

Identity Based Policies and Identity Manipulation: Evidence from Colonial Punjab.

ONLINE APPENDIX

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1 the Punjab Alienation of Land Act

Extract of the Punjab Alienation of Land Act :

Sanction of District Officer (Revenue) required to certain permanent alienations. Save as hereinafter provided a person who desires to make a permanent alienation of his land shall be at liberty to make such alienation where: the alienor is not a member of an agricultural tribe; or the alienor is a member of an agricultural tribe and the alienee is a member of the same tribe or of a tribe in the same group.

2 Procedures against caste identity manipulation

The administration was conscious that caste identity manipulation was used in order to have access to the benefits of the “agricultural caste” status. The manipulation took such an extent that specific procedures were set in order to counter such manipulation. The Financial Commissioner’s Standing Order N.1 (reproduced by Lal (1937)), paragraph 32 to 34 details this procedure.

“32. Attempts are frequently made by persons who are not zamindars to get themselves recorded as members of agricultural tribes and it is desirable to take steps to check such attempts. The most simple case that can occur is where a person applies to have his tribal designation as shown in the village paper altered, apart from any proceedings under the Alienation of Land Act, from that of a non-agricultural to an agricultural tribe. If a mutation of this kind is wrongly sanctioned, it may afterwards be used to support what would otherwise be an illegal transaction under the Alienation of Land Act. In such cases, therefore, the Revenue Officer, to whom the register of mutations is submitted, should either (a) refuse sanction and leave the applicant to appeal or (b) if he thinks that there has been a mistake in fact, and that the claim should be admitted, report the case to the Collector for orders.

33. (i) The second class of cases to be noticed is of more complicated nature, and arises out of proceedings directly connected with the working of the Alienation of Land Act.[...]

(iii) If [...] the claim of the alienee to be a member of an agricultural tribe does not depend on any entry in the records-of-rights, (e.g., when the alienee is recorded neither as a landlord nor as a tenant), it might happen that in the absence of such documentary evidence, the alienee would be accepted, on the basis of verbal and inaccurate statements, as a member of an agricultural tribe. Then, if the alienation is otherwise in accordance with the provisions of the Act, the procedure [...] would not be followed.

(iv) In order to obviate this risk, the Revenue Officer, to whom the register of mutations is submitted for orders, shall in all cases in which the alienee is unable to support his claim to be a member of an agricultural tribe from an entry in the record-of-rights:

(a) in the case of permanent alienation, follow the procedure [...] (b) in the case of temporary alienation, refer it for the orders of the Deputy Commissioner if he thinks the claim is substantiated [...]

34. (i) A more difficult class of cases is where the alienee, though shown in a record of rights, is described by a class name which is not of the well recognized sub divisions of the notified tribe to which he claims to belong, e.g., where a Harni claims that the Harnis are Rajputs.

(ii) Here there is a general question for decision, viz., whether the contention is correct that the class concerned does in fact belong to one of the notified tribes; and the decision would be of importance because all future applications by members of the class would, in the district concerned, be dealt with in accordance with it.

(iii) Whenever a case of this kind arises, the Revenue Officer shall report it to the Deputy Commissioner, who will himself make an inquiry, and, unless he rejects the application, report the result to the Commissioner for orders. If the Commissioner considers the case clear, he should dispose of it himself, but doubtful cases should be reported to the

Financial Commissioner. It is most desirable that in dealing with cases of this class there should be uniformity of treatment throughout the Province.

3 Creating the Punjab Caste population 1881-1921 panel.

This paper relies on the use of a panel data set of caste population at the district level. This appendix describes the construction of this dataset, and in particular, how the data has been comparable over time, which involved two main issues: 1. making geographical units comparable over time and 2. making caste definition comparable over time.

3.1 Making geographical units comparable over time

The data covers the Punjab Province in its 1921 borders, from 1881 to 1921. However, during that period Punjab's internal and external administrative border have changed. Indeed, two new Provinces were carved out of Punjab: the North Western Frontier Province in 1901 and Delhi in 1911. Their creation led to changes in the definition of the districts bordering them which had to be dropped: the districts of Gurgaon and Rohtak are dropped due to the creation of the Delhi Province and the districts of Mianwali, Muzaffargarh and Dera Ghazi Khan because of the creation of the North Western Frontier Province.

In addition, internal borders changed also very much during that period, and many districts had to be merge in order to keep comparable geographical units over time. The following districts are merged together:

- Ambala and Karnal;
- Ferozepore, Hisar and Sirsa;
- Gujranwala, Jhang, Montgomery, Lyallpur, Sheikhupura, Sialkot and Lahore;
- Jhelum, Attock and Rawalpindi;

- Shahpur and Gujrat.

Finally, the district of Simla was dropped, has it contains both the British district of Simla and the Simla Hill States, which are Princely States, and the separation between the two types has not been consistent over time in the census.

3.2 Making caste population comparable over time

The identification strategy of this paper relies on the growth rate of each caste. Hence, the comparability of each caste over time is an essential requirement for the validity of the results. However, the Census data on caste population is confronted with two different evolutions making the comparison of the population of a caste recorded under the same name problematic across years. First of all, the way in which each caste is reported varies across Census: depending on the year, certain castes are considered as sub-castes of other castes, or synonym of the same caste are sometimes reported as being a different castes. In order to make caste names comparable, the different castes and sub castes have to be merged together. Table 1 relates all the merge made in the data, as well as their justification. The rule followed to merge the castes is extremely conservative: whenever a source mentions that two caste names are somehow similar, or that there has been confusion between the two, then the castes are merged. This means that often, more than castes, it is “caste groups” that are being followed over time, groups which sometimes do not share much in common other than a similar sounding name, that has been misinterpreted by the administration.

[Table 1 about here.]

[Table 2 about here.]

[Table 3 about here.]

[Table 4 about here.]

[Table 5 about here.]

[Table 6 about here.]

3.3 Dropping geographical and functional caste names

A second matter relates with the difficulty to define caste itself: while the Census is interested in the precise caste name of the individual (its “jati”), what was meant by caste was not obvious to everyone in Punjab, leading some to answer with their occupation name, or with a name related to their country or region of origin. Those caste entries are to be dropped, as they do not relate to real castes. However, due to their large population and to the fact that they do not exhibit abnormal variations in population across years, the entries Kashmiri (169,761 individuals in 1921), Purbia (3,150 individuals in 1921), Raj (12,938 individuals in 1921) and Ulema (16,508 individuals in 1921) are kept in the data. Removing them does not alter the results. Table 3 lists all the caste dropped as well as the justification. The 1921 population of each dropped caste is given, or, if this caste is not reported in 1921, its maximum population in the other years is given. Dropping castes might be an issue for the results presented in this paper. Indeed, if there is any correlation between the castes dropped and the agricultural status, and that the share of dropped caste varies over time, the results might be driven by this selection of dropped castes. Figure 1 pictures the evolution of the share of the non dropped castes in the total population of the districts used in the paper.

[Figure 1 about here.]

If it is reassuring to see that the non dropped castes represent at least 97.7% of the population of the districts used in the paper, the figure also exhibits a increasing trend in the share of the population of the dropped castes, which might affect the results. In

order to check if this might drive the result, we allocate the population of the dropped castes to the non agricultural castes, and re-run the regression described in Model 1. Table 2 reports the results, which stay very close to the main results, hence showing that the attrition is not driving the evolution seen in the data.

[Table 7 about here.]

[Table 8 about here.]

4 List of Agricultural castes.

This list presented in Table 4 is taken from Lal (1937). The castes considered as agricultural in this paper are the ones that have been notified as agricultural before 1921.

[Table 9 about here.]

[Table 10 about here.]

[Table 11 about here.]

[Table 12 about here.]

[Table 13 about here.]

[Table 14 about here.]

5 Controlling for migration to the Canal Colonies

A concern very similar to the one dealt with in section IV.A needs to be ruled out in order to interpret the results of Section V. To rule out the possibility that the differences exhibited in Table B6 are an artifact created by migration, as a robustness check, we will relocate all migrants from the British districts entering the canal colonies (or the districts having access to them) after 1901 to their districts of origin, under the assumption that all immigrants were member of agricultural castes and all emigrants were members of non agricultural castes, in the spirit of the robustness check presented in Section IV.A. Table 5 presents the results of the regressions of Model 5 using a migrant free population. It can be seen that the qualitative results are unaltered, even if the point estimates are (by construction) smaller for $post1901 * access * agr$ (and less significant) and larger for $post1901 * agr$ (and more significant).

[Table 15 about here.]

6 Calculating the number of caste identity manipulators

6.1 In all Punjab

Taking the notation of Model 1, the system is:

$$\begin{cases} g_1 * pop_agricultural_d = -g_2 * pop_nonagricultural_d \\ g_1 - g_2 = \delta \\ g_0 + g_2 = \gamma \end{cases} \quad (1)$$

From column (2) of Table B3, we know that $\delta = 0.0789$ and $\gamma = -0.116$. From the data, we have:

[Table 16 about here.]

Hence, we get:

[Table 17 about here.]

It is then trivial to compute the number of caste identity changers in each category:

[Table 18 about here.]

Every decade, 4% of the population of the non agricultural castes switches to agricultural castes. Hence, in 1921, the total population of caste identity switchers amounts to 323 711 plus the survivors and descendants for the 330 227 that had switched during the 1901-1911 decade. Under the assumption that this subpopulation had the average growth rate, then in 1921, the total population of caste identity switchers was¹:

$$(1 + g_0 + constant) * 330227 + 323711 = 656177$$

¹The calculation is made here under the assumption that the caste switchers have the same growth rate as the non agricultural castes. Under the assumption that they adopt the growth rate of the agricultural castes, one would need to add the coefficient on *agricultural* to the computation. This very marginally change the quantitative results, and is not presented here.

Which amounts to 7.5% of the 1921 population of non agricultural castes or 3.8% of the total population.

6.2 In Canal colonies

Taking the notation of Model 5, the system for the relevant coefficients is :

$$\left\{ \begin{array}{l} g_1 * pop_agricultural_d = -g_2 * pop_nonagricultural_d \\ (g_1 + g_6) * pop_agricultural_d = -(g_2 + g_7) * pop_nonagricultural_d \\ g_1 - g_2 = \delta \\ g_0 + g_2 = \gamma \\ g_5 + g_7 = \eta \\ g_6 - g_7 = \pi \end{array} \right. \quad (2)$$

With the same notation as earlier and g_5 the change in the growth rate of all castes in the district having access to the canal colonies, g_6 (resp. g_7) the change in the agricultural (resp. non agricultural) castes' growth rate due to the identity manipulation in view to acquire land in the canal colonies. Using the population by type of caste and type of district, it is then trivial to compute the number of manipulators. However, given that $(g_1 + g_6) * pop_agricultural_d = -(g_2 + g_7) * pop_nonagricultural_d$ and not $g_6 * pop_agricultural_d = -g_7 * pop_nonagricultural_d$, the total amount of manipulators due to the access to the canal colonies will be different depending on if we look at $g_6 * pop_agricultural_d$ or $g_7 * pop_agricultural_d$. Hence those estimates give bounds on the number of identity manipulators motivated by the access to the land grants. However, those are estimates for the population located in canal colonies as well as in districts having access to the canal colonies, while only the individuals located in the canal colonies could be the recipients of land. A conservative way to assess the repartition between the two locations is to allocate the manipulators according to the actual 1901 agricultural caste repartition between canal district and non canal districts

having access to the canal land: i.e., assuming that 49.6% of the government land motivated manipulators were located in canal colonies. Table 11 present the estimates of identity manipulators located in canal districts.

[Table 19 about here.]

[Table 20 about here.]

[Table 21 about here.]

7 Historical Background on the Canal Colonies

7.1 Land ownership in canal colonies

The canal colonies of Punjab were built in the western part of Punjab by the British government from 1885 on². Ali (1988) has written a detailed account of their history, from which this paragraph draws upon. The creation of the canals led to the development of one of the largest irrigation system in the world which was to affect deeply the agricultural structure of the Punjab. Indeed, it turned “6 millions acres of desert into one of the richest agricultural regions in Asia” (Talbot, 2007).

As underlined by Ali (1988), the state played a central role in the colonization process, as the canal colonies were situated in areas belonging to the crown: “*The ownership of both land and water gave the central power virtual control over the means of production...*” As a consequence, the choice of the beneficiaries of the land grants were in the hands of the state, whose aims in their distribution were “*[the] relief from population congestion, settlement of the land with the most efficient agriculturists, and improvement of rural living standards*”, as well as “*[strengthening] the status and authority of the social groups and classes selected for land grants so that they could serve [...] as props to the ruling authority*” (Ali, 1988). Hence, the identity of the beneficiaries of the land grant of the canal colonies was to be carefully defined, as “*[...] the Government was confronted with a [...] difficult problem of devising a colonization scheme to people the areas to be irrigated with a settled and industrious agricultural population*” (Paustian, 1930). There were 4 main types of grants: “peasant grants” (from 14 to 55 acres in the Chenab Colony, and which represented the majority of the land distributed), “military grants” to retired soldiers, “yeomen” grants (55 to 140 acres in the Chenab Colony) and “capitalists” grants (from 166 to 554 acres in the Chenab Colony). Apart from their average sizes, a difference between the types of grant was the eligibility of the

²See Online Appendix 7.4 and Figure 2 for the timing of the construction of the colonies.

non agricultural castes: the agricultural caste status was compulsory for the “peasant grants”, the “military grants” and the “yeomen” grants, but not for the “capitalists” grants. However, the “capitalist grant” amounted only to a minority of the land allocated by the government (7.9% of the Chenab Colony, for exemple). In addition, the grants also differed in terms of their tenurial status, notably in terms of access to full proprietary rights. While the “capitalists” and “yeoman” grantees could usually acquire the ownership of their land after 5 years, the policy towards the land ownership of the peasants grantees evolved significantly over time. Indeed before 1892 the colonists could acquire the land for a nominal sum, usually after 10 years of presence (Barrier (1967) and Paustian (1930)). In 1892, the policy changed dramatically, with the Government remaining the owner of the land distributed to the peasant grantees.

The situation was to evolve again drastically from 1907 on, with the “Punjab disturbances”. Indeed, the Colonisation Bill of 1906, which extended the rights of the government over the land allocated to the grantees, particularly by restricting the inheritance rights³ and by officialising an highly contested system of fines, led to a vast agitation in the canal colonies. Confronted to a wide movement of contestation from the population that was supposed to be the beneficiary of its policies, the Government of India finally vetoed the law in May 1907⁴. This led to a clear reversal of policy in the canal colonies: a Committee was set up in order to prepare a new Colonisation Bill, proposed to give full proprietary rights to the colonists. The Colonisation Bill of 1912 implemented this proposition: the colonists could have access to proprietary rights ten years after having obtained occupancy rights or fifteen years after the date of settlement. In sum, the policy towards land ownership for peasant grantees in the canal colonies has had three main periods: before 1892, for which the colonists could get access to full property rights after 10 years of occupancy, between 1892 and 1912, during which they were to remain tenants, and after 1912, going back to the pre-1892 policy of access to full property

³Allowing only primogeniture.

⁴See Barrier (1967) for a detailed account.

rights after 10 years of occupancy. However, the policy with respect to the individuals having access to the land of the canal colonies was also to evolve over time, with Punjab Alienation of Land Act of 1901 and the creation of the “agricultural castes” list.

7.2 the Punjab Alienation of Land Act and the canal colonies

What has maybe been the most important impact of the creation of the “agricultural castes” category was that it was also used as a criteria for the allocation of land in the “canal colonies”: “[...]this categorization [...] became the basis for eligibility for land grants in the canal colonies. For land distribution after 1900, the administration did not need to nominate specific groups, but could simply rule that in each selected district the agricultural castes, and those castes alone, were eligible.” (Ali, 1988). The Punjab Alienation of Land Act thus created conditions such as either through sales or through access to the land of the canal colonies, the land ownership of the agricultural castes could only increase. The time line of colonization and its related legislation is described in Figure 2.

[Figure 2 about here.]

7.3 Migration to the canal colonies

One of the specificities of the canal colonies is that they were built in almost desert areas⁵. Hence, the grantees had to come from other regions, making migration play a big role in the development of the canal colonies⁶. Indeed, the Canal colonies have seen their population vastly increase between 1881 and 1921: the population of the districts in which they are located jumped from 5 million to 7.9 million (+57%), while the rest of Punjab remained relatively stable (+7%). This points to a vast migration

⁵ “These areas [...] were practically desert waste supporting no settled population” (Paustian, 1930).

⁶ “According to the Chenab Colony’s final colonization report, the population of the area grew from 112,000 in 1891 to over 1.1 million in 1911, of which the majority were migrants from other parts of the Punjab.” Gilmartin (2004).

movement towards the Canal Colonies⁷. And not only did the Punjab Government chose the recipients of the land grants with respect to their caste identity from 1901 on, but they also chose the districts of origin of the “grantees” from the beginning of the colonization scheme. Indeed, among the objectives of the colonization was to “*provide relief from population congestion and to procure the most skilled agriculturists*” and as “*British officials were convinced that central Punjabis were the most skilled and efficient agriculturists in the Province*” (Ali, 1988), it was mainly the districts of Central Punjab who had access to the canal colonies.

As the Census contains information on the birthplace of individuals at the district level, we can calculate the amount of migration taking place between 1901 and 1921 to the canal colonies, after the implementation of the Punjab Alienation of Land Act. As can be seen in Figure 3, if all districts are net emigrants to the Canal Colonies, the size of this emigration varies widely: only some districts send a significant portion of their population in the canal colonies. The comparison with Figure 4 shows that this pattern is due to the selection of the districts having access to the land grants of the canal colonies. In total, those districts account for 70% of the population migrating to the canal colonies between 1901 and 1921, while their population in 1901 represented only 37% of the inhabitants of the non canal colonies districts of Punjab (and 29% of the total population of Punjab).

[Figure 3 about here.]

7.4 List of Canal Colonies

[Table 22 about here.]

⁷ “...the Punjab witnessed a major migration from Central Punjab into the newly opened canal colonies of Western Punjab” (Gilmartin, 2004)

8 Cleaning the Punjab land ownership data

Figure 5 graphs the comparison between the raw data on land ownership and the cleaned data used in the paper. While the evolution of the land ownership of agricultural and non agricultural castes did not have to be cleaned much, it can be seen that the government land ownership faced a large correction in 1917. Indeed, the Reports on the Land Revenue Administration for the years 1918-19 states that *“the reason for the very great increase reported last year in the area of the Montgomery district was further investigated and it was ascertained that the increase was almost entirely due to the fact that the district figures for the first time included the area of all government waste and forest lands, this area having been erroneously excluded in the figures reported in the previous years”*. In order to account for it, the area of Montgomery as measured in 1918 was allocated to all the previous years, and the difference between the area of Montgomery and the area owned by either agricultural or non agricultural castes was allocated to the Government land. Table 13 lists the other corrections of the data, and their justification taken from the reports.

[Figure 4 about here.]

[Table 23 about here.]

9 Agricultural Castes Land Ownership

The data contained in the “Report on the land revenue administration” divides owners into 3 categories : “agricultural tribes”, “others” and “shamilat, village abadi and government property”. Hence, the information is not given by caste, but by agricultural status, which can bias the data towards an increasing share of land owned by agricultural castes, as castes were added to the agricultural castes list over time. Indeed, the change of the status of a caste would mechanically decrease the size of the land owned by “others” and increase the area owned by agricultural castes. The data allows to control for this bias, as it gives the amount of sales between the two groups. Hence, any decrease in the land owned by “others” not explained by sales to agricultural castes must come from an addition to the agricultural list. We thus create a new series systematically removing any negative variation of “others” land ownership not explained by sales to the agricultural castes. It is this corrected data that is used throughout the paper. Figure 6 graphs the two series for comparison, for both type of castes.

[Figure 5 about here.]

10 Cleaning of the number of land owners data

The Reports on the Land Revenue Administration detail by district and year the “number of owners or shareholders”, by agricultural status. As for the data on the area owned, the raw data contains some inconsistencies that have been corrected. Figure 7 depicts the correction of the data, while Table 14 lists the correction made to the raw data.

[Figure 6 about here.]

[Table 24 about here.]

11 Cleaning the land sales data.

The data on land sales contains the sales between individuals in Punjab. However, in several occasions, the sales of Government land to individuals was mistakenly reported. Figure 8 graphs the two series, while Table 15 reports the corrections made to the data.

[Figure 7 about here.]

[Table 25 about here.]

12 Land sales in the canal colonies

The land sales between individuals have been strongly affected by the Act (see Figure 9). However, they represent an infinitesimal share of the amount of the land owned. In particular, the total area transferred from non agricultural castes to agricultural castes between 1902 and 1931 represents only 1.3% of the area privately owned in Punjab in 1931. Figure 10 describes the evolution of the share of the sales on the total area owned⁸. It can be seen that the area exchanged never exceeds 0.6% of the total owned area during a given year. More relevant, the sales between caste groups never exceed 0.15% of the area owned (0.21% of the area privately owned). Thus land sales between caste groups are not the main channel through which the agricultural castes have acquired land during the period.

[Figure 8 about here.]

[Figure 9 about here.]

⁸Online Appendix 11 describes the construction of this data.

13 Removing the impact of land sales between caste groups on the evolution of land ownership.

In order to assess the role of the distribution of government land in the evolution of the share of the land owned by agricultural castes, we need to remove the sales having taken place between agricultural castes and non agricultural castes during the period. As the Reports on the Punjab Alienation of Land Act and the Reports on the Land Revenue Administration contain the amount of sales between caste groups, we can remove the contribution of the land sales to the evolution of agricultural castes' land ownership. The two series are pictured in Figure 11. It is to be noted that this will tend to bias the evolution of land ownership of agricultural castes downward, as due to errors in the reports, in certain years and districts, the sales from the government were included in the data : *“the statistics of sales and sale prices are largely vitiated by the inclusion in the Gujranwala, Lahore and Jhang returns of sales of proprietary rights by Government to colonists, and by their exclusion from the Lyallpur returns”* (1912-13 Report on the Land Revenue Administration of the Punjab) and *“...most of the sales are of Government land”* (1919-1920 Report on the Land Revenue Administration of the Punjab).

[Figure 10 about here.]

14 Distinguishing the pre and post-Alienation of Land Act grantees in land ownership data.

Due to the variation in the legislation related to the access to land ownership in the canal colonies described in Online Appendix 1, in 1912, for the first time since 1892, the grantees could get access to the property of their land. Hence, the grantees arrived in the canal colonies between 1892 and 1901, not concerned by the restrictions of the Punjab Alienation of Land, and thus, not prone to caste identity manipulation, could only become land owners from 1912 on. In order to distinguish the two populations, we resort to the fact that to become land owner in 1912, a grantee had to be settled for at least 10 years. Hence, in 1912, only the grantees settled in 1902 or before could become land owners. As the colonies settled before 1892 were not submitted to the restriction on the transfer of property rights, and due to their relatively small size, we will assume that by 1912, all the grantees that settled before 1892 had become owners of their land. It thus remains to distinguish between the grantees that settled between 1892 and 1901 (not subject to the “agricultural caste” restriction but not being able to become owners before 1912) and the grantees that settled after 1901.

Hence, assuming that the land allocated in each colony was distributed equally across the whole period of the colonization of the colony, we know for each year, the amount of land of each colony that could be purchased by its grantees (ie. for a colony which settlement lasted for two years, ten years after the beginning of the settlement, 50% of the land is available for sale, and 11 years after, all the land of the colony is available for sale). Under the assumption that the acquisition of land between post 1901 and pre 1901 grantees was exactly proportional to the share of land available for sales to each of them, we can evaluate in the 1911-1931 data, the amount of land that was purchased by post 1901 grantees. Panel (a) of Figure 12 picture the evolution of the share of the land distributed sold to post 1901 grantees, while the panel (b) pictures the actual quantities

of land sold to each type of grantee. As was to be expected, in 1912, a very large quantity of land is sold to pre 1901 grantees, as the land allocated between 1892 and 1901 could not have been bought by them earlier, so a large stock a grantees was willing to buy the land made suddenly available to them in 1912.

[Figure 11 about here.]

15 Caste identity manipulation among land owners.

The number of persons manipulating their caste identity does not give a direct knowledge of the amount of land obtained by the “manipulators”. Indeed, not every person manipulating her caste identity had access to land: first, the number of “manipulators” is calculated at the individual level, while it is likely that only one person per household had access to land ownership (typically, the head of the household), and second, because it is likely that not all agricultural caste heads of household had access to land ownership (some might not have been “grantees”, while among the grantees, some might not have acquired ownership of their land). The data allows to follow the evolution of the number of land owners by type of caste⁹ from 1911 to 1931. The variation in the number of land owners can be caused by three main factors: by inheritance (or any type of non monetary transfer of land), by sales (or mortgages) between individuals and by sales between the government and individuals, the first of which is likely to drive most of the increase in the number of land owners. As has been shown, sales between individuals account for only a small fraction of the evolution of land ownership, and it is thus likely that the main factors driving the evolution of the number of landowners are inheritance and sales from the government. In order to distinguish between those two factors, we would need to build a counterfactual for the evolution of the number of agricultural castes land owners absent the sales of government land. Two hypothesis can be explored. The first one would be to assume that the evolution of the number of agricultural castes land owners would have followed the same growth rate as the non agricultural castes’ one in the canal colonies. Alternatively, one could assume that this counterfactual evolution would be better proxied by the evolution of the number of agricultural castes landowners outside in the rest of Punjab¹⁰ Admittedly, both those methods are very crude.

⁹However, the number of agricultural castes land owners is likely to increase due to the addition of new castes on the agricultural castes list, which could not be corrected. The data thus overestimates the increase in the number of agricultural caste land owners.

¹⁰Those two hypothesis rely on two different intuitions. In the first case, the intuition would be that the main factor driving the evolution of the number of land owners are the conditions specific to the

It can be seen in table 16 that the number of new agricultural castes land owners between 1911 and 1931 is estimated to be between 36 596 and 58 614 per decade. As the number of caste identity manipulators evaluated in Appendix 6.2 measured the manipulation in the total population and not among the land owners, an estimate of the share of land owners in the manipulators population is needed. Assuming that each manipulator household had one and only one land owner, this can be easily recomputed with information on the average size of the Punjabi household in colonial times. According to Swamy (1994), the average Punjabi household had 2.58 working male in 1933-1936. Hence, assuming that the working male population was aged 15 and above, we can recompute the average household size. The population of British Punjab was 23,580,852 in 1931 and the male population above 15 was 7,708,454, which makes the average household size be around 7.9 individuals. Appendix 6.2 evaluated the population of caste identity manipulators motivated by access to land between 67 997 and 93 901 for 1911-1921 and between 69 346 and 89 735 for 1921-1931. Hence, the number of new land owners having manipulated their caste identity can be estimated between 8 615 and 11 897 for 1911-1921 and between 8 786 and 11 370 for 1921-1931.

Hence, the share of manipulators among new land owners is estimated to be in between 14.7% and 32.5% for 1911-1921 and 15% and 31% for 1921-1931.

[Table 26 about here.]

district of residence (say, exposure to epidemics). In the second case, on the contrary, the intuition is that the main factor driving the evolution is the caste specific cultural norms (in particular, the inheritance rules). The second case also allows to control for the increase in land ownership due to the addition of castes to the agricultural castes list. Those two hypothesis thus give two bounds of the evolution of the number of agricultural castes land owners in the canal colonies.

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Figure 1: Share of non dropped castes in the total population.

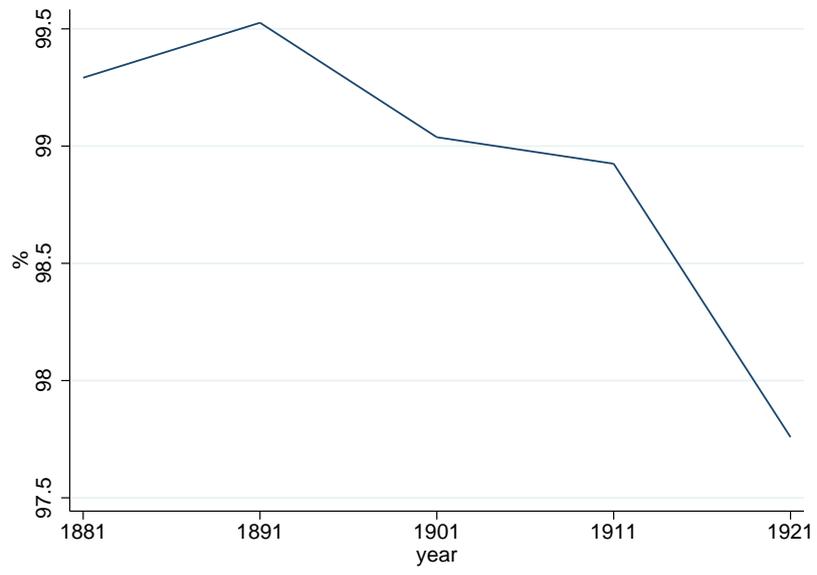


Figure 2: Colonization and related legislation in Punjab.

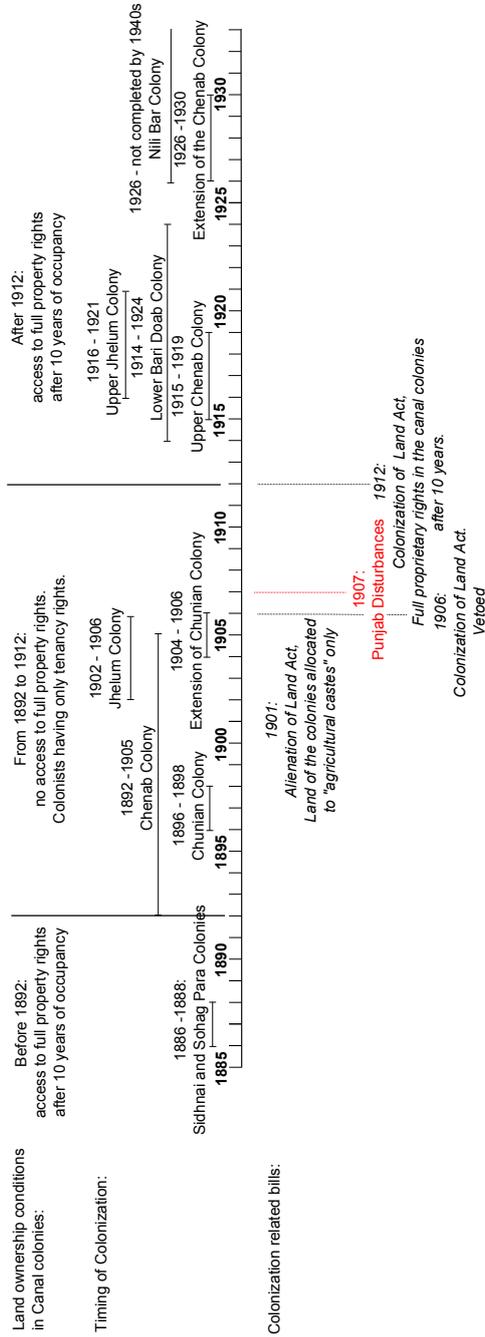
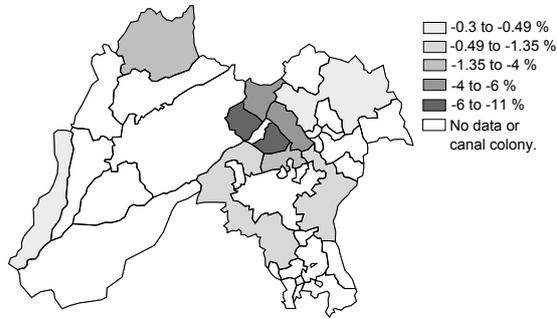
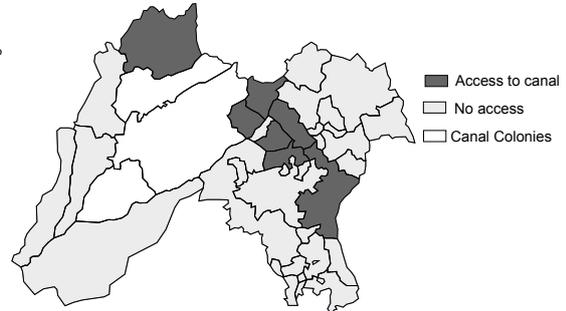


Figure 3: Ratio of net 1901-1921 immigration between colony districts and other districts on the total population born in the district.



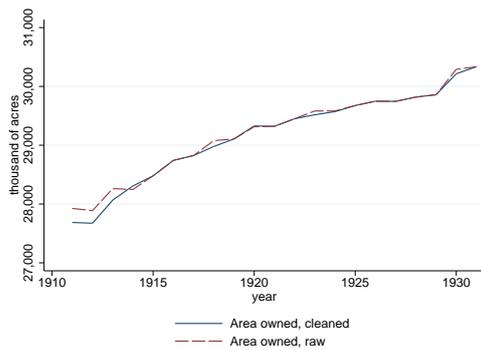
Source: Reports on the Census of Punjab 1901 and 1921.

Figure 4: Districts whose population is eligible to land in the Canal colonies.

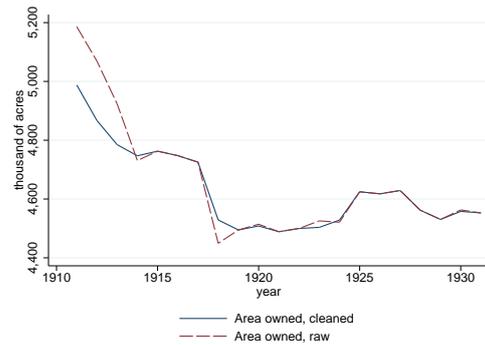


Source: Ali (1988)

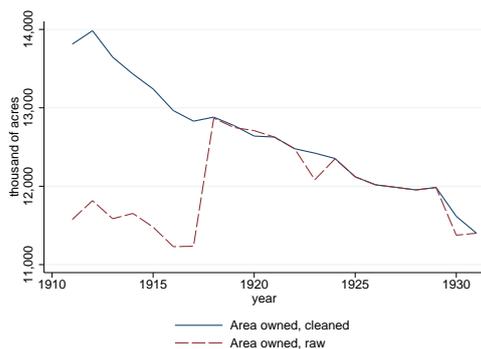
Figure 5: Land ownership: raw and cleaned data.



Agricultural castes.



Non agricultural castes.



Shamilat, village abadi and government property.

Figure 6: Correction for inclusion of new agricultural castes

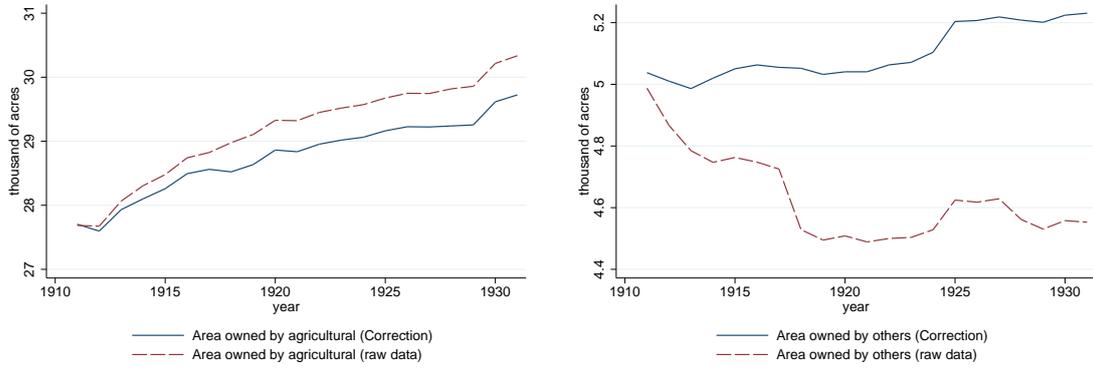
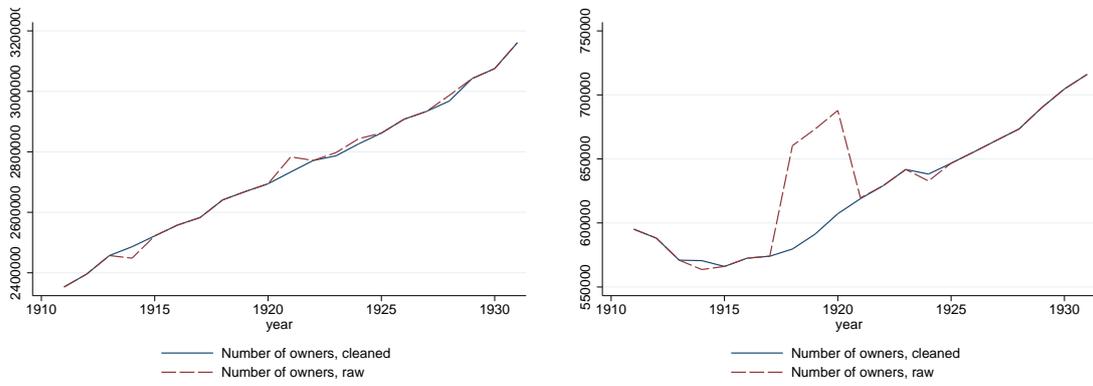


Figure 7: Number of owners: raw and cleaned data.



Agricultural castes.

Non agricultural castes.

Figure 8: Land Sales: raw and cleaned data

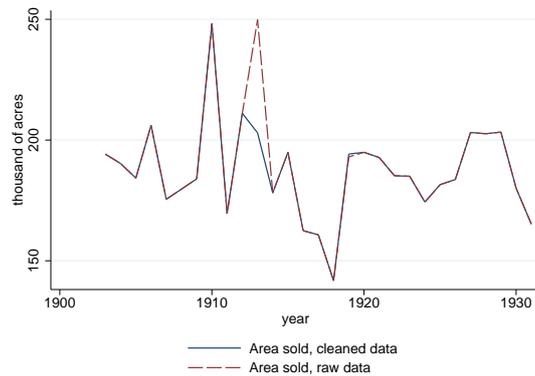
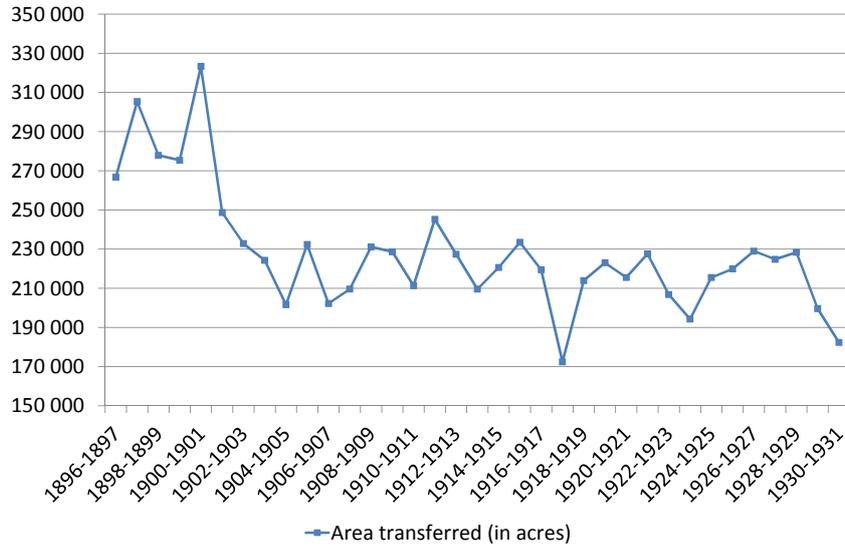
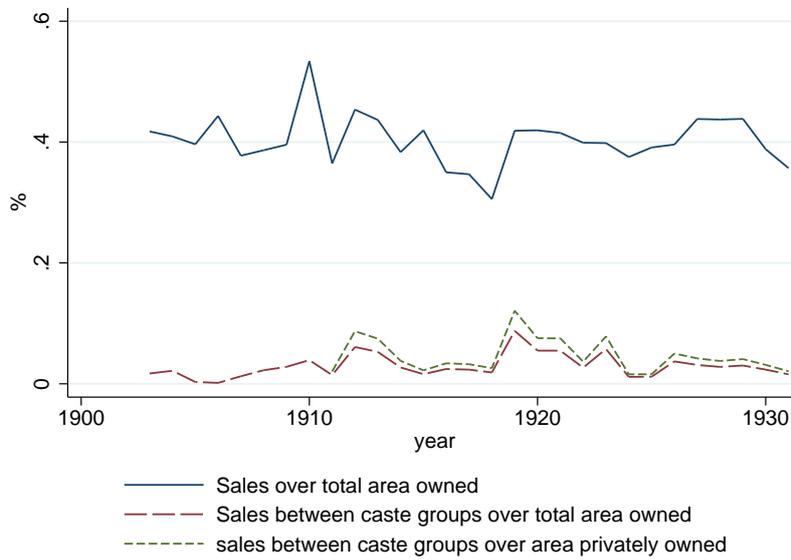


Figure 9: Evolution of sales of land. Province of Punjab, 1896-1932.



Source: Reports on the Land Administration of the Punjab.

Figure 10: Share of land sales in total land owned. Province of Punjab, 1903-1932.



Source: Reports on the Land Administration of the Punjab.

Figure 11: Share of land owned by agricultural castes by type of district, removing the sales contribution of sales between caste groups. Province of Punjab, 1911-1931.

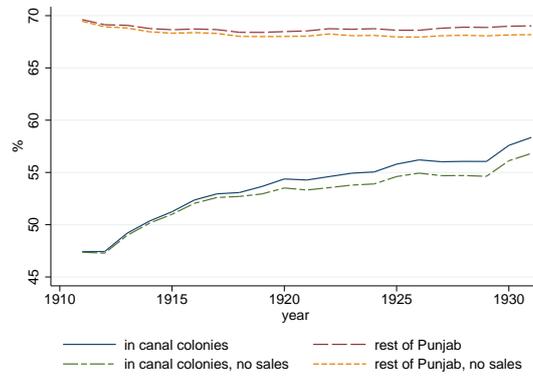
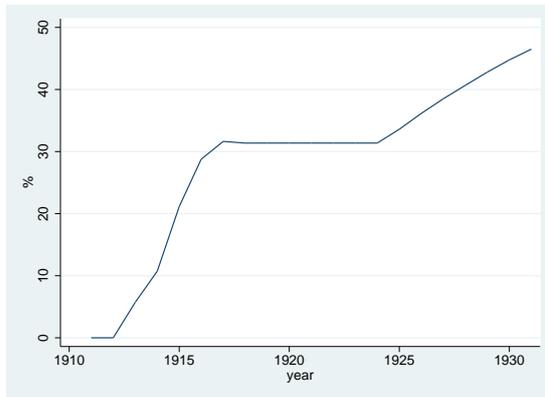
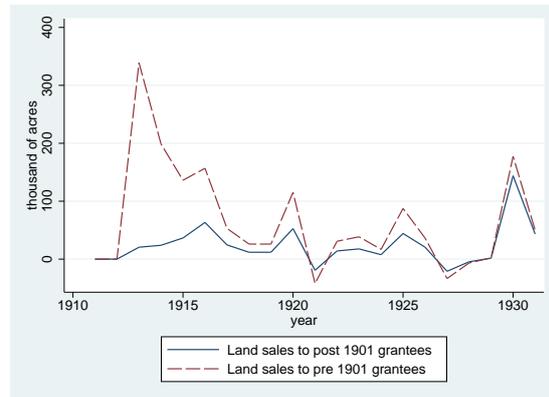


Figure 12: Distinction between pre and post Alienation Act grantees.



(a) Evolution of the share of land sold to post Alienation Act grantees.



(b) Quantity of land sold to pre and post Alienation Act grantees.

Table 1: Castes merging choices.

Merged with	Caste Name	Quote	Source	Note
Ahir	Gadi/Garri	"Gadis [...] are, perhaps, a sub division of the Ahir"	Punjab 1911 Census report, p.455.	[Not reported in 1881. Several quotes pointing to either Banjara, Dhanak, Rajput or Thori, but with majority for Baniara.]
	Hesi	"The entry [...] under Hesi [...] is a mistake [...]. The figures really belong to the Ahir Caste."	Punjab 1911 Census report, p.457.	
Arain	Baghban	"Baghban has been included in Mali"	Punjab 1911 Census report, p.435.	
	Mali	"...it is synonymous with Baghban and Arain"	Punjab 1891 Census report, p.309.	
	Maliar	"...in 1891 Maliar was classed under Mali and in 1881 under Baghban"	Punjab 1901 Census report, p.345.	
	Saini	"The Mali and Saini are in reality one and the same tribe"	Punjab 1931 Census report, p.347.	
	Sahnar/Sansar	"...they rank with the Arains."	Punjab 1911 Census report, p.474.	
Bania	Mahajan/Mahajan Pahari	"[...] to count them as Banyas as was done in 1881"	Punjab 1891 Census report, p.309.	
Banjara	Naik		Punjab 1891 Census report, p.311.	
Barwala	Batwal	"...they are akin to the Batwals"	Punjab 1911 Census report, p.449.	
Bazigar	Nat	"I have kept the figures distinct from those for Bazigars, though the difference between the two is doubtful"	Punjab 1891 Census report, p.311.	
Brahman	Bhojki	"They were recognised as Brahmans in Bhavishya Puran"	Punjab 1911 Census report, p.451.	
	Brahman (Muhial)	"Brahman muhial were not separately given in 1881"	Punjab 1901 Census report, p.346.	
	Dhusar	"I have included Bhargu Brahman and Brahman, Dhunsar Bhargu"	Punjab 1891 Census report, p.299.	
	Husaini	"Husaini [included] in Brahman"	Punjab 1911 Census report, p.435.	
	Padha	"Padhas are all Muhammadans who were converted sometimes back from Brahmans. [...] The Hindu Padhans have been returned as Brahmans."	Punjab 1911 Census report, p.470.	
Bhat	Bhatra	"The mixed caste of Bhat degraded into Bhatra""	Punjab 1911 Census report, p.450.	
	Kapri	"They also officiate as Bhats in weddings"	Punjab 1911 Census report, p.462.	
Biloch	Untwal	"Biloch includes Untwal in 1881."	Punjab 1901 Census report, p.345.	
Chamar	Chamrang	"Chamar included Chamrang in 1881."	Punjab 1901 Census report, p.346.	
	Dagi	"The Dagi Koli [...] in 1901, some of these returned themselves as weavers and Chamars"	Punjab 1911 Census report, p.440.	
	Jaiswara	"...entries of Chamar, jaiswara, have been returned under Chamar..."	Punjab 1891 Census report p.302	

Merged with	Caste Name	Quote	Source	Note
Chamar	Khatik	"Chamrang [included] in Khatik"	Punjab 1911 Census report, p.435.	
	Kori	"it is really a sub caste of Purbia Chamar"	Punjab 1911 Census report, p.464.	
	Pasi	"synonymous to Khatik, Chamrang"	Punjab 1911 Census report, p.471.	
Chhimba	Charhoa	"Charhoa in Dhobi"	Punjab 1911 Census report, p.435.	
	Darzi	"In some places members of occupational castes such as Darzi, Chhimba and Chhipi returned themselves as Tank Kshatriya"	Punjab 1931 Census report vol.2 p.281	
	Dhobi	"They are known in some parts as Chhimba." "In some places members of occupational castes such as Darzi, Chhimba and Chhipi returned themselves as Tank Kshatriya"	Punjab 1911 Census report, p.453.	
Chuhra	Tank	"Tank Kshatriya"	Punjab 1931 Census report vol.2 p.281	
	Kutana	"Kutana [...] were classed under Churha in 1881 and 1891."	Punjab 1901 Census report, p.346.	
	Mazhabi	"Mazabhi [...] were classed under Churha in 1881 and 1891."	Punjab 1901 Census report, p.346.	
Dagi	Musalli	"The Chuhras have decreased [...] during the past decade, but against this is to be set off the more than equal increase among the Musallis..."	Punjab 1911 Census report, p.440.	
	Chanal	"in 1881 and 1891 Chanal Hali and Sepi were included in Koli and Dagi"	Punjab 1901 Census report, p.346.	
	Gaddi	"I have therefore, classed the Hali and Sepi with the Gaddi"	Punjab 1891 Census report, p.301.	
Dagi	Hali	"in 1881 and 1891 Chanal Hali and Sepi were included in Koli and Dagi"	Punjab 1901 Census report, p.346.	
	Koli	"These two words [...] are used almost indifferently"	Punjab 1881 Census report, p.339.	
	Nar	"...it is a synonym for Dagi and Koli"	Punjab 1911 Census report, p.470.	
Dumna	Sepi	"in 1881 and 1891 Chanal Hali and Sepi were included in Koli and Dagi"	Punjab 1901 Census report, p.346.	
	Bhanjra	"in 1881 and 1891 Bhanjra and Sehnais were included in Dumna"	Punjab 1901 Census report, p.345.	
	Daoli	"a low caste of about the same status as Dumna"	Punjab 1911 Census report, p.453.	
Faqir	Kamachi	"Kamachi [included] in Mirasi"	Punjab 1901 Census report, p.345.	
	Mirasi	"The Dumnas [...] in the Gurdarpur District [...] were recorded in 1901 as Dums and classified under Mirasi"	Punjab 1911 Census report, p.440.	
	Rehar	"This caste appears to be closely allied to Dumna"	Punjab 1911 Census report, p.473.	
Faqir	Sehnai	"in 1881 and 1891 Bhanjra and Sehnais were included in Dumna"	Punjab 1901 Census report, p.345.	
	Abdal	"The Abdals, Chistis, Bairagis, Jogis etc., have now been returned as separate castes, while they were classed in 1901 as Fakirs"	Punjab 1911 Census report, p.440.	

Merged with	Caste Name	Quote	Source	Note
Faqir	Bairagi	"The Abdals, Chistis, Bairagis, Jogis etc., have now been returned as separate castes, while they were classed in 1901 as Fakirs"	Punjab 1911 Census report, p.440.	
	Benawa			[Benawa is a Faqir sub caste from 1891]
	Bhand	"I have also included [...] Abdal"	Punjab 1891 Census report, p.292.	
	Chisti	"The Abdals, Chistis, Bairagis, Jogis etc., have now been returned as separate castes, while they were classed in 1901 as Fakirs"	Punjab 1911 Census report, p.440.	
	Darvesh			[Darvesh is a Faqir sub caste from 1891]
	Gosain	"Faqir: [...] the larger differences are due possibly to the inclusion or exclusion from time to time of Gosains..."	Punjab 1931 Census report, p.338.	
	Jalali			[Jalali is a Faqir sub caste from 1891]
	Jogi	"The Abdals, Chistis, Bairagis, Jogis etc., have now been returned as *separate castes, while they were classed in 1901 as Fakirs"	Punjab 1911 Census report, p.440.	
	Jogi-Rawal	"there has been a good deal of confusion between the term of Jogi-Rawal and Jogi"	Punjab 1911 Census report, p.459.	
	Madari			[Madari is a Faqir sub caste from 1891]
	Nirmala			[Nirmala is a Faqir sub caste from 1891]
	Qadiri			[Qadiri is a Faqir sub caste from 1891]
	Qalandar	"most of this class call themselves Fakirs"	Punjab 1911 Census report, p.472.	
	Sadh			[Sadh is a Faqir sub caste from 1891]
	Sannyasi			[Sannyasi is a Faqir sub caste from 1891]
	Suthra Shahi			[Sythra Shahi is a Faqir sub caste from 1891]
Udasi			[Udasi is a Faqir sub caste from 1891]	
Ghirath	Bathi	"in 1881 and 1891 Bathi and Chang were included in Ghirath"	Punjab 1901 Census report, p.345.	
	Chang	"in 1881 and 1891 Bathi and Chang were included in Ghirath"	Punjab 1901 Census report, p.345.	
Ghosi	Ghai	"It [...] is equivalent to Ghosi"	Punjab 1911 Census report, p.456.	
Jat	Arab	"the group should apparently be considered as a sub caste of jat"	Punjab 1911 Census report, p.445.	
	Kanera	"... they are reckoned as a sub caste of Jat"	Punjab 1911 Census report, p.461.	
	Khokhar	"The Khokhars [...] have been returned as a sub caste of Jat"	Punjab 1911 Census report, p.440.	
	Lalla	"they possess the same status as Jats"	Punjab 1911 Census report, p.465.	
	Marth	"Marth [included] in Jat"	Punjab 1911 Census report, p.435.	
	Phiphra	"their status is similar to that of Jats, and are probably an isolated sub caste of that caste"	Punjab 1911 Census report, p.472.	

Merged with	Caste Name	Quote	Source	Note
Jat	Satiar	"Satiar [included] in Jat"	Punjab 1911 Census report, p.435.	
Jhinwar	Bharbunja	"term applied to Jhinwars or Bathiaras"	Punjab 1911 Census report, p.450.	
	Bhatiara	"...generally Jhinwars"	Punjab 1891 Census report, p.293.	
	Kahar	"Jhinwar who is aslo called Kahar..."	Punjab 1911 Census report, p.458.	
	Toba	"the Toba generally belong to the Jhinwar or Machhi caste"	Punjab 1911 Census report, p.476.	
Kanchan	Kanjar	"the corresponding term is [...] Kanchan"	Punjab 1911 Census report, p.456.	
Kalal	Ahluwalia		Punjab 1911 Census report, p.460.	[Given as a synonym of Kalal.]
	Kakkezai	"Kakkezai were included in Kalal in 1891"	Punjab 1901 Census report, p.437.	
Kumhar	Hadi	"They [...] are similar to the kumhar of the plains"	Punjab 1911 Census report, p.457.	
Khattri	Khakka	"khakhas are converted Khattris"	Punjab 1911 Census report, p.462.	
Labana	Banjara		Punjab 1911 Census report, p.465.	[Banjara listed as a synonym of Labana]
Lilari	Rangrez	"Rangrez [included] in Lilari"	Punjab 1911 Census report, p.435.	
Lodha	Kachhi	"They are also known as Lodha"	Punjab 1911 Census report, p.460.	
Lohar	Bot	"The may be placed in 4 classes [...]:Jocho [...] Loppa[...] Chhazang[...] Loban[...]"	Punjab 1891 Census report, p.295.	[Not reported in 1881. Arbitrarily put in Chhazang.]
	Chhazang	"shoud a Chahzang take a Lohar woman..."	Glossary of Castes and Tribes in Punjab and NWFP	[Reported only in 1881.]
	Kamangar	"Khamangar were included in Tharkan in 1891"	Punjab 1901 Census report, p.347.	
	Ram Garhi	"the discarding of the term Tarkhan and more recently to the adoption of Ramghari as their caste."	Punjab 1931 Census report, p.346.	
	Saiqalgir	"Saiqalgir was included in Lohar in 1891"	Punjab 1901 Census report, p.348.	
	Tarkhan	"The figures of Lohars and Tharkans are better studied together"	Punjab 1931 Census report, p.346.	
Maniar	Churigar	"are also known as Bangara, Maniar and Kachera"	Punjab 1911 Census report, p.453.	[no Bangara or Kachera in the data.]
Mahtam	Barhupia	"are said to have been really Mahtams"	Punjab 1891 Census report, p.291.	
	Mahton	"there can, I think, be little doubt as to the identity of those two names"	Punjab 1901 Census report, p.340.	
Mallah	Darein	"Darein [included] in Mallah"	Punjab 1911 Census report, p.435.	
Marija	Bagri	"they are sometimes called Marecha or Marija"	Punjab 1911 Census report, p.447.	

Merged with	Caste Name	Quote	Source	Note
Meo	Jhinwar	"The loss in Jihnvars is ascribable to the Muhammadan Jhinwars calling themselves Macchis at the present Census"	Punjab 1911 Census report, p.440.	
	Macchi	"returns of Meo outside of Delhi division have been recorded as Macchi"	Punjab 1891 Census report, p.310.	
	Men	"Mens are also called Meuns and the latter term has been confused with Meo."	Punjab 1911 Census report, p.468.	
Nungar	Shoragar	"Shoragar was included in Nungar in 1891"	Punjab 1901 Census report, p.348.	
Od	Beldar	"in 1891 Beldar were included in Od"	Punjab 1901 Census report, p.345.	
Paracha	Khoja		Punjab 1911 Census report p.471	[Khoja listed as a synonym of Paracha.]
Pathan	Deghan	"...included in the last census with Pathan"	Punjab 1891 Census report, p.298.	
Purbia	Gurkha	"I include [...]Purbia, Nipalia..."	Punjab 1891 Census report, p.301.	
	Kurmi	"It is as caste of Purbia cultivators"	Punjab 1911 Census report, p.465.	
	Lodha	"...also returned as Purbia, Lodkhe or Purbia, Lodhi..."	Punjab 1891 Census report, p.309.	
Raj	Batera	"...Were included in 1881 with Raj"	Punjab 1891 Census report, p.292.	
	Thavi	"Thavi [included] in Raj"	Punjab 1911 Census report, p.435.	
Rajput	Bodla	"it is a section of Wattu Rajput"	Punjab 1911 Census report, p.451.	
	Dhund	"Dhund includes Rajput Dhund in 1881, 1891 and 1901"	Punjab 1901 Census report, p.346.	
	Dogra	"Dogra [included] in Rajput"	Punjab 1911 Census report, p.435.	
	Gara	"the term gara denotes a cross breed and is applied particularlu to the issue of a Muhammadan Rajput by a wife of another caste"	Punjab 1911 Census report, p.455.	
	Janjua	"Rajput includes Janjua [...] in 1891"	Punjab 1901 Census report, p.348.	
	Kahut	"...obviously of Rajput origin"	Punjab 1911 Census report, p.460.	[Abnormal population in 1891 and 1921.]
		"A deputation of Kanets, Rathis etc., which wished themselves to be styled as Rajputs was received, and it was decided that there would be no objection to their being included amongst Rajputs..."	Punjab 1921 Census report, p.342.	
	Kanet	"...also returned as kharral and rajput kharral"	Punjab 1891 Census report, p.307.	
	Kathia	"it is a tribe of Rajput origin"	Punjab 1911 Census report, p.462.	
	Khattar	"the tribe is held by some to be of Rajput origin; other [...] Awan..."	Punjab 1911 Census report, p.463	[Abnormal population in 1881 and 1921. arbitrarily put in Rajput. 1911 population: 14,817.]

Merged with	Caste Name	Quote	Source	Note
Rajput	Khanzaha	"the term denotes an honorific title among the Rajput converts to Islam"	Punjab 1911 Census report, p.463.	[Rajput listed as a synonym of Thakar]
	Mahtam	"...a number of them have [...] returned themselves as a sub caste of Rajput"	Punjab 1911 Census report, p.467.	
	Pachhada	""Rajput includes[...] Pachhada in 1891""	Punjab 1901 Census report, p.348.	
	Rathi	"The large increase among the Rathis si the results of correct classification, particularly in Kangra, of the members of the caste, who were formerly included in Rajput"	Punjab 1911 Census report, p.440.	
	Reya	"Reya [included] in Rajput"	Punjab 1911 Census report, p.435.	
	Satti	""Rajput includes [...] Satti [...] in 1891""	Punjab 1901 Census report, p.348.	
	Thakkar	"The two words Thakkar and Thakur are often confused"	Punjab 1911 Census report, p.476.	
	Thakar		Punjab 1911 Census report, p.476.	
	Thakur	"thakur is now being adopted by high castes Rajput as a title of honour"	Punjab 1911 Census report, p.476.	
Sansi	Gedri	"they are allied to Sansis"	Punjab 1911 Census report, p.456.	
Sheikh	Qureshi	"Qureshi were included in Sheiks in 1891"	Punjab 1901 Census report, p.348.	
Tamboli	Tanaoli	"tamboli: the word is likely to be confused with Tanaoli"	Punjab 1891 Census report, p.317.	
Thathiar	Thathera		Punjab 1911 Census report, p.476.	[Thathiar listed as a synonym of Thathera]

Table 2: Controlling for attrition.

	Province level		District level	
	(1)	(2)	(3)	
post1901*agr	0.0621*** (0.0186)	0.0606*** (0.0131)	0.0580** (0.0242)	
agr	-0.0185 (0.0126)	-0.0164* (0.00849)	-0.00468 (0.0163)	
post1901	-0.0910*** (0.0136)	-0.0975*** (0.0293)		
Decade FE	NO	NO	YES	
District FE	NO	NO	YES	
Decade*District FE	NO	NO	YES	
Observations	429	2850	2850	
Adjusted R^2	0.151	0.047	0.244	

Weighted OLS regressions of caste's population growth rates by decade. Standard errors are clustered at the caste level in column 1 and are two way clustered at the district-decade and caste levels in column 2 and 3, *** p<0.01, ** p<0.05, * p<0.1.

Table 3: Castes dropping choices.

Caste dropped	Quote	Source	Note
American			[Foreign nationality. 1891 population: 144.]
Armenian			[Foreign nationality. 1891 population: 69.]
Arya	"the term arya appears as a caste for the first time in this census"	Punjab 1911 Census report, p.445.	[1921 population: 51,532.]
Bangali	"really a geographical term"	Punjab 1891 Census report, p.291.	[1921 population: 1,323.]
Canadian			[Foreign nationality. 1891 population: 26.]
Chirimar	"...is a functional term"	Punjab 1911 Census report, p.452.	[1921 population: 809.]
Dabgar	"a functional term"	Punjab 1911 Census report, p.453.	[1921 population: 414.]
Darugar	"the name is obviously functional"	Punjab 1911 Census report, p.453.	[1921 population: 458.]
Eurasian			[Foreign nationality. 1891 population: 3,087.]
European			[Foreign nationality. 1891 population: 30,538.]
Goanese			[Geographical term. 1891 population: 72.]
Hijra	"Eunuchs"	Punjab 1891 Census report, p.302.	[1921 population: 150.]
Jain			[Religion. 1901 population: 2,442.]
Jew			[Religion. 1891 population: 32.]
Khalsa	"it has been returned for the first time as a caste"	Punjab 1911 Census report, p.462.	[1921 population: 9,648.]
Kharasia	"it is really a functional term"	Punjab 1911 Census report, p.463.	[1921 population: 127.]
Khushabi	"it is a geographical term"	Punjab 1911 Census report p.464	
Kunjra	"it is really a functional term"	Punjab 1911 Census report, p.464.	[1921 population: 4,872.]
Madrasi	"...the servants of Europeans from Madras"	Punjab 1891 Census report, p.309.	[1891 population: 68.]
Maniar	"... the term, which is a functional one..."	Punjab 1911 Census report, p.467.	[1921 population: 9,727.]
Miana	"they are now recognised as a separate caste"	Punjab 1911 Census report, p.469.	[1921 population: 2,831]
Mujawir	"it is a functional term"	Punjab 1911 Census report, p.469.	[1921 population: 5,267.]
Native Christian			[Religion. 1891 population: 19,176.]
Parsi			[Religion. 1891 population: 526.]
Patwa	"it is a functional term"	Punjab 1911 Census report, p.472.	[1891 population: 249.]
Pujari	"... it is a functional term..."	Punjab 1911 Census report, p.472.	[1921 population: 1,431]
Sangtrash	"it is a functional term"	Punjab 1911 Census report, p.474.	[1921 population: 28]
Swiss			[Foreign nationality. 1891 population: 22.]
Tajik			[Foreign nationality. 1921 population: 44.]
Tamboli	"tamboli is a functional term."	Punjab 1911 Census report, p.476 .	[1921 population: 426.]
Thathiar	"is a functional term"	Punjab 1911 Census report, p.476.	[1901 population: 4,354.]
Turk			[Foreign nationality.1921 population: 560.]

Table 4: List of agricultural castes

District	Caste	Notification and date	District	Caste	Notification and date	
Hissar	Ahir	N°.2401-R, dated 21st June, 1933	Gujranwala	Arain	N°.32237, dated 21st December, 1921.	
	Arain			Awan	N°.32237, dated 21st December, 1921.	
	Bishnoi			Biloch	N°.32237, dated 21st December, 1921.	
	Dogar			Dogar	N°.87, dated 25th May, 1908.	
	Gujar			Gakhar	N°.32237, dated 21st December, 1921.	
	Jat			Gujar	N°.32237, dated 21st December, 1921.	
	Koreshi			Jat	N°.32237, dated 21st December, 1921.	
	Mali			Kamboh	N°.32237, dated 21st December, 1921.	
	Moghal			Kharral	N°.32237, dated 21st December, 1921.	
	Pathan			Koreshi	N°.109, dated 6th July, 1908.	
Rajput	Labana	N°.100, dated 30th March, 1906.				
Saiyad	Moghal	N°.32237, dated 21st December, 1921.				
Rohtak	Ahir	N°.2401-R, dated 21st June, 1933	Sheikhupura	Arain	N°.32238, dated 31st December, 1921.	
	Arain			Awan		
	Biloch			Biloch		
	Chauhan			Bodla		
	Gujar			Dogar		
	Jat			Gakhar		
	Koreshi			Gujar		
	Mali			Jat		
	Moghal			Kamboh		
	Pathan			Kharral		
Rajput	Koreshi					
Ror	Labana					
Saini	Mahtam	N°.441-183-17-2-2946, dated 7th March, 1923.				
Saiyad	Moghal					
Taga	Pathan					
Gurgaon	Ahir	N°.76, dated 4th April, 1910.	Gujrat	Arain	N°.12, dated 13th January, 1913.	
	Biloch			Awan		
	Gujar			Bahrupia		
	Jat			Biloch		
	Khanzada			Gujar		
	Koreshi			Jat		
	Mali			Koreshi		
	Meo			Labana		N°.100, dated 30th March, 1906.
	Moghal			Maliar		N°.1076-R, dated 1st April, 1935.
	Pathan			Moghal		
Rajput	Pathan					
Saiyad	Rajput					
Taga	Saiyad					

District	Caste	Notification and date	District	Caste	Notification and date
Karnal	Abbasi	N°.127, dated 20th May, 1909.	Shahpur	Ahir	N°.675-R, dated 29th February, 1936.
	Ahir			Arain	
	Ansari			Awan	
	Arain			Biloch	
	Dogar			Gujar	
	Gadi			Jat	
	Gujar			Kamboh	
	Jat			Khkhar	
	Kamboh			Koreshi	
	Koreshi			Maliar	
	Mali			Moghal	
	Meo			Pathan	
	Moghal			Rajput, excluding	
	Pathan			Bhatia	
	Rajput			Bhatia	
	Ror			Saiyad	
	Saini				
Saiyad					
Taga					
Usmani					
Ambala	Abbasi	N°.223, dated 20th August, 1914.	Jhelum	Akra	
	Ahir			Awan	
	Ansari	N°.223, dated 20th August, 1914.		Bhatti	
	Arain			Biloch	
	Biloch			Chauhan	
	Gara			Chib	
	Gaur	N°. 3137-R, dated 18th		Gakhar	
	Brahman	September, 1934.		Gujar	
	Gujar			Jalap	
	Jat			Janjua	
	Kamboh			Jat	
	Kanet	N°.60, dated 22nd April, 1908.		Jodh	
	Koreshi	N°.233, dated 20th August, 1914.		Kahut	
	Labana	N°.100, dated 30th March, 1906.		Kasar	
	Magh			Khandoya	
	Mali			Khokar	
	Moghal			Koreshi	
Pathan		Lilla			
Rajput		Mair and			
Ror		Manhas			
Saini		Maliar			
Saiyad		Moghal and			
Taga		Kok			
Simla	Badi	N°.16177, dated 21st of June, 1919.	Rawalpindi	Awan	
	Bohara	N°.5077, dated 16th February, 1921.		Biloch	
	Brahman	N°.223, dated 20th August, 1914.		Danial	
	Christain	N°.223, dated 20th August, 1914.		Dhund	

District	Caste	Notification and date	District	Caste	Notification and date
Simla	Kanet	N°.223, dated 20th August, 1914.	Rawalpindi	Gakhar	
	Koli	N°.223, dated 20th August, 1914.		Gujar	
	Kumhar	N°.223, dated 20th August, 1914.		Jat	
	Lohar	N°.223, dated 20th August, 1914.		Jodhra	
	Mochi	N°.223, dated 20th August, 1914.		Khethwal	
	All Pujaris indigneous to the Kotgarh ilaqa	N°.223, dated 20th August, 1914.		Khattar	
	Rajput	N°.223, dated 20th August, 1914.		Koreshi	
	Rohar	N°.223, dated 20th August, 1914.		Maliar	
	Sunar	N°.223, dated 20th August, 1914.		Moghal	
Kangra	Arain	N°.8111, dated 24th March, 1919.	Attock	Pathan	
	Bhatti	N°.54, dated 18th February, 1914 and N°60, dated 22nd April, 1908.		Rajput	
	Chhang	N°204, dated 20th July, 1914.		Satti	
	Dagi	N°204, dated 20th July, 1914.		Saiyad	
	Gadi	N°204, dated 20th July, 1914.		Awan	N°.36, dated 31st January, 1919.
	Ghirath	N°204, dated 20th July, 1914.		Bati Sheikh	N°.176, dated 17th July, 1912.
	Gujar	N°204, dated 20th July, 1914.		Bhatti	N°.36, dated 13th January, 1906.
	Jat	N°204, dated 20th July, 1914.		Biloch	N°.36, dated 13th January, 1906.
	Kanet	N°204, dated 20th July, 1914.		Gakhar	N°.36, dated 13th January, 1906.
	Koli	N°204, dated 20th July, 1914.		Gujar	N°.36, dated 13th January, 1906.
	Rajput	N°204, dated 20th July, 1914.		Jat	N°.36, dated 13th January, 1906.
	Rathi	N°204, dated 20th July, 1914.		Janjua	N°.36, dated 13th January, 1906.
	Saini	N°204, dated 20th July, 1914.		Jodhra	N°.36, dated 13th January, 1906.
	Thakur	N°204, dated 20th July, 1914.		Jodhra	N°.36, dated 13th January, 1906.
				Kahut	N°.36, dated 13th January, 1906.
		Khattar	N°.36, dated 13th January, 1906.		
		Koreshi	N°.36, dated 13th January, 1906.		
		Mair and	N°.36, dated 13th January, 1906.		
		Manhas	N°.36, dated 13th January, 1906.		
		Maliar	N°.36, dated 13th January, 1906.		
		Moghal	N°.36, dated 13th January, 1906.		
		Pathan	N°.36, dated 13th January, 1906.		
		Rajput	N°.36, dated 13th January, 1906.		
		Sadiqi	N°.176, dated 17th July, 1912.		
		Sheikh	N°.36, dated 13th January, 1906.		
		Saiyad	N°.36, dated 13th January, 1906.		
Hoshiarpur	Arain		Mianwali	Ahir	
	Awan			Arain	
	Bhatti	N°.127, dated 27th May, 1909.		Awan	
	Chhang			Baghban	
	Dogar			Biloch	
	Girath			Gujar	
	Gujar			Jat	
	Jat			Kharral	
	Kanet			Khokhar	
	Koreshi	N°.44, dated 4th March, 1911.		Koreshi	
Labana	N°.100, dated 30th March, 1906.	Pathan			
Mahtam		Rajput			
Moghal		Saiyad			
Pathan					

District	Caste	Notification and date	District	Caste	Notification and date
Hoshiarpur	Rajput Saini Saiyad	N°237, dated 26th August, 1914.	Mianwali		
Jullundur	Arain Awan Dogar Gujar Jat Kamboh Koreshi Labana Mahtam Pathan Rajput Saini Saiyad	N°.195, dated 30th July, 1912. N°.100, dated 30th March, 1906.	Montgomery	Arain Awan Bhatti Biloch Bodla Dogar Jat Kamboh Khagga Kharral Koreshi Matham Pathan Rajput Saiyad	N°.781-R, dated 30th July, 1927. N°.107, dated 6th July, 1908. N°.1684-R, dated 6th July, 1931 N°.107, dated 6th July, 1908. N°.107, dated 6th July, 1908.
Ludhiana	Arain Awan Dogar Gujar Jat Kamboh Koreshi Labana Pathan Rajput Saini Saiyad	N°.2401-R, dated 21st June, 1933. N°.100, dated 30th March, 1906.	Lyalpur	Arain Awan Bhatti Biloch Ghakhar Gujar Jat Kamboh Khagga Kharral Kokara Koreshi Moghul Pathan Rajput Saini Saiyad	N°.79, dated 12th April, 1907. N°.4643-R, dated 23rd August, 1929. N°.79, dated 12th April, 1907. N°.79, dated 12th April, 1907. N°.4643-R, dated 23rd August, 1929. N°.79, dated 12th April, 1907. N°.79, dated 12th April, 1907. N°.79, dated 12th April, 1907. N°.4643-R, dated 23rd August, 1929. N°.79, dated 12th April, 1907. N°.79, dated 12th April, 1907. N°.79, dated 12th April, 1907. N°.79, dated 12th April, 1907.
Ferozepore	Arain Baloch Bodla Dogar Gujar Kamboh Koreshi Labana Mahtam Moghal Mussalman Jat Other Jat Pathan Rajput Saini Saiyad	N°.361, dated 8th December, 1914. N°.2401-R, dated 21st June, 1933. N°.100, dated 30th March, 1906. N°.168, dated 30th August, 1909.	Jhang	Arain Biloch Gujar Jat Kokara Koreshi Nekokara Pathan Rajput Saiyad Turk	N°.91, dated 8th June, 1908. N°.2129-R, dated 20th May, 1933. N°.4667-R, dated 26th August, 1929. N°. 194, dated 18th August, 1906.
Lahore	Arain Awan	44	Multan	Ahir Arain	

District	Caste	Notification and date	District	Caste	Notification and date
Lahore	Biloch	N°.135, dated 18th August, 1908.	Multan	Awan	N°.948-R, dated 28th March, 1936. N°.1694-R, dated 11th August, 1927
	Bodla	N°.85, dated 25th May, 1908.		Biloch	
	Dogar			Gujar	
	Jat			Jat	
	Kamboh			Kamboh	
	Kharral			Kharral	
	Koreshi			Khokhar	
	Labana			Koreshi	
	Mahtam			Mahtam	
	Moghal			Moghal	
Pathan	Od				
Rajput	Pthan				
Saiyad	Rajput excluding Bhatia				
Amritsar	Arain	N°.93, dated 5th June, 1907.	Muzaffargarh	Arain	N°.187, dated 22nd November, 1907. N°.169, dated 6th June, 1914.
	Awan			Awan	
	Dogar			Biloch	
	Gujar			Jat	
	Jat			Koreshi	
	Kakkezai			Pathan	
	Kamboh			Rajput	
	Koreshi			Saiyad	
	Labana				
	Moghal				
Pathan					
Rajput					
Saiyad					
Gurdaspur	Arain	N°.163, dated 26th August, 1909.	Dera Ghazi Khan	Arain	
	Chhang			Biloch	
	Dogar			Jat	
	Gujar			Khethran	
	Jat			Koreshi	
	Kakkezai			Machhi	
	Kamboh			Moghal	
	Koreshi			Mujawar	
	Labana			Pathan	
	Moghal			Rajput	
Pathan	Saiyad				
Rajput					
Saini					
Saiyad					
Sialkot	Arain	N°. 2337-R, dated 24th August, 1935.			
	Awan				
	Baghban				
	Dogar				
	Gakhar				
	Gujar				
	Jat				
Kakkezai					
Kamboh					

District	Caste	Notification and date	District	Caste	Notification and date
Sialkot	Koreshi	N°.787, dated 8th August, 1906.			
	Labana	N°.100, dated 30th March, 1906.			
	Moghal				
	Pathan				
	Rajput Saini Saiyad				

Table 5: Access to canal colonies: migration robustness check

	Province level	District level	
	(1)	(2)	(3)
post1901*access*agr	0.0315* (0.0177)	0.0336*** (0.00790)	0.0398* (0.0235)
post1901*agr	0.0515*** (0.0132)	0.0477*** (0.00824)	0.0399** (0.0177)
access*agr	0.0147 (0.0109)	0.0136** (0.00541)	0.00625 (0.0255)
agr	-0.0297*** (0.00911)	-0.0279*** (0.00599)	-0.00989 (0.0164)
post1901	-0.0724*** (0.00735)	-0.0759** (0.0350)	
access	-0.00426 (0.00704)	-0.00861 (0.0358)	
post1901*access	-0.0416*** (0.0154)	-0.0452 (0.0457)	
District FE	NO	NO	YES
Decade FE	NO	NO	YES
Decade*District FE	NO	NO	YES
Observations	720	2850	2850
Adjusted R^2	0.188	0.068	0.251

Weighted OLS regressions of caste's population growth rates by decade. Standard errors are clustered at the caste level in column 1 and are two way clustered at the district-decade and caste levels in column 2 and 3, *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Population by type of caste in British Punjab, 1901 to 1911

Agricultural caste	1901 population	1911 population
NO	8 301 627	7 861 148
YES	8 441 088	8 581 680

Source: Census of India, 1901 to 1911.

Table 7: Computation of the decomposed growth rates

	1901-1911	1911-1921
g_0	-0.076	-0.075
g_1	0.039	0.038
g_2	-0.04	-0.041

Table 8: Computation of the number of caste identity changers

	1901-1911	1911-1921
Number of new caste identity changers	330 227	323 711
Share of new caste identity changers among non agricultural castes	4%	3.9%

Table 9: Population by type of caste and type of district in British Punjab, 1901 to 1911

Agricultural caste	Access to Canal colonies	1901 population	1911 population
NO	NO	1 027 357	1 037 527
YES	NO	1 469 080	1 489 818
NO	YES	7 274 270	6 823 621
YES	YES	6 972 008	7 091 862

Source: Census of India, 1901 to 1911.

Table 10: Computation of the decomposed growth rates

	1901-1911	1911-1921
g_0	-0.045	-0.045
g_1	0.015	0.015
g_2	-0.022	-0.022
g_5	-0.035	-0.034
g_6	0.027	0.026
g_7	-0.019	-0.02

Table 11: Computation of the number of caste identity changers due to the access to land government

	1901-1911	1911-1921
Number of new caste identity changers using g_6	189 317	180 918
Number of new caste identity changers located in canal colonies using g_6	93 901	89 735
Number of new caste identity changers using g_7	137 091	139 810
Number of new caste identity changers located in canal colonies using g_7	67 997	69 346

Table 12: The Canal Colonies of Punjab.

Name of Colony	Period of Colonisation	District	Area in acres
Sidhnai	1886-1888	Multan	250,000
Sohag Para	1886-1888	Montgomery	86,300
Chunian	1896-1898 & 1904-1906	Lahore	102,500
Chenab	1892-1905 & 1926-1930	Gujranwala, Jhang, Lyallpur, Lahore, Sheikhpura	1,824,745
Jhelum	1902-1906	Shahpur, Jhang	540,000
Lower Bari Doab	1914-1924	Montgomery, Multan	1,192,000
Upper Chenab	1915-1919	Gujranwala, Sialkot, Sheikhpura	78,800
Upper Jhelum	1916-1921	Gujrat	42,300
Nili Bar	1926-not completed by 1940's	Montgomery, Multan	1,650,000

Table adapted from Ali (1988).

Table 13: Corrections to the land ownership data.

Year	Error	Correction	Report Reference
1910	Owned areas underestimated	Dropping 1910	<i>"The difference in the area totals in the statement are due to the fact that the instruction for its preparation issued somewhat late in 1910 and it was not possible to comply with them in every case in the statement for 1909-10"</i> (1910-1911 Report).
1911 & 1912	Large decrease in area privately owned in Ludhiana from 1912.	Attribution of 1913 areas to the years preceding.	Not mentioned in the reports.
1913	Large increase in area privately owned in Kangra from 1913.	Attribution of 1913 areas to the years preceding.	Not mentioned in the reports.
1913	Large decrease in area privately owned in Gurdaspur from 1913.	Attribution of 1913 areas to the years preceding.	Not mentioned in the reports.
1914	Large decrease in area privately owned in Gujrat/Shapur from 1914.	Attribution of 1915 areas to the years preceding.	Not mentioned in the reports.
1914	Large decrease in the total area of Jullundur in 1914 only.	Linear interpolation of 1913's and 1915's data.	<i>"Large decreases in Jullundur [...] require further explanation"</i> (1913-1914 Report).
1917	Large increase in the area of Jullundur in 1917 only.	Linear interpolation of 1916's and 1918's data.	Not mentioned in the reports.
1918	Large increase in Montgomery's areas and government's ownership from 1918.	Replacing by 1918's total's area, and giving to the government the added area before 1918.	<i>"the reason for the very great increase reported last year in the area of the Montgomery district was further investigated and it was ascertained that the increase was almost entirely due to the fact that the district figures for the first time included the area of all government waste and forest lands, this area having been erroneously excluded in the figures reported in the previous years"</i> (1918-19 Report).
1918	Large decrease in the area owned by non agricultural in 1918 only	Linear interpolation of 1917's and 1919's data.	Not mentioned in the reports.
1918	Large increase in Kangra's areas and government's ownership from 1918.	Replacing by 1918's total's area, and giving to the government the added area before 1918.	Not mentioned in the reports.
1918, 1919, 1920	Large increase in the number of owners in Jullundur for those years only.	Linear interpolation between 1917 and 1921.	Not mentioned in the reports.
1920	Large increase of Multan's area in 1920 only.	Linear interpolation of 1919's and 1920's data.	<i>"The decrease in Multan is said to be due to a correction of areas consequent upon demarcation of boundaries in the Khanewal district"</i> (1920-21 Report).
1921	Large increase of Kangra's area from 1921.	Replacing by 1921's total's area, and giving to the government the added area before 1921.	<i>"the increase in Kangra [...] is attributed to the correction of settlement area [...]"</i> (1920-21 Report)
1920	Large drop in area owned by government and increase of agricultural and non agricultural ownership in 1920 only.	Linear interpolation of 1919's and 1920's data.	Not mentioned in the reports.
1923	Large decrease in the areas of Amballa and Hoshiarpur in 1923 only.	Linear interpolation of 1922's and 1924's data.	<i>"The decrease of 241,696 acres reports last year by the district officers[...] was found to be due to errors in the Ambala and Hoshiarpur reports, the corrected figures have been incorporated in the present report."</i> (1923-24 Report).
1923	Large drop in area owned by government in Shahpur in 1923 only.	Linear interpolation of 1922's and 1924's data.	Not mentioned in the reports.
1924	Large increase in the area owned by agricultural castes in Amritsar in 1924 only.	Linear interpolation of 1923's and 1925's data.	Not mentioned in the reports.
1930	Large decrease of area owned by government in Lyallpur in 1930 only.	Linear interpolation of 1929's and 1931's data.	Not mentioned in the reports.

Table 14: Corrections to the land owners data.

Year	Error	Correction	Report Reference
1914	Large decrease in the number of owners Jullundur	Linear interpolation of 1913's and 1915's data.	Not mentioned.
1918,1919 & 1920	Peak in the number of "others" owners in Jullundur	Linear interpolation of 1917's and 1921's data.	Not mentioned.
1921	Peak in the number of land owners in Gujrat and Shahpur	Linear interpolation of 1920's and 1922's data.	Not mentioned.
1923	Drop in the number if land owners in Shahpur	Linear interpolation of 1922's and 1923's data.	Not mentioned.
1924	Drop in the number if land owners in Ludhiana	Linear interpolation of 1923's and 1925's data.	Not mentioned.
1924	Drop in the number of "others" owners in Amritsar	Linear interpolation of 1923's and 1925's data.	Not mentioned.
1924	Peak in the number of agricultural land owners in Gujranwala	Linear interpolation of 1923's and 1925's data.	Not mentioned.
1928	Peak in the number of agricultural land owners in Shahpur	Linear interpolation of 1923's and 1925's data.	Not mentioned.

Table 15: Corrections to the land sales data.

Year	Error	Correction	Report Reference
1913	Inclusion of Government sales in Gujranwala, Lahore and Jhang districts	Linear interpolation of 1912's and 1914's data.	<i>"the statistics of sales and sale prices are largely vitiated by the inclusion in the Gujranwala, Lahore and Jhang returns of sales of proprietary rights by Government to colonists"</i> (1913 Report).
1919	Inclusion of Government sales in Montgomery and Multan	Linear interpolation of 1918's and 1920's data.	<i>"Almost the whole increase [...] in the cultivated area sold is accounted for by the figure for Montgomery and Multan districts [...] the increase being due to sales of proprietary rights in Government land to colonists and crown tenants"</i> (1919 Report).

Table 16: Counterfactual Agricultural caste land owners population.

	1911	1931	Growth Rate	1931 Counterfactual
Agricultural Castes in non colonies districts	1,706,944	2,207,795	29.3%	
Agricultural Castes in colonies districts	646,179	953,009	47.5%	835,781
Counterfactual Increase in Agricultural caste land owners				117,228
Non agricultural Castes in colonies districts	163,329	222,384	36.2%	
Agricultural Castes in colonies districts	646,179	953,009	47.5%	879,818
Counterfactual Increase in Agricultural caste land owners				73,191