Explaining the Superior Education Outcomes of Kerala

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Explaining the Superior Education Outcomes of Kerala:
The Role of State Activism and Historical Endowment

For Peer Review Only

1. Introduction

In the aftermath of the reforms in the early 1990s, there has been concerns about increasing inequality and poor human development indicators despite high economic growth in India (Singh, Das, & Agarwal, 2013; Weisskopf, 2011). This is particularly evident for educational achievements as studies show that it lags behind lower income countries like Bangladesh, Sri Lanka in most, and Pakistan and Nepal in some indicators (Drèze & Sen, 2013). For example, adult literacy rate in India between 1960 and 2010 increased from 28% to 63%. Over the same period, Nepal posted substantially higher improvement, from 9% to 60%. Similarly, youth female literacy rate (age group 15-24 years) in India was around 40% in 1980 which rose to 74% in 2010. In the same period, Bangladesh, which lagged behind India in 1980 with a figure of 27%, surpassed it in 2010 with youth female literacy rate of 78%. Nepal too recorded a better performance with this figure increasing from 15% to 78% in the same time period.

However, there exists substantial heterogeneity in this respect across Indian states. While literacy rates for several states such as Bihar, Jharkhand, Rajasthan and Uttar Pradesh among others are considerably below the national average, a systematic outlier is the southern state of Kerala, whose literacy level not only surpass rest of the nation but also some of the developed countries. The findings from the Census data collected in 2011 indicate a literacy rate of 94% in the state as against 74% at the all-India level.

Among diverse streams of literature, two main theories compete in explaining Kerala's educational performance. One attributes it to *unique historical endowment* of the Travancore Cochin (TC) region, which comprises of the south-central part of Kerala and was administratively under the control of the erstwhile Princely states of Travancore and Cochin and not a part of British India. This provided significant autonomy to the former in their internal

Comment [UR1]: Response to comment 1: In an attempt to better organize the introduction section, we are presenting an edited version of the same afresh. The content however remains the same and we have kept all the previous recommendations from the Editor, the Associate Editor and the Reviewers on the previous draft in mind.

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affairs. Here the educational policies in the Kingdoms, role of Missionaries, economic prosperity from trade and commerce emanating from a strategic coastal location created favourable conditions for educational achievements (Nair, 1976; Bhagwati & Panagariya, 2012). Notably, in addition to promoting education in the region, the princely states did initiate some egalitarian reforms like land redistribution, promoting peasant proprietors and tenant based economy with significant economic autonomy (Nair, 1976). Accordingly, it has been argued that this historical feature has been the key reason that explains the higher literacy rate in the state. We refer this school of thought as the influence of historical endowment. Of note is the fact that these reforms were restricted to the TC region and did not cover the northern part of Kerala (Malabar region), which was directly under the British administration (Madras Presidency) until India's independence. This northern part of Kerala, in the paper, is referred to as the Non Travancore Cochin (NTC) region.

The other school of thought attributes the higher mass literacy rates in Kerala to a more proactive state policy, emanating from the broad based social and political reforms post 1956, when the state of Kerala came into existence. In this period, Kerala experienced mass support for pro-poor, redistributive policies that were inclusive in implementation and arguably led to significant gains in the education sector (Drèze & Sen, 2013; Franke & Chasin, 1999; Heller, 1999; Parayil, 2000; Ramachandran, 1998).

Using Census data from 1941 to 2011 and the Employment and Unemployment rounds of the National Sample Survey Organisation (NSSO) data since 1983, this paper attempts to disentangle the role of historical endowment and proactive state policy in explaining the higher literacy rates in Kerala. More specifically, we examine the trends in literacy rates across the TC and the NTC region, which allows for systematic comparison in regions with and without the

historical endowment. This is because the NTC region, while belonging to the post-independence Kerala, was under British control before and hence not subjected to the historical educational push.¹ Furthermore, we check for spillover effects by comparing the trends in literacy rates across the NTC region with other neighboring districts of the TC region in states of Tamil Nadu and Karnataka.

Assigning causality here entails the impossible task of going back in time to randomly assign districts to administration by the princely states and the British rule. As a next best alternative, we utilise the quasi-natural experiment design emanating from the policy of redrawing of the state boundaries as per the recommendations of the State Re-organisation Commission (1956). Under the recommendations, specific districts in both, the NTC and TC regions were bifurcated and absorbed by different states. Dissimilar state policy post 1956 in these newly created districts that were previously part of the same administration and same agro-climatic zones (Khanna, 1989) allows us to identify the positive role of state activism in achieving mass literacy in Kerala. Through this, the paper introduces an important methodological innovation in a subject where most evaluations in literature have been carried out in sheer qualitative form.

Exceptional literacy rates aside, we observe a considerable difference in share of the overall population with a graduate degree or a diploma certificate across the TC and the NTC region. This observation in our view has received negligible attention in literature. We argue that this difference can be attributed to the historical endowment effect, emerging from competitive demand for higher education among the socially mobile social groups in the TC region. Though higher educational outcomes for TC are better than the NTC region, we find that the trend is opposite for the Scheduled Castes (SC), who were in general excluded from historical

Comment [u2]: Response to comment 2.
Changed in other places as well.

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endowment effect in the TC region² (Ramachandran, 1998). This could be attributed to the accentuated effects of social reforms movement in the region that was the epicenter of the social reform process. Thus, backed by empirical data and historical literature, the relevance of state activism in determining high literacy rates and yet its inability to explain the continued wedge in higher educational outcomes across Kerala is the main finding that the paper reports.

The remainder of this paper is structured as follows: Section 2 discusses the history of education policy in Kerala. Section 3 explains the data used and methodology and Section 4 discusses the findings from analysis. Section 5 concludes.

~~In the aftermath of the liberalising reforms of the early 1990s, India has been characterised by asymmetric trends in economic growth and social development. While reforms have facilitated higher economic growth, concerns about increasing inequality and poor performance in terms of human development indicators have been raised (Singh, Das, & Agarwal, 2013; Weisskopf, 2011). The scenario pertaining to education seems to be complex as we find India performing poorly vis à vis lower income countries like Bangladesh, Sri Lanka, and in some cases Pakistan and Nepal (Drèze & Sen, 2013). For example, adult literacy rate in India, which was 28% in 1960 rose to 63% in 2010, however in the same period, the figures for Nepal improved from just 9% to 60%. Similarly youth female literacy rate (age group 15-24 years) in India was around 40% in 1980 which went upto 74% in 2010. In the same period, Bangladesh started off with a much lower figure (27%) and then improved it to 78%. Nepal as well showed an increase from just 15% to 78%. This suggests that the widely acclaimed Indian growth story may not have translated into a regional advantage in literacy outcomes for the country.~~

Interestingly, there exists considerable heterogeneity in this respect across Indian states. While literacy outcomes for several states such as Bihar, Jharkhand, Rajasthan and Uttar Pradesh among others are considerably below the national average, a systemic outlier is the southern state of Kerala, whose level of educational achievements not only outperform the rest of the nation but also some of the world's developed countries. The model that Kerala followed has been hailed as the 'Kerala Development Model' (Chakraborty, 2005; Drèze & Sen, 2013), which focuses on social development through redistributive programmes and high levels of political participation and social activism.

However, it is important to note that there exists historical heterogeneity within Kerala. The state consists of a northern part (Malabar region) that was historically directly under the British administration (Madras Presidency) and a central southern part that was the erstwhile Princely states of Travancore and Cochin, that/which was not under administrative control of the British. We refer to the former region as Non-Travancore and Cochin (NTC) and the latter as Travancore Cochin (TC) region. This is further illustrated in Figure 1 that is discussed in the subsequent section. Though literature has focused on convergence of literacy rates across the TC and the NTC region in Kerala, no attempts to our knowledge have been made to empirically disentangle the role of historical endowment (pre-independence) and the social reforms movement (post-independence) policies in achieving mass literacy in Kerala and explaining the existing differences in higher education outcomes across the TC and the NTC region. This is the contribution of this paper.

Among diverse streams of literature, two main theories compete in explaining Kerala's performance. One attributes it to *unique historical endowment* of the TC region, where education policies in the Kingdoms, role of Missionaries, economic prosperity from trade and commerce

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and their interaction created favourable conditions for educational achievements (Bhagwati & Panagariya, 2012). We note that in addition to promoting education in the region, the princely states did initiate some egalitarian reforms like land distributional policies, promoting peasant proprietors and tenant based economy with significant economic autonomy (Nair, 1976). Thus, it has been argued that the central southern part of Kerala had an advantage over the northern part and rest of India at the time of independence and we refer to this as the influence of historical endowment.

A different school attributes the superior educational outcomes of Kerala to a more activist state policy, emanating from the broad based social and political reform. Kerala in this period experienced mass support for pro poor, redistributive policies that were inclusive in implementation and have been argued to explain the gains made in sectors like health and education after 1957 (Drèze & Sen, 2013; Franke & Chasin, 1999; Heller, 1999; Parayil, 2000; Ramachandran, 1998).

Using Census data from 1941 to 2011 and the Employment and Unemployment rounds of the National Sample Survey Organisation (NSSO) data since 1983, this paper attempts to disentangle the validity of both these arguments in explaining the exceptional literacy in Kerala outcomes as well as continued difference in higher education indices across the TC and the NTC regions of Kerala today. More specifically, we examine the trends in literacy rates across the TC and the NTC region that, while belonging to the post independence Kerala, was under British control before and hence not subjected to the historical education push.[†] This leads to a systematic comparison of literacy trends in territories with and without the historical endowment. Further, we check for spillover effects by comparing literacy rates across the NTC region and other neighboring districts of the TC region in states of Tamil Nadu and Karnataka.

We also utilise natural experiment emanating from the policy of redrawing of the state boundaries as per the recommendations of the State Re-organisation Commission (1956). Under the recommendations, specific districts in both, the NTC and TC regions were bifurcated and absorbed by different states. These were South Kanara that was bifurcated between Karnataka and Kerala, and Trivandrum between Kerala and Tamil Nadu respectively. Dissimilar administration and state policy post 1956 in these newly created districts, that were previously part of the same administration and same agro-climatic zones (Khanna, 1989) allows us to gauge the role of social reforms movement in achieving mass literacy in Kerala. In addition, our findings also reveal continued difference in higher education achievements internal to Kerala. These can most likely be attributed to the historical endowment effect, emerging from competitive demand for education among the socially mobile social groups in the TC region. Backed by empirical data and historical literature, the relevance of social reforms in determining high literacy outcomes and yet its inability to explain the continued wedge in higher education across Kerala is the main finding that the paper reports. However, we do note that state activism may be credited with improved higher education achievements for the Scheduled Castes (SC), who were in general excluded from historical endowment effect in the TC region².

Assigning causality in this argument entails the impossible task of going back in time to randomly assign districts to administration by the princely states of TC and the British rule. As a next best alternative, this paper relies on a quasi-experiment design with two natural experiments and a detailed review of historical literature to disentangle the positive role of social reforms in achieving superior educational outcomes. Through this, the paper introduces an important methodological innovation in a domain in which most evaluations, in the literature as it stands, are carried out in a sheer qualitative form.

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~~The remainder of this paper is structured as follows: Section 2 discusses the history of education policy in Kerala. Section 3 explains the data used and methodology and Section 4 discusses the findings from analysis. Section 5 concludes with a discussion on the findings of the paper.~~

2. History of Education Policy and Social Structure in Kerala

In 1975, the Centre for Development Studies³, in collaboration with the Committee for Development Planning, United Nations undertook a study on Kerala, which showcased the positive role of education on improved social outcomes for the state, despite low levels of income (per capita consumption expenditure). This experience illustrates the possibility of achieving improved social outcomes, without exclusive reliance on high income levels (Chakraborty, 2005). In the light of this, the history and evolution of social structure in the state deserves special attention. The educational achievements of Kerala are rooted in the amalgam of cultural aspects specific to the state, historical educational policy pursued in its central-southern parts (TC) and social reforms movement that started in the NTC region and spread to the southern part of Kerala in the post independence era. These are now discussed in turn. ~~in unified Kerala in the post independence era. The latter two in turn were shaped by socio-economic and political factors in the central southern part (TC) and the entire state of Kerala at distinct point of time, respectively and are discussed in turn.~~

2.1 Historical Endowment: Policies in different regions of Kerala in the Pre Independence era

Prior to Independence, expansion of education and literacy was predominantly associated with the Kingdom of TC or the central-southern part of Kerala. The emphasis on education in Travancore is evident from the Royal Rescript of 1817 issued by the Queen of Travancore, addressed to the Dewan Peishkar (head of government) of Quilon. As per this memorandum

“The state should defray the whole cost of education of its people, in order that there might be no backwardness in the spread of enlightenment among them; that by diffusion of education, they might become better subjects and public servants, and that the reputation of state might be advanced thereby.” The memorandum provided support to village schools with each school mandated to have two teachers, one well versed in Malayalam and Astronomy and the other in Tamil and Arithmetic, who were to be paid from the Treasury and be regularly inspected by the revenue officials (Tharakan, 1984).

Apart from the intrinsic importance assigned by Travancore, education policy was also inadvertently shaped by the vision of Colonel Munro, the British Resident⁴ (1810-1819) who desired a modern administrative structure for British India and its allies. His vision was one of well defined administrative divisions and independence of military and judicial powers from the revenue department. This was to be achieved by a well trained cadre of officials. This idea was also encoded in Macaulay’s recommendations, which exclusively promoted secondary and higher education at the cost of primary education (Nair, 1976).⁵ This requirement destroyed the indigenous system in Malabar (and most of India) long before the Western system could expand and provide access to education to the masses (Nair, 1976). This however had an opposing effect for the TC region, whose autonomous status ensured that ~~as~~ the administrative and judicial language continued to be ~~was~~ Malayalam and not English. Thus, the indigenous schools, which were present in almost every village and where medium of instruction was vernacular, remained relevant and were not uprooted. ~~They~~ ~~were~~ in fact upgraded to incorporate modern curriculum later ~~and there was no break in education tradition~~ (Tharakan, 1984). Also, educational eligibility conditions were introduced for government jobs and this eroded the powers of the

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traditional elites and their hold on government policies. Education thus became a matter of prestige across certain communities in Travancore (Tharakan, 1984).

Moreover, demand for administrative officials also swelled as the revenue department expanded, particularly after the government’s takeover of 348 major and 1171 minor temple administration in Travancore. With access to these vast properties, [the state of](#) Travancore started more ~~government~~ schools [that were run by –the Princely state](#) (particularly in the second half on the nineteenth century) and provided liberal grant-in-aid to private schools. Though the role of [these government](#) schools and grants to private schools cannot be overlooked, by the start of the twentieth century there was extensive presence of private unaided institutions that stemmed from demand for education in the society. By 1901, in Travancore for example, share of private unaided institutions in number of schools and that of students was 62.9 % and 47.4 %, respectively (Tharakan,1984).

Lure of administrative jobs alone cannot explain the lead in literacy enjoyed by the TC region. Critical factors that explain these are as follows:

Though government schools in Kerala remained open to lower castes and woman in theory, the actual participation from these segments in schools was negligible. This void in Travancore was partially filled by the entry of Protestant Missionaries, particularly the London Missionary Society (LMS) in South Travancore and the Church Missionary Society (CMS) in North Travancore. These focused on education of certain though not all lower caste communities and women, particularly from castes like Shanars, Pulayas and Izhavas (Tharakan, 1984; Ramachandran, 1998). For example, the first girls school in Travancore was established in 1818 at Kottayam and a pamphlet titled “Advantages of Female Education” was printed by LMS Press

and distributed free of cost at Nagercoil in 1819. Moreover, with a desire to reach the masses, the medium of instruction in these schools was vernacular until the fourth standard. As its curriculum was more suited to training for the Civil Services, this fostered competition for quality education among different communities. An example of this is the emergence of the Nair Service Society (NSS) which supported education of a community (Nair) that was wedged between the traditional elites like Brahmins (upper caste) and sections like the Ezhavas, Shanars and the so called “slave” castes who had access to missionary education. Moreover, this promoted further competition in education that emerged from founding of organisations like Shree Narayana Dharma Paripalana Yogam (SNDP) in 1903 that led to establishment of education institutions for the Ezhavas (Ramachandran, 1998; Gopalakrishnan, 1973; Nair, 1976; Mathew, 1999). With increasing demand for education, indigenous schools were supported by the government and upgraded to match the modern education system. This encouraged the entry of Missionary schools as well (Tharakan, 1984).

These gains were further buttressed by the interventionist stance of the state in the second half of the nineteenth century. The government expanded the number of primary schools, particularly for girls, and revised the content and methods of teaching in indigenous schools to keep them at par with grant-in-aid schools. The support for vernacular as the medium of instruction was further strengthened in the period which is evident from organisation of a Book Committee in 1867 that translated and brought out 12 fresh titles from both Sanskrit and English. For grant-in-aid schools, special inspector was appointed for supervision and the grant was conditional on the institutions following the curriculum and books prescribed by the government schools. This was particularly useful in keeping missionary school education secular in character (Tharakan, 1984).

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In the second half of the nineteenth century access to land was provided to certain non-elite communities. This was done by converting wastelands to agricultural land and giving away abandoned land to whosoever was willing to cultivate. This gave the ability to the lower castes (like Ezhavas) to acquire land on lease for the first time. However, it is broadly agreed that measures like these were limited in scope and agrarian relations in the region remained largely exploitative (Ramachandran, 1998). In Malabar, landlords charged exorbitant rents and could evict a tenant at will. In Cochin, these conditions were better as the unoccupied wasteland was not under the ownership of traditional landlord (Tharakan,1984; Nair, 1976). These measures however opened land markets for certain communities and created a class of peasant proprietors in the Travancore. Nevertheless, these were by no means full-fledged land reforms as experienced in the post reforms period.

The economic surplus for Travancore also expanded in the period due to commercialisation of agriculture and trade in spices and plantation (Tharakan, 1984). Subsequently, industries like spinning, weaving of cotton and choir added to economic prosperity of the region. Infrastructure such as roads, waterways, irrigation works, bridges, ports among others developed as well and all these factors facilitated job creation but required basic level of education (Nair, 1976). With jobs in the private sector tied to the ability in reading, writing and basic arithmetic for book keeping, basic literacy became a desired commodity for certain communities in the region (Tharakan, 1984). This demand was fulfilled not just by the government but also by missionaries and organisations like NSS and NSDP (Ezhavas) among others.

Though education policy in the region was oriented to benefit certain communities, the case of women’s education deserves particular mention. Social fabric in Kerala through distinct

matrilineal traditions in marriage and inheritance provided a favourable social environment for women to be at the forefront of gains made in health and education (Ramachandran, 1998; Simister, 2011). The position of women and strengthening of their education further supported mass literacy in Kerala. This is perhaps a critical reason why Kerala progressed to mass literacy levels, leaving behind other princely states like Baroda which had comparable literacy rates in the pre-independence era but did not focus on literacy for women (Jeffery, 1978). Thus, socio-cultural practices alongside state support, particularly in the latter half of the nineteenth century were crucial in promoting women's education in TC region.

Despite these measures, adult male and female literacy rate in the TC region was still below 25% and 5% by the end of the nineteenth century, respectively. This was nowhere near the mass literacy levels observed in the state in the second half of the twentieth century and hence as Ramachandran (1998) argues, mass literacy cannot be attributed to historical endowment. In this paper, we present a systematic empirical justification of this argument and further look at the reasons for differences in higher educational outcomes across the state and exclusion of vulnerable social groups from this process in particular. ~~Despite this, the role of historical endowment in fostering competitive demand for education across certain social groups in the TC society, and particularly for women needs to be recognised.~~

Comment [UR3]: IN response to comment 3. This statement is covered later in analysis and placing it here alongside mass literacy achievements is causing confusion.

2.2. Social Reform Movement and the Post-Independence era

The Northern part of the present Kerala, the Malabar (~~what we refer to as NTC in this paper~~) was a part of the erstwhile Madras Presidency, which came directly under the administrative control of the British and lagged behind the TC region in literacy metrics. This part is what we refer to as NTC in this paper. However significant gains in mass literacy were made in unified Kerala under the aegis of the Communist party in the post independence era. Malabar, which witnessed the

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agrarian rebellion of 1921, became the epicenter of the left leaning and later, the Communist movement in Kerala. This rebellion which comprised of peasants and agricultural workers working under extremely exploitative relationships was mainly aimed against the janmi landlords and revenue officials. ~~Movement in 1921 comprised of peasants and agricultural workers who worked under extremely exploitative relationships. The rebellion was mainly aimed against the janmi landlords and revenue officials.~~ In the post independence era, these sprouted into widespread public action movements and included students, teachers, womens' group and active participation of the socially backward communities. These public action movements included legislations, agitations against the existing norms of the society that were oppressive such as the caste system and the extractive agrarian relations. Given these conditions, it has been argued that reforms had an extensive egalitarian and empowering effect in the NTC region (Ramachandran, 1998; Lieten, 2002).

Social reforms movement in Kerala commenced in 1957 when an ordinance was passed that made evictions illegal and restored tenancy to those who were evicted post formation of Kerala. Moreover, the rights of janmi landlords were acquired by the government and tenancy legislations that provided land to the tiller were initiated (Ramachandran, 1998; Lieten, 2002; Oommen, 1994). In addition, land ceiling was imposed at the household level based on membership with an upper limit of 25 acres. These series of actions culminated into radical laws in form of the Kerala Agrarian Relations Bill that was approved in 1959 and led to dismissal of the democratically elected government of Kerala by the Central Government. Eventually, a struggle ensued and led to the promulgation of the Kerala Agrarian Relations Act of 1964, which was part of the Ninth Schedule of the Indian Constitution and hence outside the jurisdiction of the Indian judicial system. These redistributive traditions continued in subsequent years and were

further buttressed by legislations such as the Kerala Agricultural Workers' Act of 1975 that aimed at providing social protection and improvement in working conditions of the agricultural workers. The egalitarian socio-economic structure was not top down but was demand driven as is evident from the support for redistributive policies like the land reforms and the public distribution system that were popular irrespective of whether the government headed by the Communist Party of India (Marxist) (CPI(M))⁶ was in power or in the opposition (Ramachandran, 1998; Herring, 1980). Thus, reforms are often credited for educational achievements of Kerala (Ramachandran, 1998).

In general, role of social reforms go beyond its contribution to literacy. These are characterised by two factors in particular. First, attention for *redistributive policies* has characterised Keralan governments since the early days (Suryanarayana, 2001; Véron, 2001). Policies oriented to redistribution of resources, as well as programmes largely tailored to satisfaction of basic needs for the poor. Maintaining a strong pro-poor system made it possible for the state to focus on its vulnerable citizens, and guarantee universal assistance in the achievement of basic needs, including education (Franke & Chasin, 1999; Parayil, 2000). The second factor lies in the creation of a *political conscience*, based primarily on the awareness of people's rights (Heller, 1996; Véron, 2001; Singh, 2011). This strategy is deeply entrenched in the logic of active citizenship that marked the hegemony of the CPI(M). The party's moral guidance was based on people's awareness of their rights, and on proactive construction of their capabilities to take action for these to be guaranteed (Heller, 1999). Still today, another feature making Kerala different from India at large is the strength of its civil society: a plethora of social movements operate within the state (Varshney, 2001), and development is now focused on exploiting synergies between these organisations, the state, and local government bodies (Véron,

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2001). A politically aware population, in the context of creation of a framework for service provision, was of paramount importance to put pressure on frontline providers, and ensure proper functioning of the educational apparatus as well as equitable access to it.

In this paper we ask empirically how valid are the theses of historical endowment and state activism in terms of explaining superior educational outcomes in Kerala? The epistemic trigger behind the question lies in the lack of data-based method to assess the strength of the two explanations, which need historical disambiguation to better understand the events that led to Kerala’s superior outcomes in achieving mass literacy and continued difference in higher education indices across TC and NTC region. Doing so requires combination of previously presented historical narratives with data that reflect the state’s educational outcomes.

3. Data and Methodology

We use data on literacy rates from the Census of India for districts belonging to Kerala and those from the neighboring states of Karnataka and Tamil Nadu for the period 1941 to 2011. To study differences in higher education indices that remain, and look at status for women and SCs, we use the Employment-Unemployment rounds from NSSO data for the years 1983, 1993-1994, 2005-2006 and 2011-2012 conducted by the Government of India.

To identify regions and facilitate comparison, we first divide the modern state of Kerala (as carved out in 1956 and before) into three segments for all census and NSSO rounds based on the Administrative Atlas provided by Census of India. These regions are TC, NTC and a relatively small ambiguous region that consists of Palakkad and Thrissur districts. Districts emanating out of the first two regions have always remained fully within the historical TC and NTC classification. We note that the ambiguous category has not been consistently part of one

category (TC or NTC region) up to 2011 census, and hence it has been left out of the analysis⁷.

We also identify the bordering districts of Karnataka and Tamil Nadu to facilitate comparisons.

In addition to the region of TC, the state of Kerala, as carved out by the States Re-Organisation Act (1956) - which reworked boundaries of India into states on linguistic lines- included parts of South Kanara and Malabar (NTC). ~~It was separated from the Madras Presidency and was not part of the TC region, but that of the British Empire, which were separated from the Madras Presidency but were not part of the TC region, but part of the British Empire.~~ Hence, the NTC region was beyond the positive influence of the education policy, ~~which was~~ pursued by the princely states of TC. However, the TC and NTC regions were both part of the post-Independence social and political reforms movement. Thus, the progression of NTC vis-à-vis TC region presents valuable insights into the debate on explanatory theories based on endowment and activism. The districts lying in the TC and NTC regions along with their neighboring districts are presented through a map (Figure 1).

[Figure 1 here]

To test if mass literacy achievement in Kerala can be attributed to the Social Reforms Movement, we first compare the historical literacy trends between TC and the NTC region. As argued before, though both these regions were part of the reforms movement, the latter did not experience historical endowment effect. To further see the effects of the reforms movement, we compare NTC region with its neighbouring districts in Karnataka and Tamil Nadu and do the same for the TC region. Even if these comparisons reflect superiority and convergence in literacy indices for TC and NTC as against their neighbours, one may argue that historical spillover effects of superior educational outcomes of the TC region are responsible for higher outcomes in the NTC parts and not the reforms. The idea stems from the fact that researchers have often

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argued that education or human capital accumulation has positive externalities in the sense that they have spillover effects on the peers and neighborhoods in different context (Jacobs, 1969; Lucas, 1988; Topa, 2001). On similar lines of argument, one may observe that the positive educational interventions implemented by the princely states of TC may have spillover effects on the NTC region, and hence it is influential in improving literacy rates in these parts. However, if this was the case, then same phenomenon should have been observed for the bordering districts of TC region in Tamil Nadu. Thus, for robustness check, we compare trends in literacy between the NTC region and other neighbours of the TC region.

Despite these comparisons, it still might be argued that the positive outcomes occurred due other confounding factors and not particularly due to social reforms. To account for these, we attempt to enumerate other plausible explanations (administration, agro-climatic zones and agrarian relations) and use ~~a~~-quasi-natural experiment design to control for these and get closer to assessing the casual impact of social reforms on educational outcomes for Kerala. These ~~natural~~-quasi- experiments were facilitated by the bifurcation of districts into separate states under the States Re-Organisation Act (1956). Prior to re-organisation, South Kanara was one unified district in Madras Presidency. This was subsequently bifurcated with the Northern part going to state of Mysore (present day Karnataka), and the Southern part going to Kerala towards formation of the district of Cannanore. Thus, before 1956, these two regions were part of the same administrative district and agro-climatic zone (Khanna, 1989), and hence a range of factors but not all, can naturally be controlled for. We note that Kerala and its neighboring districts in Karnataka and Tamil Nadu predominantly fall under the Western Coastal Plains and Ghats (Zone XII) in terms of agro-climatic zone divided on the basis of similar conditions of temperature, rainfall, nature of soil, crops among others as per the Agro-climatic Regional Planning Project

(Khanna, 1989) and were mainly agrarian economies⁸. Post bifurcation, the southern part was influenced by the reforms movement of Kerala, while the northern part was excluded from it. Similarly, with re-organisation of states, Kanniyakumari from Trivandrum (now Thiruvananthapuram) went to Tamil Nadu. Thus, Kanniyakumari, though exposed to the historical endowment was directly excluded from the social reforms movement in Kerala. Hence, district wise comparison in these two cases gives us critical insights on the possible implications of these movements on education policy in Kerala.

~~Fe~~We also check for possible effects of historical endowment via generating competitive demand for higher education across certain segments. For this, we compare TC and the NTC region on basis of the percentage of individuals who are of age 25 years and above and whose general education level is above higher secondary (~~usual~~ completion age of which is around 17-18 years) using the 38th (1983), 50th (1993-1994), 61st (2005-2006) and the 68th (2011-2012) NSSO rounds. We use this as a proxy for higher education. This includes all individuals with a diploma/certificate course, or who at least hold a graduate degree⁹. Given that the reforms movement took roots in the NTC region, differences, if any in favour of the TC region may be attributed to competitive demand for education that was achieved via historical endowment. We note that the social reforms post 1956-of 1957 was founded on movements like the Agrarian Rebellion of 1921 and hence social policies in the NTC region were more egalitarian as against the TC region (Ramachandran, 1998). Given that historical endowment effect focused on education of women among others but not so for many 'backward sections', we make similar comparison for women and SCs in the region. This helps in identifying whether the benefits were shared equally across different social groups.

4. Quantitative Findings:

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Mass Literacy, role of Social Reforms Movement and Differences in higher education

To capture the influence of ~~social reforms state policy and activism post reforms~~ on mass literacy, we plot time series ~~decadal~~ data for two indicators: overall literacy rates (LR) and Female Literacy Rates (FLR), for the period 1941 to 2011. ~~We do the same for Female Literacy Rates (FLR), charts for which are available on request.~~

We first compare aggregated literacy figures for the region under the erstwhile princely state of TC with other regions in the state of Kerala (NTC). We note here that prior to independence, only the former was influenced by historical endowment whereas both were influenced by the reform process in the post independence era. Figure 3 shows the plots of LR for TC, NTC and their respective neighbouring districts. From the figure it is evident that TC enjoyed a lead over NTC in the pre-independence era, which can most likely be explained by historical endowment. In the post reforms era, both TC and NTC show exceptional growth in literacy rates, which converge over time. This steady growth must also be seen in light of the natural limit to literacy rates (100%) that makes sustained improvements closer to this limit harder to achieve. Figure 3 also facilitates comparison of LR for both the TC and NTC regions with their respective neighbouring districts. Interestingly, LR for both these sets were converging with their neighbours until 1961 diverged thereafter, and continued to do so up to 1991. Moreover, The positive effect of reforms in establishing mass literacy rates in Kerala must also be seen in the light of neighbouring districts in Tamil Nadu and Karnataka (Kanyakumari, Tirunelveli, Coimbatore, Dindigul, Theni, Virudhunagar) being one of the better performers in literacy indices at all India level. Data for FLR suggest a similar trend (Online Appendix, Figure 3A) ~~and are available on demand~~. We also note that both LR and FLR for the TC and the NTC region accelerate as against their neighbours in the post reforms era. Moreover, from Figure 4 it

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is evident that the literacy gap (male-female) records a steep decline in the post reforms era in Kerala as against its neighbours. This is consistent with the literature discussed previously where social reforms cut through the chains of gender and other biases and were oriented to focus on women and other vulnerable sections of society. This further gives credibility to the thesis of state activism. Figure 4 also demonstrates relevance of historical endowment as the decline in gender gap, despite a higher base is steeper for the TC region, where status of women was better as against the NTC region. Interaction of this socio-cultural context with reforms is likely to have accelerated the decline in gender gap for the region.

[Figure 3 here]

[Figure 4 here]

For robustness check, we also verify for spillover effects. As argued in Section 3, if LR in NTC were a result of a spillover of human capital and its desirability as against the reforms movement, then such an effect should have been uniform in its spread across NTC and other neighbours of TC region (Karnataka and Tamil Nadu). However, in figure 3 and 4 we see a divergence in LR and LD across these two regions up to 1991. This further strengthens the case of reforms movement in achieving mass literacy rates with increasing gender balance in Kerala.

We note that it might be argued that historical endowment effect subsequently influenced the reform in Kerala and in this way was a necessary condition for the success of the latter. To test this hypothesis, we rely on the quasi-experiment design, where we look at the two cases where districts under common administration and agro-climatic region were bifurcated under the recommendations of the State Re-organisation Committee, which reorganised state boundaries in India on linguistic lines. First, we compare districts of Cannanore (currently Kasargod and Kannur in Kerala) and South Kanara (Karnataka), that were both part of a common district in

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Madras Presidency in the pre-independence era. Though both these districts were excluded from the influence of historical endowment effect, the former experienced social reforms by virtue of being part of post independent Kerala. Post the social reforms, literacy in the former region grows at a higher rate as against the latter region and this trend persists until 1981 (Figure 5). For both these regions, the growth tapers off once literacy rates reached around 70 %. This is expected as the variable has an upper limit and marginal gain at higher levels becomes difficult to sustain. Also, LR for both the regions converges with the larger group of districts in which they are categorised, Cannanore with NTC and South Kanara with neighbours of NTC, respectively. We observe a similar trend for FLR for these regions ([Online Appendix, Figure 5A](#)). ~~(available on demand).~~

[Figure 5 here]

Second, we look at the comparison between Trivandrum and Kanniyakumari, both of which were parts of the same administrative district (consolidated Trivandrum) prior to independence but subsequently bifurcated, with Trivandrum being absorbed by Kerala and Kanniyakumari by Tamil Nadu. Thus, the direct influence of Kerala's reforms movement post 1956 was restricted to only Trivandrum and not Kanniyakumari, whereas both were influenced by historical endowment effect. As indicated in Figure 6, post 1961, Trivandrum overtakes Kanniyakumari and stays above it for all subsequent periods in terms of LR ~~and FLR~~. [We observe similar trend for FLR \(Online Appendix, Figure 6A\)](#). Importantly, Kanniyakumari is ~~one~~ [among](#) ~~of~~ the leading districts in literacy indices in Tamil Nadu, which [in turn](#) is one of the best performers across Indian states. For example, as per the 2001 Census figures, LR for Tamil Nadu was about 65%. The corresponding figure for Kanniyakumari was 78%. Similarly, for the 2011

Census, LR for Tamil Nadu was about 72%, whereas the corresponding figure for Kanniyakumari was 83%.

[\[Figure 6 here\]](#)

In both these cases, districts that were under common district administration and agro-climatic zones (Khanna, 1989) part were later bifurcated and hence many factors other social reform movement must have been similar and hence are automatically controlled for. Any subsequent divergence in literacy indices could be ascribed to the differences in policies adopted by the respective states and local administration, which allowed us to disentangle the effects of social reforms and historical endowment effect. Thus, using a variety of cases which can control for many of the factors that may have an impact on literacy rate that are otherwise not possible to control, we find a definite role of the social movements backed by the government of Kerala in achieving mass literacy in the state. We do however acknowledge the limitation of this quasi-experiment design. In addition to common agro-climatic region and district administration, there could be other potential confounding variables which when combined with paucity of data make these effects difficult to disentangle.

[\[Figure 6 here\]](#)

It is worth mentioning that one may argue that emigration rate in the Gulf region is high in Kerala because of which the literacy rates given in the Census 2011 might be an underestimate, especially when the literate individuals are more likely to migrate (Zachariah and Rajan, 2015). We have tried to look at the enumerators guidelines for the Census survey and found that if a person is not enumerated elsewhere, he/she should be enumerated (Government of

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India, 2011). Since migrants in Gulf cannot get themselves enumerated, it is likely that they have been enumerated in their home district and hence our estimates are likely to be valid.

Despite the contribution of social reforms in establishing mass literacy in Kerala (TC and NTC region), there exists a wedge between higher education indices between TC and NTC till date. As demonstrated in Table 1, share of proportion of population above 24 years with general education level above higher secondary, which is used as a proxy of higher education remains substantially higher for TC as against NTC region even in 2011. Given the socio-cultural context and women’s status, we find this to be true also for females above the age of 24 years. This result should be seen in light of women along with other groups being at the forefront of the reforms process which gained strength in the NTC region. Thus, sustained lead of TC against the NTC region in higher education metrics, particularly for women suggest a positive role of historical endowment for women. However, from the same table, it is evident that SCs as a larger group was largely excluded from the gains of historical endowment, though it did benefit some specific communities within, like the Ezhavas. Though the overall share of SC graduates in the population remains small across Kerala, we do note that the SC community in NTC region, overtook the TC region in this metric by 2004-2005.

[Table 1 here]

5. Conclusion

In this paper we have explored the two main competing explanations for Kerala’s educational achievements, ~~exemplified by its sustained performance on achieving mass literacy in the state.~~ One school of thought attributes Kerala’s performance to historical endowment effect whereas a different view argues ~~in favour of that~~ state led activism and interventions, starting from ~~state~~ creation of Kerala independence in 1956 and the social reforms that ensued. Using district-level

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census data from 1941 to 2011, this paper looks into the validity of both the claims for explaining superior educational outcomes in Kerala. We find that achievement of mass literacy with gender balance in Kerala is explained by reforms driven state activism, the post-independence reform process which was not just restricted to education. However, it is equally true that Unlike convergence in mass literacy across the TC and the NTC regions however, continued difference in higher educational outcomes between the two regions can the reforms by themselves are unable to explain the existing overall wedge in higher education achievements between TC and NTC regions. This can most likely be explained by competitive demand for education across upwardly mobile communities, which was an integral component of the or historical endowment effects. Though there has been a non-negligible difference in higher education rates across the two regions. However, we find that given that we see graduation rates among the SC's in the NTC region remained close to the TC region and overtook it take those in the TC region by the turn of the twentieth century. As argued before, the roots of the social reforms movement can be traced back to the agrarian rebellion in the NTC region which experienced active participation from the SC community. the SCs Thus, the superior higher educational outcomes for SC's in NTC areis suggestive of the continued importance of the social reforms movement in negating a historical bias against the backward section sections of the society. in higher education, the role of social reforms in negating the historical bias against the vulnerable social group cannot be undermined.

As against its literacy rates, Despite these efforts, it should be noted that the overall performance of Kerala in higher educational indices- condition of higher education in Kerala- is far less impressive. Despite Kerala faring better in terms of Gross Enrollment Ratio (GER) in higher education for 18 to 23 years than the all-India figures in 2011-12 (23.1 as against 20.4

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respectively), ~~it's the~~ performance is worse than many states including the south Indian states of Karnataka, Tamil Nadu and Andhra Pradesh among others (Government of India, 2013). Even among SCs, the GER in Kerala is found to be lower than Andhra Pradesh and Tamil Nadu though marginally higher than Karnataka. This demonstrates that even though mass literacy is a necessary condition for higher educational achievement, it is not a sufficient one. In an environment where employability is being increasingly linked with higher education in India, this is a matter of concern and merits urgent attention.

~~Hence it~~In Kerala's context, it is imperative that the focus should now shift to higher education ~~in Kerala~~. Kodoth (2010) points out that there has been negligible expansion in the facilities of public funded institutes of higher education in Kerala, which has restricted access of not only marginalised students but of those from other socio-economic groups as well. As demonstrated with the success in basic education, the state must take necessary action to ease the bottlenecks that discourage students to enroll in higher education and increase its demand across different segments of the society. Furthermore alongside long term measures should be adopted that can reduce the constraints and facilitate increased demand for higher education across different segments of the society. ~~As Kodoth (2010) points out, there has been negligible expansion in the facilities of public funded institutes of higher education, which has restricted access of not only marginalised students but of those from other socio-economic groups as well. Hence it is important that experience of Kerala in achieving mass literacy should be used in improving the situation in terms of higher educational outcomes and derive optimal benefits of providing basic education to all.~~

Notes

1. We note here that current South Kanara or Dakshin Kannada refers to a current district in state of Karnataka, which was part of the erstwhile Madras Presidency in pre-independence era and included Cannanore (in Kerala) that was subsequently divided into Kasargod and Kannur districts. Similarly, Trivandrum or Thiruvananthapuram refers to the same district in TC region in the pre independence era, where this also included the current district of Kanniyakumari, which became part of state of Tamil Nadu post-independence.
2. Castes are groups that were historically formed primarily on the basis of occupation. SCs were considered untouchables and among the most vulnerable social groups in India. For more information please refer Despande (2011).
3. Centre for Development Studies is an advanced research institute in India established in 1971. Please visit the website <http://www.cds.edu/> for more information.
4. British Residents were appointed by the East India Company to keep a watchful eye in day to day administration of the ally states, particularly revenue collection and monitor restriction on military.
5. Macaulay's minutes in 1835 were the cornerstone of British education policy in India. As per the recommendations, western science and education with English as a medium of instruction was propagated at cost of education in Sanskrit and Arabic. The focus was predominantly on secondary education with complete neglect of primary education.
6. For more information on CPI(M), refer to <http://www.cpim.org/> (Last accessed on March 26, 2018).
7. For 2011 Census, NTC districts include Kasargod, Kannur, Wayanad, Kozhikode, Malappuram. TC region includes Ernakulam, Idukki, Kottayam, Alappuzha,

Pathanamthitta, Kollam, Thiruvananthapuram. Ambiguous region includes district of Palakkad, Thrissur.

8. We note here that a small part (Tirunelveli district) partially falls under Agro-climatic zone XI, Eastern Coastal Plains and Hills. The mean temperature, humidity and rainfall levels are in comparable range to zone XII (Western Coastal Plains and Ghats) and cultivate similar staple crops like rice and oilseeds. Nonetheless, these are inherently different Agro-climatic zones based on natural endowment.
9. We note that for the 38th and the 50th NSSO rounds, general education has no category for Diploma. Thus, for these we only consider the share of population who were atleast graduates. Also, given non-availability of district wise data for the NSSO data in 1983 and 1993-1994, we base our analysis for these years on regions where we include Thrissur in TC and Palakkad in NTC.
10. The World Economic Forum publishes the Human Capital Report that in 2016 ranked 130 countries on wide ranging parameters related to human capital. Further details are publicly accessible at <http://reports.weforum.org/human-capital-report-2016/>

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For Peer Review Only

Figures

District Boundaries

Figure 1: District boundaries in Kerala and the neighboring districts in Karnataka and Tamil Nadu (North to South)

Notes: Non Travancore-Cochin Districts are Kasargod, Kannur, Wayanad, Kozhikode, Malappuram. Ambiguous Districts includes Palakkad, Thrissur. Travancore-Cochin Districts include Ernakulam, Idukki, Kottayam, Alappuzha, Pathanamthitta, Kollam, Thiruvananthapuram. Neighboring districts of NTC are Dakshina Kannada, Mysore, Chamarajanagar, Kodagu, Nilgiris. Neighboring districts in TC include Coimbatore, Dindigul, Theni, Virudhunagar, Tirunelveli, Kanniyakumari, Tiruppur.

Source: Census of India, 2011

Figure 2: Location of Quasi-experiment district on the map of Kerala
Source: Census of India, 2011

Figure 3: Historical Literacy Rates in Travancore Cochin, Non Travancore Cochin and Neighbourhood Districts
Source: Census of India

Figure 4: Historical Literacy Difference (Male-Female) in Travancore Cochin, Non Travancore Cochin and Neighbourhood Districts
Source: Census of India

Figure 5: Literacy Rates from [Quasi-Natural Experiment](#) for Cannanore and South Kanara
Source: Census of India

Figure 6: Literacy Rates from [Quasi-Natural Experiment](#) for Trivandrum and Kanniyakumari
Source: Census of India

Table 1: Share above the age of 24 who have Diploma or Graduate Degrees

Regions	1983	1993-1994	2004-2005	2011-2012
Overall Population				
TC	2.99	4.73	15.11	18.14
NTC	1.32	2.99	6.59	6.99
Shares for Women				
TC	2.42	3.32	13.82	16.79
NTC	0.66	1.67	5.53	4.45
Shares of Scheduled Castes				
TC	0.49	0.91	4.28	5.55
NTC	0.00	0.04	4.54	6.27

Note: For the NSSO 50th (1993-1994) and 38th (1983) rounds, district wise data is not available. We rely on regions defined to approximately demarcate TC and NTC regions. Here, Trichur is included in TC and Palakkad in NTC, though both these are ambiguous regions for rest of the analysis. Also, for the same rounds, diplomas are not considered in general education achievement though these are included in the latter rounds.

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Explaining the Superior Education Outcomes of Kerala:
The Role of State Activism and Historical Endowment

For Peer Review Only

1. Introduction

In the aftermath of the reforms in the early 1990s, there has been concerns about increasing inequality and poor human development indicators despite high economic growth in India (Singh, Das, & Agarwal, 2013; Weisskopf, 2011). This is particularly evident for educational achievements as studies show that it lags behind lower income countries like Bangladesh, Sri Lanka in most, and Pakistan and Nepal in some indicators (Drèze & Sen, 2013). For example, adult literacy rate in India between 1960 and 2010 increased from 28% to 63%. Over the same period, Nepal posted substantially higher improvement, from 9% to 60%. Similarly, youth female literacy rate (age group 15-24 years) in India was around 40% in 1980 which rose to 74% in 2010. In the same period, Bangladesh, which lagged behind India in 1980 with a figure of 27%, surpassed it in 2010 with youth female literacy rate of 78%. Nepal too recorded a better performance with this figure increasing from 15% to 78% in the same time period.

However, there exists substantial heterogeneity in this respect across Indian states. While literacy rates for several states such as Bihar, Jharkhand, Rajasthan and Uttar Pradesh among others are considerably below the national average, a systematic outlier is the southern state of Kerala, whose literacy level not only surpass rest of the nation but also some of the developed countries. The findings from the Census data collected in 2011 indicate a literacy rate of 94% in the state as against 74% at the all-India level.

Among diverse streams of literature, two main theories compete in explaining Kerala's educational performance. One attributes it to *unique historical endowment* of the Travancore Cochin (TC) region, which comprises of the south-central part of Kerala and was administratively under the control of the erstwhile Princely states of Travancore and Cochin and not a part of British India. This provided significant autonomy to the former in their internal

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3 affairs. Here the educational policies in the Kingdoms, role of Missionaries, economic prosperity
4 from trade and commerce emanating from a strategic costal location created favourable
5 conditions for educational achievements (Nair, 1976; Bhagwati & Panagariya, 2012). Notably,
6 in addition to promoting education in the region, the princely states did initiate some egalitarian
7 reforms like land redistribution, promoting peasant proprietors and tenant based economy with
8 significant economic autonomy (Nair, 1976). Accordingly, it has been argued that this historical
9 feature has been the key reason that explains the higher literacy rate in the state. We refer this
10 school of thought as the influence of historical endowment. Of note is the fact that these reforms
11 were restricted to the TC region and did not cover the northern part of Kerala (Malabar region),
12 which was directly under the British administration (Madras Presidency) until India's
13 independence. This northern part of Kerala, in the paper, is referred to as the Non Travancore
14 Cochin (NTC) region.

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17 The other school of thought attributes the higher mass literacy rates in Kerala to a more
18 proactive state policy, emanating from the broad based social and political reforms post 1956,
19 when the state of Kerala came into existence. In this period, Kerala experienced mass support for
20 pro-poor, redistributive policies that were inclusive in implementation and arguably led to
21 significant gains in the education sector (Drèze & Sen, 2013; Franke & Chasin, 1999; Heller,
22 1999; Parayil, 2000, Ramachandran, 1998).

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25 Using Census data from 1941 to 2011 and the Employment and Unemployment rounds of
26 the National Sample Survey Organisation (NSSO) data since 1983, this paper attempts to
27 disentangle the role of historical endowment and proactive state policy in explaining the higher
28 literacy rates in Kerala. More specifically, we examine the trends in literacy rates across the TC
29 and the NTC region, which allows for systematic comparison in regions with and without the

historical endowment. This is because the NTC region, while belonging to the post-independence Kerala, was under British control before and hence not subjected to the historical educational push.¹ Furthermore, we check for spillover effects by comparing the trends in literacy rates across the NTC region with other neighboring districts of the TC region in states of Tamil Nadu and Karnataka.

Assigning causality here entails the impossible task of going back in time to randomly assign districts to administration by the princely states and the British rule. As a next best alternative, we utilise the quasi-natural experiment design emanating from the policy of redrawing of the state boundaries as per the recommendations of the State Re-organisation Commission (1956). Under the recommendations, specific districts in both, the NTC and TC regions were bifurcated and absorbed by different states. Dissimilar state policy post 1956 in these newly created districts that were previously part of the same administration and same agro-climatic zones (Khanna, 1989) allows us to identify the positive role of state activism in achieving mass literacy in Kerala. Through this, the paper introduces an important methodological innovation in a subject where most evaluations in literature have been carried out in sheer qualitative form.

Exceptional literacy rates aside, we observe a considerable difference in share of the overall population with a graduate degree or a diploma certificate across the TC and the NTC region. This observation in our view has received negligible attention in literature. We argue that this difference can be attributed to the historical endowment effect, emerging from competitive demand for higher education among the socially mobile social groups in the TC region. Though higher educational outcomes for TC are better than the NTC region, we find that the trend is opposite for the Scheduled Castes (SC), who were in general excluded from historical

endowment effect in the TC region² (Ramachandran, 1998). This could be attributed to the accentuated effects of social reforms movement in the region that was the epicenter of the social reform process. Thus, backed by empirical data and historical literature, the relevance of state activism in determining high literacy rates and yet its inability to explain the continued wedge in higher educational outcomes across Kerala is the main finding that the paper reports.

The remainder of this paper is structured as follows; Section 2 discusses the history of education policy in Kerala. Section 3 explains the data used and methodology and Section 4 discusses the findings from analysis. Section 5 concludes.

2. History of Education Policy and Social Structure in Kerala

In 1975, the Centre for Development Studies³, in collaboration with the Committee for Development Planning, United Nations undertook a study on Kerala, which showcased the positive role of education on improved social outcomes for the state, despite low levels of income (per capita consumption expenditure). This experience illustrates the possibility of achieving improved social outcomes, without exclusive reliance on high income levels (Chakraborty, 2005). In the light of this, the history and evolution of social structure in the state deserves special attention. The educational achievements of Kerala are rooted in the amalgam of cultural aspects specific to the state, historical educational policy pursued in its central-southern parts (TC) and social reforms movement that started in the NTC region and spread to the southern part of Kerala in the post independence era. These are now discussed in turn.

2.1 Historical Endowment: Policies in different regions of Kerala in the Pre Independence era

Prior to Independence, expansion of education and literacy was predominantly associated with the Kingdom of TC or the central-southern part of Kerala. The emphasis on education in

Travancore is evident from the Royal Rescript of 1817 issued by the Queen of Travancore, addressed to the Dewan Peishkar (head of government) of Quilon. As per this memorandum “The state should defray the whole cost of education of its people, in order that there might be no backwardness in the spread of enlightenment among them; that by diffusion of education, they might become better subjects and public servants, and that the reputation of state might be advanced thereby.” The memorandum provided support to village schools with each school mandated to have two teachers, one well versed in Malayalam and Astronomy and the other in Tamil and Arithmetic, who were to be paid from the Treasury and be regularly inspected by the revenue officials (Tharakan, 1984).

Apart from the intrinsic importance assigned by Travancore, education policy was also inadvertently shaped by the vision of Colonel Munro, the British Resident⁴ (1810-1819) who desired a modern administrative structure for British India and its allies. His vision was one of well defined administrative divisions and independence of military and judicial powers from the revenue department. This was to be achieved by a well trained cadre of officials. This idea was also encoded in Macaulay’s recommendations, which exclusively promoted secondary and higher education at the cost of primary education (Nair, 1976).⁵ This requirement destroyed the indigenous system in Malabar (and most of India) long before the Western system could expand and provide access to education to the masses (Nair, 1976). This however had an opposing effect for the TC region, whose autonomous status ensured that the administrative and judicial language continued to be Malayalam and not English. Thus, the indigenous schools, which were present in almost every village and where medium of instruction was vernacular, remained relevant and were not uprooted. They were in fact upgraded to incorporate modern curriculum later (Tharakan, 1984). Also, educational eligibility conditions were introduced for government

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3 jobs and this eroded the powers of the traditional elites and their hold on government policies.
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5 Education thus became a matter of prestige across certain communities in Travancore (Tharakan,
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7 1984).
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11 Moreover, demand for administrative officials also swelled as the revenue department
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13 expanded, particularly after the government's takeover of 348 major and 1171 minor temple
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15 administration in Travancore. With access to these vast properties, the state of Travancore started
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17 more schools that were run by the Princely state (particularly in the second half on the nineteenth
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19 century) and provided liberal grant-in-aid to private schools. Though the role of these schools
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21 and grants to private schools cannot be overlooked, by the start of the twentieth century there
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23 was extensive presence of private unaided institutions that stemmed from demand for education
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25 in the society. By 1901, in Travancore for example, share of private unaided institutions in
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27 number of schools and that of students was 62.9 % and 47.4 %, respectively (Tharakan,1984).
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33 Lure of administrative jobs alone cannot explain the lead in literacy enjoyed by the TC
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35 region. Critical factors that explain these are as follows:
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39 Though government schools in Kerala remained open to lower castes and woman in theory, the
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41 actual participation from these segments in schools was negligible. This void in Travancore was
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43 partially filled by the entry of Protestant Missionaries, particularly the London Missionary
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45 Society (LMS) in South Travancore and the Church Missionary Society (CMS) in North
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47 Travancore. These focused on education of certain though not all lower caste communities and
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49 women, particularly from castes like Shanars, Pulayas and Izhavas (Tharakan, 1984;
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51 Ramachandran, 1998). For example, the first girls school in Travancore was established in 1818
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53 at Kottayam and a pamphlet titled "Advantages of Female Education" was printed by LMS Press
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and distributed free of cost at Nagercoil in 1819. Moreover, with a desire to reach the masses, the medium of instruction in these schools was vernacular until the fourth standard. As its curriculum was more suited to training for the Civil Services, this fostered competition for quality education among different communities. An example of this is the emergence of the Nair Service Society (NSS) which supported education of a community (Nair) that was wedged between the traditional elites like Brahmins (upper caste) and sections like the Ezhavas, Shanars and the so called “slave” castes who had access to missionary education. Moreover, this promoted further competition in education that emerged from founding of organisations like Shree Narayana Dharma Paripalana Yogam (SNDP) in 1903 that led to establishment of education institutions for the Ezhavas (Ramachandran, 1998; Gopalakrishnan, 1973; Nair, 1976; Mathew, 1999). With increasing demand for education, indigenous schools were supported by the government and upgraded to match the modern education system. This encouraged the entry of Missionary schools as well (Tharakan, 1984).

These gains were further buttressed by the interventionist stance of the state in the second half of the nineteenth century. The government expanded the number of primary schools, particularly for girls, and revised the content and methods of teaching in indigenous schools to keep them at par with grant-in-aid schools. The support for vernacular as the medium of instruction was further strengthened in the period which is evident from organisation of a Book Committee in 1867 that translated and brought out 12 fresh titles from both Sanskrit and English. For grant-in-aid schools, special inspector was appointed for supervision and the grant was conditional on the institutions following the curriculum and books prescribed by the government schools. This was particularly useful in keeping missionary school education secular in character (Tharakan, 1984).

In the second half of the nineteenth century access to land was provided to certain non-elite communities. This was done by converting wastelands to agricultural land and giving away abandoned land to whosoever was willing to cultivate. This gave the ability to the lower castes (like Ezhavas) to acquire land on lease for the first time. However, it is broadly agreed that measures like these were limited in scope and agrarian relations in the region remained largely exploitative (Ramachandran, 1998). In Malabar, landlords charged exorbitant rents and could evict a tenant at will. In Cochin, these conditions were better as the unoccupied wasteland was not under the ownership of traditional landlord (Tharakan,1984; Nair, 1976). These measures however opened land markets for certain communities and created a class of peasant proprietors in the Travancore. Nevertheless, these were by no means full-fledged land reforms as experienced in the post reforms period.

The economic surplus for Travancore also expanded in the period due to commercialisation of agriculture and trade in spices and plantation (Tharakan, 1984). Subsequently, industries like spinning, weaving of cotton and choir added to economic prosperity of the region. Infrastructure such as roads, waterways, irrigation works, bridges, ports among others developed as well and all these factors facilitated job creation but required basic level of education (Nair, 1976). With jobs in the private sector tied to the ability in reading, writing and basic arithmetic for book keeping, basic literacy became a desired commodity for certain communities in the region (Tharakan, 1984). This demand was fulfilled not just by the government but also by missionaries and organisations like NSS and NSDP (Ezhavas) among others.

Though education policy in the region was oriented to benefit certain communities, the case of women’s education deserves particular mention. Social fabric in Kerala through distinct

matrilineal traditions in marriage and inheritance provided a favourable social environment for women to be at the forefront of gains made in health and education (Ramachandran, 1998; Simister, 2011). The position of women and strengthening of their education further supported mass literacy in Kerala. This is perhaps a critical reason why Kerala progressed to mass literacy levels, leaving behind other princely states like Baroda which had comparable literacy rates in the pre-independence era but did not focus on literacy for women (Jeffery, 1978). Thus, socio-cultural practices alongside state support, particularly in the latter half of the nineteenth century were crucial in promoting women's education in TC region.

Despite these measures, adult male and female literacy rate in the TC region was still below 25% and 5% by the end of the nineteenth century, respectively. This was nowhere near the mass literacy levels observed in the state in the second half of the twentieth century and hence as Ramachandran (1998) argues, mass literacy cannot be attributed to historical endowment. In this paper, we present a systematic empirical justification of this argument and further look at the reasons for differences in higher educational outcomes across the state and exclusion of vulnerable social groups from this process in particular.

2.2 Social Reform Movement and the Post-Independence era

The Northern part of the present Kerala, the Malabar (what we refer to as NTC in this paper) was a part of the erstwhile Madras Presidency, which came directly under the administrative control of the British and lagged behind the TC region in literacy metrics. This part is what we refer to as NTC in this paper. However significant gains in mass literacy were made in unified Kerala under the aegis of the Communist party in the post independence era. Malabar, which witnessed the agrarian rebellion of 1921, became the epicenter of the left leaning and later, the Communist movement in Kerala. This rebellion which comprised of peasants and agricultural workers

working under extremely exploitative relationships was mainly aimed against the janmi landlords and revenue officials. In the post independence era, these sprouted into widespread public action movements and included students, teachers, womens' group and active participation of the socially backward communities. These public action movements included legislations, agitations against the existing norms of the society that were oppressive such as the caste system and the extractive agrarian relations. Given these conditions, it has been argued that reforms had an extensive egalitarian and empowering effect in the NTC region (Ramachandran, 1998; Lieten, 2002).

Social reforms movement in Kerala commenced in 1957 when an ordinance was passed that made evictions illegal and restored tenancy to those who were evicted post formation of Kerala. Moreover, the rights of janmi landlords were acquired by the government and tenancy legislations that provided land to the tiller were initiated (Ramachandran, 1998; Lieten, 2002; Oommen, 1994). In addition, land ceiling was imposed at the household level based on membership with an upper limit of 25 acres. These series of actions culminated into radical laws in form of the Kerala Agrarian Relations Bill that was approved in 1959 and led to dismissal of the democratically elected government of Kerala by the Central Government. Eventually, a struggle ensued and led to the promulgation of the Kerala Agrarian Relations Act of 1964, which was part of the Ninth Schedule of the Indian Constitution and hence outside the jurisdiction of the Indian judicial system. These redistributive traditions continued in subsequent years and were further buttressed by legislations such as the Kerala Agricultural Workers' Act of 1975 that aimed at providing social protection and improvement in working conditions of the agricultural workers. The egalitarian socio-economic structure was not top down but was demand driven as is evident from the support for redistributive policies like the land reforms and the public

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3 distribution system that were popular irrespective of whether the government headed by the
4 Communist Party of India (Marxist) (CPI(M))⁶ was in power or in the opposition
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6 (Ramachandran, 1998; Herring, 1980). Thus, reforms are often credited for educational
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8 achievements of Kerala (Ramachandran, 1998).
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13 In general, role of social reforms go beyond its contribution to literacy. These are
14 characterised by two factors in particular. First, attention for *redistributive policies* has
15 characterised Keralan governments since the early days (Suryanarayana, 2001; Véron, 2001).
16 Policies oriented to redistribution of resources, as well as programmes largely tailored to
17 satisfaction of basic needs for the poor. Maintaining a strong pro-poor system made it possible
18 for the state to focus on its vulnerable citizens, and guarantee universal assistance in the
19 achievement of basic needs, including education (Franke & Chasin, 1999; Parayil, 2000). The
20 second factor lies in the creation of a *political conscience*, based primarily on the awareness of
21 people's rights (Heller, 1996; Véron, 2001; Singh, 2011). This strategy is deeply entrenched in
22 the logic of active citizenship that marked the hegemony of the CPI(M). The party's moral
23 guidance was based on people's awareness of their rights, and on proactive construction of their
24 capabilities to take action for these to be guaranteed (Heller, 1999). Still today, another feature
25 making Kerala different from India at large is the strength of its civil society: a plethora of social
26 movements operate within the state (Varshney, 2001), and development is now focused on
27 exploiting synergies between these organisations, the state, and local government bodies (Véron,
28 2001). A politically aware population, in the context of creation of a framework for service
29 provision, was of paramount importance to put pressure on frontline providers, and ensure proper
30 functioning of the educational apparatus as well as equitable access to it.
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In this paper we ask empirically how valid are the theses of historical endowment and state activism in terms of explaining superior educational outcomes in Kerala? The epistemic trigger behind the question lies in the lack of data-based method to assess the strength of the two explanations, which need historical disambiguation to better understand the events that led to Kerala's superior outcomes in achieving mass literacy and continued difference in higher education indices across TC and NTC region. Doing so requires combination of previously presented historical narratives with data that reflect the state's educational outcomes.

3. Data and Methodology

We use data on literacy rates from the Census of India for districts belonging to Kerala and those from the neighboring states of Karnataka and Tamil Nadu for the period 1941 to 2011. To study differences in higher education indices that remain, and look at status for women and SCs, we use the Employment-Unemployment rounds from NSSO data for the years 1983, 1993-1994, 2005-2006 and 2011-2012 conducted by the Government of India.

To identify regions and facilitate comparison, we first divide the modern state of Kerala (as carved out in 1956 and before) into three segments for all census and NSSO rounds based on the Administrative Atlas provided by Census of India. These regions are TC, NTC and a relatively small ambiguous region that consists of Palakkad and Thrissur districts. Districts emanating out of the first two regions have always remained fully within the historical TC and NTC classification. We note that the ambiguous category has not been consistently part of one category (TC or NTC region) up to 2011 census, and hence it has been left out of the analysis⁷. We also identify the bordering districts of Karnataka and Tamil Nadu to facilitate comparisons.

In addition to the region of TC, the state of Kerala, as carved out by the States Re-Organisation Act (1956) - which reworked boundaries of India into states on linguistic lines- included parts of South Kanara and Malabar (NTC). It was separated from the Madras Presidency and was not part of the TC region, but that of the British Empire. Hence, the NTC region was beyond the positive influence of the education policy, which was pursued by the princely states of TC. However, the TC and NTC regions were both part of the post-Independence social and political reforms movement. Thus, the progression of NTC vis-à-vis TC region presents valuable insights into the debate on explanatory theories based on endowment and activism. The districts lying in the TC and NTC regions along with their neighboring districts are presented through a map (Figure 1).

[Figure 1 here]

To test if mass literacy achievement in Kerala can be attributed to the Social Reforms Movement, we first compare the historical literacy trends between TC and the NTC region. As argued before, though both these regions were part of the reforms movement, the latter did not experience historical endowment effect. To further see the effects of the reforms movement, we compare NTC region with its neighbouring districts in Karnataka and Tamil Nadu and do the same for the TC region. Even if these comparisons reflect superiority and convergence in literacy indices for TC and NTC as against their neighbours, one may argue that historical spillover effects of superior educational outcomes of the TC region are responsible for higher outcomes in the NTC parts and not the reforms. The idea stems from the fact that researchers have often argued that education or human capital accumulation has positive externalities in the sense that they have spillover effects on the peers and neighborhoods in different context (Jacobs, 1969; Lucas, 1988; Topa, 2001). On similar lines of argument, one may observe that the positive

educational interventions implemented by the princely states of TC may have spillover effects on the NTC region, and hence it is influential in improving literacy rates in these parts. However, if this was the case, then same phenomenon should have been observed for the bordering districts of TC region in Tamil Nadu. Thus, for robustness check, we compare trends in literacy between the NTC region and other neighbours of the TC region.

Despite these comparisons, it still might be argued that the positive outcomes occurred due other confounding factors and not particularly due to social reforms. To account for these, we attempt to enumerate other plausible explanations (administration, agro-climatic zones and agrarian relations) and use quasi-natural experiment design to control for these and get closer to assessing the casual impact of social reforms on educational outcomes for Kerala. These quasi-experiments were facilitated by the bifurcation of districts into separate states under the States Re-Organisation Act (1956). Prior to re-organisation, South Kanara was one unified district in Madras Presidency. This was subsequently bifurcated with the Northern part going to state of Mysore (present day Karnataka), and the Southern part going to Kerala towards formation of the district of Cannanore. Thus, before 1956, these two regions were part of the same administrative district and agro-climatic zone (Khanna, 1989), and hence a range of factors but not all, can naturally be controlled for. We note that Kerala and its neighboring districts in Karnataka and Tamil Nadu predominantly fall under the Western Coastal Plains and Ghats (Zone XII) in terms of agro-climatic zone divided on the basis of similar conditions of temperature, rainfall, nature of soil, crops among others as per the Agro-climatic Regional Planning Project (Khanna, 1989) and were mainly agrarian economies⁸. Post bifurcation, the southern part was influenced by the reforms movement of Kerala, while the northern part was excluded from it. Similarly, with re-organisation of states, Kanniyakumari from Trivandrum (now Thiruvananthapuram) went to

Tamil Nadu. Thus, Kanniyakumari, though exposed to the historical endowment was directly excluded from the social reforms movement in Kerala. Hence, district wise comparison in these two cases gives us critical insights on the possible implications of these movements on education policy in Kerala.

We also check for possible effects of historical endowment via generating competitive demand for higher education across certain segments. For this we compare TC and the NTC region on basis of the percentage of individuals who are of age 25 years and above and whose general education level is above higher secondary (usual completion age of which is around 17-18 years) using the 38th (1983), 50th (1993-1994), 61st (2005-2006 and the 68th (2011-2012) NSSO rounds. We use this as a proxy for higher education. This includes all individuals with a diploma/certificate course, or who at least hold a graduate degree⁹. Given that the reforms movement took roots in the NTC region, differences, if any in favour of the TC region may be attributed to competitive demand for education that was achieved via historical endowment. We note that the social reforms post 1956 was founded on movements like the Agrarian Rebellion of 1921 and hence social policies in the NTC region were more egalitarian as against the TC region (Ramachandran, 1998). Given that historical endowment effect focused on education of women among others but not so for many 'backward sections', we make similar comparison for women and SCs in the region. This helps in identifying whether the benefits were shared equally across different social groups.

4. Quantitative Findings: Mass Literacy, role of Social Reforms Movement and Differences in higher education

To capture the influence of social reforms on mass literacy, we plot time series data for two indicators: overall literacy rates (LR) and Female Literacy Rates (FLR), for the period 1941 to 2011.

We first compare aggregated literacy figures for the region under the erstwhile princely state of TC with other regions in the state of Kerala (NTC). We note here that prior to independence, only the former was influenced by historical endowment whereas both were influenced by the reform process in the post independence era. Figure 3 shows the plots of LR for TC, NTC and their respective neighbouring districts. From the figure it is evident that TC enjoyed a lead over NTC in the pre-independence era, which can most likely be explained by historical endowment. In the post reforms era, both TC and NTC show exceptional growth in literacy rates, which converge over time. This steady growth must also be seen in light of the natural limit to literacy rates (100%) that makes sustained improvements closer to this limit harder to achieve. Figure 3 also facilitates comparison of LR for both the TC and NTC regions with their respective neighbouring districts. Interestingly, LR for both these sets were converging with their neighbours until 1961 diverged thereafter, and continued to do so up to 1991. Moreover, The positive effect of reforms in establishing mass literacy rates in Kerala must also be seen in the light of neighbouring districts in Tamil Nadu and Karnataka (Kanyakumari, Tirunelveli, Coimbatore, Dindigul, Theni, Virudhunagar) being one of the better performers in literacy indices at all India level. Data for FLR suggest a similar trend (Online Appendix, Figure 3A). We also note that both LR and FLR for the TC and the NTC region accelerate as against their neighbours in the post reforms era. Moreover, from Figure 4 it is evident that the literacy gap (male-female) records a steep decline in the post reforms era in Kerala as against it neighbours. This is consistent with the literature discussed previously where social reforms cut

through the chains of gender and other biases and were oriented to focus on women and other vulnerable sections of society. This further gives credibility to the thesis of state activism. Figure 4 also demonstrates relevance of historical endowment as the decline in gender gap, despite a higher base is steeper for the TC region, where status of women was better as against the NTC region. Interaction of this socio-cultural context with reforms is likely to have accelerated the decline in gender gap for the region.

[Figure 3 here]

[Figure 4 here]

For robustness check, we also verify for spillover effects. As argued in Section 3, if LR in NTC were a result of a spillover of human capital and its desirability as against the reforms movement, then such an effect should have been uniform in its spread across NTC and other neighbours of TC region (Karnataka and Tamil Nadu). However, in figure 3 and 4 we see a divergence in LR and LD across these two regions up to 1991. This further strengthens the case of reforms movement in achieving mass literacy rates with increasing gender balance in Kerala.

We note that it might be argued that historical endowment effect subsequently influenced the reform in Kerala and in this way was a necessary condition for the success of the latter. To test this hypothesis, we rely on the quasi-experiment design, where we look at the two cases where districts under common administration and agro-climatic region were bifurcated under the recommendations of the State Re-organisation Committee, which reorganised state boundaries in India on linguistic lines. First, we compare districts of Cannanore (currently Kasargod and Kannur in Kerala) and South Kanara (Karnataka), that were both part of a common district in Madras Presidency in the pre-independence era. Though both these districts were excluded from the influence of historical endowment effect, the former experienced social reforms by virtue of

being part of post independent Kerala. Post the social reforms, literacy in the former region grows at a higher rate as against the latter region and this trend persists until 1981 (Figure 5). For both these regions, the growth tapers off once literacy rates reached around 70 %. This is expected as the variable has an upper limit and marginal gain at higher levels becomes difficult to sustain. Also, LR for both the regions converges with the larger group of districts in which they are categorised, Cannanore with NTC and South Kanara with neighbours of NTC, respectively. We observe a similar trend for FLR for these regions (Online Appendix, Figure 5A).

[Figure 5 here]

Second, we look at the comparison between Trivandrum and Kanniyakumari, both of which were parts of the same administrative district (consolidated Trivandrum) prior to independence but subsequently bifurcated, with Trivandrum being absorbed by Kerala and Kanniyakumari by Tamil Nadu. Thus, the direct influence of Kerala’s reforms movement post 1956 was restricted to only Trivandrum and not Kanniyakumari, whereas both were influenced by historical endowment effect. As indicated in Figure 6, post 1961, Trivandrum overtakes Kanniyakumari and stays above it for all subsequent periods in terms of LR. We observe similar trend for FLR (Online Appendix, Figure 6A). Importantly, Kanniyakumari is among the leading districts in literacy indices in Tamil Nadu, which in turn is one of the best performers across Indian states. For example, as per the 2001 Census figures, LR for Tamil Nadu was about 65%. The corresponding figure for Kanniyakumari was 78%. Similarly, for the 2011 Census, LR for Tamil Nadu was about 72%, whereas the corresponding figure for Kanniyakumari was 83%.

[Figure 6 here]

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3 In both these cases, districts that were under common district administration and agro-
4 climatic zones (Khanna, 1989) part were later bifurcated and hence many factors other social
5 reform movement must have been similar and hence are automatically controlled for. Any
6 subsequent divergence in literacy indices could be ascribed to the differences in policies adopted
7 by the respective states and local administration, which allowed us to disentangle the effects of
8 social reforms and historical endowment effect. Thus, using a variety of cases which can control
9 for many of the factors that may have an impact on literacy rate that are otherwise not possible to
10 control, we find a definite role of the social movements backed by the government of Kerala in
11 achieving mass literacy in the state. We do however acknowledge the limitation of this quasi-
12 experiment design. In addition to common agro-climatic region and district administration, there
13 could be other potential confounding variables which when combined with paucity of data make
14 these effects difficult to disentangle.

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17 It is worth mentioning that one may argue that emigration rate in the Gulf region is high
18 in Kerala because of which the literacy rates given in the Census 2011 might be an
19 underestimate, especially when the literate individuals are more likely to migrate (Zachariah and
20 Rajan, 2015). We have tried to look at the enumerators guidelines for the Census survey and
21 found that if a person is not enumerated elsewhere, he/she should be enumerated (Government of
22 India, 2011). Since migrants in Gulf cannot get themselves enumerated, it is likely that they have
23 been enumerated in their home district and hence our estimates are likely to be valid.

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26 Despite the contribution of social reforms in establishing mass literacy in Kerala (TC and
27 NTC region), there exists a wedge between higher education indices between TC and NTC till
28 date. As demonstrated in Table 1, share of proportion of population above 24 years with general
29 education level above higher secondary, which is used as a proxy of higher education remains

substantially higher for TC as against NTC region even in 2011. Given the socio-cultural context and women’s status, we find this to be true also for females above the age of 24 years. This result should be seen in light of women along with other groups being at the forefront of the reforms process which gained strength in the NTC region. Thus, sustained lead of TC against the NTC region in higher education metrics, particularly for women suggest a positive role of historical endowment for women. However, from the same table, it is evident that SCs as a larger group was largely excluded from the gains of historical endowment, though it did benefit some specific communities within, like the Ezhavas. Though the overall share of SC graduates in the population remains small across Kerala, we do note that the SC community in NTC region, overtook the TC region in this metric by 2004-2005.

[Table 1 here]

5. Conclusion

In this paper we have explored the two main competing explanations for Kerala’s educational achievements. One school of thought attributes Kerala’s performance to historical endowment effect whereas a different view argues in favour of state led activism and interventions, starting from creation of Kerala in 1956 and the social reforms that ensued. Using district-level census data from 1941 to 2011, this paper looks into the validity of both the claims. We find that achievement of mass literacy with gender balance in Kerala is explained by reforms driven state activism. Unlike convergence in mass literacy across the TC and the NTC regions however, continued difference in higher educational outcomes between the two regions can most likely be explained by competitive demand for education across upwardly mobile communities, which was an integral component of the historical endowment effect. Though there has been a non-negligible difference in higher education rates across the two regions, we find that graduation

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3 rates among the SC's in the NTC region remained close to the TC region and overtook it by the
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5 turn of the twentieth century. As argued before, the roots of the social reforms movement can be
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7 traced back to the agrarian rebellion in the NTC region which experienced active participation
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9 from the SC community. Thus, the superior higher educational outcome for SC's in NTC is
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11 suggestive of the continued importance of the social reforms movement in negating a historical
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13 bias against the backward section sections of the society.
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17 Despite these efforts, it should be noted that the overall performance of Kerala in higher
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19 educational indices is far less impressive. Despite faring better in terms of Gross Enrollment
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21 Ratio (GER) in higher education for 18 to 23 years than the all-India figures in 2011-12 (23.1 as
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23 against 20.4 respectively), it's performance is worse than many states including the south Indian
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25 states of Karnataka, Tamil Nadu and Andhra Pradesh among others (Government of India,
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27 2013). Even among SCs, the GER in Kerala is found to be lower than Andhra Pradesh and Tamil
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29 Nadu though marginally higher than Karnataka. This demonstrates that even though mass
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31 literacy is a necessary condition for higher educational achievement, it is not a sufficient one. In
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33 an environment where employability is being increasingly linked with higher education in India,
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35 this is a matter of concern and merits urgent attention.
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40 In Kerala's context, it is imperative that the focus should now shift to higher education.
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42 Kodoth (2010) points out that there has been negligible expansion in the facilities of public
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44 funded institutes of higher education in Kerala, which has restricted access of not only
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46 marginalised students but of those from other socio-economic groups as well. As demonstrated
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48 with the success in basic education, the state must take necessary action to ease the bottlenecks
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50 that discourage students to enroll in higher education and increase its demand across different
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52 segments of the society.
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Notes

1. We note here that current South Kanara or Dakshin Kannada refers to a current district in state of Karnataka, which was part of the erstwhile Madras Presidency in pre-independence era and included Cannanore (in Kerala) that was subsequently divided into Kasargod and Kannur districts. Similarly, Trivandrum or Thiruvananthapuram refers to the same district in TC region in the pre independence era, where this also included the current district of Kanniyakumari, which became part of state of Tamil Nadu post-independence.
2. Castes are groups that were historically formed primarily on the basis of occupation. SCs were considered untouchables and among the most vulnerable social groups in India. For more information please refer Despande (2011).
3. Centre for Development Studies is an advanced research institute in India established in 1971. Please visit the website <http://www.cds.edu/> for more information.
4. British Residents were appointed by the East India Company to keep a watchful eye in day to day administration of the ally states, particularly revenue collection and monitor restriction on military.
5. Macaulay’s minutes in 1835 were the cornerstone of British education policy in India. As per the recommendations, western science and education with English as a medium of instruction was propagated at cost of education in Sanskrit and Arabic. The focus was predominantly on secondary education with complete neglect of primary education.
6. For more information on CPI(M), refer to <http://www.cpim.org/> (Last accessed on March 26, 2018).

7. For 2011 Census, NTC districts include Kasargod, Kannur, Wayanad, Kozhikode, Malappuram. TC region includes Ernakulam, Idukki, Kottayam, Alappuzha, Pathanamthitta, Kollam, Thiruvananthapuram. Ambiguous region includes district of Palakkad, Thrissur.
8. We note here that a small part (Tirunelveli district) partially falls under Agro-climatic zone XI, Eastern Coastal Plains and Hills. The mean temperature, humidity and rainfall levels are in comparable range to zone XII (Western Coastal Plains and Ghats) and cultivate similar staple crops like rice and oilseeds. Nonetheless, these are inherently different Agro-climatic zones based on natural endowment.
9. We note that for the 38th and the 50th NSSO rounds, general education has no category for Diploma. Thus, for these we only consider the share of population who were atleast graduates. Also, given non-availability of district wise data for the NSSO data in 1983 and 1993-1994, we base our analysis for these years on regions where we include Thrissur in TC and Palakkad in NTC.
10. The World Economic Forum publishes the Human Capital Report that in 2016 ranked 130 countries on wide ranging parameters related to human capital. Further details are publicly accessible at <http://reports.weforum.org/human-capital-report-2016/>

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Figures

District Boundaries

Figure 1: District boundaries in Kerala and the neighboring districts in Karnataka and Tamil Nadu (North to South)
Notes: Non Travancore-Cochin Districts are Kasargod, Kannur, Wayanad, Kozhikode, Malappuram. Ambiguous Districts includes Palakkad, Thrissur. Travancore-Cochin Districts include Ernakulam, Idukki, Kottayam, Alappuzha, Pathanamthitta, Kollam, Thiruvananthapuram. Neighboring districts of NTC are Dakshina Kannada, Mysore, Chamarajanagar, Kodagu, Nilgiris. Neighboring districts in TC include Coimbatore, Dindigul, Theni, Virudhunagar, Tirunelveli, Kanniyakumari, Tiruppur.
Source: Census of India, 2011

Figure 2: Location of Quasi-experiment district on the map of Kerala
Source: Census of India, 2011

Figure 3: Historical Literacy Rates in Travancore Cochin, Non Travancore Cochin and Neighbourhood Districts
Source: Census of India

Figure 4: Historical Literacy Difference (Male-Female) in Travancore Cochin, Non Travancore Cochin and Neighbourhood Districts
Source: Census of India

Figure 5: Literacy Rates from Quasi-Natural Experiment for Cannanore and South Kanara
Source: Census of India

Figure 6: Literacy Rates from Quasi-Natural Experiment for Trivandrum and Kanniyakumari
Source: Census of India

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Table 1: Share above the age of 24 who have Diploma or Graduate Degrees

Regions	1983	1993-1994	2004-2005	2011-2012
<i>Overall Population</i>				
TC	2.99	4.73	15.11	18.14
NTC	1.32	2.99	6.59	6.99
<i>Shares for Women</i>				
TC	2.42	3.32	13.82	16.79
NTC	0.66	1.67	5.53	4.45
<i>Shares of Scheduled Castes</i>				
TC	0.49	0.91	4.28	5.55
NTC	0.00	0.04	4.54	6.27

Note: For the NSSO 50th (1993-1994) and 38th (1983) rounds, district wise data is not available. We rely on regions defined to approximately demarcate TC and NTC regions. Here, Trichur is included in TC and Palakkad in NTC, though both these are ambiguous regions for rest of the analysis. Also, for the same rounds, diplomas are not considered in general education achievement though these are included in the latter rounds.

Online Appendix

Explaining the Superior Education Outcomes of Kerala: The Role of State Activism and Historical Endowment

Figure 3A: Historical Female Literacy Rates in Travancore Cochin, Non Travancore Cochin and Neighbourhood Districts.....2

Figure 5A: Female Literacy Rates from Natural Experiment for Cannanore and South Kanara.....3

Figure 6A: Female Literacy Rates from Natural Experiment for Trivandrum and Kanniyakumari.....4

Figure 3A: Historical Female Literacy Rates in Travancore Cochin, Non Travancore Cochin and Neighbourhood Districts

Source: Census of India

Figure 5A: Female Literacy Rates from Natural Experiment for Cannanore and South Kanara

Source: Census of India

Figure 6A: Female Literacy Rates from Natural Experiment for Trivandrum and Kanniyakumari

Source: Census of India