labour force (all eligible labour market participants). The dependent variable is the log of total monthly earnings, and the main independent variable is whether one is/has been coethnic with the President or not. The regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects. The fact that the inverse mills ratio is significant implies that there is a selection issue, and the appropriate empirical model is the Heckman's selection model.

Table 5.9 results show that on average, being coethnic with an incumbent President (Kikuyu) is associated with significantly higher incomes today. The Kikuyu (coethnics) employees on average earn approximately 7%[59] higher monthly incomes than employees from other ethnic communities with similar characteristics. There are significant coethnic differences in earnings by sector of employment and income brackets (the results are appended in tables A12-A19). Kikuyu employees earn significantly higher incomes in the formal (6.8 percentage points higher), informal (39.8 percentage points higher), and the public sector (14.2 percentage points higher), compared to employees of other ethnic descents. While there are no significant ethnic differences in earnings for employees in the high-income group, there are significant differences for the low-income earners. For individuals in the low-income bracket, Kikuyu employees earn significantly higher incomes, 21% higher than non-coethnics (non-Kikuyu). Broadly speaking, the incumbent President coethnics (Kikuyu) do relatively better in all sectors, both in terms of the likelihood of getting a job, as well as earnings once they are employed.

In contrast, the Kalenjin, who are not coethnics currently, but have been coethnics in the past earn approximately 10% lower incomes than employees from other ethnic communities with similar characteristics. Our findings show that Kalenjins have significantly lower earnings than other ethnic groups in the formal (9 percentage points lower) and private sector (about 14 percentage points lower), while there are no significant differences observed in the informal and the public sector. We also do not find any differentials in earnings by income brackets. These findings largely suggest that although the Kalenjin have been in power (produced President) previously, losing power makes them worse off.

In the next set of regressions, we establish the earning differentials in the specific regimes of entry into the labour market for first time entrants in Table 5.10. The sample here contains only first-time eligible entrants in the labour force, ages 20-25 when the President assumed power.

[59] Since the dependent variable is in natural log, the precise coefficient is computed as: {exp (0.0689)-1} *100

Table 5.10: Coethnicity with the President, Regime of Entry and Monthly Earnings

	(1) Kenyatta Regime	(2) Moi regime	(3) Kibaki Regime	(4) Uhuru Regime
Coethnic	0.275	-0.088	0.085**	0.486***
	(0.233)	(0.152)	(0.049)	(0.000)
Individual is Male	1.312	0.247	0.144	0.439***
	(0.680)	(0.160)	(0.502)	(0.000)
Years of education	0.0299	-0.148***	-0.120**	-0.130**
	(0.925)	(0.000)	(0.005)	(0.006)
Education squared	-0.00175	0.0143***	0.0108***	0.0116***
	(0.954)	(0.000)	(0.000)	(0.000)
Age of the individual	1.364	0.0832	-0.229	0.336***
	(0.858)	(0.499)	(0.652)	(0.000)
Age squared	-0.0110	-0.000778	0.00326	-0.00498***
	(0.846)	(0.536)	(0.654)	(0.000)
Urban resident	-0.0923	0.319***	0.276*	0.449***
	(0.944)	(0.001)	(0.013)	(0.000)
Selected variables: Coethnic, Age, Age squared, Male, Education, Education squared, Urban effects				
Observations	873	5504	4533	38455

p-values in parentheses

The sample is for people aged 20-25 years when they first entered the labour market. The dependent variable is the log of total monthly earnings, and the main independent variable is whether one is/has been coethnic with the President or not. The regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects. We run Heckman's specification model that allows us to factor in the significant number of zero incomes, the outcome variable.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The result of coethnicity in the table 5.10 shows the earnings today conditioned on the regime when one first entered the labour market. Just like was the case with probability of employment, we find that coethnic effects of earnings manifest strongly in real time, the current regime labour market entrants. We do not observe any strong coethnic effects in earnings for the earlier regime (Kenyatta, Moi) entrants, but the effects are stronger for the Kibaki and Uhuru regime coethnic entrants. While there are no significant coethnic effect in earnings for the entrants in Kenyatta and Moi regimes, the monthly earnings of first time coethnic entrants in the Kibaki regime is about 8%

higher than that of non-coethnics. Similarly, current regime (Uhuru regime) entrants earn about 49% higher monthly income than non-coethnics, holding all else constant. The fact that the magnitude is bigger, and the significance is stronger for Uhuru regime entrants suggests that the effects are stronger in real time ownership or proximity to political power.

In the next analysis, we test whether these pay differences are due to sectoral differences. We estimate coethnic effects of earnings for the different sectors; the formal sector (public and private) and the informal sector in the given regimes of first entry. The summary of the results are presented in table 5.11, but more detailed coefficients are appended.

Table 5.3:Coethnicity with the President, Regime of Entry and Monthly Earnings by Sector

	Kenyatta Regime	**Moi Regime**	**Kibaki Regime**	**Uhuru Regime**
Formal Sector[60]	0.237 (0.285)	-0.083 (0.152)	0.089** (0.042)	0.49*** (0.004)
Informal Sector[61]	0.408** (0.012)	-0.304 (0.238)	0.398*** (0.014)	0.402*** (0.012)
Public Sector[62]	1.304*** (0.00)	0.12** (0.048)	0.103 (0.220)	0.0577 (0.498)
Private Sector[63]	0.154 (0.578)	-0.271*** (0.006)	0.078 (0.218)	0.0088 (0.903)

Source: Own Estimations from KIHBS 2015/16

The sample is for people aged 20-25 years and are employed. The dependent variable is the log of total monthly earnings, and the main independent variable is whether one is/has been coethnic with the President or not. The regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects. We run Heckman's specification model that allows us to factor in the significant number of zero incomes, the outcome variable. We consider specific regimes of first entry and sectors of employment. We control for the usual factors, age, gender, education, place of residence, among others. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

From the outset, the sample in these estimations is first time labour market eligible entrants only. We look at the differentials in income by coethnicity status of the individuals. Considering the regime of first entry into the labour market, the coethnic effects for first time labour market entrants is stronger for more recent entrants, while there are no effects in today's labour market for earlier regime entrants.

[60] First row, Table A12 in the Appendix
[61] First row, Table A13 in the Appendix
[62]First row, Table A14 in the Appendix
[63] First row, Table A15 in the Appendix

Beginning with the formal sector, the coethnics who entered the labour market during the regime of Kibaki's presidency earn significantly higher monthly earnings today, in the order of 9 percent higher. The magnitude and the significance of coethnic effects of earnings is even bigger and stronger for the latest regime entrants, the Uhuru regime. First time coethnic entrants in the Uhuru regime earn about 49% higher incomes today. The result is statistically significant at 1% level.

There are stronger effects of coethnicity in earnings in the informal sector for almost all regime entrants. Except for the Moi regime coethnic entrants (the Kalenjin), first time coethnic entrants in the Kenyatta, Kibaki and Uhuru regimes (the Kikuyu) have significantly higher earnings today, about 50% higher incomes, holding all else constant. This suggests that the coethnic effects seem to be existent for the earliest regime entrants and remains so through to the present.
Interestingly, there are observed coethnic effects of earnings in the labour market today in the public sector. The public sector appointments has been argued to be one way by which political leaders reward patronage (Robinson & Verdier, 2013b; Simson, 2016c). The coethnics who entered the public sector during the Kenyatta and Moi regime earn significantly higher incomes today than non-coethnics who entered the labour market at the same time. The post-colonial regimes, especially Kenyatta and Moi regimes have been alleged to be the regimes that to the highest degree allocated resources and opportunities mainly in favour of their communities (KHRC, 2018; Society for International Development, 2006a).

We do not observe any coethnic effects for the later regime entrants, the Kibaki and Uhuru regime entrants in the public sector. Notably, the coefficients, even though they are insignificant, go from being large and positive to getting smaller. Since it is under Kibaki regime (post 2010) when devolution among other labour market reforms were sort of introduced, and then it probably got fully rolled out under Uhuru, this pattern of coefficients speaks to the effects of the devolution efforts and effectiveness of multi-party democracy[64]. For instance, the Kenya Constitution 2010 provides that not more than 2/3 of employees in any parastatal or public commission should be from one ethnic community (Kimenyi et al., 2016; NCIC, 2016d; Zeleza, 1991). Different from the findings in employment probabilities' estimations, we find no evidence of coethnic differentials in earnings in the private sector today, for most regime entrants.

[64] The coethnic effects manifest in the later years of Moi regime after the introduction of multi-party state in Kenya.

These results remain robust to different times of entry into the specific regimes and across sectors of employment. The coethnic effects manifest in the later years of Moi regime after the introduction of multi-party state in Kenya. Coethnics of the President earn significantly higher wages regardless of the sector of employment or type of employment.[65]

5.12 The Devolution Effect in the Labour Market

We assess whether the change in governance structure from centralized system to devolved system has altered the patterns and trends in ethnic biases in the labour market. One of the hallmarks of the new constitution 2010 is the provision for ethnic inclusivity in the labour market. The provision requires that no entity will have more than two-thirds of one ethnic group in its labour force. In this section, we test whether there are any discernible differences in Kikuyu premia for the pre-2010 labour market entrants and post-2010 entrants. Our hypothesis is that the magnitude of coethnic premia has reduced, if not non-existent in the post 2010 regimes since these reforms were meant to reduce the ethnic gaps in the labour market. In the post 2010 period, the country has been governed by a new constitution.

We test precisely by estimating the equation 5.4, whether the new constitutional dispensation in the post 2010 period has in any way altered the legacies of coethnic patronage in the labour market. We compare the coefficients of being Kikuyu on the likelihood of getting a job, between labour market entrants in the pre-2010 period and entrants in the post-2010 period.

$$Working\ for\ wages = \beta_0 + \beta_1 kik + \beta_2 post\_2010 + \beta_3 kik\#post\_2010 + \beta_i X_i \Delta + \mu_i \quad (5.4)$$

We compare the coefficients of being Kikuyu on the likelihood of getting a job, between labour market entrants in the pre-2010 period and entrants in the post-2010 period. The classification of entrants in either category is elaborated in the earlier section under coethnicity, regime of entry and post-2010 constitutional reforms. To reiterate, the pre-2010 entrants are those aged between 28-65 years old, while post-2010 entrants are those aged between 20-27 years old, and then compare the Kikuyu premia of employment and earnings in both cases.

[65] We run similar estimations for different sectors of employment: formal, informal (same classification as in the employment regressions).

The results are presented in table 5.12.

Table 5.4:Employment Probabilities and Time of Entry into the Labour Market

Variables	(1) Full Sample	(2) Private Sector	(3) Public Sector
Individual is Kikuyu	0.04***	0.11***	-0.02***
	(0.00)	(0.00)	(0.00)
Post-2010 entrant	0.01***	0.003***	0.06***
	(0.00)	(0.00)	(0.00)
Kik#post-2010 entrant[66]	0.03***	0.03***	0.07***
	(0.00)	(0.00)	(0.00)
Individual is Male	0.20***	0.15***	0.09***
	(0.00)	(0.00)	(0.00)
Years of education	-0.05***	-0.01***	0.01***
	(0.00)	(0.00)	(0.00)
Education squared	0.00***	0.00***	0.00
	(0.00)	(0.00)	(0.00)
Age of the individual	0.03***	0.04***	0.01***
	(0.00)	(0.00)	(0.00)
Age squared	-0.00***	-0.00***	-0.00***
	(0.00)	(0.00)	(0.00)
Works in urban area	0.16***	0.29***	0.01***
	(0.00)	(0.00)	(0.00)
Observations	15,822,074	4,023,042	1,396,625

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

The main coefficient of interest is that of being Kikuyu, and the interaction between Kikuyu and the post-2010 dummy. In the full sample, in the pre-2010 period, the Kikuyus have a 4 percentage points higher likelihood of being paid work than non-Kikuyus. While entrants in the post-2010 period have about 1 percentage point higher likelihood of having wage employment, the Kikuyu entrants in the post-2010 period enjoy a 3 percentage points higher likelihood of having paid employment. The overall employment premium for Kikuyu is 7 percentage points (we sum the coefficient of Kikuyu (0.03) and the coefficient of the interaction term (0,04)).

[66] This is an interaction term between being Kikuyu and post-2010 entrants' dummy.

In the private sector, the Kikuyu employment premium is higher; 11 percentage points higher than non-Kikuyus in the pre-2010. In the post-2010 period, the employment payoff is even higher; an additional 3 percentage points. Thus, Kikuyu post-2010 entrants have a 14 percentage points higher likelihood of wage employment in the private sector than the non-Kikuyu entrants. The converse holds true in the public sector. For the public sector, Kikuyu entrants pre-2010 entrants are less likely to be employed, 2 percentage points lower. However, while non-Kikuyu post-2010 entrants have 6 percentage points higher likelihood of getting paid work in the public sector, the Kikuyu counterparts have 5 percentage points (-0.02+0.07) chances. The likelihood of Kikuyus getting employed in the public sector has increased by 7 percentage points in the post 2010 period.

The post-2010 employment findings suggest that the 2010-constitutional reforms aimed at reducing inequalities in the labour market have not been effective in reducing the coethnic biases in employment, both in the private sector and the public sector. Instead, the coethnic premia have even increased, the Kikuyu have even higher chances of getting paid job in all sectors.

Shifting attention to whether time of entry matters for wages, we explore further explore the coethnic premia in hourly wages in the post-2010 constitutional dispensation. The main question of interest is whether the reforms have reduced ethnic gaps in earnings or otherwise.

The wage regression model is expressed as follows:

$$\log of\ hourly\ wages = \beta_0 + \beta_1 kik + \beta_2 post\_2010 + \beta_3 kik\#post\_2010 + \beta_i X_i \Delta + \mu_i \quad (5.5)$$

The outcome variable is hourly wages expressed in log. All the other variables are expressed as before. X_i is a vector of control variables education, age, gender, alongside other variables. Equation 5.5 is estimated using a truncated model just like the previous wage model because of the many zero income. The estimation results are presented in Table 5.13.

Table 5.5: Time of Entry and Income Levels today

Variables	(1) Full Sample	(3) Private Sector	(5) Public Sector
Individual is Kikuyu	0.07***	0.045***	0.039***
	(0.00)	(0.001)	(0.002)
Post -2010 entrants	-0.01***	-0.013***	-0.172***
	(0.00)	(0.002)	(0.003)
Kikuyu#post-2010 entrants	-0.05***	-0.105***	0.081***
	(0.00)	(0.002)	(0.005)
Individual is Male	0.38***	0.305***	0.109***
	(0.00)	(0.001)	(0.001)
Years of education	-0.13***	-0.164***	-0.070***
	(0.00)	(0.001)	(0.002)
Education squared	0.01***	0.015***	0.011***
	(0.00)	(0.000)	(0.000)
Individual's age	0.06***	0.081***	0.052***
	(0.00)	(0.001)	(0.001)
Age squared	-0.00***	-0.001***	-0.000***
	(0.00)	(0.000)	(0.000)
Works in the urban area	0.50***	0.651***	0.280***
	(0.00)	(0.001)	(0.001)
Observations	6,721,329	2,799,289	1,243,661

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Overall, our estimations reveal evidence of significant differences in the hourly wages between Kikuyus and non-Kikuyus. Beginning with the entire labour force, the pre-2010 Kikuyu entrants earn 7 percentage points higher income than non-Kikuyus. And while the non-Kikuyu post-2010 entrants have about 1 percentage point lower hourly wages than pre-2010 entrants, the decline is larger: 5 percentage points lower, for the Kikuyu post-2010 entrants. The Kikuyu post-2010 entrants therefore earn about (0.07+-0.05); 2 percentage points more wages per hour in the labour market in general. This suggests that in the post constitutional dispensation, the President's coethnics have higher hourly wages than non-coethnics. This difference, however, is very small.

In the disaggregated analysis, the private sector results reveal that while in general coethnics enjoy higher wage premium, 4.5 percentage points higher than the income non-coethnics earn, there is a reduction in the hourly wages coethnics earn, 6 percentage points (-0.105 + 0.045) lower than non-

coethnics, in the post-2010 era. In the public sector however, coethnics (Kikuyus) earn more income per hour (3.9+8.1); in the order of 12 percentage points.

Our analysis has shown suggestive evidence that coethnic wage premia still exists in the post 2010 dispensation. The magnitude of the premium, however, has declined significantly in the private sector but has accelerated with almost the same magnitude in the public sector. While we find that the coethnic bias in employment in the private sector has largely increased in the post constitutional dispensation, as well as increase in hourly earnings for the coethnics who are already employed in the public sector.

These results suggest at the very least that post-devolution entrants (Kikuyu and non-Kikuyu) have a higher probability of being in paid employment than those who entered pre-devolution. Importantly, those aged 20-27 enjoy higher employment probabilities than the next age cohort (28-37 years). Arguably, these 2 cohorts are more similar in terms of employment experience than individuals aged 38 and above, suggesting a discontinuity (albeit small) that coincides with devolution. Interestingly, pre-devolution Kikuyu entrants appear to have lower employment probabilities than pre-devolution non-Kikuyu entrants, although the extent of this difference has narrowed for the more recent entrants. This pattern remains similar for the private sector and the public sector. This supports our earlier findings that the new constitutional governance reforms have not been significantly effective in reducing the ethnic biases in the labour market.

A key issue we cannot entirely resolve in our analysis is whether the differences we observe are due to devolution or to regime of entry. Rather, it would seem both devolution and regime of entry may matter. There is a discontinuity evident in 2010 in terms of employment probabilities, but this also coincides with specific underlying regime of entry, namely the Uhuru regime. However, as the results show, those Kikuyu who entered under a Kikuyu president in the Uhuru regime enjoy better employment probabilities than those who entered in the preceding Kikuyu regime, namely, Kibaki. Since these two cohorts are similar in age, (20-27 versus 28-35) and both entered under a coethnic President, at the very least it would seem that devolution has strengthened the advantage enjoyed by Kikuyu in the labour market. Indeed, if one considers the coefficients across the preceding regimes of entry, it will appear that the Kikuyu premia has strengthened over time.

5.13 Broader definition of Coethnicity and labour market outcomes

We have shown that there are sharing the same ethnicity as the President at the time of entry into the labour force does pay off in today's labour market through the likelihood of getting employed and earnings. This is especially true for the Kikuyu, and not quite for the Kalenjin. As a robustness check, we extend the analysis to examine the labour market effects of having produced the Deputy/Vice President, the Prime Minister, or politically coalescing with the ruling group to ascend to power.

In the Kenyatta regime, the politically dominant ethnic groups were the Kikuyu, Embu, and Meru Association (famously known as the GEMA) and the Kalenjin. The Kikuyu produced the president while the Kalenjin produced Vice President. The Embu and Meru have historically coalesced with the Kikuyu in successive general elections in the country (Kramon & Posner, 2014). Under Moi regime, they were the Kikuyu and the Kalenjin. The Kalenjin produced both the President and the Vice President. The Kikuyu also alternated the Vice Presidency position in switching regimes under Moi presidency. In the Kibaki regime, they were the GEMA, the Luo, the Luhya, and the Kamba; the Kikuyu controlling the presidency, the Luo the Prime Minister position (with equal powers as the president), and the Kamba and the Luhya held the Vice President position. Finally in the Uhuru regime, these are the Kikuyu and the Kalenjin; the Kikuyu controlling the presidency while the Kalenjin controlled the deputy presidency. In general, the dominant tribes produced the presidency, deputy president, prime minister or politically coalesced with the ruling ethnic groups.

Given the conduct of politics in Kenya, the communities that are proximate to the ruling regime, producing the Vice presidents or the Prime Minister, or holding cabinet or ministerial positions have been deemed to have disproportionate access to opportunities and resources in various forms (Burgess et al., 2011). We consider these individuals to be proximate to political power and thus might have some spillover effects from the presidency. In table 5.14, we present the proximity effects of employment by sector.

Table 5.6: Regression Results for Political Proximity and Sectoral Employment Probabilities

	Coefficient	Kenyatta Regime	Moi Regime	Kibaki Regime	Uhuru Regime
Full Sample	Proximity	0.221 (0.128)	0.179*** (0.003)	0.216*** (0.000)	0.294*** (0.001)
Formal Sector	Proximity	-0.0849 (0.785)	0.459*** (0.000)	-0.270*** (0.002)	0.232 (0.302)
Non-Formal jobs	Proximity	0.235 (0.350)	0.295*** (0.002)	0.0917 (0.273)	0.553*** (0.001)
Public Sector	Proximity	1.840** (0.032)	-0.322** (0.042)	-0.109 (0.593)	-0.496 (0.342)
Private Sector	Proximity	-0.108 (0.752)	0.721*** (0.000)	-0.341*** (0.001)	0.124 (0.544)

Source: Own Estimations

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$
Robust standard errors in parenthesis.

In each regime, we consider the sample of people who were first eligible to enter the labour market (20-25 years old) in every election year. For example, for the Kenyatta regime, we assign a value one to individuals who were 20-25 years old as of 1963, 1968 and 1973, and zero otherwise, since these were the election years. The same approach follows for the other regimes. The dependent variable is earnings today for those who are employed in the respective sectors. As before, coethnics are those who share the same ethnicity as the President in a given regime when they first entered the labour market. The regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects. Other covariates in these regressions include age, age squared, gender, years of education, education squared, type of place of residence (urban/rural). The regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects.

Our findings show that the greatest gainers today are those entrants during the Moi regime and were proximate to political power across all the sectors. It is not surprising that those who were proximate to power benefit more than the President's coethnics in the labour market today.

President Moi's administration largely comprised members of the communities that were previously in power, the Kikuyu, Embu and Meru ethnic groups. Moi's ascent to power was through the support of other tribes and prominent Kikuyu who he rewarded with cabinet positions (Burgess et al., 2011)

For the Kibaki proximate regime entrants into the labour market, they seem to have significantly lower chances of getting employed in the formal sector and the private sector today. This suggests that there are no spillover benefits from the Kibaki presidency to flow to other ethnic groups that were close to his administration. It could suggest that currently due to the quest of equity in access to opportunities through affirmative action, ethnic groups that were previously marginalized by the past administrations are given preference when opportunities arise (NCIC, 2016b). On the contrary, those who were close to the ruling elite during the Uhuru regime are more likely to get employed in the non-formal sector today. This means that any biases in real time are driven largely by the informal sector. This could be the case because the informal sector is unregulated, and labour laws may not be easily enforceable (ILO, 2018).

5.14 Robustness checks/sensitivity analysis for employment estimations

5.14.1 Propensity score matching approach

To check for the validity of the estimations, we subject our results to further analysis using a more accurate specification of treatment effect, the propensity score matching (PSM). To attempt to compare similar units/households in the treated (coethnic) and untreated (non-coethnic) by matching at the individual level. In contrast to the ordinary regressions, PSM ensures that the control group-one not receiving favoritism- should be as similar as possible with the treated group-one receiving political favoritism through coethnic connection to the executive, even in the absence of randomized controlled experiments, as long as there are relevant pre-program characteristics that determines whether or not the individual received the treatment (Definition et al., 2001; Dehejia & Wahba, 2002a; Peikes et al., 2008).

Ideally, we want the control group to look a lot more like the treated group. Procedurally, for each observation in the treatment group, we select the control observation that looks most like it based on the selection variables (background characteristics) (Andrillon et al., 2020; Njagi et al., 2021). We then compare the average outcome in the treatment group with the average outcome in the new (matched) control group. This is the average treatment effect.

We match using the strong predictors of the outcome of interest, in this case, labour market outcomes. We first apply logistic regression to determine the predictors and predict the probability of the outcome based on the observed variables. This predicted probability is the propensity score. We then use the propensity scores as a summary of the background characteristics weighted by their importance in predicting treatment to match each control observation to treated observation. It may not be a one-to-one match, so we match the closest (Peikes et al., 2008). Multiple propensities can be matched to one. We compute the differences of the weighted averages to derive the effect of treatment on the treated.

To check if the treatment worked, we look at the covariate balance between the treatment and the new control group. We also compare the distribution (mean, median, histograms, non-parametric

densities, distribution of the densities) of the propensity scores in the treatment group and the new control group. These should be similar.

The beauty of PSM is that it is not sensitive to functional form of the covariates. The PSM however does not address the omitted variables that affect both the outcome and whether the observation was treated (unobserved confounders) (Dehejia & Wahba, 2002b).

The PSM model in this chapter is specified as follows:

$$y = \beta_0 + \beta_1 Treatment + \beta_2 agecat_1 + \beta_3 education_3 + \beta_k X_k \Delta + \mu_i \quad (5.6)$$

Where y is the outcome variable, in this case log of hourly wage/employment; Treatment variable in this case is being Kikuyu/Kalenjin whose effect on the labour market outcomes we want to estimate; age category is also controlled for in addition to education. $X_k\Delta$ is a vector of other matching covariates between the treated and untreated groups. The coefficient, β_1 reveals the treatment effect, the labour market premium associated with being coethnic with the President, all else held similar. We use a logistic regression model to estimate the propensity scores $e(X)$ – the probability of receiving the treatment given observed covariates (X).

We include all relevant covariates in the propensity score model.

Table 5.7: Regression Results for Political Proximity and Sectoral Employment Probabilities

Variables	(1) Paid work	(2) Private sector	(3) Public sector	(4) Paid work	(5) Private sector	(6) Public sector
Kikuyu premium	0.085***	0.046***	0.016**			
	(0.011)	(0.010)	(0.008)			
Kalenjin premium				0.003	-0.014	0.101*
				(0.069)	(0.009)	(0.058)
Observations	25,030	25,309	25,309	24,611	25,045	25,045

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Other matching variables: age category, type of place of residence (urban/rural), highest level of education completed, county of residence, sex of the individual, household size, type of economic activity, union membership.

We find slightly different results from the earlier estimations. Unlike in the multivariate regressions which showed that there are no pronounced Kikuyu premia in the public sector, the PSM results suggest that Kikuyu individuals on average have a higher likelihood of getting paid job in the formal sector, both private and public, although the magnitude is smaller in the public sector. Similarly, the Kalenjin have higher chances of being employed in the public sector as shown in table 5.16.

Today, being Kikuyu is associated with 8.5 percentage points higher chances of getting paid work, 4.6 percentage points higher chances in the private sector, and 2 percentage points higher chances in the public sector, compared to non-Kikuyus with similar characteristics. We do not see any strong significant differences in the labour market wage employment premia between Kalenjins and non-Kalenjin individuals of working age.

Similarly, we estimate the average treatment effect on the treated for wages. That is, the effect of Kikuyu coethnicity on the wages of Kikuyu employees. Similar results hold for wages. On average, Kikuyu employees earn significantly higher wages (21% higher) than non-Kikuyu employees with similar characteristics. In contrast, Kalenjin employees earn significantly lower hourly wages than non-Kalenjins of similar labour market characteristics, 8% lower. See table 5.17.

Table 5.8: Regression Results for Regime of Entry and Coethnic Wage Premium

Variables	(1) Log hourly wage	(4) Log hourly wage
Kikuyu wage premium	0.215*** (0.001)	
Kalenjin wage premium		-0.08*** (0.050)
Observations	7,498	6,946

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

We restrict the estimation to only individuals who worked for pay. Matching variables: age category, type of place of residence (urban/rural), county characteristics, sex, household size, union membership, hours worked per day, employment category (formal/informal), and type of primary activity.

Results for coethnic premia by regimes show that the Kikuyu on average have higher earnings than other ethnic groups, 21.5% higher wages. The opposite holds for Kalenjins, they earn 8% lower wages than other coethnics. Considering the regimes of entry, we find that Kikuyu employees continue to enjoy higher wage premia today, regardless of whether they had a coethnic president at the time of first entry into the labour market. For instance, the Kikuyu who entered the labour market first during the Kenyatta regime, earn 44% higher wages than their non-Kikuyu counterparts with similar features. The magnitude has however dampened across the regimes of entry; Uhuru regime coethnic entrants have lower wage differences than Kibaki regime coethnic entrants, for instance.

Table 5.9: Regression Results for Regime of Entry and Wages

Variable	(1) Kenyatta regime entrants	(2) Moi regime entrants	(3) Kibaki regime entrants	(4) Uhuru regime entrants
Kikuyu wage premium	0.444***	0.203***	0.266***	0.199***
	(0.010)	(0.002)	(0.001)	(0.002)
Observations	68,128	1,840,530	2,107,293	1,931,412

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

We restrict the estimation to only individuals who worked for pay, aged 15-25 years in each regime. These are the first-time eligible entrants. Matching variables: age category, type of place of residence (urban/rural), county characteristics, sex, household size, union membership, hours worked per day, employment category (formal/informal), and type of primary activity.

Additional estimations show that the Kikuyu first time entrants in the labour market during Kenyatta, Kibaki and Uhuru regimes, today, have higher chances of getting paid work. However, their chance of getting paid work today is significantly lower if they entered the labour market during Moi regime. These results suggest that coethnicity with the president at the time of first entry perpetuates through to the present to confer benefits to the coethnics.

Table 5.10: Regression Results for Political Proximity and Sectoral Employment Probabilities

Variables	(1) Kenyatta regime entrants	(2) Moi regime entrants	(3) Kibaki regime entrants	(4) Uhuru regime entrants
Kikuyu employment premium	0.050***	-0.001**	0.012***	0.051***
	(0.002)	(0.001)	(0.001)	(0.001)
Observations	343,808	4,704,519	4,376,435	3,964,774

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

We restrict the estimation to only individuals aged 15-25 years in each regime. These are the first-time eligible entrants. Matching variables: age category, type of place of residence (urban/rural), county characteristics, sex, household size, union membership, and type of primary activity

For public sector employment, only Kikuyu first time entrants have a higher likelihood of getting a job in the public sector. The latest regime counterparts on average have lower likelihood of getting employed in the public sector than non-coethnic entrants in the same regimes. This points to the potential effectiveness of affirmative action in the public service requiring not more than one third representation of one tribe in the public service. As a matter of fact, we find that the likelihood of Kikuyus finding private sector employment is higher than other tribes regardless of the regime of entry. Results for Private sector employment probabilities are presented in Table 5.11

Table 5.11: Regression Results for Employment Probabilities in the Public Sector

Variables	(1) Kenyatta regime entrants	(2) Moi regime entrants	(3) Kibaki regime entrants	(4) Uhuru regime entrants
Kikuyu employment premium	0.007***	-0.025***	-0.031***	-0.010***
	(0.001)	(0.000)	(0.000)	(0.000)
Observations	343,808	4,704,519	4,376,435	3,964,774

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

We restrict the estimation to only individuals aged 15-25 years in each regime. These are the first-time eligible entrants. Matching variables: age category, type of place of residence (urban/rural), county characteristics, sex, household size, union membership, hours worked per day, employment category (formal/informal), and type of primary activity.

Table 5.12: Regression Results for Regime of Entry and Private Sector Employment

Variables	(1) Kenyatta regime entrants	(2) Moi regime entrants	(3) Kibaki regime entrants	(4) Uhuru regime entrants
Kikuyu employment premium	0.004***	0.030***	0.003***	0.020***
	(0.002)	(0.000)	(0.000)	(0.001)
Observations	343,808	4,704,519	4,376,435	3,964,774

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

We restrict the estimation to only individuals aged 15-25 years in each regime. These are the first-time eligible entrants. Matching variables: age category, type of place of residence (urban/rural), county characteristics, sex, household size, union membership, hours worked per day, employment category (formal/informal), and type of primary activity.

5.14.2 Regression Discontinuity Analysis

We further subject the results of the regime of coethnic entry into the labour market to more rigorous non-experimental impact evaluation design, the regression discontinuity. We follow this approach propagated by a number of empirical studies in Economics (Card et al., 2015; Hahn et al., 2001; D. S. Lee & Lemieux, 2010; Pettersson-Lidbom, 2008).

The regression-discontinuity (RD) research design is a quasi-experimental method that can be used to assess the effects of a treatment or intervention. Unique to the RD design is that participants are assigned to groups solely on the basis of a pretreatment cutoff score (D. S. Lee & Lemieux, 2010b; van der Klaauw, 2008). In this context, the treatment effect appears as a 'jump' or discontinuity at the cutoff point in the regression function linking the assignment variable to the outcome.

To reiterate, we are interested in finding the effect of being coethnic with the president (Kenya) at the time of entry across the political regimes. The precise counterfactual in these estimations are Kikuyus in the different regimes. We have shown in the descriptive results that the trends in labour market outcomes (paid work and wages) have risen gradually over time for Kikuyus, especially when they have had a coethnic president, and gradually slowed down when they have been out of power (refer to figures in section 5.6).

The question that begs is whether these benefits accrue to everyone as long as they are coethnics with the President, or to specific people within the coethnics. Our argument is that treatment is that these benefits can easily be conferred to first time entrants more easily as opposed to veteran labour force participants, who already might be employed. Even for the wages, it might be possible to segregate specific ethnicities into low paying jobs, while awarding coethnics the high paying jobs. We test this treatment at the time of entry. Ideally, we test whether there are any significant differences in the labour market outcomes for first time coethnic entrants compared to those who have been in the labour market for a longer time. We seek to answer the question whether coethnic biases are more pronounced at the time of entry into the labour market, or coethnics benefit from the premia regardless of the times of entry into the job market.

Whilst the conventional labour market entry age is 15, we argue that due to delayed transition from school to work and potential pursuit of higher education, this age is bounded between 15 to 25. Assuming someone completes secondary school at 17 years old and continues to acquire tertiary level or university education, they will be about 21-year-old. The coethnic premia for them starts to set in beyond 21 years of age, hence the age boundaries.

Based on the information in table 5.4, we construct age boundaries as follows: In the Kenyatta regime, (1963-1978), first time eligible entrants in the labour market here (age 15-25), are today 52-65 years old. For the Moi regime (1978-2002), the first-time eligible entrants in this regime, are today (2015) aged between 28 to 52 years old. Finally, for the Kibaki and Uhuru regimes (2002-2015), first time eligible entrants are aged between 15 to 28 years old.

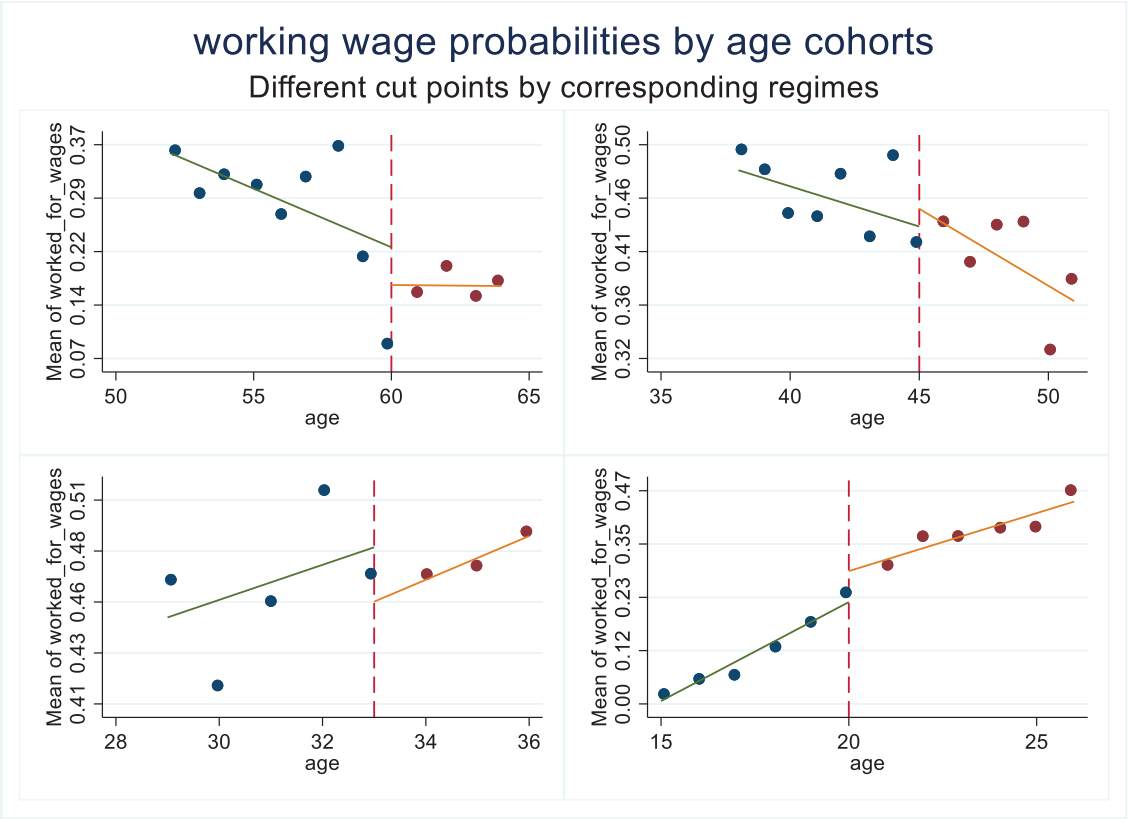
We first check the plots of employment and wages for the entire sample and check if there are any jumps suggesting discontinuity. We then ascertain these jumps around the entry age within each regime.

We consider different age cut points, measuring different coethnic intensities. First, we consider individuals who have been coethnics for 5 years. This means that they have had a coethnic president for just one term. We argue however that there is likely to be a discontinuity around this age, and that there would be no significant differences for the individuals who have had coethnic president for more or less years around this cut-point. Accordingly, we test for the significant differences in the outcome variables for the years one has been coethnic between 1 -5 years, that is 0>years of coethnicity<=5, and not just at the cut point. This is 5 years on either side of the cut off. These are first time entrants (currently 16–20-year-olds). If they entered the labour market at 15 years old, 1 to 5 years of coethnicity will imply they are between 16-20 years old currently. Hence the payoff not only accrues to first time entrants (15-year-olds), but there are spillover effects to those around the entry age (16–20-year-olds). These are Uhuru regime first time eligible entrants.

We test whether the coethnic effects remain significant after expanding the coethnic age bounds to 10 years; 5>years of coethnicity<=10. This allows us to observe whether those who have had the presidency longer, benefit today in the labour market. With a cut point at 20 years, this implies that these are individuals of ages 20-25 years old; Kibaki regime first time entrants.

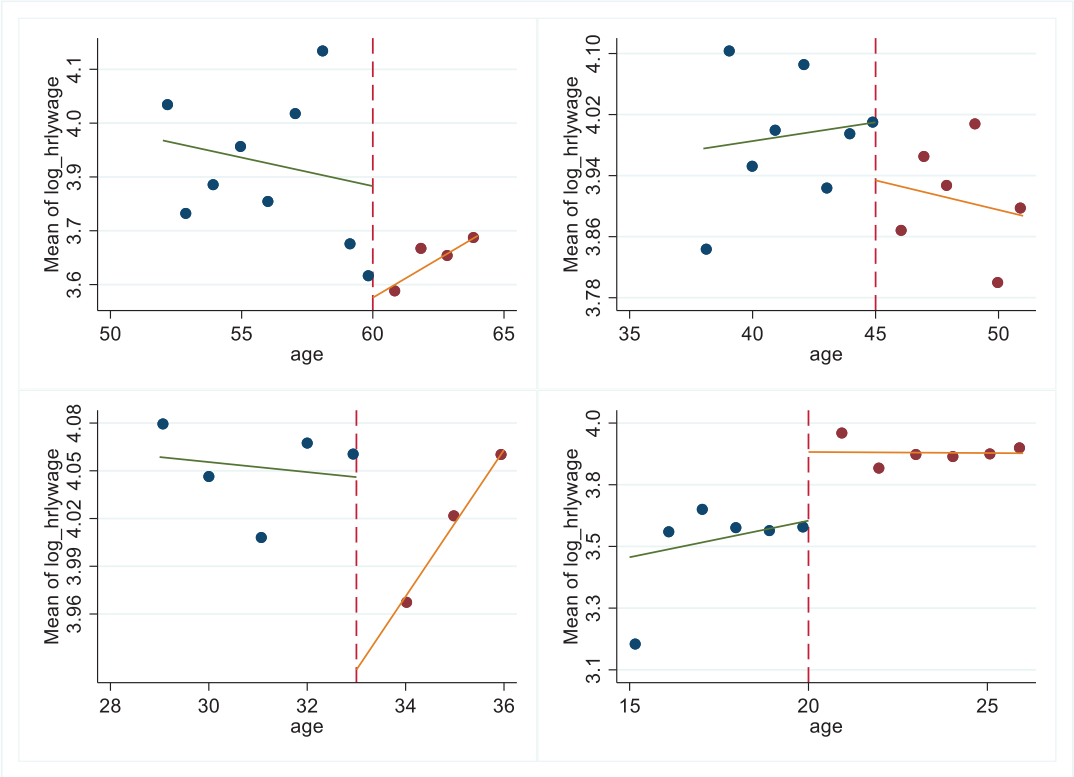
Expanding the age bracket further to 15, with a cut point age at 30 gives individuals aged 40-45 years old; Moi regime first time eligible entrants. Finally, a cut off at 50 implies that the relevant age bracket currently is 50-65 years old; Kenyatta regime eligible entrants.

Figure 5.6: Bin plots of Probability of finding paid work by age cohorts



Source: Author's computation from KIHIBS 2015

Figure 5.7: Hourly wage patterns by age cohorts



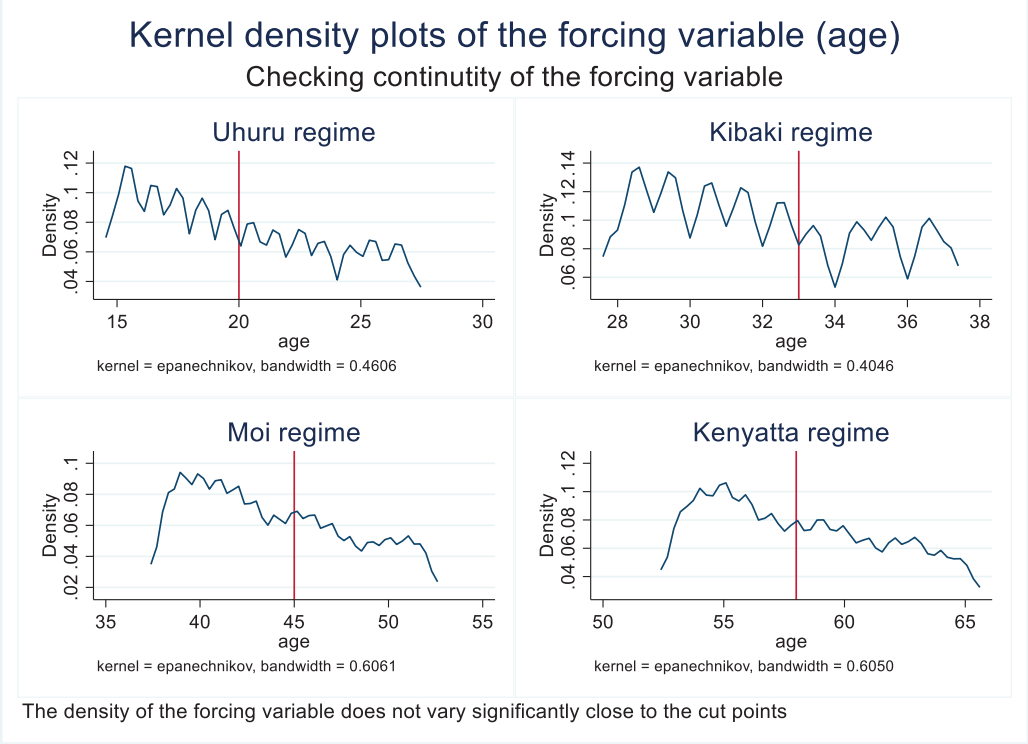
Source: Author's computation from KIHBS 2015

We see a clear jump/discontinuity around the cut point, 20 years old. This suggests that there exists a discontinuity both for the hourly wage and the likelihood of getting employed for Kikuyu individuals of working age. As we would expect from theory, there is quite a fairly discontinuous labour market outcomes for the Kikuyu as the regime changes from Kenyatta to Moi and post Moi regimes. We observe a similar trend for the probability of getting paid work by the Kikuyu. The probability has a positive trend in the Kenyatta, Kibaki and Uhuru regime, but a downward trend for the Moi regime entrants.

These patterns suggest that estimating the treatment effect, that is, the effect of having a coethnic president, for the coethnics, may yield biased results in an OLS parameterization. We therefore invoke the RDD methodology to estimate the treatment effects under this identification.

The standard assumptions under the RDD specification; continuity of the assignment variable, common trends, no manipulation, local randomization, smoothness of the potential outcome, no sorting around the cutoff, independence of the treatment assignment and covariates, monotonicity may not be directly observable (D. S. Lee et al., 2009; van der Klaauw, 2008), are largely met and there are no reasons to believe that they could be violated in such a manner to bias our results. For instance, we see that there exists a sharp cutoff in the bounds of the forcing variable (age), indicative of a sharp RDD. Most of the covariates also show similar patterns indicative of a balanced covariate existence.

Figure 5.8: Kernel density plots of age across cut points.

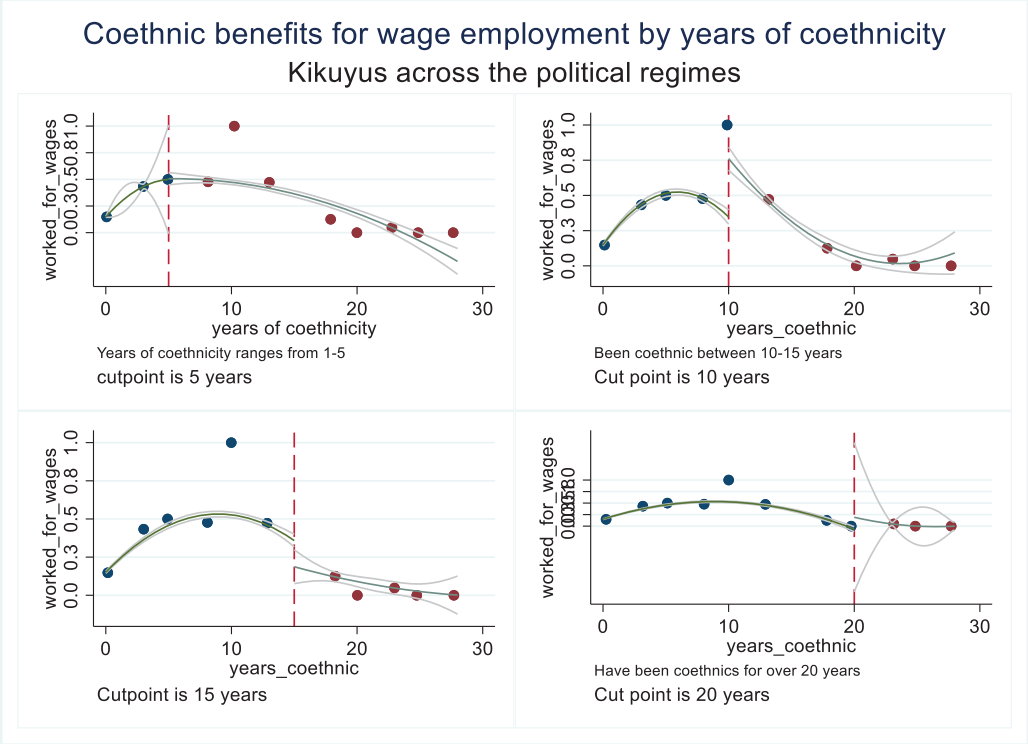


Source: Author's computation from KIHBS 2015

Tests of covariate balance also seem to hold given that the density of the forcing variable does not change significantly around the cut points in the specific regimes of entry.

Plots of the wage employment probabilities by number of years one has been coethnic shows that there is a jump/discontinuity around 10-15 years of being coethnic, whilst the plot seems smooth for 0-5 years (cut point 5) and post 15 years of coethnicity (cut point 20). This suggests that at the point of entry into the labour market, the coethnic benefits are not significant, but it becomes manifest after one has stayed for some time being coethnic in the labour market. We notice a sharp discontinuity of wage employment by years of coethnicity.

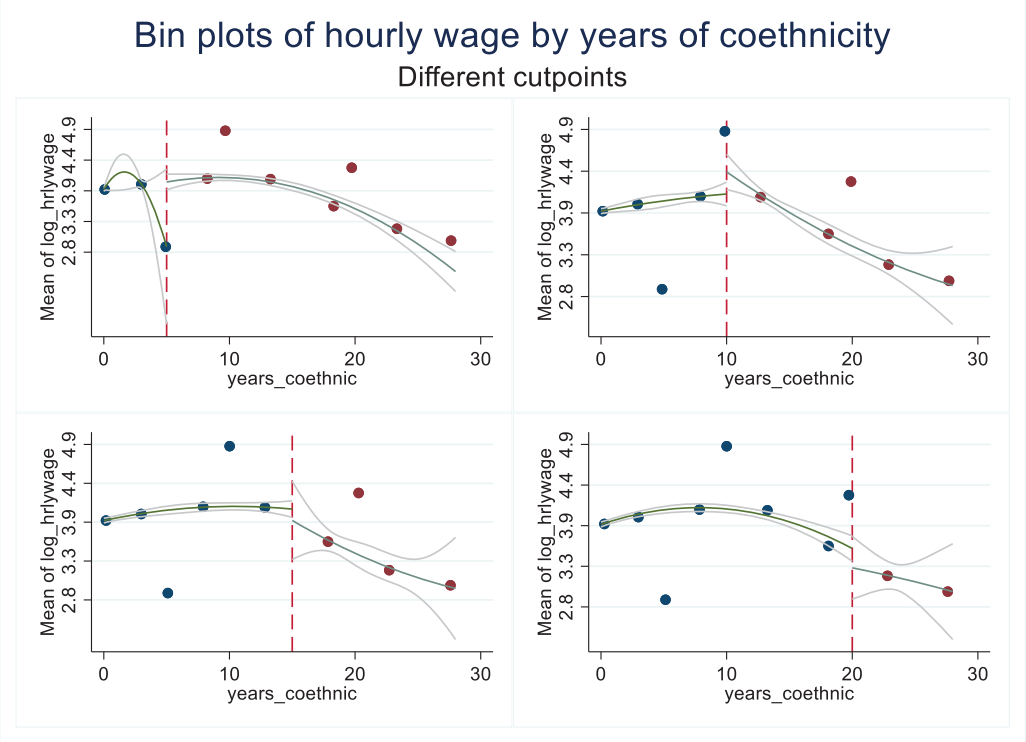
Figure 5.9: Bin plots of wage employment across political regimes



Source: Author's computations from KIHBS 2015.

Notably, as we expand the age bound, that is, extending the cut point from 5 to 15 to 20 to 30, the gap for the treated (Kikuyu individuals of the cut point age) and the non-treated group (Kikuyu individuals above the cut point age) diminishes. This implies that the treatment may only be effective for certain age groups, and not the entire labour force. We see quite a similar patten with wages.

Figure 5.10: Bin plots of hourly wage by years of coethnicity



Source: Author's computation from KIHIBS 2015

The estimation results of the regression discontinuity design show similar results to the earlier findings. The results reveal the existence of local average treatment effects for Kikuyu first time entrants in the Uhuru regime. Even after taking into account the trend around the cut point and additional covariates, the coefficient of the intention to treat at the local point does not change dramatically and remains significant. The results are presented in table 5.22.

Table 5.13:Hourly wage discontinuity results for Kikuyu entrants in the Uhuru regime

Variables	(1) Bivariate	(2) With trend	(3) All covariates
Local Average treatment effect	0.283***	0.273**	0.234*
	(0.064)	(0.115)	(0.120)
Trend around cut point		0.002	0.015
		(0.020)	(0.019)
Other covariates			
Post secondary qualification			0.693***
			(0.092)
Urban worker			0.121**
			(0.062)
Male worker			0.252***
			(0.056)
Private sector employee			-0.067
			(0.102)
Works in an NGO			0.012
			(0.166)
Self-employed			-0.029
			(0.105)
Member is unionised			-0.160*
			(0.095)
Constant	3.605***	3.608***	3.409***
	(0.054)	(0.063)	(0.214)
Observations	945	945	713
R-squared	0.021	0.021	0.194

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
The age bandwidth is 5; on either side of the discontinuity. The age bound is 15-20 years old.
Alternatively, 0-5 years of coethnicity, corresponding to Uhuru regime first time entrants.

The coefficient of the local average treatment effect shows that there is about 32.4% difference in earnings between the Kikuyus that entered the labour market in the Uhuru regime, first time entrants, and the Kikuyus that entered the labour market in other regimes (earlier entrants). We find that this difference is statistically significant at 10%.

When we expand the age bandwidth to 10, and 20, corresponding to Kibaki, and Moi regime entrants, the local average treatment effect becomes smaller and insignificant. This implies that the coethnic premiums are only effective for the most recent regime entrants in the labour market.

Hence, once someone has stayed in the labour market for long, the benefits from coethnicity dissipates, despite their coethnicity status. Similar patterns hold for Moi and Kenyatta regime entrants.

Table 5.14: Hourly wage discontinuity results for Kikuyu entrants in the Kibaki regime

Variables	(1) No trend	(2) (1) +Trend	(3) (2) +All covariates
Local average treatment effect	0.215***	0.082	0.076
	(0.036)	(0.064)	(0.062)
Trend around the cut-point		0.016**	0.021***
		(0.006)	(0.006)
Post secondary school qualification			0.766***
			(0.049)
Urban worker			0.208***
			(0.036)
Male worker			0.269***
			(0.034)
Private sector employee			-0.213***
			(0.061)
Works for NGO			0.082
			(0.143)
Self employed			-0.214***
			(0.061)
Member is unionised			-0.256***
			(0.065)
Constant	3.810***	3.858***	3.950***
	(0.029)	(0.034)	(0.143)
Observations	2,809	2,809	2,174
R-squared	0.013	0.015	0.238

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Age bandwidth is 10, corresponding to Kibaki regime entrants (20-28 years old currently).

Table 5.15:Hourly wage discontinuity results for Kikuyu entrants in the Moi regime

Variables	(1) No trend	(2) (1) + Trend	(3) (2) + all covariates
Local average treatment effect	-0.003	-0.040	0.029
	(0.032)	(0.062)	(0.063)
Trend at the cut point		0.004	0.005
		(0.005)	(0.005)
Post secondary school qualification			0.780***
			(0.046)
Urban worker			0.279***
			(0.032)
Male worker			0.329***
			(0.032)
Public sector employee			-0.237***
			(0.056)
Works for NGO			0.120
			(0.138)
Self employed			-0.248***
			(0.057)
Member is unionised			-0.371***
			(0.057)
Constant	4.013***	4.043***	4.332***
	(0.021)	(0.050)	(0.126)
Observations	3,446	3,446	2,704
R-squared	0.000	0.000	0.256

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Cut point is 40 years. The age bandwidth is 20 on either side of the cut point. The corresponding age category is 35-55; over 15 years of coethnicity.

Additional estimations using the number of years one has been coethnic while in the labour force reveals somewhat similar results. When we do not control for any trends around the cut point, the average treatment effects around the cut point are positive and significant for the Kikuyus in that bandwidth.

Table 5.16: Regression discontinuity results for Kikuyu entrants by years of coethnicity (Bivariate)

	Hourly wage			Paid work		
Corresponding regime of entry	(Kenyatta)	(Moi)	(Post Moi)	(Kenyatta)	(Moi)	(Post-Moi)
Years of coethnicity	11-15	6-10	1-5	11-15	6-10	0-5
10-15 years	-0.600***			-0.382***		
	(0.066)			(0.021)		
5-10 years		-0.092**			-0.088***	
		(0.044)			(0.021)	
1-5 years			0.102**			0.044**
			(0.047)			(0.022)
Constant	4.051***	4.056***	3.958***	0.473***	0.477***	0.433***
	(0.034)	(0.032)	(0.035)	(0.017)	(0.015)	(0.016)
Observations	1,027	1,766	1,505	1,412	2,253	2,069
R-squared	0.076	0.002	0.003	0.149	0.008	0.002

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
*LATE-Local Average Treatment Effect

The T-test result reveals a significant difference in the outcomes at the cut point of 15, implying existence of treatment effect at the local point (Local Average treatment effect).

However, when we add additional covariates and account for trends around the cut point, we find different results. The effect disappears when we control for trend and other covariates. This tells us that there is no discontinuity, that is the coethnic benefits accrue equally to individuals around the cutoff points, and that, people with almost similar coethnic intensities (years having been coethnic) actually reap significantly different benefits. Thus, 0-5 years of coethnicity gives significantly different benefits compared to 10-20 years of coethnicity or 5-10 years.

Table 5.17:Regression discontinuity results for Kikuyu entrants by years of coethnicity (Multivariate)

	Hourly wage			Working for pay probabilities		
Corresponding regime of entry	(Kenyatta)	(Moi)	(Post-Moi)	(Kenyatta)	(Moi)	(Post-Moi)
Years of coethnicity	10-15	6-10	1-5	10-15	5-10	1-5
LATE (10-15)	-0.252***			0.032		
	(0.041)			(0.167)		
Trend (15 years bandwidth)	-0.015***			-0.051**		
	(0.004)			(0.020)		
LATE (5-10)		0.321***			0.287***	
		(0.041)			(0.109)	
Trend (10 years bandwidth)		-0.063***			-0.045***	
		(0.005)			(0.017)	
LATE (0-5)			-0.615			0.710**
			(0.509)			(0.717)
Trend (5 years bandwidth)			0.132			-0.312**
Post secondary school qualification	0.124***	0.080***	-0.028	0.783***	0.814***	0.772***
	(0.038)	(0.029)	(0.027)	(0.102)	(0.063)	(0.060)
Male worker	0.146***	0.199***	0.222***	0.153**	0.246***	0.294***
	(0.023)	(0.020)	(0.021)	(0.061)	(0.046)	(0.046)
Urban worker	0.048*	0.093***	0.137***	0.259***	0.265***	0.232***
	(0.025)	(0.020)	(0.022)	(0.065)	(0.047)	(0.049)
			(0.102)			(0.143)
Private sector employee				-0.244*	-0.213**	-0.140*
				(0.136)	(0.087)	(0.075)
Works for NGO				0.485	0.282	0.148
				(0.350)	(0.181)	(0.170)
Self employed				-0.270**	-0.242***	-0.190***
				(0.136)	(0.085)	(0.074)
Employee is unionised				-0.429**	-0.295**	-0.285***
				(0.184)	(0.118)	(0.100)
Observations	1,412	2,253	2,069	811	1,352	1,153
R-squared	0.189	0.112	0.068	0.253	0.243	0.249

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
*LATE: Local Average Treatment Effect

We find mixed evidence on the existence of local average treatment effect on wages and employment. Beginning with wages, the results show that while there is no significant difference

in earnings for Kikuyus who entered the labour market during Uhuru regime (0-5 years of coethnicity), such effects are present for Kikuyu entrants in the Moi regime.
There is a 32% higher in earnings for the Kikuyu who have had coethnic presidents for between 10 -15 years in the labour force than those who have had presidency for a shorter time, less than 5 years. This is significant at 1%.

For access to paid work, we find significant local average treatment effects for the Kikuyu The effects are more pronounced in the fewer years' cohorts (0-5) and (5-10), suggesting that the coethnic benefits are only easily transferrable at the point of entry but fizzles out with time. Kikuyu who are of working age in the Uhuru regime or Kibaki regime have 70 percentage points higher chances of getting paid job than their counterparts who have had fewer years of coethnicity with the President. Similarly, Kikuyus who entered the labour market first during the Moi regime have about 28 percentage points higher chances of getting paid job today than Kikuyus who have only been coethnics with the president for a shorter time. This finding suggests that coethnic effects of employment are fairly more persistent than the effects for wages. It therefore benefits coethnics more to find paid job, but not to earn higher wages once they have entered the job market.
Overall, the coethnic effects of wages and employment seem to only last in the short term. Potentially, as time passes by, there are more anti-discriminatory reforms and policies that seek to enhance equality in access to livelihood opportunities, and therefore their enforcement shrinks any perpetuation of any coethnic discriminatory practices by the political class.

We have conducted sensitivity tests such as doing the estimations with the different bandwidths and different orders of polynomials of the running variable and the significance of our estimates continue to hold. The point estimates are also quite similar in all the cases suggesting that these results are more reliable. With RDD, outcomes for which the treatment is known to have no effect should exhibit a zero-regression discontinuity treatment effect-we should observe zero treatment effect at the cutoff (Card et al., 2015; Hahn et al., 2001). This is quite the case in our regressions.

Our RDD results have shown that the effects of coethnicity are larger with bigger bandwidths. This suggests that once someone enters the labour market, the benefits continue to accumulate. The effects are therefore larger for 10-20 years coethnics, and smaller for the new entrants, 0-5 years coethnics.

5.15 Summary and policy implications for the labour market

To conclude, this chapter has investigated whether coethnicity with the President today, and at the time of entry into the labor force matters for labor outcomes today. Our results reveal evidence of coethnic biases in different sectors and types of employment across both earnings and employment in the general labour market. The coethnicity status at the regime of first entry into the labour market plays a significant role in today's employment and earnings.

Sharing the same ethnicity with the ruling elite at the time one enters the labour market is associated with significantly higher employment probabilities today. The coethnic biases seem to manifest in real time. While the coethnic effects especially for access to paid job seem manifest at the time of entry into the labour market, these effects dampen for the coethnics who have stayed longer in the job market. The biggest coethnic differentials are therefore pronounced at the time of entry but does not persist for long. The recent coethnic cohorts seem to have higher employment probability than the earlier regime entrants. One of the key findings is that the coethnic effects of employment are prevalent both in the private sector and the public sector.

Different from earlier studies that do not find pronounced ethnic biases in employment in the Kenyan public sector, our findings reveal the existence of such biases across all regimes of entry. Our findings are consistent with the evidence from the administrative datasets derived from the audit of parastatals in Kenya, (NCIC, 2016b, 2016d; Nyabira & Ayele, 2017a), that find oversubscription of particular ethnic groups (coethnics of the President and the Deputy President-the Kikuyu and Kalenjin). We find results indicative of this evidence using the household survey dataset. Although in the past the efforts to reduce ethnic inequalities in the labour market has been on the public sector, it seems that there are deeply entrenched inequalities in the other sectors: self-employment, own account work, employment within the household and the non-formal sector more broadly. Other than direct recruitment into the formal sector, the previous political regimes have created an enabling environment for their own to conduct businesses and be engaged in gainful economic activities in other sectors. The challenge in implementing equity in access to opportunities in the informal sectors is the difficulty regulating the sector to make any laws enforceable.

Chapter 6 : Summary and Conclusion.

This thesis makes a vitally important contribution to the ongoing attempts to undo this legacy, not just in Kenya, but in sub-Saharan Africa more broadly, where these kinds of issues are rife. Perceptions and realities of ethnic and political favoritism in wellbeing has been a major cause of ethnic conflict, erosion of civic participation, and the undermining of an inclusive national identity and other aspects of social cohesion in Kenya.

We use multiple nationally representative large quantitative datasets to identify the causal underpinnings of the relationship between ethnopolitics and resource distribution in Kenya. We do this by mapping ethnically based resource allocation over time in Kenya, from the 1990s through to the present, in three interrelated but independent papers by means of empirical analyses.

Chapter one presents the introduces the thesis, providing background and motivation behind the thesis. After deriving reasonably comparable datasets in the technical chapter (chapter two), in chapter three, we construct the multidimensional poverty index (MPI) (from three domains: education, dwelling conditions and access to key basic amenities-tap water, electricity, clean cooking fuel) and characterized its distributional patterns between 1999-2019. The MPI is constructed using the approach by (Santos & Alkire, 2011). We utilized pseudo panel data of counties constructed from two rounds of 10% samples of the Kenya Population and Housing Censuses (1999;2009, and 2019) datasets. This enables us to observe poverty experience over time to examine the extent to which poverty is sustained in specific regions. Chapter four aims to investigate the drivers of poverty and the effect of change of governance structure on the distribution of wellbeing across counties, and whether this transition has effectively redressed the ethnic-identity based resource allocation problem, while chapter five explores the ethnic biases in the labour market entirely and for the first-time entrants.

We find that coethnicity plays a significant role in poverty levels both at the household level and county level. Political favoritism in wellbeing manifests along both the regional dimension and the ethnic dimension. While being coethnic (Kikuyu or Kalenjin) with the president is associated with lower likelihood of becoming poor, residing in coethnic regions confers even lower poverty outcome, especially for the Kikuyu. Non-coethnics residing in coethnic major regions are even

better off than their non-coethnics counterparts in the other regions. This finding is similar for coethnics.

In addition, the share of coethnics in a region, to date, significantly determines its fortunes, all else held constant. Also, the fact that the coethnic major regions have continued to exhibit lower poverty levels and simultaneous highest reduction in poverty while the rest of the counties remain trapped in poverty means that the county poverty gaps have widened. This suggests that devolution has not effectively countered the potential ethnic bias in resource distribution at the national level.

Even though we have insufficient information linking the Presidents' coethnic regions and them receiving more public goods, the sheer fact that there exist remarkable imbalances from distribution of resources poses a threat to the stability and development of the country.

We also find contemporaneous clustering of poor counties with specific ethnic groups. Counties that have the highest share of President's coethnics are the least poor and have the greatest reduction in poverty levels over time. Counties where the Kikuyu tribe are the majority (Central Kenya and lower Eastern Kenya) have consistently simultaneously exhibited lowest poverty levels and the most significant reduction in poverty over time. On the contrary, the inhabitants of Western Kenya (the Luo and the Luhya tribes) have remained moderately poor and the Northern Frontier Districts have stayed "trapped" in poverty (mostly the Kenyan Somali).

Our results suggest that despite the institutionalization of devolution, the importance of patronage networks continues to be witnessed, implying that character of ethnic patronage politics persists. We find no doubt that the President's counties disproportionately benefit from public goods and services. The Kikuyu dominant counties more especially on average have substantially lower poverty levels, higher access to employment opportunities, better road networks, high school quality, adequate health infrastructure, proper water distribution and connection to electricity (resources which are largely publicly provided) although the reasons for such disproportionate allocations remain unclear.

The labour market results reveal evidence of coethnic premia in wages and probability of employment in the entire labour force, the private sector, and the public sector. We find overarching evidence that coethnicity with the President both at present and when one entered the

labour market (being Kikuyu) is associated with higher employment probabilities and larger monthly earnings today. Although we do not find any strong biases in employment in the public sector, for those who are employed already, there are significant differences in earnings between coethnics and non-coethnics).

In conclusion, this thesis, and brings out three key contributions: (i) the same regions and social groups in Kenya have been trapped in poverty (have always been the poorest) since the era of Kenya's first Kikuyu President (in 1964); (ii) high or low poverty rates have persisted in certain regions or social groups over the same time period; (iii) these two aspects of poverty are linked to the ethnic identity of a President, with the President's co-ethnics being distinctly better-off than other groups throughout the particular time periods analyzed; (iv) coethnic biases are present in the labour market, both in terms of employment and wages. These biases persist in the post devolution era.

Even though we do not have sufficient information linking the Presidents' coethnic counties and them receiving more public goods, the sheer fact that there exist remarkable imbalances from distribution of resources poses a threat to the stability and development of the country. Thus, coethnicity with the President seemingly comes out as an important element in the conduct of social and political affairs in Kenya, with direct implications on poverty and the labour market.

Although it might be too early to comment on the effectiveness of devolution since Kenya is only at its initial stages, our evidence suggests that devolution has not reduced the ethnic favoritism in regional development. The persistence of ethnic favoritism in the post devolution era shows that the new constitutional dispensation and other legislations in pursuit of equitable access to resources and opportunities have not been effective in addressing the long-term challenges of county inequalities. Political exclusion and inequitable and unequal distribution of resources and opportunities have been longstanding issues in Kenya.

6.1 Study Limitations and Areas for Further Research

This thesis has shown that sharing the same ethnicity as the President or staying in counties that have Presidents' coethnics as the majority ethnic group is associated with better socio-economic outcomes in terms of lower poverty levels and higher wages. Our study, however, is limited by data to investigate potential interesting concerns which this thesis proposes as potential areas for further research.

To begin with, is there evidence that local politicians influence construction, suggesting decentralization may not be sufficient to constrain favoritism in large nationwide infrastructure projects? We have largely found out that the patterns of political and ethnic favoritism are mostly consistent with clientelist public investment behaviors motivated by national presidential election outcome-the ethnic group of the incumbent President get more resources.

There is mixed evidence on expanding the definition of coethnicity depending on the good/resource/project in question. Whereas other scholars find no evidence that local leaders do not influence the distribution of resources suggesting that decentralization may not effectively alter distributive politics of a country (Berkouwer et al., 2022), other evidence suggest that there are strong spillover effects in welfare to the other ethnic groups that are proximate to the ruling elite, either through producing the Deputy Presidents, or Prime Minister, or politically coalescing with the ruling group to ascend to power (Burgess et al., 2011). Moreover, coethnicity with the cabinet ministers in any given regime is also associated with better outcomes in the specific ministries, (see for example (Kramon & Posner, 2014)).

Given the conduct of politics in Kenya, the tribes that are proximate to the ruling regime, producing the Vice presidents or the Prime Minister, or holding cabinet or ministerial positions are deemed to have disproportionate access to opportunities and resources in various forms, almost in equal measure as the President's coethnics (Burgess et al., 2011).

This is a potential area of further research in this area that future studies could consider; expanding the investigation to include other "powerful" ethnic groups, not necessarily President's coethnics. In the Kenyatta regime for instance, the politically dominant ethnic groups were the Kikuyu, Embu, and Meru Association (famously known as the GEMA) and the Kalenjin. The Kikuyu produced the president while the Kalenjin produced Vice President. The Embu and Meru have

historically coalesced with the Kikuyu in successive general elections in the country (Kramon & Posner, 2014). Under Moi regime, they were the Kikuyu and the Kalenjin. The Kalenjin produced both the President and the Vice President. The Kikuyu also alternated the Vice Presidency position in switching regimes under Moi presidency. In the Kibaki regime, they were the GEMA, the Luo, the Luhya, and the Kamba; the Kikuyu controlling the presidency, the Luo the Prime Minister position (with equal powers as the president), and the Kamba and the Luhya held the Vice President position. Finally in the Uhuru regime, these are the Kikuyu and the Kalenjin; the Kikuyu controlling the presidency while the Kalenjin controlled the deputy presidency. In general, the dominant tribes produced the presidency, deputy president, prime minister or politically coalesced with the ruling ethnic groups.

Another potential area of consideration could be whether political and ethnic favoritism in resource distribution play out differently in politically contested areas from the areas regarded as strongholds. Due to data limitation, we have estimated only the overall extent of favoritism, but not investigated the potential sources of these biases. However, assessing accountability channels by comparing different contexts (resources or index of resources in general) can confound other differences, posing an empirical challenge-especially when these projects are implemented in different phases (Berkouwer et al., 2022). There is need to go beyond the canonical existence of political favoritism, and investigate further, the mechanisms through which the favoritism is implemented.

Moreover, our study has only relied on the on- and off-election cycles (between political regimes). It might be useful to evaluate political favoritism using data that allows us to study how public goods provision tracks political developments at a high frequency. Investments in public projects for instance may accelerate in the weeks immediately before voting, and slow down significantly in the post-election period. Rather than assuming that coethnics continue to benefit from public goods provision throughout the Presidency of the incumbent leaders, mapping out the temporal process of ethnic and political favoritism gives more granular information which does not conceal within-period biases (A. Alesina & Roubini, 1992; Nordhaus, 1975). This would contribute to understanding the timing of fiscal spending around the election cycle (Baskaran et al., 2015; Marx, 2018).

Finally, one of the key limitations in this thesis is data limitation, especially with regards the ethnicity variable, which we inferred by from proxies. This might have an impact on the robustness of our result. With availability of data, over a long period of time, more accurate empirical investigations can be conducted to guide policy formulation on poverty reduction and narrowing the inequality. While we have attempted to control for all the possible empirical factors given our data-time trend, extent of urbanization, being Presidents coethnics, the proportion of the population with post-secondary schooling, and the proportion of the population with paid work, the empirical data may not convincingly rule out many other potential explanations. Some of these unobserved factors in our data may include better equipped bureaucracies, stronger representation in the national assembly, more effective county executives, among other factors, which we have not controlled for. Although we have convincingly provided evidence of persistence of ethnic imbalances beyond the governance reform period, future studies may consider adding additional empirical material that could support the assertions in this thesis.To exhaustively attribute the differences to political favoritism would require additional analysis using granular data with information on the conduct of bureaucrats-economic planners, resource allocation and electoral outcomes for instance.

6.2 Policy Implications and Suggested Recommendations from the Thesis.

We have shown that far more households in areas that are predominantly coethnic are significantly less poor than households in the non-coethnic areas, even conditional on a wide range of covariates and estimation approaches. In addition, individuals who are coethnic of the incumbent President have significantly higher probabilities of getting employed and earn significantly higher incomes despite the recent constitutional reforms, which suggests that legislations in pursuit of equitable access to resources and opportunities have not been effective in addressing the long-term challenges of between-county inequalities. A number of researchers contend that when citizens vote largely along ethnic-party lines, electoral accountability can be limited, and public services may serve as a form of patronage for government supporters (Ferraz & Finan, 2011). In Sub-Saharan Africa, where political divisions often reflect ethnic ones, clientelist allocation of public resources is often believed to have undermined economic performance (A. F. Alesina & La Ferrara, 2004).

Policy implications arising from this thesis may not be straightforward upfront, but a few issues and recommendations are worth considering. The persistence of ethnic favoritism even as late as 2019 shows that the new constitutional dispensation and other legislations in pursuit of equitable access to resources and opportunities have not been effective in addressing the long-term challenges of regional inequalities.

Although the period over which we have assessed the effectiveness of devolution is rather short, our study indicates that the Kenya's recent move to greater political and fiscal decentralization (devolution) and the major constitutional reform in 2010 has not fundamentally altered the country's political economy. Favoritism is still overwhelmingly driven by differences in support for the incumbent President. We find evidence of significant political favoritism in the poverty distribution in Kenya even after the advent of considerable decentralization, although the magnitude of the favoritism effects is considerably smaller than those estimated for during the pre-devolution periods of in Kenya. This may be due to increased constraints on executive and legislative power. This suggests that decision-making on large nationwide programs like distribution of electricity, water and other state projects are still primarily driven by central government officials. Even though we have discussed as extensively as possible, the spirit of devolution, its aspirations and, the level of resources (amount and share between national and county level); the revenue sharing criteria-how resources are shared between counties (what the formula currently is); Institutions controlling and sharing resources (who allocates and what is the process), a lot of the policy implications from the thesis, especially on the effectiveness of devolution, still remains to be desired, which will inform future inquiries in this area.

Beyond the reforms and policies that accompanied devolution, our results suggest that these policies have neither effectively reduced poverty nor narrowed the inequality gap, which calls for additional scrutiny of the policy that was put in place alongside devolution. The first is, despite the revenue distribution of the funds including an equalization formula that was supposed to provide more to poorer counties, these counties have consistently remained poor, especially the northern counties and counties in the western Kenya. The question that begs is whether this amount is too small? Currently, only 0.5% of the national revenue is allocated to equalization fund. The Commission on Revenue Allocation has been actively involved in identifying marginalized areas in Kenya through county visits as part of the development of the Third Policy Identifying

Marginalized Areas aims to determine, and review criteria for identifying these previously marginalized areas, highlighting the country's commitment to ensuring equitable resource allocation and development across the country. Future studies should consider expanding scrutiny of the effectiveness of the devolved funds to counties in alleviating poverty. How much is just enough to help people exit poverty? There is need to uncover how much resources should be allocated to counties versus central government for effective service delivery of services and to reap the benefits enshrined in the devolution. How much more funds should be devolved to the counties to help reduce the inequalities remain a central focus area in this domain.

The second area of concern regards the capacity of the counties to absorb devolution. Do all counties have the capacity harness the potential of devolution? Are the counties able to absorb it? Lastly a countervailing tendency may be that devolution could be best taken advantage of by counties that were previously favoured. So, if a county already had more schools and health facilities and better infrastructure and higher levels of human capital prior to 2010, for instance, then every shilling received by that county might be able to do more given previous investment. By the current policy, these counties will receive more of the fiscal responsibility allocation funds than those counties with lower fiscal capacity. This calls for relooking at the revenue allocation criteria to capture these aspects.

In addition, there is need for significant tracking and scrutiny of government spending behaviour to curb the persistent ethnic and political biases. There is need for increased media coverage of distribution of public investments. This has an effect of increased accountability. Evidence shows that public investments which were hard to track and hidden from the public eye, especially within the implementation phases—exhibit significant favoritism, while stages which are disclosed publicly and receive widespread media coverage—do not (Berkouwer et al., 2022). Active independent media might provide significant accountability and restrain the role of favoritism. Therefore, increasingly active independent media scrutiny as well as increasingly robust democratic institutions, expanding constraints on executive power, and donor oversight may partly curb favoritism.

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Appendices Section:

Table A2: Poverty Transitions Matrix (1999-2019)

Period	**(1999-2019)**			
	Least Poor	Moderately Poor	Poorest	Total
Least Poor	**81.25**	12.5	6.25	100
Moderately Poor	18.75	**56.25**	25	100
Poorest	0	33.33	**66.67**	100
Total	34.04	34.04	31.91	100
Period	**(2009-2019)**			
	Least Poor	Moderately Poor	Poorest	Total
Least Poor	**75**	25	0	100
Moderately Poor	18.75	**43.75**	37.5	100
Poorest	6.67	33.33	**60**	100
Total	34.04	34.04	31.91	100
Period	**(1999-2009)**			
	Least Poor	Moderately Poor	Poorest	Total
Least Poor	**81.25**	18.75	0	100
Moderately Poor	18.75	**68.75**	12.5	100
Poorest	0	13.33	**86.67**	100
Total	34.04	34.04	31.91	100

Source: Author's Calculation

Table A5: Poverty Reduction Levels by County (2016-1999)

County	Urban	Major Tribe	Population Share	Pov_1999	Pov_2009	Pov_2016	(2016-1999)
Kenya	35.00	Kikuyu	0.190	0.458	0.385	0.425	-0.3
Most Improved Counties in Poverty reduction							
Nyeri	31.88	Kikuyu	0.930	0.568	0.531	0.299	-0.269
Marsabit	28.04	Borana	0.575	0.824	0.752	0.555	-0.269
West Pokot	7.99	Pokot	0.943	0.825	0.784	0.56	-0.265
Meru	9.31	Meru	0.933	0.638	0.613	0.392	-0.246
Turkana	20.59	Turkana	0.959	0.895	0.848	0.674	-0.221
Kiambu	65.41	Kikuyu	0.820	0.507	0.37	0.294	-0.213
Embu	17.99	Embu	0.477	0.62	0.545	0.419	-0.201
Laikipia	18.19	Kikuyu	0.648	0.667	0.576	0.478	-0.189
Kisumu	59.16	Luo	0.892	0.63	0.542	0.449	-0.181
Kirinyaga	14.03	Kikuyu	0.965	0.597	0.52	0.425	-0.172
Least Improved Counties in Poverty Reduction							
Homabay	13.58	Luo	0.982	0.7	0.608	0.61	-0.09
Kitui	14.41	Kamba	0.978	0.657	0.559	0.568	-0.089
Kakamega	13.16	Luhya	0.843	0.699	0.617	0.613	-0.086
Taita Taveta	18.39	Kamba	0.147	0.599	0.528	0.514	-0.085
Busia	12.46	Luhya	0.604	0.729	0.62	0.647	-0.082
Nairobi	100.00	Kikuyu	0.363	0.209	0.232	0.128	-0.081
Migori	30.44	Luo	0.667	0.681	0.601	0.628	-0.053
Bungoma	11.88	Luhya	0.894	0.701	0.615	0.666	-0.035
Nyandarua	17.75	Kikuyu	0.978	0.635	0.573	0.622	-0.013
Mombasa	100.00	Mijikenda	0.255	0.393	0.361	0.384	-0.009

Source: Own Estimation.

Table A6: Rank of Counties from Richest to Poorest across Time and Ethnic Composition

Rank	1999	Major Tribe	2009	Major Tribe	2016	Major Tribe
Top 10 richest counties						
1	Nairobi	Kikuyu	Nairobi	Kikuyu	Nairobi	Kikuyu
2	Mombasa	Mijikenda	Mombasa	Mijikenda	Kiambu	Kikuyu
3	Kiambu	Kikuyu	Kiambu	Kikuyu	Nyeri	Kikuyu
4	Nyeri	Kikuyu	Machakos	Kamba	Mombasa	Mijikenda
5	Machakos	Kamba	Nakuru	Kikuyu	Meru	Meru
6	Kirinyaga	Kikuyu	Muranga	Kikuyu	Embu	Embu
7	Taita Taveta	Kamba	Makueni	Kamba	Kirinyaga	Kikuyu
8	Muranga	Kikuyu	Kirinyaga	Kikuyu	Kisumu	Luo
9	Nakuru	Kikuyu	Taita Taveta	Kamba	Machakos	Kamba
10	Embu	Embu	Nyeri	Kikuyu	Laikipia	Kikuyu
Bottom 10 poorest counties						
37	Kilifi	Mijikenda	Kwale	Mijikenda	Narok	Maasai
38	Kwale	Mijikenda	Baringo	Kalenjin	Kwale	Mijikenda
39	Narok	Maasai	Narok	Maasai	Migori	Luo
40	Marsabit	Borana	Marsabit	Borana	Busia	Luhya
41	West Pokot	Pokot	Tana River	Somali	Bungoma	Luhya
42	Garissa	Somali	Garissa	Somali	Turkana	Turkana
43	Tana River	Somali	Samburu	Turkana	Garissa	Somali
44	Samburu	Turkana	West Pokot	Pokot	Tana River	Somali
45	Mandera	Somali	Mandera	Somali	Mandera	Somali
46	Turkana	Turkana	Wajir	Somali	Samburu	Turkana
47	Wajir	Somali	Turkana	Turkana	Wajir	Somali

Source: Own Estimation.

Table A7: Weighted Descriptive Statistics for the Non-Kikuyu, by residence in Kikuyu counties When President is Kikuyu (2016)

Variable	Kikuyu county	Non-Kikuyu county	significance	p-value
Dependent variable				
Multidimensionally poor	0.17	0.56	***	0.00
Head's Demographics				
Head's Age	36.66	42.46	***	0.00
Head is Male	0.75	0.61	***	0.00
Head is Married	0.75	0.81	***	0.00
Education Levels				
No education	0.12	0.31	***	0.00
Years of Education	8.41	4.89	***	0.00
Primary Incomplete	0.32	0.38	***	0.00
Primary Complete	0.13	0.09	***	0.00
Secondary incomplete	0.04	0.03	***	0.00
Secondary Complete	0.05	0.03	***	0.00
Some Tertiary Level	0.34	0.15	***	0.00
Employment Status				
Worked for pay	0.68	0.37	***	0.00
Own family business	0.19	0.46	***	0.00
Work not available	0.04	0.08	***	0.00
Household Amenities Available				
Electricity	0.32	0.07	***	0.00
Clean cooking fuel	0.61	0.11	***	0.00
Flush Toilet	0.31	0.04	***	0.00
Clean Water	0.63	0.39	***	0.00
Modern Walling Material	0.65	0.28	***	0.00
Modern roofing material	0.95	0.55	***	0.00
Average household size	3.60	4.78	***	0.00
Household is in the rural area	0.30	0.67	***	0.00
Households	101898	382284		

Source: Own Calculations from KIHBS 2015/16

Table A8: Coethnicity Effects of Formal Sector Employment

	(1) Kenyatta Regime	(2) Moi Regime	(3) Kibaki Regime	(4) Uhuru Regime
Coethnic	-0.07	-0.004	0.062**	0.098***
	(0.334)	(0.992)	(0.02)	(0.000)
Log of experience	-88.85	5.024	6.637	0.100
	(0.580)	(0.469)	(0.234)	(0.493)
Log of experience squared	9.907	-0.791	-1.257	0.202***
	(0.616)	(0.424)	(0.209)	(0.000)
Years of education	0.0596	-0.142*	-0.120	0.000808
	(0.759)	(0.021)	(0.225)	(0.988)
Years of education squared	-0.0264	0.0105**	0.00968	0.00820*
	(0.080)	(0.001)	(0.084)	(0.010)
Urban resident	0.551	0.446***	0.765***	0.885***
	(0.148)	(0.000)	(0.000)	(0.000)
Individual is male	1.630***	0.853***	0.557***	0.293***
	(0.000)	(0.000)	(0.000)	(0.000)
Head is employed	1.108	2.126***	1.190***	0.402**
	(0.062)	(0.000)	(0.000)	(0.010)
Household's education	0.00975	0.0260	0.0207	0.0786***
	(0.941)	(0.277)	(0.399)	(0.000)
Observations	112	1713	1589	3551
Pseudo R^2	0.266	0.255	0.239	0.393

p-values in parentheses

The sample is for people aged at least 25 years old in each regime. The subsequent regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A9: Coethnicity Effects of Informal Employment

	(1) Kenyatta Regime	(2) Moi Regime	(3) Kibaki Regime	(4) Uhuru Regime
Eligible entrant	0.016	0.03**	0.103***	0.142***
	(0.149)	(0.013)	(0.003)	(0.000)
Age of the individual	156.1	5.869	3.527	0.259
	(0.170)	(0.364)	(0.543)	(0.093)
Age squared	-19.39	-0.945	-0.593	-0.00656
	(0.167)	(0.295)	(0.550)	(0.899)
Years of education	-0.149	0.00489	-0.0477	0.0983*
	(0.247)	(0.914)	(0.539)	(0.012)
Education squared	0.0112	-0.00323	-0.00204	-0.00833**
	(0.151)	(0.240)	(0.670)	(0.001)
Urban resident	0.419	0.376***	0.432***	0.479***
	(0.114)	(0.000)	(0.000)	(0.000)
Individual is Male	0.430	0.489***	0.528***	0.588***
	(0.080)	(0.000)	(0.000)	(0.000)
Head is employed	0	0.612**	0.379*	0.183
	(.)	(0.009)	(0.041)	(0.156)
Average education hh	-0.141	-0.0388	0.0333	0.0434*
	(0.059)	(0.107)	(0.215)	(0.018)
Observations	574	3490	3245	4949
Pseudo R^2	0.109	0.058	0.072	0.104

p-values in parentheses

The sample is for people aged at least 25 years old in each regime. The subsequent regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A10: Coethnicity Regime of Entry and Public Sector Employment

	(1)	(2)	(3)	(4)
	Kenyatta Regime	**Moi Regime**	**Kibaki Regime**	**Uhuru Regime**
Coethnic	0.074	0.038*	-0.07	0.091**
	(0.360)	(0.071)	(0.237)	(0.03)
Age	1.093	-0.0377	0.809	2.232
	(0.390)	(0.795)	(0.110)	(0.376)
Age squared	-0.00996	0.000856	-0.0156	-0.0578
	(0.351)	(0.626)	(0.130)	(0.383)
Years of education	-0.198	0.133	0.166	0.237
	(0.472)	(0.500)	(0.566)	(0.733)
Education squared	0.00927	-0.00188	-0.00112	-0.0102
	(0.495)	(0.851)	(0.939)	(0.788)
Urban	0.928	0.375	0.102	-1.127*
	(0.079)	(0.100)	(0.687)	(0.020)
Male	0.682	0.836***	1.267***	1.815***
	(0.187)	(0.000)	(0.000)	(0.000)
Constant	-27.20	0.331	-10.84	-21.41
	(0.464)	(0.912)	(0.074)	(0.348)
Observations	398	1741	870	152
Fitted Value	0.94	0.90	0.86	0.74
Pseudo R^2	0.069	0.055	0.103	0.178

p-values in parentheses

Notes: These regressions contain people aged 15-20 years old in each regime (those who eligible to first enter the labour market). We estimate the logit model and derive the marginal effects. Coethnicity here is narrowly defined to include only members of the ethnic groups that produced the presidents. The regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A11: Coethnicity Status by Regime and Private Sector Employment

	(1) Kenyatta Regime	(2) Moi Regime	(3) Kibaki Regime	(4) Uhuru Regime
Eligible entrant	-0.045	-0.027	0.099***	0.106***
	(0.708)	(0.658)	(0.000)	(0.000)
Age of the individual	2.297	-0.0646	0.490	0.312**
	(0.369)	(0.747)	(0.670)	(0.002)
Age squared	-0.0174	0.000333	-0.00813	-0.00443
	(0.328)	(0.863)	(0.620)	(0.073)
Years of education	0.0576	-0.155*	0.0566	-0.0944
	(0.760)	(0.028)	(0.506)	(0.234)
Education squared	-0.0165	0.0100**	0.000120	0.00369
	(0.149)	(0.009)	(0.979)	(0.421)
Urban resident	0.517	0.571***	1.077***	1.004***
	(0.200)	(0.000)	(0.000)	(0.000)
Individual is Male	1.383**	1.004***	0.474***	0.213**
	(0.001)	(0.000)	(0.000)	(0.005)
Head is employed	0.945	1.661***	0.950***	0.184
	(0.092)	(0.000)	(0.000)	(0.341)
Average education hh	0.0889	0.0102	0.0223	0.0898***
	(0.545)	(0.744)	(0.437)	(0.000)
Observations	99	940	1113	4100
Pseudo R^2	0.239	0.255	0.279	0.444

p-values in parentheses

The sample is for people aged at least 25 years old in each regime. The subsequent regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A12: Coethnicity with the President, Regime of Entry and Formal Sector Earnings

	(1) Kenyatta Regime	(2) Moi Regime	(3) Kibaki regime	(4) Uhuru Regime
Coethnic	0.237	-0.083	0.089**	0.49***
	(0.285)	(0.152)	(0.042)	(0.004)
Individual is Male	0.100	-0.244	0.273***	0.305***
	(0.950)	(0.538)	(0.000)	(0.000)
Years of education	-0.0203	-0.198	-0.134***	-0.184***
	(0.942)	(0.071)	(0.001)	(0.000)
Education squared	0.00929	0.0161**	0.0138***	0.0165***
	(0.677)	(0.001)	(0.000)	(0.000)
Age of the individual	1.926	-0.000628	0.686	0.330***
	(0.613)	(0.998)	(0.159)	(0.000)
Age squared	-0.0132	0.000214	-0.00982	-0.00401***
	(0.641)	(0.946)	(0.159)	(0.000)
Urban resident	0.331	0.0192	0.284***	0.739***
	(0.534)	(0.931)	(0.000)	(0.000)
Selected: Coethnicity, Age, Education, Education, Urban Effects, Gender Effects.				
Observations	112	1713	1589	4595

p-values in parentheses

The sample is for people aged 25-65 years, employed in formal sector. The subsequent regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A13: Coethnicity with the President and Public Sector Earnings

	(1) Kenyatta Regime	(2) Moi Regime	(3) Kibaki Regime	(4) Uhuru Regime
Coethnic	1.304***	0.12**	0.103	0.0577
	(0.00)	(0.048)	(0.220)	(0.498)
Individual is Male	1.248	0.101	0.297*	0.101
	(0.796)	(0.864)	(0.042)	(0.654)
Years of education	-0.375	-0.113	-0.0287	-0.130
	(0.932)	(0.803)	(0.839)	(0.288)
Education squared	0.0390	0.0125	0.00882	0.0121*
	(0.920)	(0.492)	(0.173)	(0.021)
Age of the individual	2.500	0.123	1.051	0.640
	(0.906)	(0.872)	(0.436)	(0.215)
Age squared	-0.0180	-0.00110	-0.0147	-0.0126
	(0.904)	(0.884)	(0.447)	(0.206)
Urban resident	-0.183	0.183	0.182	0.507***
	(0.919)	(0.621)	(0.188)	(0.000)
Selected: Coethnicity, Age, Education, Education, Urban Effects, Gender Effects.				
Observations	13	773	476	495

p-values in parentheses

The sample is for people aged 25-65 years, employed in the public sector. The regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A14: Coethnicity with the President, Regime of Entry and Private Sector Earnings

	(1) Kenyatta Regime	(2) Kibaki Regime	(3) Kibaki Regime	(4) Uhuru Regime
Coethnic	0.154	-0.271***	0.078	0.0088
	(0.578)	(0.006)	(0.218)	(0.903)
Individual is Male	0.0384	-0.232	0.365***	0.347***
	(0.987)	(0.777)	(0.000)	(0.000)
Years of education	-0.0326	-0.248*	-0.146***	-0.197***
	(0.943)	(0.034)	(0.001)	(0.000)
Education squared	0.0101	0.0203***	0.0146***	0.0169***
	(0.771)	(0.001)	(0.000)	(0.000)
Age of the individual	2.873	0.0706	0.263	0.313***
	(0.624)	(0.837)	(0.642)	(0.000)
Age squared	-0.0198	-0.000461	-0.00395	-0.00364***
	(0.655)	(0.892)	(0.626)	(0.000)
Urban resident	0.425	0.0688	0.475***	0.802***
	(0.587)	(0.868)	(0.000)	(0.000)
Selected: Coethnicity, Age, Education, Education, Urban Effects, Gender Effects.				
Observations	99	940	1113	4100

p-values in parentheses

The sample is for people aged 25-65 years, employed in the private sector. The subsequent regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A15: Coethnicity with the President, Regime of Entry, and Informal Sector Earnings

	(1) Kenyatta Regime First Entrants	(2) Moi Regime First Entrants	(3) Kibaki Regime First Entrants	(4) Uhuru Regime First Entrants
Coethnic	0.408**	-0.304	0.398***	0.402***
	(0.012)	(0.238)	(0.014)	(0.012)
Individual is Male	-0.577	0.208	0.439***	0.653***
	(0.882)	(0.646)	(0.000)	(0.000)
Years of education	0.292	-0.0539	-0.00271	-0.0342
	(0.866)	(0.377)	(0.918)	(0.252)
Education squared	-0.0126	0.00649	0.00493**	0.00478**
	(0.904)	(0.112)	(0.001)	(0.005)
Age of the individual	1.686	-0.0272	-0.615	0.487***
	(0.920)	(0.924)	(0.085)	(0.000)
Age squared	-0.0118	0.000292	0.00904	-0.00828***
	(0.919)	(0.922)	(0.077)	(0.000)
Urban resident	-0.792	0.173	0.367**	0.666***
	(0.876)	(0.706)	(0.005)	(0.000)
Selected: Coethnicity, Age, Education, Education, Urban Effects, Gender Effects.				
Observations	594	3490	3245	5746

p-values in parentheses

The sample is for people aged 25-65 years, employed in the informal sector. The regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A16: Coethnicity, Regime of Entry and Earnings-Bottom Income Quintile

	(1) Kenyatta Regime First Entrants	(2) Moi Regime First Entrants	(3) Kibaki Regime First Entrants	(4) Uhuru Regime First Entrants
Coethnic	0.129***	0.0025***	0.142***	0.174***
	(0.004)	(0.008)	(0.00)	(0.000)
Individual is Male	0.519**	0.844***	1.046***	0.702***
	(0.001)	(0.000)	(0.000)	(0.000)
Years of education	-0.0379	-0.0400	0.0592	-0.0937**
	(0.568)	(0.213)	(0.138)	(0.003)
Education squared	0.00397	0.00887***	0.00353	0.00751***
	(0.307)	(0.000)	(0.094)	(0.000)
Age of the individual	0.546	0.485***	0.0955	0.755***
	(0.647)	(0.000)	(0.864)	(0.000)
Age squared	-0.00417	-0.00502***	-0.00129	-0.0119***
	(0.617)	(0.000)	(0.872)	(0.000)
Urban resident	0.301*	0.512***	0.605***	0.550***
	(0.043)	(0.000)	(0.000)	(0.000)
Observations	369	2415	2266	4338

p-values in parentheses

The sample is for people aged 25-65 years, for the bottom income quintile. The subsequent regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A17: Coethnicity, Regime of Entry and Monthly Earnings-Top Income Quintile

	(1) Kenyatta Regime First Entrants	(2) Moi Regime First Entrants	(3) Kibaki Regime First Entrants	(4) Uhuru Regime First Entrants
Coethnic	-0.110	-0.0365	-0.011	-0.069
	(0.177)	(0.233)	(0.392)	(0.068)
Individual is Male	0.613	0.268**	0.365***	0.678**
	(0.854)	(0.002)	(0.000)	(0.001)
Years of education	-0.0483	-0.131***	-0.129***	-0.253***
	(0.840)	(0.000)	(0.000)	(0.000)
Education squared	0.00752	0.0121***	0.0115***	0.0169***
	(0.750)	(0.000)	(0.000)	(0.000)
Age of the individual	-0.917	0.228**	0.257	0.956**
	(0.834)	(0.001)	(0.339)	(0.004)
Age squared	0.00589	-0.00223**	-0.00355	-0.0161**
	(0.856)	(0.002)	(0.357)	(0.007)
Urban resident	0.727	0.222***	0.222***	0.516**
	(0.699)	(0.000)	(0.000)	(0.002)
Observations	529	3089	2903	35190

p-values in parentheses

The sample is for people aged 25-65 years and top income earners. The subsequent regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A18: Kikuyu Ethnicity and Earnings Across Sectors and Income Brackets.

	(1) Overall	(2) Formal Sector	(3) Informal Sector	(4) Private Sector	(5) Public Sector
Individual is Kikuyu	0.0685**	0.0685**	0.398**	0.0320	0.142***
	(0.029)	(0.029)	(0.012)	(0.437)	(0.000)
Individual is Male	0.348***	0.348***	0.263	0.421***	0.166***
	(0.000)	(0.000)	(0.094)	(0.000)	(0.000)
Years of education	-0.159***	-0.159***	-0.148	-0.220***	-0.0721
	(0.000)	(0.000)	(0.312)	(0.000)	(0.051)
Education squared	0.0152***	0.0152***	0.0131	0.0183***	0.0101***
	(0.000)	(0.000)	(0.088)	(0.000)	(0.000)
Age	0.0934***	0.0934***	-0.000840	0.112***	0.0689***
	(0.000)	(0.000)	(0.985)	(0.000)	(0.000)
Age squared	-0.00099***	-0.000990***	0.000122	-0.00126***	-0.000645**
	(0.000)	(0.000)	(0.825)	(0.000)	(0.002)
Urban resident	0.616***	0.616***	0.231	0.747***	0.365***
	(0.000)	(0.000)	(0.223)	(0.000)	(0.000)
Head is employed	-0.0154	-0.0154	-0.573*	-0.0534	-0.0216
	(0.830)	(0.830)	(0.014)	(0.567)	(0.814)
/					
Inverse Mills Ratio	0.740***	0.740***	0.696***	0.772***	0.630***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	5449	5449	118	3244	2205

p-values in parentheses. The sample is for people aged 20-60 years. The subsequent regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects.* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A19: Kalenjin Coethnicity and Earnings by Sector and Income Brackets.

	(1) Overall	(2) Formal sector	(3) Informal Sector	(4) Private Sector	(5) Public Sector
Individual is Kalenjin	-0.0960**	-0.0960**	-0.291	-0.138**	-0.00721
	(0.017)	(0.017)	(0.259)	(0.021)	(0.884)
Individual is Male	0.410***	0.410***	0.233	0.499***	0.202***
	(0.000)	(0.000)	(0.279)	(0.000)	(0.000)
Years of education	-0.152***	-0.152***	-0.252	-0.228***	-0.0467
	(0.000)	(0.000)	(0.164)	(0.000)	(0.166)
Education squared	0.0149***	0.0149***	0.0197	0.0186***	0.00899***
	(0.000)	(0.000)	(0.060)	(0.000)	(0.000)
Age	0.0956***	0.0956***	0.0602	0.108***	0.0840***
	(0.000)	(0.000)	(0.196)	(0.000)	(0.000)
Age squared	-0.00102***	-0.00102***	-0.000579	-0.00123***	-0.000822***
	(0.000)	(0.000)	(0.280)	(0.000)	(0.000)
Urban resident	0.579***	0.579***	0.0751	0.704***	0.352***
	(0.000)	(0.000)	(0.759)	(0.000)	(0.000)
Head is employed	0.0507	0.0507	-0.529*	0.128	-0.0986
	(0.511)	(0.511)	(0.043)	(0.238)	(0.253)
/ Inverse Mills Ratio	0.775***	0.775***	0.755***	0.814***	0.661***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	4777	4777	97	2713	2064

p-values in parentheses.The sample is for people aged 20-60 years. The subsequent regressions are estimated with robust standard errors and control adjust for cluster effects and district fixed effects.* $p < 0.05$, ** $p < 0.01$, *** $p < 0.00$