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Abstract

Relating to the view that centralized governments are likely to be less sensitive to the needs of the local population than decentralized ones, we set out to investigate the impact of the 2010 decentralization on real total expenditures per adult equivalent – a proxy for household economic well-being (HEW). To do this, appeal is made to the pseudo-panel fixed effect model, with the panel constructed using age cohorts from the two most recent Cameroon household consumption surveys, and the unconditional quantile regression model of Firpo et al. (2009). Specifically, we report fixed effects regressions, correcting standard errors for within-prefecture and age-cohort correlations using the Jackknife estimator, at the mean, across colonial experiences, and the unconditional distribution. Results show that the adjusted exposure to the 2010 decentralization was associated significantly with improvements in household economic well-being (HEW) – in the order of 0.274 log points and 0.247 log points in the full and the labor force samples, respectively. A significant and positive responsiveness of HEW to decentralization is also recorded across expenditure percentiles, and the magnitude increases monotonically from the 10th to the 90th percentiles, except the dent seen among the median households. These results are, in essence, robust across samples (labor force, civil law, and common law samples), at the mean and across the distribution of real total expenditures per adult equivalent. More interestingly, the weighted exposure to the 2010 decentralization is more strongly associated with household economic well-being than the unweighted exposure. These findings are transmitted, at least in part, through improved social service delivery and associated labor market opportunities and these channels have important implications for alleviating poverty and curbing rural-urban migration in Cameroon and elsewhere in Africa.

Keywords: Decentralization; perceptions; household economic well-being; unconditional quantiles; pseudo-panel fixed effects; Cameroon.

JEL Classification: H70, I31, I38, K15 N37

1. Introduction

Low levels of household socioeconomic well-being and income in Cameroon have for the past years been causes for concern among national and international institutions. Despite the donor-driven policies of the 1980s, 1990s, and 2000s such as the structural adjustment programs – that destroyed the social service delivery systems (Cornia et al., 1995; Thomson et al., 2017), the HIPC process, and the completion point policies that attempted to revamp the social service delivery systems in Sub-Saharan Africa (Baye, 2006), poverty and social inequalities remain high and a major challenge. For example, in the case of Cameroon as computed by the National Institute of Statistics (NIS, 2014), the poverty rate fell by only 2.4% from 39.9% in 2007 to 37.5% in 2014, this corresponds to about 8 million Cameroonians living below the poverty line, while the Gini inequality increased by 5% from 39% in 2007 to 44% in 2014. In this context, together with the global challenges the world is facing at large, increasing household prosperity seems to be a harder nut to crack within centralized systems of governance, which many, if not all, African countries have, in essence, practiced. The dual colonial heritage of Cameroon - civil law regions and common law regions, makes her a unique case study in Africa in this regard.

Following the general belief that central governments are typically unable to effectively and efficiently deliver social public goods and services, many African countries are now embarking on the process of shifting competencies from the central government to local authorities to better address the needs of the local population (Hobdari et al., 2018). Notwithstanding, the pace at which transferred competences are accompanied by the necessary resources remains very timid in some African countries, especially those that were formally under centralized administrations (Riedl and Dickovick, 2010; Ali et al., 2019; Adjei, 2022). Following the growing importance assigned to decentralization, many studies have attempted to link decentralization to changes in social service delivery, local development, and poverty reduction (Malesky et al., 2014; Kim and Dougherty, 2018; Tchouassi and Dzou, 2020). Yet, very little attention, if there is any, has been given to the direct effects of decentralization on household incomes and prosperity as mediated, at least in part, through the labor market channel. In the present study, an attempt is made to fill this gap. We contribute empirically to the existing literature, in the case of Cameroon, by assessing the impact of exposure to the 2010 devolution of competencies on household prosperity, captured by changes in real household total expenditures per adult equivalent. We introduce a novel theoretical framework and investigate heterogeneity in responsiveness of HEW to the 2010 exposure to

decentralization across the distribution of real total expenditures per adult equivalent.

According to Rondinelli et al. (1983), decentralization refers to the transfer of authority and responsibility for key government social functions from central authorities to regional and local governments. It has been demonstrated theoretically and empirically by the pioneering supporters of decentralization such as Musgrave, Oates and Tiebout, among others, in many countries around the world, that, decentralization: brings the government closer to the people; gives greater voice and choice to citizens to influence decisions that affect their livelihoods; increases efficiency in determining service provision; facilitates the channeling of solutions for local problems to local environments; provides a conducive environment for the creation of a community culture of collaboration among the various groups which comprise the local government, local society, non-government organizations, entrepreneurs and the citizens; facilitates a better division of work in the management of public affairs; enables the mobilization of local resources in support of local development processes; and enables value-added contributions to the provision of services and development efforts, which increase the total value of services provided (Tiebout, 1956; Musgrave, 1959; Oates, 1972; White, 2011; Kim and Dougherty, 2018; Tchouassi and Dzou, 2020).

Most of these authors strongly argue that a decentralized, participatory system of local governance equally promotes accountability, transparency, and openness, and creates incentives for the adoption of high moral standards in the conduct of public affairs. In this regard, decentralization creates an enabling setting for more functions to be performed at the local level, thereby creating opportunities for citizens with technical, managerial, and leadership skills to remain in the region/locality, thus reducing the rural-urban brain-drain, and enhancing local capacity to manage local affairs and spearhead local development and prosperity.

However, according to Prud'homme (1995), Miller (2002), Rodden (2006), and Malesky et al. (2014), the decentralized system of government preached and so much appreciated in the world today, comes with impending demerits. Some of the shortcomings include regional inequalities - since the different regions of a country are likely to be differently endowed in terms of natural resources, level of economic activities, and land values. For instance, some local authorities may generate more revenue than others and afford their citizens more or better quality services than jurisdictions that are unable to generate reasonable revenue from their resources; the advantages of economies of scale enjoyed in a centralized system may be absent in the decentralized system; tendencies to foster corruption and misuse of funds; increased likelihoods for elite capture of

the policy-making process and rent-seeking activities, and risk of macroeconomic instability.

Despite these demerits of a decentralized system of governance, the advantages may overshadow the disadvantages if implemented in a democratic setting. In addition, if local governments can understand and function in line with Tiebout's hypothesis, the decentralized system may just be an ideal system of governance. According to Tiebout's hypothesis, Tiebout (1956), just as firms in a competitive market compete to produce better quality goods that suit the taste of consumers, decentralization will permit local governments to compete with one another in the supply of goods and services demanded by their citizens to prevent them from moving out of the locality into localities that provide such basic goods and services. However, the observed merits and demerits of decentralization are a pointer that at the empirical level decentralization has a negative or positive effect on local development outcomes remains an empirical issue in developing country settings.

A remarkable move toward decentralization in Cameroon was in 2010 when over 63 competencies were transferred from the center to regional and local authorities (MINDDEVEL, 2019). The implications of the 2010 devolution of competencies for household prosperity are the focus of this study because it marks the starting point of actual decentralization in Cameroon. The attempt we make here to understand the impact of this policy change on household real total expenditure is unique because we do not have identifiable treatment and comparison groups before and after the policy change as required by standard quasi-experimental approaches such as the difference-in-differences approach. In the present endeavor, the universal exposure to the 2010 decentralization takes the value of 0 before 2010 and 1 after 2010. Similarly, in the 2007 and 2014 Cameroon household consumption cross-sectional surveys, the question on the subjective assessments of the merits of decentralization was: in your opinion, what is/would be the impact of a decentralization policy, that is, the fact that the state transfers some of its powers to regional and local authorities (National Institute of Statistics, 2007; 2014)? The three proposed modalities were (a) better consideration of citizens' demands, (b) greater injustice from local authorities, and (c) no change. In terms of a dummy for perceptions of the decentralization process, we attributed 1 to the category "a", and the other two categories were attributed 0. In this paper, we attempt to investigate the impact of the 2010 decentralization on household well-being using the two most recent Cameroon household consumption surveys. In this setting, people's ratings or perceptions of the merit of decentralization are not considered as a variable *per se*, but as subjective weights that adjust the exposure to the 2010 decentralization to reflect its desirability to the people.

We used the subjective ratings (as captured by people's perceptions) to weigh the decentralization policy and the effects of the weighted exposure to the 2010 decentralization on household well-being in Cameroon are estimated while controlling for other correlates. We assume that the 2007 household ratings of decentralization whether positive or negative could have provided feedback to the government on the structure and content of her 2010 decentralization policy. We presume that any behavior change by the government occasioned by the ratings has implications for changes in social service delivery, labor market activities, and other facets of the economy, all of which are presumed to affect household incomes and well-being. Ratings can change how the government implements the decentralization policy and what it decentralizes. We constructed a ratings-weighted exposure to the 2010 decentralization at the prefecture level (58 prefectures in Cameroon) and used this weighted exposure as the key regressor in the household economic well-being generating function. Thus, the variation in cluster-level weighted exposure to decentralization is used as a proxy for changes in government social policy and government behavior, which have effects on household incomes via service and infrastructure delivery systems, labor markets, and social trust.

Such analysis is typically done using panel data. In the absence of panel data, we use the 2007 and 2014 independent cross-sectional surveys collected by the government statistics office and pseudo panel methods for estimating fixed effects models. We first captured ratings at the prefecture level and used it to derive a desirability-adjusted exposure to the 2010 decentralization. Five-year age bands and the two survey years are then used to construct age cohorts. The resulting pseudo panel observes prefecture/cohort, which are stable groups of households rather than households over time. Individual variables are then replaced by their within-cohort means – that is all households within an age cohort received the cohort mean of each variable. The desirability-adjusted exposure to the 2010 decentralization is expected to positively influence household economic well-being by 2014. To test this hypothesis, the econometric methods employed are pseudo panel fixed effects regressions – controlling for cohort and prefecture-level within-group correlations using the Jackknife estimator, at the mean, across colonial experiences, and across unconditional quantiles of household total expenditures per adult equivalent – proxy for household well-being.

With two distinct legal systems in Cameroon originating from past colonial experiences – common law regions inherited a more decentralized system of governance from its British colonial master, and the civil law regions inherited a more centralized system of governance from its French colonial master. In this context, one would expect the impact of the desirability-adjusted exposure to

decentralization to be different in the two territories. For example, one would expect people in the common law regions to largely give favorable opinions to the process of decentralization. In like manner, one would also expect people in the civil law regions to largely give unfavorable opinions to the decentralization process. Such differences in perceptions may not materialize in practice. For instance, aside from the political elite and supporters of the central governance system in French-speaking Cameroon, a majority may have developed fatigue with the system, making them anxious to experience decentralization. In this case, they may give favorable ratings to the process of decentralization even though they experienced the centralized system of governance.

Similarly, some of the people in the common law regions might give negative ratings to the process of decentralization because they no longer trust the governing elite because of the unsatisfactory manner of governance experienced since reunification of French and English Cameroons in 1961 - when the two Cameroons formed the Federal Republic of Cameroon, later the name was changed to the United Republic of Cameroon in 1972 by a referendum, and eventually to the Republic of Cameroon in 1984 by a decree, the appellation of French Cameroon before reunification. This last change in the name of the country is largely interpreted as an attempt to erase history and is intermittently resisted. The impact of the 2010 devolution of competencies may also vary across the distribution of well-being. For instance, ratings may reflect the rent-seeking attitudes of those individuals who plan to capture the process. Such individuals are typically leading politicians or entrepreneurs, as well as their associates, who are typically at the upper tail of the distribution of income. This set of individuals may reap more benefits from decentralization compared to those at the lower tail. In this context, it is useful to do regressions across the distribution of well-being for heterogeneity checks.

We find that the adjusted exposure to the 2010 decentralization was associated significantly with improvements in household economic well-being (HEW) by 2014 - in the order of 0.274 log points and 0.247 log points in the full and labor force samples, respectively. We also find significant and positive responsiveness of HEW to decentralization across percentiles of the unconditional distribution of household expenditure, and the magnitude increases monotonically from the 10th to the 90th percentiles, except the dent among the median households. We further find no significant difference in household well-being responsiveness to the 2010 decentralization policy in Cameroon between the common law and civil law regions. More interestingly, the weighted exposure to the 2010 decentralization is more strongly associated with household economic well-being than the unweighted exposure. Our baseline results of a positive and significant association between exposure to the 2010 decentralization and HEW

remain consistent to a battery of robustness checks. These findings are transmitted, at least in part, through improved social service delivery and associated labor market opportunities and have important implications for alleviating poverty and curbing rural-urban migration.

The rest of the paper is organized as follows: Section 2 presents country specifics and colonial experiences of Cameroon. Section 3 contains the literature review. Section 4 dwells on the methodology, data, and stylized facts. Section 5 presents results and potential transmission channels, while Section 6 gives concluding remarks.

2. Colonial experiences and the evolution of decentralization in Cameroon

Colonial experiences and some socioeconomic specificities of Cameroon

When it comes to administration, particularly decentralization, Cameroon is a unique case study because of her dual heritage and experiences. First colonized by Germany but ended up as a League of Nations mandate territory from 1922 to 1945 and as a UN Trust territory from 1945 to 1960 under the leadership of Britain and France. Britain and France introduced two distinct legal systems concurrently in Cameroon; the common law by Britain which practiced a more decentralized system of administration in British southern Cameroons (present-day Northwest and Southwest regions of Cameroon, ¼ of the population), and the civil law by France which practiced a more centralized system of administration in eastern Cameroons (the present eight French-speaking regions of Cameroon, ¾ of the population). These legacies left by Britain and France in Cameroon are likely to play on their perceptions, which are used to derive the desirability-adjusted exposure to the 2010 devolution of competencies, expected to influence household incomes or prosperity.

This expectation is well articulated by Giblin (2015) when he says - that the past largely plays in the present, as such the decisions taken today, are largely influenced by past experiences. African countries that were once colonized tend to be influenced by life and culture of their colonial masters. According to Acemoglu et al. (2014), and Ali et al. (2019), the British government in Africa during the colonial era created local government systems based partly on existing native authorities by which they governed their colonies using mainly the indirect rule policy - a highly decentralized policy. The French government

on their part imposed a strong centralized state, which operated at the regional or provincial level through the prefecture system in which the appointed representatives had direct control over local fields. On the basis of this past colonial experience, the impact of decentralization on households' socioeconomic well-being may vary across the common law and civil law regions. Former West Cameroon which constitutes the present two English-speaking regions of Cameroon: Northwest and Southwest regions may tend to largely find merit in the decentralized system of governance and decentralization than their French-speaking counterparts.

For decades now, the Cameroon government has made several efforts to adopt different poverty reduction strategy papers (PRSP), a 2010 - 2019 growth and employment strategy paper (GESP), and the recent 2020-2030 national development strategy (NDS30), in a bit to reduce the rate of poverty and inequality and increase the well-being of Cameroonians, but the incidence of poverty remains stubbornly high estimated at 37.5% in 2014 according to the National Institute of Statistics (2014). This estimate corresponds to about 8 million Cameroonians who live below the poverty line. Most of these poor people are residents of rural communities. According to World Bank statistics 2019, the poverty map set up by the government of Cameroon shows that poverty increased in the Far North, North West, and South West regions ranging from 77%, 57%, and 21% in 2019 respectively compared to 74%, 55% and 18% in 2014, while decreasing slightly or remained stagnant in regions like Yaoundé and Douala – the political and economic capitals, respectively.

The recent increase in the rate of poverty is attributable, at least in part, to the crisis going on in the North and Southwest regions of Cameroon that started in 2016 and the Boko Haram crisis in the Far North region of the country. As of 2021, Cameroon was ranked the 36th poorest country out of 192 with a GDP of 3860 per head express in dollars, while extreme poverty increased from 24.5% in 2019 to 25.3% in 2021 (Global Finance, 2021). According to the World Bank (2022), the COVID-19 pandemic has contributed to this as well. Yet, the rate of poverty before 2010 was, at least in part, attributable to the centralized system of governance in Cameroon, where major financial and developmental decisions at local levels were largely taken by the central government. The centralization of major decisions created development imbalances in the ten regions of the country, which include inequitable distribution of income, poor medical facilities in some regions, poor educational facilities resulting in low human capital formation, poor electrification, and a swelling number of citizens living below the poverty line.

It has been argued in the literature that one way of addressing these imbalances is to decentralize the administrative, developmental, and financial functions of

the central government to the local governments. Local governments typically can better understand the needs of the citizenry and if empowered with the wherewithal to carry out development projects, they are likely to do better than the central government in the delivery of basic education and health, and the construction of community or farm-to-market roads, which can help rural farmers easily transport their produce to urban markets where prices are generally more attractive.

The evolution of decentralization in Cameroon

Years after the reunification of the two Cameroons, the growing rate of poverty, and regional inequality became an issue attributable, at least in part, to poor governance. Cameroon was then urged to fast-track her decentralization policies as one of the conditions for international debt cancellation (World Bank, 2012). The government of Cameroon yielded to this and has since 1996 been on the move to decentralize its political, administrative, and financial functions to avoid administrative bottlenecks and achieve efficiency. Table 1 gives a synthesis of the various actions taken by the government of Cameroon since 1996 in the process of decentralization.

Table 1: Evolution of decentralization in Cameroon

Year	Decentralization laws passed	Competences devolve
1996	Section 1 of article 55 of the 18 January 1996 revised constitution	Decentralized local entities of the Republic shall be regions and councils having administrative and financial autonomy in the management of local interests
2002	Decree No 2002/216 of August 24 2002	The Ministry of Territorial Administration and Decentralization (MINATD) was given the go ahead to spearhead the process of decentralization
2004	Law N°. 2004-18 OF 22 JULY 2004	Article 2: (1) The council shall be a basic decentralized local authority. Part III of this law talks of devolving competences to councils in the various areas for the well-being of the local population 1. Health and social development 2. Educational, sports and cultural development
2010	Several decrees concerning different ministries.	Over 63 competences transferred in areas necessary for economic, social, education, health and sport development
2018		The creation of the Ministry of Decentralization and Local Development (MINDDEVEL).
2019	Law N° 2019/024 of 24 DEC 2019	Section · 5: (1) Decentralization shall consist of devolution by the State of special powers and appropriate resources to local authorities.

		(2) Decentralization shall constitute the basic driving force for promotion of development, democracy and good governance at the local level.
2021		The putting in place of 10 Regional councils, and the two Special Houses of Chiefs in the common law regions of Cameroon - the Southwest and North West regions.

Source: Law No. 2004-18 of 22 July 2004, Law No 2019/024 of 24 DEC 2019, Cheka (2007), MINDDEVEL (2019).

As shown in Table 1, several decrees and laws have been passed over the years for political, administrative, and fiscal decentralization to be implemented. According to MINDDEVEL (2019), the devolution of powers to municipal and city councils was initiated in the 2010 financial year by the Prime Minister, Head of Government, and chair of the national decentralization board. There was a positive balance sheet in terms of the number of powers devolved - over 63 competencies were transferred by the central government to local government officials, and the sector ministries devolved 20. These local government officials are largely elected. Since 2010, the number of classrooms built has increased with the contributions derived from the powers and resources devolved to local authorities by the Ministry of Basic Education. Accordingly, the activities carried out by municipal councils to promote local development in various areas of national economic life have increased. Not denying the fact that several attempts have been made since 1996 to promote and implement decentralization in Cameroon, it is however, regrettable that 15 years hence very little was done, and the first actual transfer took place in 2010 when 63 competences were transferred from the center to the periphery. This paper attempts to evaluate the impact of this policy change - weighing it with what the people say, on total expenditures per adult equivalent - proxy for household incomes and well-being.

3. Literature review

Theoretical foundations of decentralization

Theories on decentralization began to develop in the 1950s following the works of Samuelson (1954), Tiebout (1956), Musgrave (1959), and later that of Oates (1972). They, to varying degrees, conceptualized the nature of public goods and services and which function of the economy should be handled by the central government and which by the local government. Meanwhile, contradictory theories of decentralization were subsequently advanced by Prud'homme (1995) and Rodden (2006).

Traditionally, the economic aspects of decentralization are scrutinized through the theory of federalism. While federalism is a framework for the analysis of a

nation's public sector, decentralization is a process of public sector activities' assignment to different levels of government (Rondinelli 1981). Thus, fiscal federalism is the system of reference within which the process of decentralization occurs.

Musgrave (1959) addressed issues of fiscal federalism from a traditional economic perspective based on values of Pareto efficiency and equity, and on three major economic functions of the public sector in an economy: wealth redistribution, macroeconomic stabilization, and resource allocation. Of these three functions, Musgrave considered that it would be more efficient for sub-national governments to handle the resource allocation aspects. This is because they are closer to the citizens and therefore know better and understand the services needed by the local population. The allocation of public goods and services such as schools, and hospitals by local governments will not only improve the physical health of citizens but will also work on their social and financial prosperity. Musgrave presumed that the central government could better handle the redistribution and macroeconomic stabilization functions. He intimated that local governments can stabilize the economy only at the local scale and their effect cannot be felt at the national level. Musgrave equally considers the redistribution function to be so sensitive and can best be handled only by the central government to avoid tax evasion by rich individuals and those who keep migrating from one region of the country to another,

In the decentralization model of Tiebout (1956), known as Tiebout's hypothesis, it is believed that citizen-consumers preferences for public goods and services can be captured through a competitive metropolitan market of local governments. Tiebout attempted to find a market-type solution to determine the level of expenditure on public goods and services by extending Musgrave-Samuelson's analysis. The major problem with Musgrave-Samuelson's analysis was that it did not bring out a mechanism by which consumers' and voters' preferences can be measured. To address this lack, Tiebout made several assumptions. These assumptions include: Consumers are fully mobile and will move to communities where their preference patterns, which are set, are best satisfied; consumer-voters are assumed to have full knowledge of differences among revenue and expenditure patterns and react to these differences; there are large numbers of communities in which voters may choose to live; restrictions due to employment opportunities are not considered; all persons are living on a dividend income; and the public services supplied do not exhibit any external economies or diseconomies between communities. Based on these assumptions, Tiebout draws his conclusions: that local governments who are best placed and know the preferences of consumer-voters, will produce goods and services for their citizens in a competitive manner to prevent them from

moving to other communities that produce the goods that suit consumer-voter preferences. Tiebout's theory therefore concludes that decentralization is not only a better means for serving the public but also provides public goods and services of their choice.

On the contrary, Prud'homme (1995) and Rodden (2006) did not see decentralization as a necessary tool for serving society. Rodden considered the problem of soft budget constraints, which lead to mounting fiscal pressures, debt default, and risk of macroeconomic instability. According to Prud'homme, decentralization will have great tendencies to foster corruption and misuse of funds, if not to say embezzlement. Prud'homme equally holds to the idea that local officials are aware that in the event of financial failure, part of the responsibility will likely be blamed on the central government. Bearing in mind that these authors were not condemning the use of the decentralized system of government, but to bring to the awareness of policymakers some impending pitfalls that may arise to permit them to better prepare before implementing the policy. The theoretical and empirical literature on decentralization has however demonstrated beyond doubt that the merits of decentralization in a democratic setting are likely greater than the demerits (Von Braun and Grote, 2002; Besley and Coate, 2003; Crook, 2003; Besley et al., 2005; Kim and Dougherty, 2018; Tchouassi and Dzou, 2020; Ain et al., 2022).

Definitions and types of decentralization

The concept of decentralization as we have presented briefly in the introduction, is the opposite of centralization or concentration of decision-making power, which is defined by Rondinelli (1981) as the transfer of responsibility for planning, management, resource mobilization, and allocation from the central government to the local authorities including the transfer of competences to actors like mayors to ensure the development and competitiveness of the locality. There are different degrees (deconcentration, delegation, and devolution of responsibilities) and types (political, administrative, fiscal, market, and environmental) of decentralization.

De-concentration is a process whereby the central government assigns responsibilities for certain service delivery to regional or local representatives of the central administration. Typically, scholars do not consider this as true decentralization, but as field offices established by the central government. Here, the central government remains fully in control of the local government (White, 2011). White (2011) also considers delegation of powers to refer to a situation in which the central government transfers responsibility for decision making and administration of public functions to local government. In this case, local governments are not fully controlled by the central government but are

accountable to them. Meanwhile, devolution refers to a situation where the central government transfers authority for decision making, finance and administrative management to quasi-autonomous units of the local government. In extant literature, this is considered the purest form of decentralization (White, 2011).

In terms of types, political decentralization aims at giving citizens or their elected representatives more power in public decision making and, in the formulation, and implementation of policies, while administrative decentralization seeks to re-distribute authority, responsibility and financial resources for providing public services among different levels of government (World Bank, 2012). In addition, fiscal decentralization entails the transfer of expenditure responsibilities and revenue assignments to lower levels of government (Rondinelli et al., 1983). These three types of decentralization are the most used in literature. They are interlinked and their impact on household prosperity makes more sense when not evaluated separately. Von Braun and Grote (2002) suggested several indicators for the different levels of decentralization.

Political decentralization is often captured by the degree of decentralization of elections (elections held at first, second, third-tier government). It is often argued that the more levels of government that hold an election, the more representation the citizens have at the local level. Administrative decentralization is often approximated by the degree of sub-division of nation states, and by the size of sub-national government in terms of population. Fiscal decentralization on its part is measured by the autonomy of the local government or its taxing power: that is the right to introduce or to abolish a tax, set tax rates, to define the tax base (Junghun et al., 2013). We will, however, not use any of these measures in the present study. In the present endeavor, our proxy for decentralization is the desirability-adjusted exposure to decentralization.

Empirical Literature Review

Existing empirical literature linking decentralization and household prosperity is quite scanty, recent and not direct. In the current literature, there have been attempts at studying aspects of decentralization, which indirectly touches household economic well-being and prosperity. Besley and Coate (2003) developed models of responsiveness of local governments to the provision of public goods - although these models did not pay much attention to pro-poor programs. They found decentralization to be welfare enhancing in the absence of spillover effects. In addition, Von Braun and Grote (2002) applied basic econometrics on a cross-section of countries to see if poverty is related to several decentralization measures and found some evidence that elections at the lower

levels of government and a larger share of sub-national government spending to total government spending are associated with lower poverty and welfare enhancement. Their statistical analyses, however, were limited in that the cross-sectional data was used with very few control variables.

Besley et al. (2005) used household and village survey data from South India to examine who participated in village meetings called by elected local governments and who benefited from such meetings. Their findings indicated that the majority of those who attend the meetings are those who constitute the poorest segments of the population in terms of income, education, and health. Such meetings can improve the targeting of resources toward the neediest groups. Relatedly, Bardhan and Mookherjee (1998) for developing countries, Crook (2003) for a group of Sub-Saharan African countries: Ghana, Cote d'Ivoire, Nigeria, Kenya, and Tanzania, studied the association between decentralization and poverty reduction. They found that poverty reduction, which is a driving force toward increasing household incomes and well-being, is closely linked to political, administrative, and fiscal decentralization. The possible channels include the empowerment of the poor - measured by the responsiveness of government and the degree of participation of the poor, pro-poor growth, changes in levels of economic activity, wages or prices, which increased the incomes of small farmers, sharecroppers, agricultural laborers, small traders or urban workers, particularly in the informal sector, as well as investment in education and health of the poor.

A report edited by Kim and Dougherty (2018) revealed that decentralization of basic services such as education and health had tremendous positive outcomes for the human capital of the poor, who were mostly residents of rural areas. Yao (2007) identified potential transmission channels of the effect of fiscal decentralization on poverty reduction through three pro-poor sectorial outcomes: basic education, basic health, and agricultural productivity. Ain et al. (2022) found that shifts towards more decentralization in health services would be accompanied by improvements in a very important component of well-being (health) in Pakistan. However, according to Nakatani et al. (2022), who studied the link between fiscal decentralization and improvement in social outcomes, they reported that decentralization by itself does not necessarily improve social outcomes and could even worsen service delivery, but that countries would only reap the benefits of decentralization when the quality of their governance arrangements exceeded a certain threshold.

According to the World Bank (2012), the effect of decentralization on household well-being in Cameroon is minimal, but they were able to infer positive associations based on indicators such as the rate of poverty (the percentage of Cameroonians living on less than 738 CFAF per day), access to drinking water,

electricity, and literacy. The weak associations of decentralization were blamed on inadequate attention given to accountability and incentives. However, Tchouassi and Dzou (2020) found that financial decentralization had a positive effect on local development and indicated that fiscal decentralization is imperative for local development. Our endeavor here is to fill the gap in the empirical analysis of the consequences of decentralization for household economic wellbeing in Cameroon using more robust theoretical framing and empirical strategies.

4. Theoretical framework and empirical model

Theoretical model and decentralization-household prosperity nexus

Theoretical model

In a democratic setting, what the people say is expected to influence what the government does, which intend affects social service delivery, incomes and well-being of the people. This is because what the people say provide feedback to the government and has the potential to trigger changes in its behavior regarding how and what it transfers to the regional and local authorities in the decentralization process. Moreover, when local government projects such as markets, hospitals, town halls, and hotels are constructed with transfers from the center, they generate income for the local government, employment for the people and other development opportunities, with spillover effects.

This can be formalized in Equation 1:

$$Y = f(\alpha, \varepsilon, R, \mu) \quad (1)$$

Where alpha is government's aversion to poverty – the FGT's poverty aversion parameter, alpha (Foster et al., 1984), and epsilon is its social disutility from inequality – Atkinson's inequality parameter, epsilon (Atkinson, 1970; Allison, 1978). Changes in goods and services between 2007 and 2014 are induced by changes in government behavior – what it transfers to local levels and by government preferences (aversion to poverty and inequality). These behaviors and preferences are induced by feedback from people's ratings of the decentralization process when given at the right time. In this context, it is presumed that people say something, the government changes behavior and people optimize - given what the government has done. The results are changes, which eventually lead to a change in income.

What the people declare in their perceptions provides feedback to the government that influences what it plans to do or has done. The government is

expected to get utility or disutility from the feedback, so ratings can change how the government does decentralization, and what it effectively decentralizes. Variations in cluster-level ratings can be used as subjective weightings of the universal exposure to the 2010 decentralization that proxies for behavior change, which has effects on social service delivery and household incomes. In this context, we can rewrite equation (1) as Equation 2:

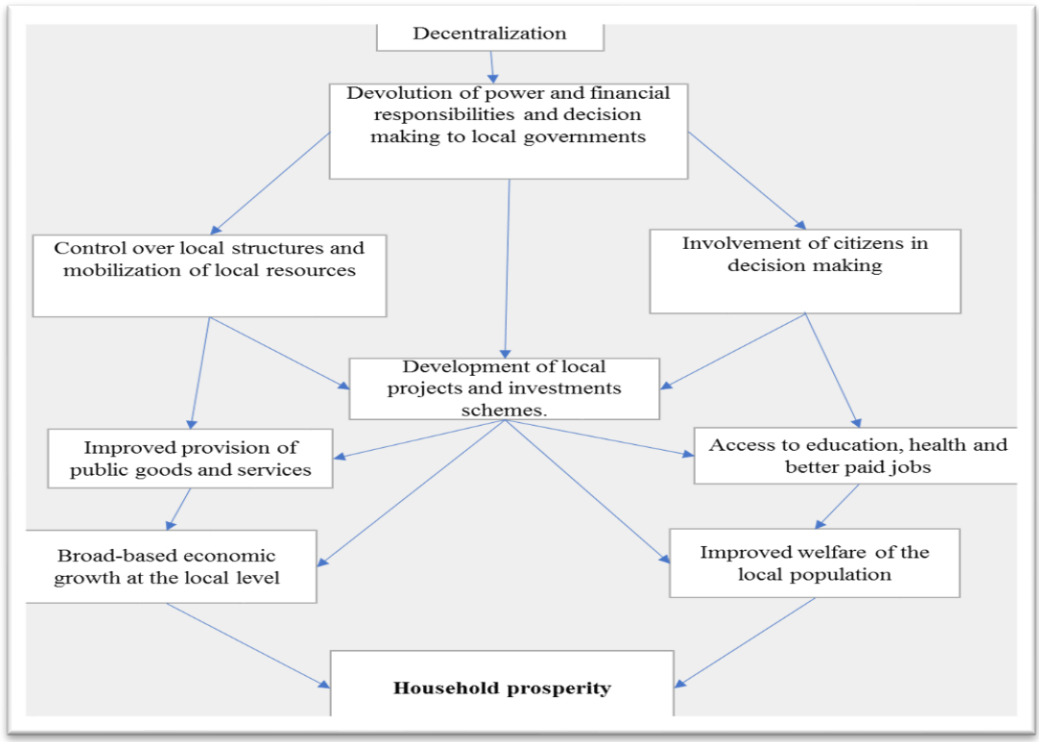
$$Y = f(Dec2010\_Ratings, X, u) \quad (2)$$

Let Dec2010 represent changes in goods and services between 2007 and 2014 induced by the 2010 decentralization and its process, meanwhile, Ratings can be interpreted as an expression of people's desirability of the decentralization process. Ratings is not treated here as a variable *per se* but as weights that adjust for the desirability of decentralization and its process as perceived by the people. So variation in desirability-adjusted exposure to decentralization (Dec2010_Ratings) is a proxy for these behaviors and preferences, which have both direct and indirect effects on households' incomes. However, it is not possible to separate these effects, what we may capture here are average fixed effects. X is a vector of other correlates of households' incomes and likely, there are implementations unobservable hidden in u – the error term.

Decentralization - Household Prosperity Nexus

Figure 1 highlights the basic channels of influence of decentralization on household prosperity. The figure demonstrates that decentralization offers a way for administrative and financial powers, as well as decision-making, to be devolved to local governments. Empowered local governments gain control over local structures, and mobilize local resources, which gives them possibilities to develop local projects and investment schemes and improve the provision of public goods and services. This is expected to usher in broad-based economic growth at the local level. At the same time, citizens are offered the possibility to actively participate in local decision-making processes, from which they have generally been excluded through lack of sufficient representation. Improved representation of formerly excluded citizens in local municipalities could, in turn, give the local population better access to information and local public services such as education and health facilities, thereby building their capacities (human capital formation) for labor market readiness, and skills for better-paid jobs, which in tend to improve the welfare of the local population. An expected outcome or consequence of this mechanism is overall broad-based household prosperity, which the World Bank (2015) qualifies as shared prosperity.

Figure 1: The decentralization-household prosperity nexus



Source: Author's illustration adapted from Steiner (2005)

Although the fruits of decentralization (fiscal, political, administrative, market, and environmental) would likely improve household socioeconomic well-being and prosperity directly, linking the 2010 decentralization and ratings to obtain the desirability-adjusted exposure to decentralization is an indication that part of the total average effect on household incomes may flow indirectly through vertical trust (trust in government).

The empirical model

The model

Fixed effects regressions exploit within group variation over time. The groups are prefectures and age cohorts. Fixed effects pick up the combined effects of all time-invariant predictors that differ across groups. Demeaning eliminates the key sources of omitted variable bias, namely unobservable between-group differences induced by people's innate abilities and motivation, as well as the quality of implementation attributable to beliefs and traditions that are culture-specific, which typically correlate with our variable of interest (desirability-adjusted exposure to decentralization) and our outcome variable (real

expenditures per adult equivalent). We use the fixed effects model to avoid omitted variable bias. Panel data is a key ingredient for fixed effects regressions. In the absence of panel data, we use the 2007 and 2014 independent cross-sectional surveys drawn from the same population by the government statistics office and pseudo panel methods for estimating fixed effects models.

We first capture ratings at the prefecture level (58 of them) as within prefecture means and then use it to derive the desirability-adjusted exposure to the 2010 decentralization (Decentralization Ratings). Five-year age bands and the two survey years are exploited to construct age-cohorts. The pseudo panels observe prefectures/cohorts, which are stable groups of households over time, rather than individual households over time. Individual variables are then replaced by their within-cohort means.

Our empirical model takes the form of Equation 3:

$$HEW_{icpt} = \beta(Decentralization_{ict}\_Ratings_{icpt}) + \theta X_{ict} + \sigma_p + \delta_c + \gamma_t + v_{icpt} \quad (3)$$

Where HEW is real expenditures per adult equivalent of household i in cohort c and prefecture p - at time t. Decentralization is exposure to the 2010 decentralization - taking the value 1 after 2010 and 0 before, for household i in cohort c, at time t. Rating proxy household perceptions of the merits of the decentralization policy, a dummy taking the value 1 for favorable opinions and 0 otherwise, of household i in cohort c and prefecture p - at time t - captured as prefecture-level averages. Decentralization Ratings is, therefore, the desirability-adjusted exposure to the 2010 decentralization – which is the 2010 decentralization weighted with cluster-level ratings. X is a vector of control variables of household i in cohort c - at time t. σ_p are prefecture-fixed effects, δ_c are cohort fixed effects, and γ_t are survey year fixed effects. β measures the impact of the desirability-adjusted exposure to decentralization on household well-being, and θ is the vector of parameters associated to control variables, while v is assumed to be a well-behaved random idiosyncratic error term.

Controlling for prefecture fixed effects allows for accounting for prefecture-specific fixed unobservable characteristics and thus removes any bias caused by the correlation between these characteristics and the desirability-adjusted exposure to the 2010 decentralization. Age-cohort-fixed effects control for global factors that simultaneously affect the well-being of each cohort. Survey year fixed effects control for specific unobserved biases which could have influenced data collection in 2007 or 2014.

To better appreciate the power of our modeling strategy, the fixed effect estimations are captured overall at the mean, and across the distribution of well-being. This is done using the unconditional quantile regression model based on

the re-centered influence function (RIF). We equally carry out heterogeneity checks across colonial experiences as reflected in the Civil law and Common law regions of Cameroon. Nominal total expenditures per adult equivalent are deflated using the CPI to remove the effect of price inflation between the two periods (2007 and 2014) to express them in real terms for comparable purposes.

The unconditional quantile regression counterpart of Equation 3

The implications of policy variables on distributional outcomes beyond simple averages are of great interest in many research areas and in particular in household economic prosperity (welfare/poverty) and income redistribution issues. The policymaker might be interested in the effect of treatment on dispersion of the outcome, or its effect on the lower tail of the income distribution. According to Heckman et al. (1997): "many persons would judge programs to have been successful if enough of the right kinds of persons reaped benefits from them even if the average participant did not". These implications can be achieved using the unconditional Quantile regression model of Firpo et al. (2009) using the re-centered influence function (RIF) to characterize the effects of variables on the whole distribution of the outcome of interest - making them appealing in such economic applications. This technique has recently received a great deal of attention in both theoretical and empirical research, see the works of (Firpo et al., 2009; Tang, 2020; Merlo et al., 2023; Alfani et al., 2024).

The essential difference between conditional quantile of Koenker and Bassett (1978) and unconditional quantile of Firpo et al. (2009) regressions is that, while the conditional quantile regression measures the effect on the dependent variable given a specific value of the explanatory variable for an observation, unconditional quantile regression measures the effect on the outcome variable at a specific quantile (say, qτth) by considering all observations in the sample, regardless of their explanatory variable values. Thus, while conditional quantile regression provides insights into how changes in the explanatory variable influence the dependent variable for a particular observation, unconditional quantile regression gives a broader perspective by capturing how changes in the explanatory variable affect the outcome variable across all observations. In this regard, an important advantage of unconditional quantile regression over mean regression is that it captures heterogeneity in responsiveness across well-being distribution. This allows for testing the hypothesis of whether the responsiveness of those at the bottom of the distribution to decentralization is similar to that of those at the middle or top of the distribution.

This method requires regressing the RIF of the unconditional quantile of the outcome variable (real log of total expenditure) on the set of independent variables. We obtain RIF by substituting the outcome variable with a linear

approximation using the influence function (IF). By definition, $\int_{-\infty}^{\infty} IF(w,\tau)dF(w) = 0$. Specifically, for quantiles, the influence function (IF) is given as:

$$IF(w;\ Q_\tau) = \frac{\tau - \mathbb{I}\{w \le q_\tau\}}{f_{W(q_\tau)}} \tag{4}$$

Where IF stands for the influence function, W denotes the log of real total expenditure per adult equivalent and $f_{W(q_\tau)}$ denote the probability density function of W evaluated at q_τ., $\mathbb{I}\{w \le q_\tau\}$ represents an indicator function which admits the value 1 when the outcome variable is less than q_τ and 0, otherwise. τ denotes the quantile in question. Based on this information, the recentered influence function (RIF) is given as:

$$RIF(w;\ q_\tau) = q_\tau + \frac{\tau - \mathbb{I}\{w \le q_\tau\}}{f_{W(q_\tau)}} \tag{5}$$

An essential characteristic of the unconditional quantile (RIF) over the conditional quantile is that RIF regression is linear in expectation, that is, $\mathbb{E}[RIF(w;\ q_\tau)] = q_\tau$. Thus, the expectation of the RIF is basically the specific quantile in question. In keeping with the consideration of X as a vector of independent variables, and the desirability-adjusted exposure to the 2010 decentralization, and φthe corresponding parameters to be estimated, the expected value of the RIF is linear in X.

$$\mathbb{E}[RIF(w;\ q_\tau)|\ X] = X\varphi \tag{6}$$

Following Firpo et al. (2009), the plausible interpretation attributable to the parameter vector φ is that it is a location shifter of X across the unconditional quantile distribution.

Data and stylized facts from the data

This study makes use of the 2007 and 2014 Cameroon household consumption survey data (CHCS III & IV) collected by the government statistics office (NIS). The main objective of the CHCS data is to provide information needed to assess monetary poverty. They also make it possible to provide relevant information on other forms of poverty: living conditions and environment, household assessment of their situation (subjective poverty), etc. These surveys are similar in terms of the nature of the information collected. These include socio-demographic characteristics (household composition, health, education, and employment of household members), housing characteristics, access to basic infrastructure, economic activity and income, perception of poverty and household consumption, perceptions of living conditions and governance (corruption, decentralization, and so on). These surveys were chosen because

they are the most recent household surveys in the country with information that can inform us about our research issues. Moreover, official statistics on poverty, well-being, and decentralization in the Cameroon National Development Strategy 2020-2030 are based on the 2007 and 2014 household consumption surveys.

The 2007 Cameroon household consumption survey (CHCS, 2007) was undertaken between May and July 2007; and comprised 11,391 households. The 2007 survey had as its objective to upgrade knowledge on poverty and welfare status in Cameroon by providing indicators that capture the living standards of the local population to be able to follow up efforts made toward the implementation of the poverty reduction strategy paper (PRSP) and the realization of the Millennium Development Goals (MDGs). This survey cuts across all ten regions of the country with the two biggest cities Yaoundé and Douala considered as two separate regions on its own making up a total of 12 regions. Except for Yaoundé and Douala, Each of the other 10 regions was divided into three strata: urban (large towns with at least 50,000 inhabitants); semi-urban (small towns with at least 10,000 inhabitants and less than 50,000 inhabitants); and rural strata (settlements with less than 10,000 inhabitants). A total of 32 survey strata were created, 12 of which were urban (Yaoundé, Douala, and the urban stratum of each of the 10 regions of the country), 10 semi-urban strata, and 10 rural strata with one stratum per region.

Two types of sampling designs were undertaken depending on the zone of residence. In the main cities of Yaoundé and Douala, a two-stage sampling frame was adopted. For other areas, a three-stage random sampling frame was adopted following the sequence city–primary sampling unit–household. The primary sampling units were chosen based on the stratification of the 2007 Demographic and Housing Census. There were 742 primary sampling units: 452 urban and 290 rural. In this survey, 12 households were visited in each primary sampling unit in Yaoundé and Douala, and 18 households were visited in each primary sampling unit in the 10 other regions that make up the country.

Just like the 2007 Cameroon household consumption surveys, the 2014 Cameroon household consumption survey comprised 10,303 households and was carried out in August 2014. This survey had as its objective to offer to the government and its partners numerous indicators of poverty and living conditions, to update knowledge of the situation, to be able to assess the progress made, to redirect public policies and strategies to keep the country on the path of ever stronger, inclusive, equitable economic growth that generates many opportunities, including decent jobs, and monitoring/evaluation of the implementation of the growth and employment strategy paper (GESP) and sectorial strategies and the monitoring of progress towards the achievement of

certain Millennium Development Goals. According to NIS, the 2014 survey was devoted to the study of poverty trends between 2007 and 2014. The analysis of poverty trends over the period 2007-2014 was deemed necessary as it provides an initial overall assessment of the impact of public policies in recent years on household living conditions.

In 2007, the 2014 survey was carried out in the entire national territory. 12,847 households were targeted, but 10,303 households were eventually surveyed. The NIS attributed this difference to non-responses and households with zero food consumption expenditures. 12 regions were considered with substrata organized in the same manner as in 2007. The same sampling frame as in 2007 was adopted. A total of 1,024 primary sampling units were drawn, including 639 in the urban strata, 99 in the semi-urban strata, and 286 in the rural strata. The number of households sampled per sampling unit is 10 for Douala and Yaoundé, 12 for the other urban strata, and 15 for the semi-urban and rural strata. For analysis, in both surveys the urban environment is made up of the urban and semi-urban strata, and the rural environment is made up of the rural strata.

Since the primary sampling units were not identical and it was not possible to uniquely identify them in the two cross-sectional surveys, for the purpose of clustering in the present study, use was made of the 58 prefectures in Cameroon in place of the primary sampling units. It was possible to identify each of the 58 corresponding prefectures in the 2007 and 2014 surveys – attributing the same number to corresponding prefectures – 1, 2, 3… 58. In addition to these two surveys, round 6 of 2014 Afro-barometer data is equally used to capture the correlation between households' perceptions of some basic service delivery and decentralization. The round 6 Afro-barometer survey which comprised 1,182 households was conducted in May 2014. We used perceptions of 8 social services from this database and each of these social service variables was captured at the regional level because it was not possible to uniquely identify prefectures in the Afro-barometer database. The averages of each of these social services were then incorporated into the pooled 2007 and 2014 surveys as new variables for the analysis.

Panel data is a key ingredient for fixed effects regression. In the absences of panel data, we exploit the 2007 and 2014 independent cross-sectional surveys collected by the government statistics office and use pseudo panel methods for estimating fixed effects models. Five-year age bands and the two surveys years are used to construct age cohorts. In total, 18 age cohorts were generated for the pseudo panel. The pseudo panel observed prefectures-cohorts which are stable groups of households rather than individual households over time. Individual variables are then explained by their intra-cluster means.

Variables and their measurements

Based on the 2007 and 2014 household surveys, the following variables were selected. The dependent variable considered as a proxy for household well-being is household total expenditure per adult equivalent. Several independent variables were considered. In particular, the proxy for weighing our main independent variable - decentralization, is the perception of the impact of the process of decentralization by household heads, which we call – household ratings or support for decentralization. The survey question that elicited decentralization ratings is: In your opinion, what is/would be the impact of a decentralization policy, i.e. the fact that the State cedes part of its powers to the regions and local authorities? a=better consideration of citizens' demands, b= greater injustice from local authorities, c= no change. Following this, a dummy for ratings of the decentralization process was generated - taking the value 1 for those who consider the decentralization process as responding to citizens' demands and zero otherwise. To circumvent concerns for potential endogeneity of ratings of the decentralization process, we capture it at the cluster level as the prefecture-level average of ratings. We use the prefecture-average of perceptions of the merits of decentralization as weightings on the actual decentralization, notable the 2010 devolution of competencies to local governments in Cameroon to obtain a desirability-adjusted exposure to the 2010 decentralization – the key independent variable in the study. In addition to this key independent variable of interest, other variables such as age, gender, level of education, region, religion and zone of residence (urban or rural) were extracted. Table 2 presents the variables used and their proxies in the database.

Harmonization of household expenditures between 2007 and 2014

To carefully handle and remove the effect of inflation on households' total expenditures per adult equivalent, which is our proxy for household economic well-being, total expenditures between the two periods were harmonized. This has been done since there was a change in the prices of consumer goods and services purchased by households between the two periods. The Cameroon CPI for 2007 (90.97), with an index of 2010 = 100, and 2014 (109.92) were used for inter-temporal harmonization. A deflator was constructed taking the value 1 for 2014 observations and the value 0.8276 (90.97/109.92) for 2007 observations. Real total expenditures per adult equivalent were obtained by dividing the nominal total expenditures per adult equivalent by the constructed deflator.

Table 2: Description and measurement of variables

Variable	Description	As measured from the data base
Household economic Well-being	Dependent variable	Log of real household total expenditures per adult equivalent.
Ratings		Household heads perception of the impact of the process of decentralization
Decentralization	Main independent variable	Exposure to the 2010 decentralization
Decentralization_Ratings	Other Independent variables	Desirability-adjusted exposure to the 2010 decentralization
Level of education		No education, primary and post primary (secondary or tertiary education)
Region		Common law regions (the two English speaking regions of Cameroon) and civil law regions (the eight French speaking regions of Cameroon)
Religion		Christian, Muslims and others
Zone of residence		Rural or urban
Age		Age of household head in years
Gender		Male or female

Source: Compiled by the author

5. Empirical results, discussion and transmission mechanisms

Descriptive statistics

Descriptive statistics of the pooled data set are mainly captured as age-cohort averages/proportions. The log of real total expenditure per adult equivalent was 13.27 with a minimum value of 12.72 and a maximum of 13.62 log points. On average, it was about 13.08 at the 10^{th} percentile of the unconditional quantile distribution (RIF), 13.14 at the 25^{th} quantile, 13.21 at the median, 13.40 at the 75^{th} percentile, and 13.46 at the 90^{th} percentile. The average value of the desirability-adjusted exposure to the 2010 decentralization was about 0.27 with a minimum of 0 and a maximum of 0.60 index points. The average value of decentralization (exposure to the 2010 decentralization) was about 0.47 index points with a minimum value of 0 and a maximum value of 1. Summary statistics equally showed that 57.38% of household heads gave positive ratings to the process of decentralization. About 79.8% of the surveyed population were resident in civil law regions, while only about 20.2% were in common law regions of the country

at the time of the surveys. On average, about 32.9% of household heads had primary education, and about 44.9 % had post-primary education (secondary or tertiary education), while about 22.1% had no education at all. Statistics equally show that the average age of household heads of the surveyed populations was about 42.7 with a minimum age of 11 years and a maximum of 99 years old. Meanwhile, in the labor force sample, we observed that the average age dropped to 39.1 with a minimum of 15 years old and a maximum of 64 years old. About 72% of household heads were male with about 54.5% of them resident in the urban area. Descriptive results equally reveal that about 71.8% of the surveyed heads were Christians, while about 20.4% where Muslims and 7.7% were of other religions. About 47.5% of objects were drawn from the 2014 records.

Table 3: Descriptive Statistics

Variables	N° of observations	Mean/Prop	Std. dev.	Min	Max
Log of real total expenditures pae	21694	13.2795	0.1719	12.7260	13.6222
Decentralization dummy	21694	0.4749	0.49938	0	1
Ratings	21694	0.5738	0.0080	0.5074	0.5947
Decentralization_Ratings	21694	0.2699	0.2838	0	0.5947
Civil law regions	21694	0.7983	0.0399	0.6206	0.8965
Common law regions	21694	0.2016	0.0399	0.1034	0.3793
No education	21694	0.2206	0.1321	0	0.8333
Primary education	21694	0.3285	0.0419	0.1034	0.4137
Post-primary education	21694	0.4494	0.1307	0	0.8965
Age of household head	21694	42.661	15.4963	11	99
Labour force (14<age<65)	19388	39.0541	11.7047	15	64
Male	21694	0.7224	0.0701	0.4285	0.8571
Urban	21694	0.5452	0.0874	0.1034	0.6464
Christians	21694	0.7183	0.0273	0.5	0.8620
Muslims	21694	0.2042	0.0211	0.0689	0.2916
Other religions	21694	0.0773	0.0155	0	0.2352

Y2014	21694	0.4749	0.4993	0	1
RIF q(10)	21694	13.083			
RIF q(25)	21694	13.142			
RIF q(50)	21694	13.208			
RIF q(75)	21694	13.4			
RIF q(90)	21694	13.461			

Source: Computed by the author using a pseudo panel based on the pooled 2007 and 2014 Cameroon household consumption surveys in STATA 17.

Notes: Decentralization Ratings is the desirability-adjusted exposure to the 2010 decentralization and is thus exogenous to a particular household within a prefecture. Furthermore, most of the control variables are captured at the prefecture level or are age-cohort means/proportions.

Regression results and discussion

The main objective of this paper was to evaluate the impact of the 2010 decentralization on households' economic well-being between 2007 and 2014 in Cameroon – with the decentralization variable captured as an index of the desirability-adjusted exposure to the 2010 decentralization. Tables 4 to 6 present the full sample fixed effects estimates for the mean regression and the RIF (unconditional quantile) regressions, overall, and across the civil law and common law regions, respectively. Column 1 of each table shows the corresponding mean fixed effects estimates, while columns 2 to 6 show the RIF estimates. The quantiles reported are the 10^{th}, 25^{th}, 50^{th}, 75^{th} and 90^{th}. Age-cohort fixed effects, prefecture, and survey year-fixed effects were controlled for in each of the regressions. Table 7 hosts a fixed effects estimate of the impact of un-weighted exposure to the 2010 decentralization on household well-being.

Results from the full sample and sub-samples

Column 1 of Tables 4, 5, and 6 show the average fixed effects of the desirability-adjusted exposure to the 2010 decentralization on household economic well-being to be positive and statistically significant at the 1% level in each case. For the full sample, the adjusted exposure to the 2010 decentralization is significantly associated with improvements in household economic well-being (HEW) - in the order of 0.274 log points (27.4%)[1] overall and in civil law regions,

[1]In a semi-log setting, the estimated fixed effects $\hat{\beta}$ are typically adjusted as $\exp(\hat{\beta})-1$ and expressed as a percentage (see, Halvorsen and Palmquist, 1980). For the mean regression in table 4, the adjustment is $\exp(0.242)-1=0.274$ log points or 27.4%.

and by 0.276 log points (27.6%) in common law regions. These effects are large and qualitatively similar. Across the unconditional quantiles improvement in the effects are statistically significant and sizable as well. For example, overall, at the 10th and 25th percentiles, the improvements in well-being are in the order of 0.186 and 0.251 log points, respectively; among the median households' improvements drop to about 0.125 log points (12.5%), before rising sharply to 0.556 log points (55.6%) at the 75th percentile and 0.559 log points (56%) at the 90th percentile (Columns 2-6). In both civil law and common law regions, similar patterns of responsiveness of household economic well-being to the adjusted exposure to the 2010 decentralization are observed across the distribution of well-being (Columns 2-6 of Tables 5 and 6). The general observation is that those at the upper and lower tails of the distribution register sizable improvements in well-being attributable to exposure to decentralization relative to the median households. These tendencies are summarized in Figure 2.

This is compelling evidence that by 2014, the adjusted exposure to the 2010 decentralization was associated significantly with improvements in household economic well-being overall, in the civil law and common law regions, and across the corresponding unconditional distributions of well-being. These findings are similar to those by Ain et al. (2022) who found that shifts towards more decentralization in health services would be accompanied by improvements in a very important component of well-being - health. They are also in line with the findings in Besley and Coate (2003). In particular, they found decentralization to be welfare-enhancing in the absence of spillover effects.

Table 4: Fixed effects estimate of the impact of decentralization on household well-being – Overall

	Mean regression	**RIF regressions at quantiles 10-90**				
VARIABLES	**mean**	**RIF10**	**RIF25**	**RIF50**	**RIF75**	**RIF90**
Decentralization_Ratings	0.242***	0.171***	0.224***	0.118***	0.442***	0.444***
	(0.005)	(0.024)	(0.014)	(0.014)	(0.023)	(0.042)
Primary education	-0.191***	1.633***	-0.329***	-0.828***	1.174***	0.802***
	(0.030)	(0.107)	(0.102)	(0.073)	(0.163)	(0.259)
Post primary education	0.103***	0.444***	0.056	0.449***	-0.981***	-1.625***
	(0.036)	(0.086)	(0.114)	(0.063)	(0.112)	(0.199)
Male	0.197***	1.538***	-0.287**	0.354***	1.428***	-1.948***
	(0.050)	(0.146)	(0.127)	(0.133)	(0.301)	(0.592)
Urban	0.866***	0.970***	0.205	0.162	0.790***	1.716***
	(0.035)	(0.134)	(0.151)	(0.110)	(0.209)	(0.297)

Muslims	0.794***	-0.128	-4.299***	-0.099	1.341***	0.104
	(0.121)	(0.408)	(0.433)	(0.306)	(0.455)	(0.689)
Age cohort fixed effects	yes	yes	yes	yes	Yes	yes
Prefecture fixed effects	yes	yes	yes	yes	Yes	yes
Survey year fixed effects	yes	yes	yes	yes	Yes	yes
Constant	12.454***	10.687***	14.144***	12.932***	11.630***	14.312***
	(0.059)	(0.140)	(0.236)	(0.168)	(0.359)	(0.548)
Observations	21,694	21,694	21,694	21,694	21,694	21,694
R-squared (within)	0.912	0.622	0.688	0.519	0.584	0.388
F test that all u_i=0:						
F (17, 905) [p-val]	19725.18[0.00]	2737.53 [0.00]	1571.48 [0.00]	1935.90 [0.00]	2876.02 [0.00]	3635.67 [0.00]
Number of prefectures	58	58	58	58	58	58
Number of cohorts	18	18	18	18	18	18

Source: Computed by the author using a pseudo panel based on the pooled 2007 & 2014 Cameroon household consumption surveys in STATA 17.

Notes: Standard errors in parentheses. ***, **, and * representing 1%, 5% and 10% levels of significance, respectively. Jackknife standard errors correcting for prefectures and age-cohorts intra-cluster correlations.

Decentralization Ratings is desirability-adjusted exposure to the 2010 decentralization. Replications based on 906 clusters in Cohorts and Prefectures.

Table 5: Fixed effects estimates of the impact of decentralization on household well-being – Civil law regions

	Mean regression	RIF regressions at quantiles 10-90				
VARIABLES	Mean	RIF10	RIF25	RIF50	RIF75	RIF90
Decentralization_Ratings	0.242***	0.177***	0.221***	0.119***	0.447***	0.435***
	(0.006)	(0.028)	(0.017)	(0.016)	(0.028)	(0.050)
Primary education	-0.190***	1.656***	-0.343***	-0.841***	1.202***	0.792***
	(0.035)	(0.126)	(0.119)	(0.085)	(0.194)	(0.304)
Post primary education	0.114***	0.409***	0.086	0.455***	-0.978***	-1.575***
	(0.042)	(0.098)	(0.136)	(0.073)	(0.132)	(0.236)
Male	0.203***	1.543***	-0.299**	0.350**	1.481***	-2.000***
	(0.059)	(0.172)	(0.149)	(0.159)	(0.354)	(0.698)
Urban	0.870***	1.006***	0.180	0.161	0.895***	1.665***
	(0.041)	(0.159)	(0.177)	(0.132)	(0.244)	(0.343)
Muslims	0.839***	-0.190	-4.257***	-0.115	1.439***	0.327

	(0.142)	(0.470)	(0.513)	(0.360)	(0.524)	(0.807)
Age cohort fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Prefecture fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Survey year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Constant	12.432***	10.682***	14.150***	12.941***	11.498***	14.309***
	(0.070)	(0.165)	(0.279)	(0.202)	(0.419)	(0.637)
Observations	17,319	17,319	17,319	17,319	17,319	17,319
R-squared (within)	0.913	0.621	0.691	0.526	0.585	0.385
F test that all u_i=0:						
F (17, 700) [p-val]	15658.74 [0.00]	2147.78 [0.00]	1224.01 [0.00]	1531.58 [0.00]	2215.71 [0.00]	2859.29 [0.00]
Number of prefectures	58	58	58	58	58	58
Number of cohorts	18	18	18	18	18	18

Source: Computed by the author using a pseudo panel based on the pooled 2007 & 2014 Cameroon household consumption surveys in STATA 17.

Notes: Standard errors in parentheses. ***, **, and * representing 1%, 5% and 10% levels of significance, respectively. Jackknife standard errors correcting for prefectures and age-cohorts intra-cluster correlations.

Decentralization Ratings is desirability-adjusted exposure to the 2010 decentralization. Replications based on 701 clusters in Cohorts and Prefectures.

Table 6: Fixed effects estimates of the impact of decentralization on household well-being – Common law regions

	Mean regression	**RIF regressions at quantiles 10-90**				
VARIABLES	**mean**	**RIF10**	**RIF25**	**RIF50**	**RIF75**	**RIF90**
Decentralization_Ratings	0.244***	0.155***	0.229***	0.113***	0.426***	0.478***
	(0.010)	(0.049)	(0.027)	(0.025)	(0.039)	(0.081)
Primary education	-0.193***	1.553***	-0.284	-0.776***	1.113***	0.838
	(0.055)	(0.224)	(0.212)	(0.143)	(0.331)	(0.576)
post primary education	0.060	0.569***	-0.049	0.428***	-1.024***	-1.797***
	(0.069)	(0.194)	(0.197)	(0.120)	(0.237)	(0.431)
Male	0.174*	1.570***	-0.255	0.346	1.229**	-1.687
	(0.090)	(0.294)	(0.292)	(0.231)	(0.621)	(1.238)
Urban	0.857***	0.880***	0.281	0.154	0.460	1.908***
	(0.066)	(0.278)	(0.306)	(0.198)	(0.446)	(0.646)
Muslims	0.619***	0.051	-4.436***	-0.006	0.982	-0.791
	(0.224)	(0.865)	(0.803)	(0.559)	(1.050)	(1.574)

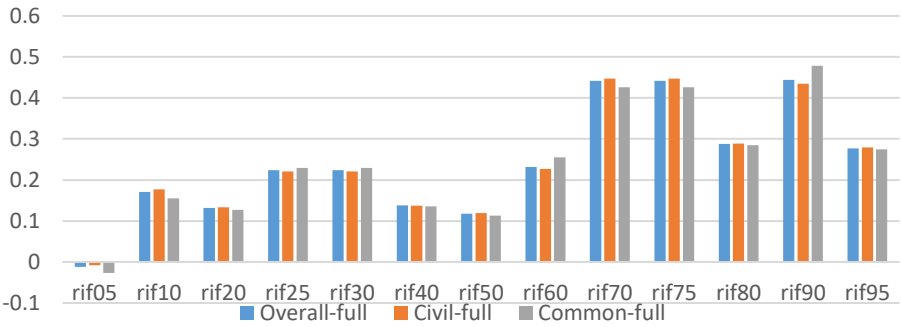
Age cohort fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Prefecture fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Survey year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Constant	12.536***	10.649***	14.140***	12.915***	12.083***	14.284***
	(0.105)	(0.291)	(0.492)	(0.288)	(0.799)	(1.264)
Observations	4,375	4,375	4,375	4,375	4,375	4,375
R-squared (within)	0.911	0.630	0.675	0.484	0.586	0.399
F test that all u_i=0:						
F (17, 204) [p-val]	4198.64 [0.00]	611.45 [0.00]	364.12 [0.00]	416.49 [0.00]	685.63 [0.00]	818.38 [0.00]
Number of prefectures	58	58	58	58	58	58
Number of cohorts	18	18	18	18	18	18

Source: Computed by author using a pseudo panel based on the pooled 2007 & 2014 Cameroon household consumption surveys in STATA 17.

Notes: Standard errors in parentheses. ***, ** and * representing 1%, 5% and 10% levels of significance, respectively. Jackknife standard errors correcting for prefectures and age-cohorts intra-cluster correlations.

Decentralization Ratings is desirability-adjusted exposure to the 2010 decentralization. Replications based on 205clusters in Cohorts and Prefectures.

Figure 2: Impacts of the 2010 decentralization on HEW overall, civil, common and across RIFs - full sample



Source: Constructed by author.

Notes: HEW=household economic well-being. Civil = Civil law regions.

Common = Common law regions. RIF= Re-center influence function.

It would be interesting as one way of robustness checks to regress HEW as a function of un-weighted exposure to the 2010 decentralization. Results in Table

7 show that un-weighted exposure to the 2010 decentralization was associated positively with improvements in household economic well-being. In particular, the association is in the order of 0.148 log points in the un-weighted case (Table 7), compared to 0.274 log points in the weighted case (Table 4) using the full sample. In essence, weighted exposure to the 2010 decentralization is more strongly associated with household economic well-being than un-weighted exposure. The indication here is that what the people say turns to enhance the influence of decentralization on household well-being.

Table 7: Fixed effects estimates of the impact of decentralization on household well-being – HEW regress on decentralization

	Mean regression	RIF Regression at quantiles 10-90				
VARIABLES	**mean**	**RIF10**	**RIF25**	**RIF50**	**RIF75**	**RIF90**
Decentralization	0.138***	0.098***	0.129***	0.068***	0.251***	0.253***
	(0.003)	(0.014)	(0.008)	(0.008)	(0.013)	(0.024)
Primary education	-0.189***	1.637***	-0.318***	-0.823***	1.181***	0.808***
	(0.030)	(0.107)	(0.102)	(0.073)	(0.163)	(0.260)
Post primary education	0.095***	0.434***	0.038	0.442***	-0.999***	-1.641***
	(0.036)	(0.086)	(0.114)	(0.064)	(0.113)	(0.201)
Male	0.179***	1.528***	-0.295**	0.348***	1.398***	-1.979***
	(0.050)	(0.145)	(0.127)	(0.132)	(0.300)	(0.592)
Urban residency	0.852***	0.964***	0.203	0.159	0.768***	1.693***
	(0.034)	(0.133)	(0.150)	(0.109)	(0.209)	(0.295)
Muslim religion	0.771***	-0.156	-4.354***	-0.122	1.291***	0.058
	(0.120)	(0.410)	(0.432)	(0.308)	(0.456)	(0.685)
Age cohort fixed effects	yes	yes	yes	yes	yes	Yes
Prefecture fixed effects	yes	yes	yes	yes	yes	Yes
Survey year fixed effects	yes	yes	yes	yes	yes	Yes
Constant	12.482***	10.705***	14.166***	12.945***	11.680***	14.362***
	(0.059)	(0.139)	(0.236)	(0.167)	(0.359)	(0.549)
Observations	21,694	21,694	21,694	21,694	21,694	21,694
R-squared (within)	0.913	0.623	0.691	0.520	0.585	0.388
F test that all u_i=0:						
F (17, 905) [p-val]	19761.94		1596.43		2886.02	3644.43

	[0.00]	2742.59 [0.00]	[0.00]	1934.71 [0.00]	[0.00]	[0.00]
Number of prefectures	58	58	58	58	58	58
Number of cohorts	18	18	18	18	18	18

Source: Computed by the author using a pseudo panel based on the pooled 2007 & 2014 Cameroon household consumption surveys in STATA 17.

Notes: Standard errors in parentheses. ***, **, and * representing 1%, 5% and 10% levels of significance, respectively. Jackknife standard errors correcting for prefectures and age-cohorts intra-cluster correlations.

Decentralization is the exposure to the 2010 decentralization. Replications based on 906 clusters in Cohorts and Prefectures.

Results using the labor force sample (14<age<65) and its corresponding sub-samples

Another way of testing for robustness is to use the labor force sample. Table 8 presents fixed effects estimates of the labor force sample (14<age<65) overall, and across the civil law and common law regions, meanwhile, Figures 2 and 3 summarize the average fixed effects estimates across the unconditional quantiles for the full and labor force samples, respectively.

Results using the labor force sample and its corresponding sub-samples equally show a positive and significant association of the desirability-adjusted exposure to the 2010 decentralization with household well-being - overall and across regions. For the labor force sample, the effect of the policy on HEW is identical overall and across regions and smaller than for the full sample with improvements in well-being of about 0.274 log points (24.7%) (Table 4). Figure 3 represents all the average fixed effects of the weighted policy on household well-being computed at the mean, across regions, and across the distribution of well-being for the labor force sample.

Figure 3 for the labor force sample is, therefore, charting the same storyline as Figure 2 for the full sample. This is evidence of the robustness of our findings and confirms that the devolution of competencies in 2010 was associated with improvements in household economic well-being by 2014 - four years hence. A period of 4 years after 2010 decentralization is not only enough to radically change the pattern and efficiency of social service delivery, but also the career choices, labor market activities, and income streams of households. So it was appropriate to choose household expenditures per adult equivalent – a proxy for household economic well-being, as the outcome variable in this study.

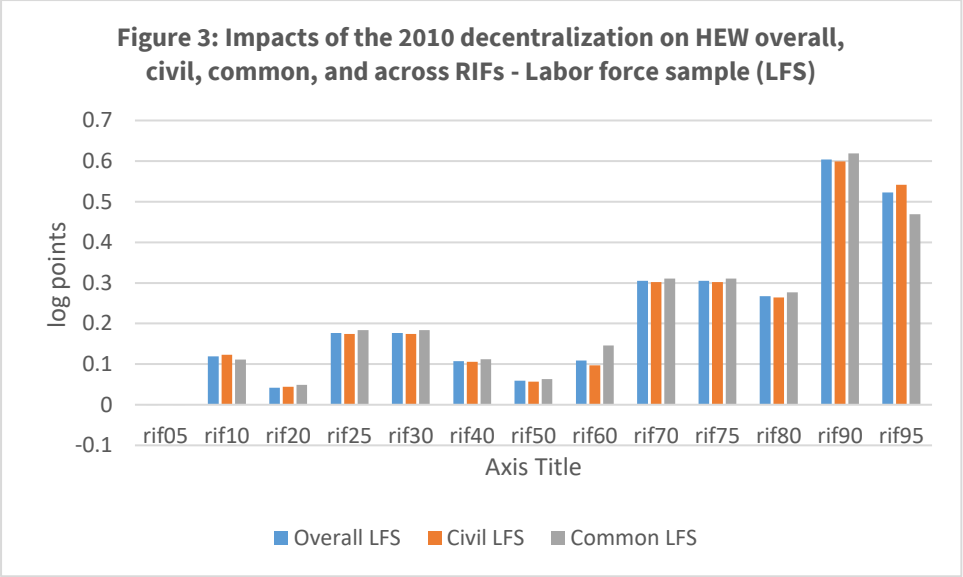
Table 8: Fixed effects estimates of the impact of decentralization on household well-being - labor force sample (14<age<65)

VARIABLES	overall	Common law regions	Civil law regions
Decentralization Ratings	0.221***	0.221***	0.221***
	(0.003)	(0.006)	(0.004)
Primary education	-0.124*	-0.107	-0.124
	(0.066)	(0.128)	(0.080)
Post primary education	0.474***	0.492***	0.472***
	(0.045)	(0.097)	(0.054)
Male	0.292***	0.303*	0.290***
	(0.088)	(0.167)	(0.104)
Urban	0.954***	0.965***	0.953***
	(0.035)	(0.074)	(0.042)
Muslims	1.966***	1.989***	1.966***
	(0.169)	(0.370)	(0.200)
Age cohort fixed effects	Yes	Yes	Yes
Prefecture fixed effects	Yes	Yes	Yes
Survey year fixed effects	Yes	Yes	Yes
Constant	11.908***	11.877***	11.910***
	(0.115)	(0.243)	(0.136)
Observations	19,388	3,864	15,524
R-squared (within)	0.962	0.963	0.962
F test that all u_i=0:			
F (10, 597) [p-val]	60862.77[0.000]		
F (10, 135) [p-val]		13663.73[0.000]	
F (10, 461) [p-val]			47635.49[0.000]
Number of prefectures	58	58	58
Number of cohorts	11	11	11

Source: Computed by the author using a pseudo panel based on the pooled 2007 & 2014 Cameroon household consumption surveys in STATA 17.

Notes: Standard errors in parentheses. ***, **, and * representing 1%, 5% and 10% levels of significance, respectively. Jackknife standard errors correcting for prefectures and age-cohorts intra-cluster correlations.

Decentralization Ratings is desirability-adjusted exposure to the 2010 decentralization. Replications based on 598, 136, and 462 clusters in Cohorts and Prefectures.



Source: Constructed by author.

Notes: HEW=household economic well-being. Civil = Civil law regions.

Common = Common law regions. RIF= Recenter influence function.

Testing for disparities in responsiveness of HEW to the adjusted exposure to the 2010 decentralization between common law and civil law regions

Despite our expectation that households in the common law regions are more likely to register significantly larger improvements in HEW occasioned by the 2010 decentralization, our findings reveal that legal origins/colonial experiences seem not to statistically influence the responsiveness of HEW to the decentralization policy. One way of testing disparity in responsiveness is to include the interaction between the decentralization variable and the civil law regions dummy on the right-hand-side of equation 3 - as an additional variable, rerun the regression, and verify the statistical significance of the coefficient of the interaction term. If the coefficient is statistically significant, then the impacts are different across legal origins, if not, then, there is no statistical difference.

Table 9: Testing for disparities across quantiles of HEW, by legal origins

	Mean regression	**RIF regressions at quantiles 10-90**				
VARIABLES	**mean**	**10RIF**	**25 RIF**	**50 RIF**	**75 RIF**	**90 RIF**
Decentralization Ratings	0.240***	0.171***	0.214***	0.112***	0.438***	0.441***
	(0.008)	(0.027)	(0.022)	(0.022)	(0.040)	(0.077)
Decentralization_Ratings*CiLRs	0.003	-0.000	0.012	0.007	0.005	0.004

	(0.008)	(0.020)	(0.023)	(0.024)	(0.048)	(0.091)
Primary education	-0.191***	1.633***	-0.327***	-0.826***	1.175***	0.803***
	(0.030)	(0.107)	(0.101)	(0.073)	(0.163)	(0.260)
Post primary education	0.103***	0.444***	0.055	0.449***	-0.982***	-1.625***
	(0.036)	(0.086)	(0.114)	(0.063)	(0.113)	(0.200)
Male	0.197***	1.538***	-0.286**	0.354***	1.428***	-1.947***
	(0.050)	(0.147)	(0.127)	(0.133)	(0.302)	(0.595)
Urban residency	0.866***	0.969***	0.207	0.163	0.790***	1.716***
	(0.035)	(0.135)	(0.151)	(0.110)	(0.209)	(0.297)
Civil law regions	-0.001	0.000	-0.003	-0.002	-0.000	0.001
	(0.002)	(0.005)	(0.006)	(0.007)	(0.013)	(0.025)
Muslim religion	0.794***	-0.128	-4.300***	-0.100	1.340***	0.102
	(0.121)	(0.409)	(0.433)	(0.307)	(0.456)	(0.690)
Age cohort fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Prefecture fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Survey year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Constant	12.455***	10.687***	14.145***	12.933***	11.630***	14.311***
	(0.059)	(0.141)	(0.236)	(0.168)	(0.360)	(0.552)
Observations	21,694	21,694	21,694	21,694	21,694	21,694
R-squared (within)	0.912	0.622	0.688	0.519	0.584	0.388
Number of prefectures	58	58	58	58	58	58
Number of cohorts	18	18	18	18	18	18

Source: Computed by author using a pseudo panel based on the pooled 2007 & 2014 Cameroon household consumption surveys in STATA 17.

Notes: Standard errors in parentheses. ***, **, and * representing 1%, 5% and 10% levels of significance, respectively. Jackknife standard errors correcting for prefecture and age-cohorts intra-cluster correlations.

Decentralization_Ratings is desirability-adjusted exposure to the 2010 decentralization. CiLRs are the eight civil law regions.

Table 9 shows that there is no significant difference in the responsiveness of HEW between the common law and civil law regions following the 2010 decentralization policy in Cameroon. These findings suggest that, in terms of HEW, 54 years after the reunification of the British and French Cameroons, the expected/hypothesized difference in responsiveness between the two key regions to central government socioeconomic policy changes could have been diluted in our fixed effects estimates - correcting standard errors for correlations within-prefectures and within-age-cohorts using the Jackknife estimator. The

consistency of results using a variety of sub-samples, with the baseline results, is preliminary evidence of the structural validity of our findings.

Potential transmission mechanisms

These findings could have been transmitted through improvements in social service delivery and associated labor market opportunities. Improvement and confidence in the social service delivery system may positively affect a household's investment decisions related to child education, health, and agriculture, as well as non-farm activities. We identify some channels/mechanisms through which the findings in the paper could have materialized.

Firstly, we have the labor market channel: improvements or belief that farm-to-market roads will be constructed or rehabilitated as promised during periods of campaign may encourage agricultural activities in the hinterlands since market access and rural-urban linkages would likely not be a problem. Similarly, the availability or expectation that water and energy will be available and stable is likely to encourage the opening up of non-farm businesses as a livelihood diversification strategy in rural areas, as well as the fringes of urban settings. These mechanisms, operating through trust in local representatives, have a positive influence on household economic well-being.

Secondly, we have the human capital mechanism: when the population is confident that the local government will effectively handle certain basic services like health and education, their well-being will be influenced positively. It is this trust that influences the local population to give positive ratings to the decentralized system of government. Barrafrem et al. (2020) carried out a study in Sweden to investigate whether trust in the government increased financial well-being and general well-being during the COVID-19 pandemic and found that Swedish trust in the government was positively associated with or had a significant impact on general well-being through the mediating channel of financial well-being.

Thirdly, we have the compliance channel: trust in the locally elected representatives is also likely to enhance compliance by the locals who will be willing to contribute to the budget of the local administration by paying taxes as well as collaborating and supporting developmental projects proposed by their representatives. According to Mundy (2007) and Birskyte (2014), the more trustworthy citizens perceive the government, the more likely citizens will be willing to comply with government laws, regulations, and policies. Scholz (2003) and Levi (2022), correspondingly support the view that citizens who trust the government are more likely to comply with taxation and taxes and provide the local governments with the means to foster social service delivery.

Lastly, we have the social network/social capital channel: when the local population has a good social relationship with their representatives, as well as among themselves, they turn out to be more confident of their capacity to handle certain socio-economic responsibilities for the improvement of their well-being. Levi (2022) argues that good governance involves mutual trust between citizens and government authorities, as well as mutual trust between citizens themselves.

As indicated earlier, these channels will work more effectively when the local officials are democratically elected. When local administrators are not democratically elected, trust erodes and confidence in this context depletes, compliance in paying taxes and other obligations weakens and the formation of social capital and development stakeholders fail to materialize synergy among locals and the locals would largely give negative ratings to the decentralization process as they are likely to perceive insignificant or no improvement in the social service delivery system. Such an outcome is likely to have important adverse implications for individual and collective well-being /prosperity.

Worthy of note is the observation that our research setup and data are not fine-tuned enough to reveal for certain which mechanisms explain the underlying robust findings. Moreover, since our results are average fixed effects, we can only speculate the possible candidate mechanisms. In this context, a possible way forward to fostering the analysis is to verify the observable implications of some of the channels discussed above. Thus, for further robustness checks, we attempt to test some of these channels using data exploited from Afro-barometer round 6 collected during the 2014 survey and incorporated in our pooled survey (2007 and 2014 surveys) in the regressions in Table 9).

Table 10: Fixed effects estimates of the impact of decentralization on some social services

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	**Electricity**	**School**	**Sewage**	**Piped water**	**Post office**	**Police station**	**Pay tax**	**Trust in the tax system**	**Employment**
Decentralization_Ratings	0.001	0.001	0.004***	0.002***	0.003**	0.004***	0.001	0.001	0.003**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Primary education	-0.004	-0.003	0.005	-0.004	-0.001	-0.001	-0.001	-0.001	0.008
	(0.006)	(0.005)	(0.005)	(0.007)	(0.009)	(0.009)	(0.004)	(0.005)	(0.008)

Post-primary education	-0.001	-0.002	-0.000	-0.002	0.001	0.001	-0.002	-0.002	0.004
	(0.005)	(0.005)	(0.005)	(0.005)	(0.008)	(0.008)	(0.003)	(0.004)	(0.007)
Male	0.002	0.004	0.004	0.008	0.001	0.002	0.002	0.004	-0.001
	(0.008)	(0.007)	(0.006)	(0.008)	(0.012)	(0.012)	(0.005)	(0.006)	(0.010)
Urban	0.008	0.003	0.012*	0.008	0.012	0.016	0.004	0.003	0.011
	(0.007)	(0.006)	(0.007)	(0.007)	(0.010)	(0.010)	(0.004)	(0.005)	(0.010)
Muslim	0.019	0.014	0.003	0.010	0.030	0.029	0.008	0.012	0.009
	(0.019)	(0.017)	(0.015)	(0.021)	(0.028)	(0.030)	(0.012)	(0.016)	(0.023)
Age cohort fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	Yes
Prefecture fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	Yes
Survey year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	Yes
Constant	0.042***	0.049***	0.018**	0.039***	0.022	0.024	0.045***	0.027***	0.859***
	(0.010)	(0.009)	(0.009)	(0.010)	(0.016)	(0.016)	(0.006)	(0.008)	(0.013)
Observations	21,694	21,694	21,694	21,694	21,694	21,694	21,694	21,694	21,694
R-squared (within)	0.001	0.001	0.005	0.001	0.002	0.003	0.001	0.001	0.002
Number of prefectures	58	58	58	58	58	58	58	58	58
Number of cohorts	18	18	18	18	18	18	18	18	18

Source: Computed by the author using Afro-barometer data introduced in the pooled 2007 & 2014 Cameroon household consumption surveys in STATA 17.

Notes: Standard errors in parentheses. ***, **, and * representing 1%, 5% and 10% levels of significance, respectively. Jackknife standard errors correcting for prefectures and age-cohorts intra-cluster correlations.

Decentralization_Ratings is desirability-adjusted exposure to the 2010 decentralization.

Table 10 shows that the desirability-adjusted exposure to the 2010 decentralization correlates positively with each of the 8 social services and employment variables under verification. Favorable opinions on sewage disposal, pipe-borne water, and policing were positively responsive to the desirability-adjusted exposure to the 2010 decentralization at a 1% level of statistical significance while post office services were positively responsive at a

5% level of statistical significance. More interestingly, access to employment, which was drawn from the pooled survey was positively responsive to the decentralization variable at the 5% level of significance. This is an indication that the desirability-adjusted exposure to the 2010 decentralization increased the probability of securing a job in 2014. These findings suggest that social service provision and associated labor market activities can largely be considered transmission channels from central government socioeconomic policy changes to household incomes and well-being.

Our assignment of social services and employment as potential transmission channels between the 2010 decentralization and improvement in HEW in 2014 are consistent with the findings in (Epo et al., 2023). For instance, Epo et al. (2023) showed that (1) the provision of social services (education and healthcare) raised household income per adult equivalent in Cameroon and Kenya, respectively, and (2) formal sector employment increased HEW in Cameroon and employment in any sector increased HEW in Kenya. Thus, their findings are non-negligible support that the potential transmission channels featured in Table 10 are some of the ways through which the 2010 decentralization increased HEW in Cameroon.

6. Concluding remarks

This paper investigated the impact of the 2010 decentralization on household economic well-being (HEW) in Cameroon – with the decentralization variable captured as a desirability-adjusted exposure to the 2010 decentralization. We applied a pseudo panel constructed using age cohorts with the two most recent Cameroon households' consumption surveys (CHCS 2007 & 2014). Specifically, we reported fixed effects regressions, correcting standard errors for within-prefecture and age-cohort correlations using the Jackknife estimator, at the mean, and explored across colonial experiences, and across the distribution whether decentralization-induced HEW is observed.

Overall, results revealed that exposure to the 2010 decentralization was associated significantly with improvements in household economic well-being (HEW) by 2014. The labor force sample (age between 15 and 64 years old) and its corresponding sub-samples equally showed a positive and significant association between the desirability-adjusted exposure to the 2010 decentralization and household well-being. In this case, the impact of the decentralization policy on HEW was identical overall and across regions. Significant positive associations between exposure to the 2010 decentralization and household economic well-being were also recorded across percentiles, and the effect increased from the 10th to the 90th percentiles, except the dent among the median households in all the sub-samples. The general observation is that

those at the upper and lower tails of the distribution registered sizable improvements in well-being relative to the median households. These findings indicate that those who reap greater benefits from decentralization in terms of HEW are likely to be the low-income and high-income earners in society, relative to the middle class. This is symptomatic evidence of polarization in the distribution of income.

Our fixed effects estimates - correcting standard errors for correlations within prefectures and age cohorts using the Jackknife estimator revealed no significant difference in household well-being responsiveness to the 2010 decentralization policy in Cameroon between the common law and civil law regions. These findings suggest that the hypothesized difference in responsiveness between the two key regions to central government socioeconomic policy changes emanating from their colonial experiences before reunification could have been diluted through improvements in social service delivery and associated labor market opportunities.

Positive correlations were observed between the desirability-adjusted exposure to 2010 decentralization and perceptions of social service provision (from the Afro-barometer survey). In particular, favorable opinions on sewage disposal, pipe borne water, post office services, and policing were positively responsive to the desirability-adjusted exposure to the 2010 decentralization at the 1% level of statistical significance. More interestingly, access to employment, which was drawn from the pooled survey, was positively responsive to the decentralization variable at the 5% level of significance. These findings suggested that social service provision and associated labor market activities can largely be considered transmission channels linking central government socioeconomic policy changes to household incomes and well-being. Related transmission mechanisms would include the development of vocational training and support for income-generating micro projects, typically promoted by local governments.

Based on these findings: improvements in public service delivery, household incomes and general prosperity are more likely when transferred competencies are accompanied by the wherewithal; acting on what the people say would make public social policies more successful; and collecting panel data by the government's statistics office would be an important ingredient to further the type of analysis carried out in this paper. Our findings are supportive of the view that decentralization can build an enabling setting for more functions to be performed at the local level, thereby creating opportunities for citizens with technical, managerial, and leadership skills to remain in their locality and reduce the rural-urban brain drain while enhancing local capacity to manage local affairs and spearhead local prosperity and development. Thus, effective decentralization would create local jobs, and other better opportunities - such

as education, employment, health, and access to social amenities. These would favor increments in local incomes, reduce local poverty, and curb rural-urban migration.

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8. Appendices

A1: Fixed effects estimates of the impact of decentralization on household well-being – without correcting for intra-cluster correlation.

	Mean regression	**RIF regression at quantiles 10-90**				
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	overall	RIF10	RIF25	RIF50	RIF75	RIF90
Decentralization_Ratings	0.242***	0.171***	0.224***	0.118***	0.442***	0.444***
	(0.001)	(0.002)	(0.003)	(0.002)	(0.004)	(0.007)

Primary education	-0.191***	1.633***	-0.329***	-0.828***	1.174***	0.802***
	(0.006)	(0.015)	(0.016)	(0.014)	(0.025)	(0.042)
Post primary education	0.103***	0.444***	0.056***	0.449***	-0.981***	-1.625***
	(0.005)	(0.013)	(0.014)	(0.012)	(0.021)	(0.036)
Male	0.197***	1.538***	-0.287***	0.354***	1.428***	-1.948***
	(0.008)	(0.021)	(0.022)	(0.019)	(0.034)	(0.057)
Urban residency	0.866***	0.970***	0.205***	0.162***	0.790***	1.716***
	(0.007)	(0.019)	(0.020)	(0.017)	(0.031)	(0.053)
Muslim religion	0.794***	-0.128***	-4.299***	-0.099**	1.341***	0.104
	(0.018)	(0.048)	(0.050)	(0.043)	(0.078)	(0.133)
Constant	12.454***	10.687***	14.144***	12.932***	11.630***	14.312***
	(0.010)	(0.027)	(0.028)	(0.024)	(0.044)	(0.074)
Observations	21,694	21,694	21,694	21,694	21,694	21,694
R-squared (within)	0.912	0.622	0.688	0.519	0.584	0.388
Number of prefectures	58	58	58	58	58	58
Number of cohorts	18	18	18	18	18	18

Source: Computed by author using a pseudo panel based on the pooled 2007 & 2014 Cameroon household consumption surveys in STATA 17.

Notes: Standard errors in parentheses. ***, ** and * representing 1%, 5% and 10% levels of significance, respectively.

Decentralization_Ratings is desirability-adjusted exposure to the 2010 decentralization.

A2: Random effects (re) estimates of the impact of decentralization on household well-being – overall

	Mean regression	**RIF regression at quantiles 10-90**				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
VARIABLES	**overall**	**RIF10**	**RIF25**	**RIF50**	**RIF75**	**RIF90**
Decentralization_Ratings	0.242***	0.171***	0.225***	0.119***	0.438***	0.441***
	(0.005)	(0.024)	(0.014)	(0.014)	(0.022)	(0.042)
Primary education	-0.191***	1.633***	-0.323***	-0.820***	1.143***	0.772***
	(0.030)	(0.107)	(0.100)	(0.072)	(0.161)	(0.259)
Post primary education	0.103***	0.441***	0.060	0.444***	-0.951***	-1.590***
	(0.036)	(0.086)	(0.112)	(0.062)	(0.108)	(0.194)
Male	0.197***	1.533***	-0.270**	0.351***	1.454***	-1.908***
	(0.050)	(0.146)	(0.122)	(0.131)	(0.292)	(0.579)
Urban residency	0.866***	0.965***	0.232	0.169	0.780***	1.715***

	(0.035)	(0.133)	(0.144)	(0.106)	(0.195)	(0.289)
Muslim religion	0.794***	-0.136	-4.268***	-0.107	1.394***	0.174
	(0.121)	(0.409)	(0.424)	(0.303)	(0.446)	(0.693)
Constant	12.422***	10.782***	14.024***	12.916***	11.613***	14.208***
	(0.052)	(0.126)	(0.208)	(0.148)	(0.310)	(0.462)
Observations	21,694	21,694	21,694	21,694	21,694	21,694
Number of prefectures	58	58	58	58	58	58
Number of cohorts	18	18	18	18	18	18

Source: Computed by author using a pseudo panel based on the pooled 2007 & 2014 Cameroon household consumption surveys in STATA 17.

Notes: Standard errors in parentheses. ***, ** and * representing 1%, 5% and 10% levels of significance, respectively. Jackknife standard errors correcting for prefectures and age-cohorts intra-cluster correlations.

Decentralization Ratings is desirability-adjusted exposure to the 2010 decentralization.

A3: Afro-Barometer averages incorporated in the pooled survey

Regions	**variables**							
	Electricity	**School**	**Sewage**	**Piped water**	**Post office**	**Police station**	**Pay tax**	**Trust in the tax system**
Douala	0.0245	0.0369	0.0132	0.0217	0.0395	0.0033	0.0346	0.0177
Yaoundé	0.0363	0.0369	0.0217	0.0329	0.0033	0.0081	0.0351	0.0186
Adamaoua	0.0369	0.0395	0.0222	0.0369	0.0289	0.0307	0.0387	0.0247
Center	0.0369	0.0409	0.0246	0.0369	0.0308	0.0326	0.0413	0.0268
East	0.0395	0.0462	0.0267	0.0396	0.0327	0.0369	0.0419	0.0276
Extreme North	0.0465	0.0465	0.0286	0.0409	0.0369	0.0395	0.0450	0.0277
Litoral	0.0508	0.0508	0.0289	0.0465	0.0395	0.0396	0.0503	0.0279
North	0.0551	0.0575	0.0321	0.0495	0.0396	0.0404	0.0541	0.0334
North West	0.0575	0.0585	0.0329	0.0575	0.0413	0.0551	0.0544	0.0343
West	0.0585	0.0594	0.0329	0.0585	0.0575	0.0575	0.0563	0.0378
South	0.0594	0.0735	0.0495	0.0689	0.0585	0.0585	0.0586	0.0454

Southwest	0.0778	0.0778	0.0575	0.0778	0.0747	0.0778	0.0623	0.0581

A4: HAUSMAN specification test for the fixed effect (fe) vs random (re)

	1		2		3		4		5		6	
	overall		RIF regression at quantiles 10-90									
			RIF10		RIF25		RIF50		RIF75		RIF90	
VARIABLES	RE	FE	RE	FE	RE	FE	RE	FE	RE	FE	RE	FE
Decentralization* Ratings	0.242***	0.242***	0.171***	0.171***	0.225***	0.224***	0.119***	0.118***	0.438***	0.442***	0.441***	0.444***
	(0.005	(0.005	(0.024	(0.024	(0.014	(0.014	(0.014	(0.014	(0.022	(0.023	(0.042	(0.042
Primary education	-0.191***	-0.191***	1.633***	1.633***	-0.323***	-0.329***	-0.820***		-0.828***	1.143***	1.174***	0.772***	0.802***
	(0.03	(0.03	(0.107	(0.107	(0.1	(0.102	(0.072	(0.073	(0.161	(0.163	(0.259	(0.259
Post primary education	0.103***	0.103***	0.441***	0.444***	0.06	0.056	0.444***	0.449***	0.951***	0.981***	1.590***	1.625***
	(0.036	(0.036	(0.086	(0.086	(0.112	(0.114	(0.062	(0.063	(0.108	(0.112	(0.194	(0.199
Male	0.197***	0.197***	1.533***	1.538***	-0.270**	-0.287**	0.351***	0.354***	1.454***	1.428***	-1.908***	1.948***
	(0.05	(0.05	(0.146	(0.146	(0.122	(0.127	(0.131	(0.133	(0.292	(0.301	(0.579	(0.592
Urban residency	0.866***	0.866***	0.965***	0.970***	0.232	0.205	0.169	0.162	0.780***	0.790***	1.715***	1.716***
	(0.035	(0.035	(0.133	(0.134	(0.144	(0.151	(0.106	(0.11	(0.195	(0.209	(0.289	(0.297
Muslim religion	0.794***	0.794***	-0.136	-0.128	-4.268***	-4.299***	-0.107	-0.099	1.394***	1.341***	0.174	0.104
	(0.121	(0.121	(0.409	(0.408	(0.424	(0.433	(0.303	(0.306	(0.446	(0.455	(0.693	(0.689
Constant	12.422***	12.454***	10.782***	10.687***	14.024***	14.144***	12.916***	12.932***	11.613***	11.630***	14.208***	14.312***
	(0.052	(0.059	(0.126	(0.14	(0.208	(0.236	(0.148	(0.168	(0.31	(0.359	(0.462	(0.548
Observations	21,694	21,694	21,694	21,694	21,694	21,694	21,694	21,694	21,694	21,694	21,694	21,694
Number of prefectures	58	58	58	58	58	58	58	58	58	58	58	58
Number of cohort	18	18	18	18	18	18	18	18	18	18	18	18
Hausman test stat	chi2(6)= 8.18		chi2(6)= 15.82		chi2(6)= 111.49		chi2(6)= 33.00		chi2(6)= 147.37		chi2(6)= 98.85	
P-value for hausman	0.225		0.0147		0		0		0		0	
Retained model	RE		FE		FE		FE		FE		FE	

Because of the similarities in the fe and re estimates, we decided to carry out a Hausman test to see which model works best for us. The null hypothesis is that the preferred model is the re, while the alternative hypothesis indicated that the preferred model is the fe. When the P-value for the Hausman test is >0.05, we accept the null hypothesis indicating that the re model is preferred. But when the P-value is <0.05 the fe model is preferred. Test of H0 equally indicates that the difference in coefficients not systematic. In the first instance, the Hausman test makes us understand the re model is preferred but when we move further comparing from the 10th to the 90th percentile for both models, we concluded that the model is preferred for our estimates.

Source: Computed by author using a pseudo panel based on the pooled 2007 & 2014 Cameroon household consumption surveys in STATA 17.

Notes: Standard errors in parentheses. ***, ** and * representing 1%, 5% and 10% levels of significance, respectively. Jackknife standard errors correcting for prefectures and age-cohorts intra-cluster correlations. Decentralization Ratings is desirability-adjusted exposure to the 2010 decentralization.

Mission

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