Inequality, Institutions and Intergenerational Educational Mobility: Dynamics of Change in Rural Punjab

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Motivation

- Few studies in South Asian context of degree of social mobility
  - Measured by the intergenerational persistence in economic outcomes
- Despite nexus between inequality and social mobility, two literatures have developed largely in isolation from one another
  - Little know about association between inequality and intergenerational mobility
  - Stands in contrast to burgeoning literature on consequences of inequality on growth, health etc.

Why rural Central Punjab?

- High performer in terms of growth, urbanization and provision of schooling since independence

  – To what extent has this experience been accompanied by equality of opportunities or social mobility

- Allows us to learn about nexus between inequality and social mobility as change taking place in

  – Historical context of high degree of social stratification in villages - access to assets and occupational-status historically tied to *quom* status

Historical context allows us to ask…

- Given deep rooted social divisions, do we see differential patterns of social mobility for different social groups?

Measures

- Focus on intergenerational educational mobility
  - Less prone to serious errors than earnings
  - Life cycle biases are unlikely to bias estimation when compared with earnings
  - Correlated with higher earnings, movements out of poverty, health and other economic outcomes (Black and Devereux 2011)
  - Considerable importance after the passage of Article 25-A of the Constitution
- Historical quom-based social stratification
  - Zamindars, Artisans and Landless (HDQ)

Sargodha village & HH Survey (2008)

- Allows us to identify father and grandfather's education for residents and co-residents
  - Most surveys collect data on co-residents and their estimates suffer from downward-bias (Azam and Bhatt 2012)
- Data on actual years of schooling rather than levels of schooling completed
- 35 village and 1085 households
  - Random stratified sample of colonial village settlements
  - Random quom stratified household sample

Regression Equation

- For each household, there are 3 generational cohorts defined as follows:
  - Generation 1 ("grandfather"): individuals aged 65+ years in the survey year 2008
  - Generation 2 ("father"): individuals aged 40-65 years in 2008
  - Generation 3 ("son"): individuals aged 20-40 years in 2008
- For household h and generation i, the regression equation is given as follows:

$$educ_{i,h} = \beta_0 + \beta_1\, educ_{i-1,h} + u_h\,, i \in \{2,3\}\,, h = 1,2,\ldots 417$$

Intergenerational Educational Mobility in Sargodha

	Dependent variable	
	Father's years of schooling	Eldest son's years of schooling
Grandfather's/Father's years of schooling (Beta-hat)	0.875 ***	0.413 ***
	(0.074)	(0.04)
Mobility	0.125	0.587
Observations	417	417
R-squared	0.154	0.204

Standard errors clustered at the village level reported in parentheses
*** 1 % significance level; ** 5% significance level; * 10% significance level

Pronounced decline in persistence across generational cohorts

Intergenerational Educational Mobility by Quom in Sargodha

	Dependent Variable	
	Father's years of schooling	Eldest son's years of schooling
	Zamindar	
Grandfather's/Father's years of schooling (Beta-hat)	0.802 ***	0.279 ***
	(0.087)	(0.061)
Mobility	0.198	0.721
Observations	228	228
R-squared	0.157	0.120
	Artisan	
Grandfather's/Father's years of schooling (Beta-hat)	0.910 ***	0.506 ***
	(0.149)	(0.090)
Mobility	0.090	0.494
Observations	79	79
R-squared	0.167	0.294
	Historically Depressed Quom	
Grandfather's/Father's years of schooling (Beta-hat)	0.680	0.525 ***
	(0.459)	(0.094)
Mobility	0.320	0.475
Observations	108	108
R-squared	0.058	0.179

Persistence much more pronounced among artisans and HDQs
Much higher relative rates of mobility among zamindars

Intergenerational Educational Mobility by Social Groups in India - (I)

Dependent variable: Son's years of schooling

	Son's Birth Cohort	
	1961 - 1965	**1981 - 1985**
	Higher Hindu Castes	
Grandfather's/Father's years of schooling (Beta-hat)	0.510 ***	0.406 ***
	(0.025)	(0.021)
Mobility	0.490	0.594
Observations	1474	2018
R-squared	0.271	0.271
	Other Backwards Castes	
Grandfather's/Father's years of schooling (Beta-hat)	0.645 ***	0.487 ***
	(0.033)	(0.028)
Mobility	0.355	0.513
Observations	2027	3114
R-squared	0.217	0.267

Azam and Bhatt (2012)

Intergenerational Educational Mobility by Social Groups in India - (II)

Dependent variable: Son's years of schooling

	Son's Birth Cohort	
	1961 - 1965	**1981 - 1985**
	Scheduled Castes/Tribes	
Grandfather's/Father's years of schooling (Beta-hat)	0.685 ***	0.467 ***
	(0.043)	(0.027)
Mobility	0.315	0.533
Observations	1667	2622
R-squared	0.207	0.179
	Muslims	
Grandfather's/Father's years of schooling (Beta-hat)	0.622 ***	0.571 ***
	(0.051)	(0.026)
Mobility	0.378	0.429
Observations	628	1316
R-squared	0.217	0.308

Azam and Bhatt (2012)

Generational Transition to Schooling by Quom

	Zamindar	Artisan	Historically Depressed Quom (HDQ)	Differences in means		
				(i) Zamindar - Artisan	(ii) Artisan - HDQ	(iii) Zamindar - HDQ
Grandfather - Father	0.500	0.443	0.185	0.0571	0.2584***	0.3155***
				0.069	0.068	0.056
Father - Son	0.808	0.700	0.605	0.1077	0.0953	0.2030***
				0.077	0.092	0.064

Standard errors reported below the difference in means

*** 1 % significance level; ** 5% significance level; * 10% significance level

Low rates of school transitions at the bottom of the social ladder – concerns for 25-A

School Provision

35 Sample Villages

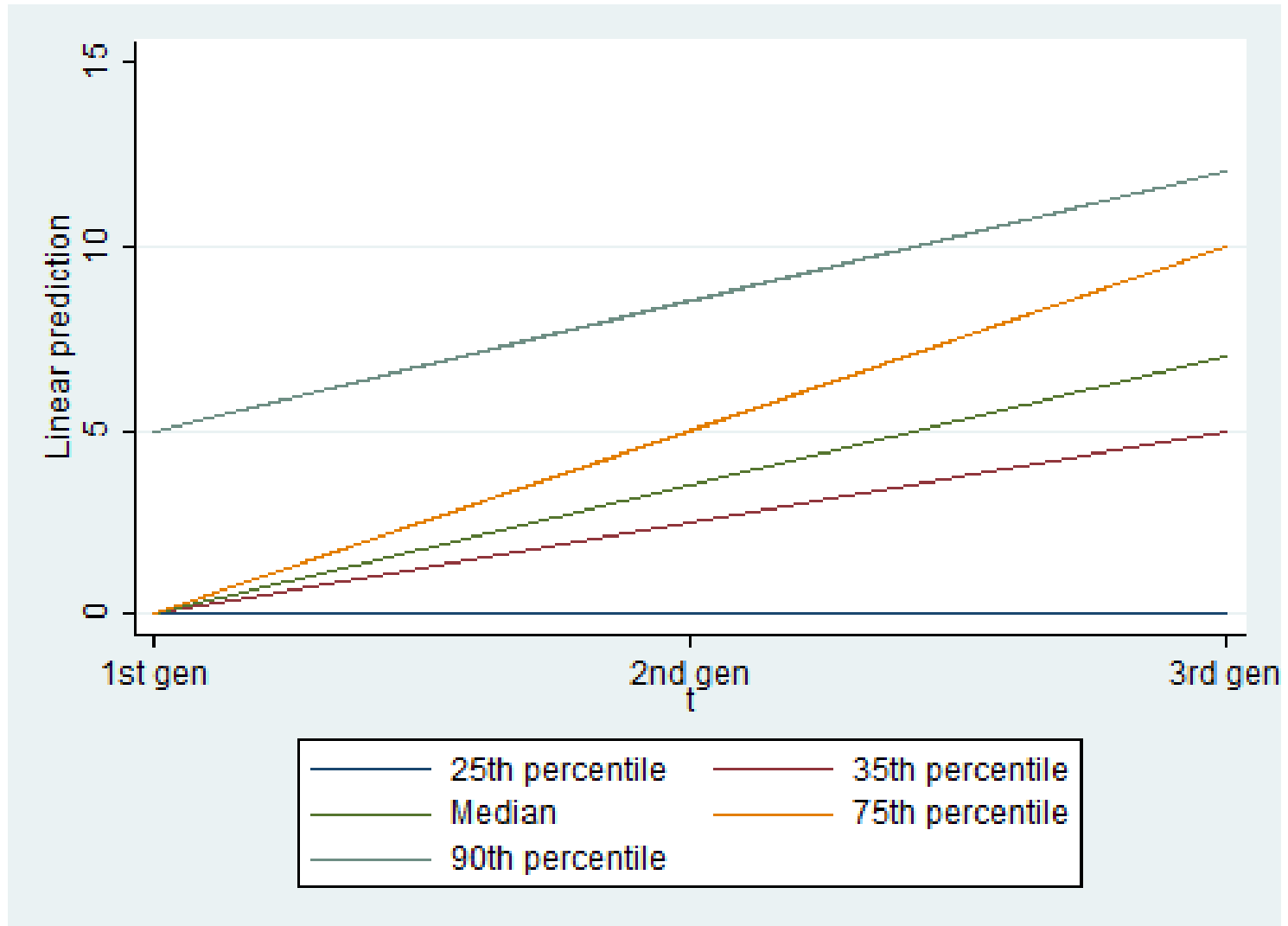| Time period	# private schools	# public schools	# villages without school
-1950	0	8	27
1951-70	0	36	8
1971-90	0	69	1
1991-	15	76	1

* Source: NEC 2005

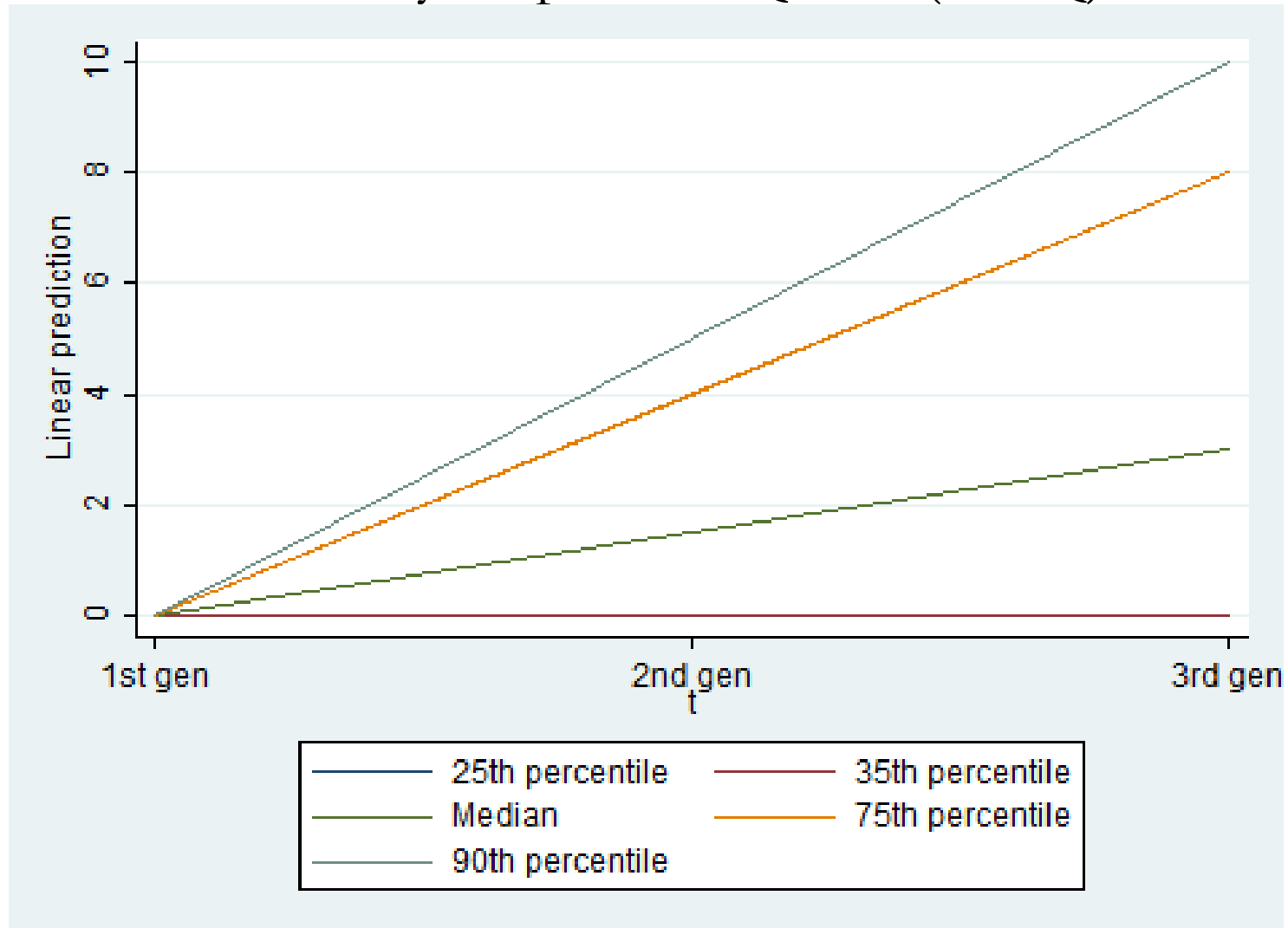**Low rates of school transitions among HDQs points to demand-side constraints or discrimination within schools**

Quantile Plots for Educational Attainment - <u>Zamindar</u>
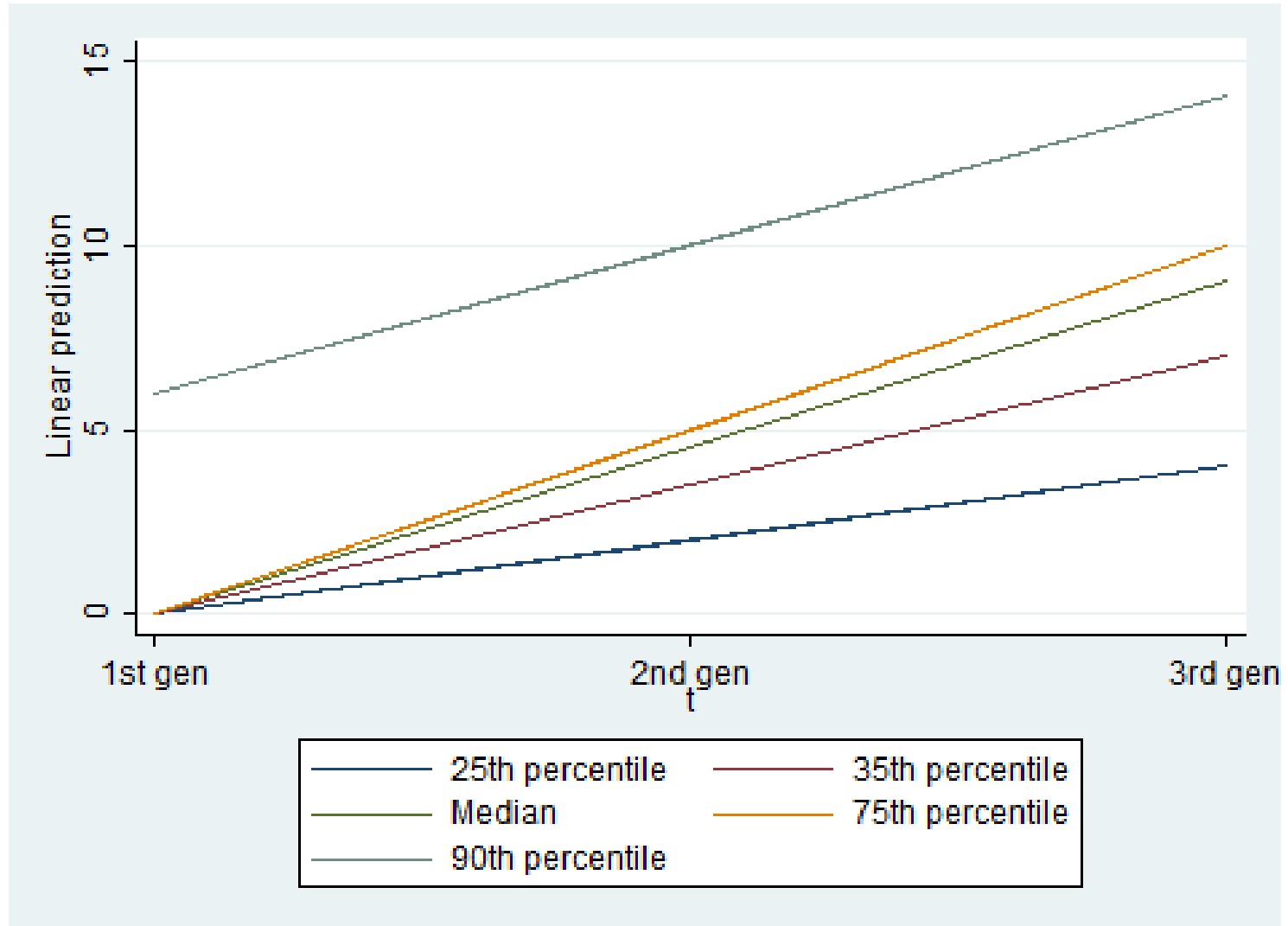
Quantile Plots for Educational Attainment - <u>Artisan</u>

Quantile Plots for Educational Attainment -
Historically Depressed Quom (HDQ)

Historical context also allows us to ask…

- Do we see differential patterns of social mobility given village-level differences in concentration of right to property in landlords

- Colonial village settlements varied the concentration of rights to property in landlords

Colonial Village Settlements

- Proprietary Estates
  - Rights to agricultural, residential and common land bundled in an oligarchy of land owning families
  - Landless tenants and artisans disenfranchised from ownership or possession
  - Adoption of customary law strengthened tribal and clan cohesion among landowners

- LJC Canal colony villages
  - Landless tenants and artisans given right of possession to residential and grazing land
  - Colony law did not give primacy to tribal and clan-based customs

Classifying Institutions

- Classify villages of Sargodha District as proprietary or canal colony estates based on database of district revenue archives

    - Village administrative papers (*Wajib-al-Arz)* part of Record of Rights detail rights to different types of land for each village

    - Colonial village inspection reports record observations of colonial settlement officers on type of settlement

    - Colonial village settlement maps

Intergenerational Educational Mobility by Village Type in Sargodha

	Dependent Variable	
	Father's years of schooling	Eldest son's years of schooling
	Propriety Estates	
Grandfather's/Father's years of schooling (Beta-hat)	0.914 ***	0.401 ***
	(0.103)	(0.057)
Mobility	0.086	0.599
Observations	268	268
R-squared	0.174	0.186
	Canal Colony Estates	
Grandfather's/Father's years of schooling (Beta-hat)	0.787 ***	0.431 ***
	(0.086)	(0.049)
Mobility	0.213	0.569
Observations	149	149
R-squared	0.120	0.232

Generational Transition to Schooling by Quom and Village Type

	Zamindar			Artisan			Historically Depressed Quom		
	Propriety Estates	Canal Colony Estates	Difference	Propriety Estates	Canal Colony Estates	Difference	Propriety Estates	Canal Colony Estates	Difference
Grandfather - Father	0.6716	0.4161	0.2556***	0.3636	0.4792	-0.1155	0.3023	0.1	0.2023***
			0.073			0.129			0.076
Father - Son	0.8261	0.8025	0.0236	0.7333	0.68	0.0533	0.6333	0.5893	0.044
			0.094			0.153			0.112

Standard errors reported below the difference in means
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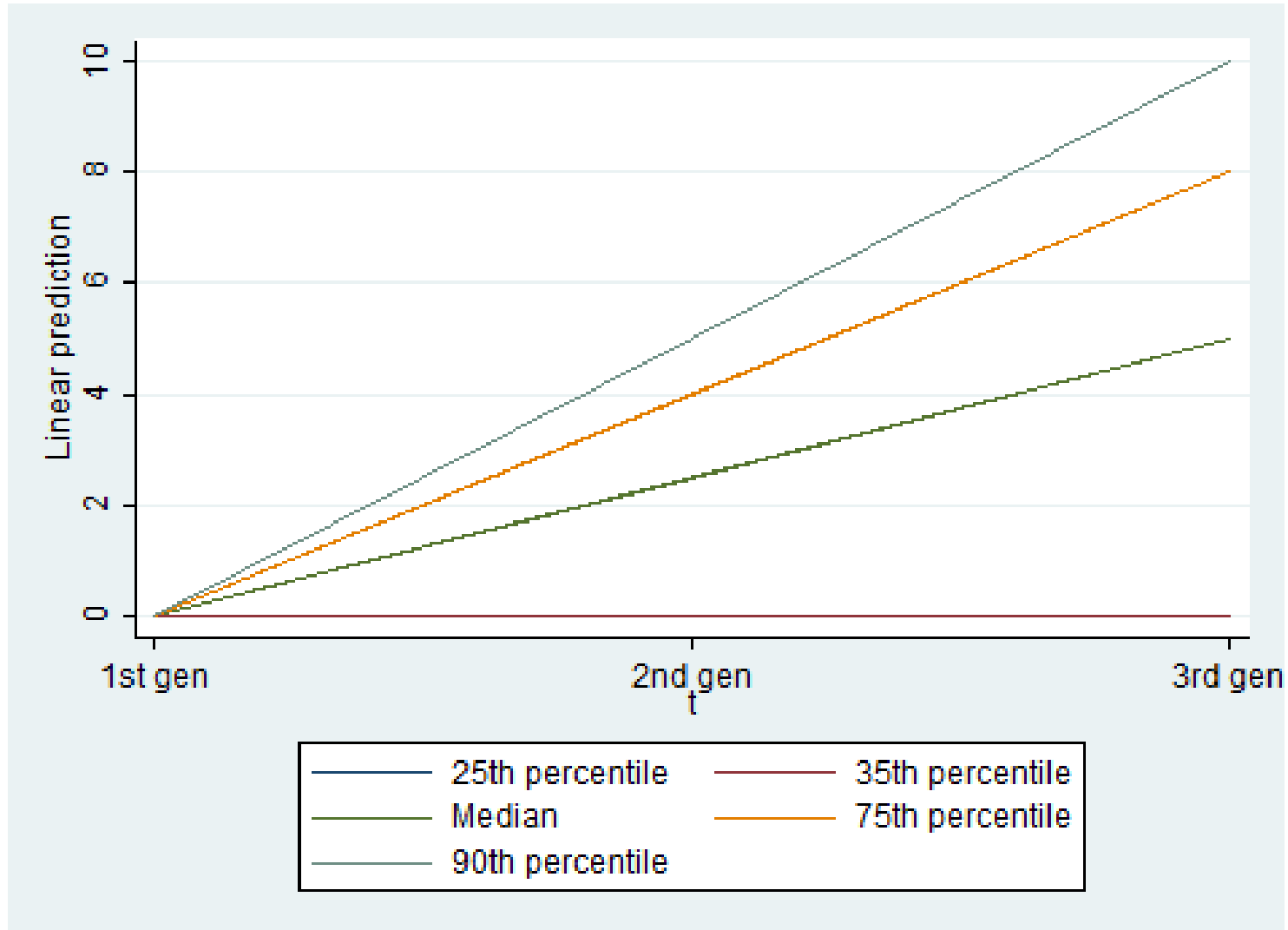# Quantile Plots for Educational Attainment -
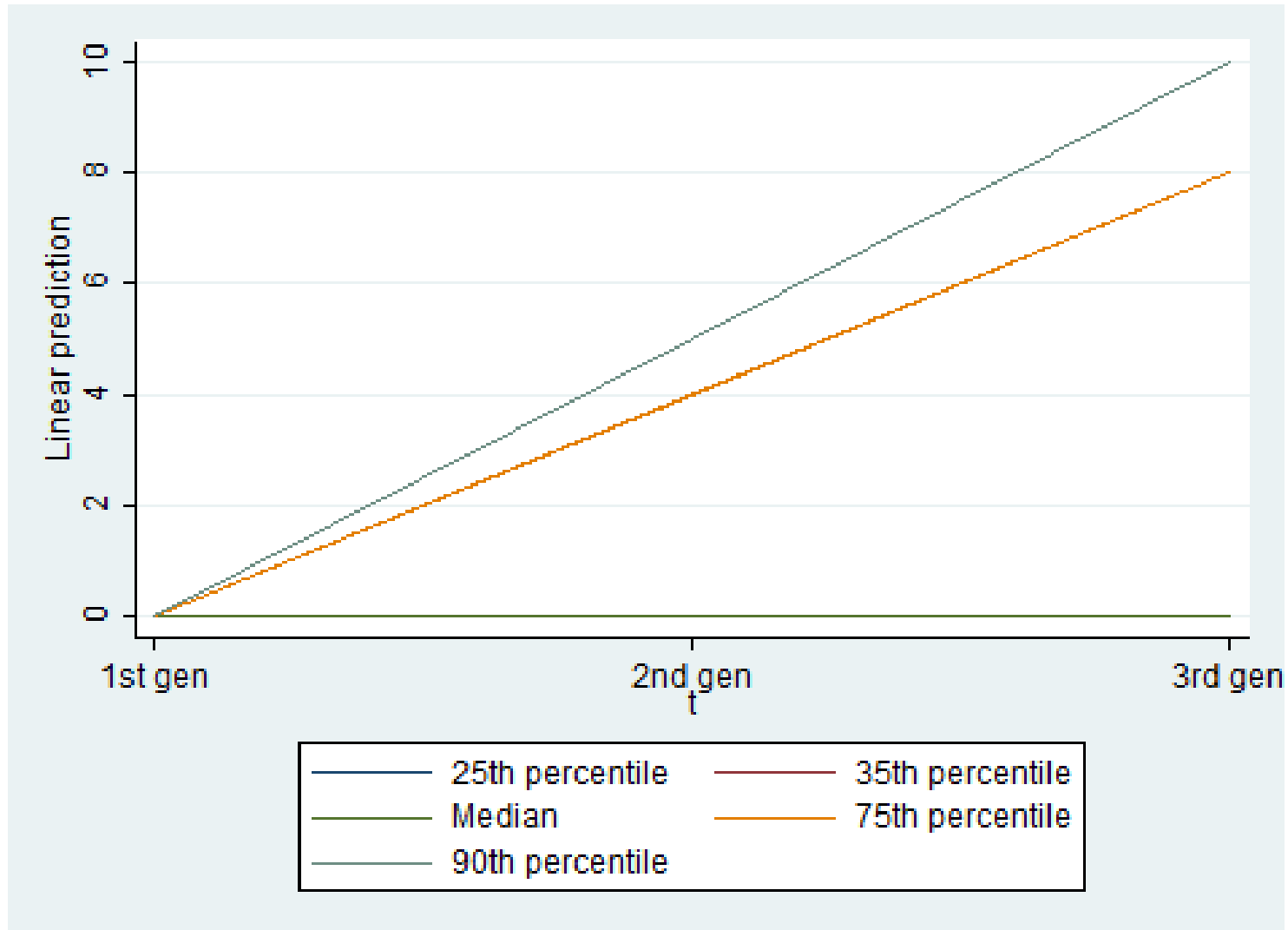## Zamindar; Canal Colony Estates
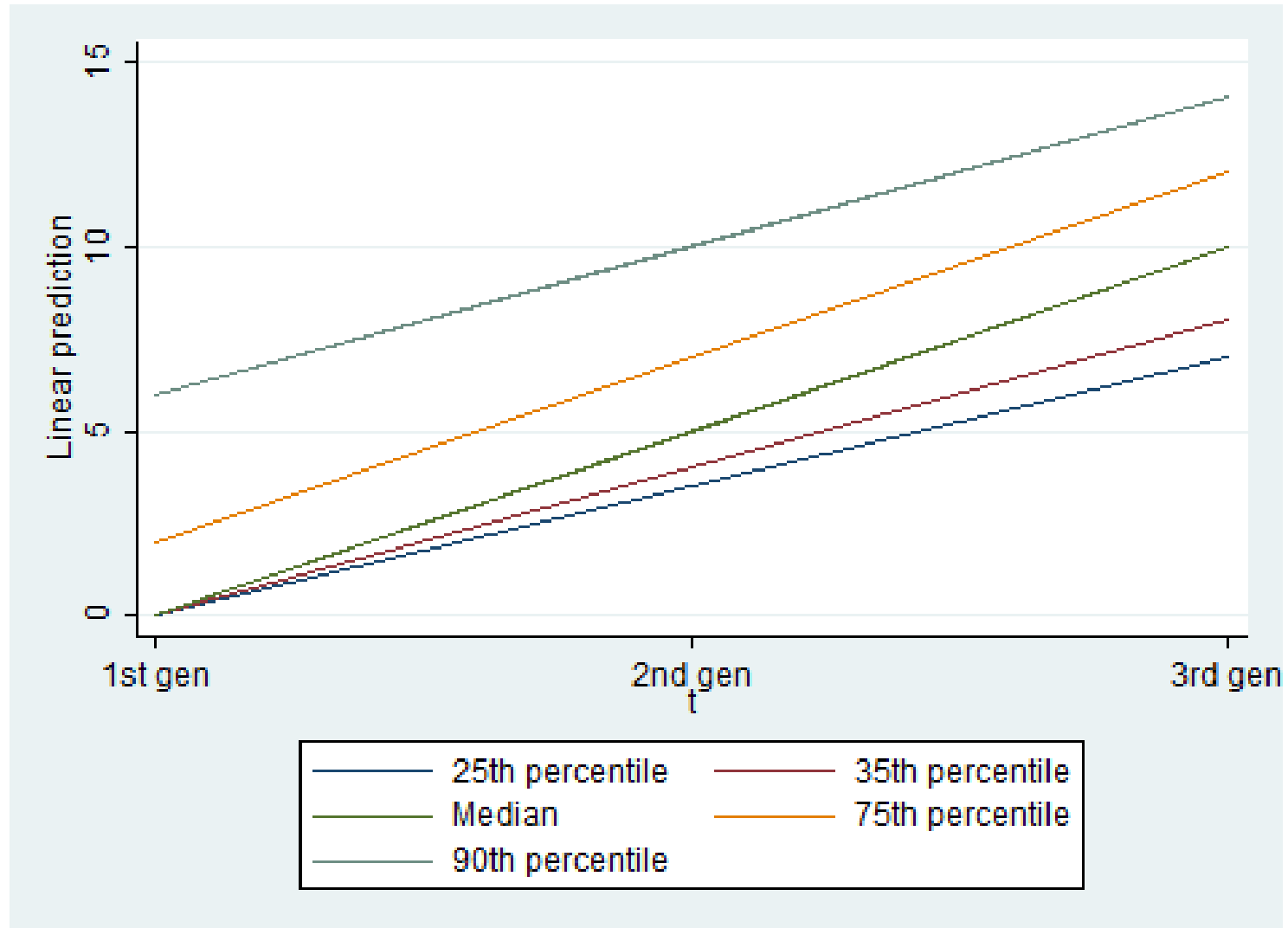
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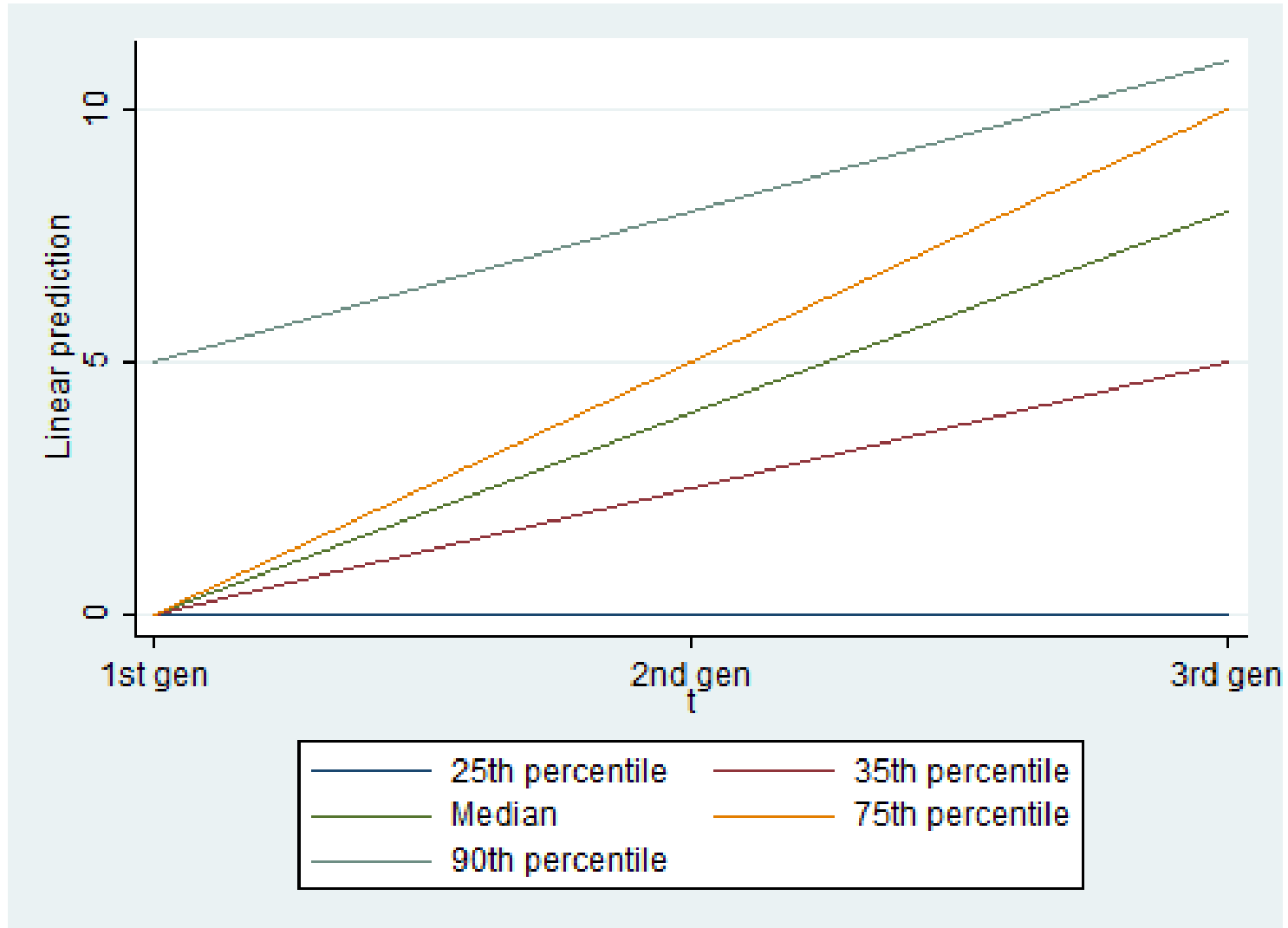## Zamindar; Propriety Estates
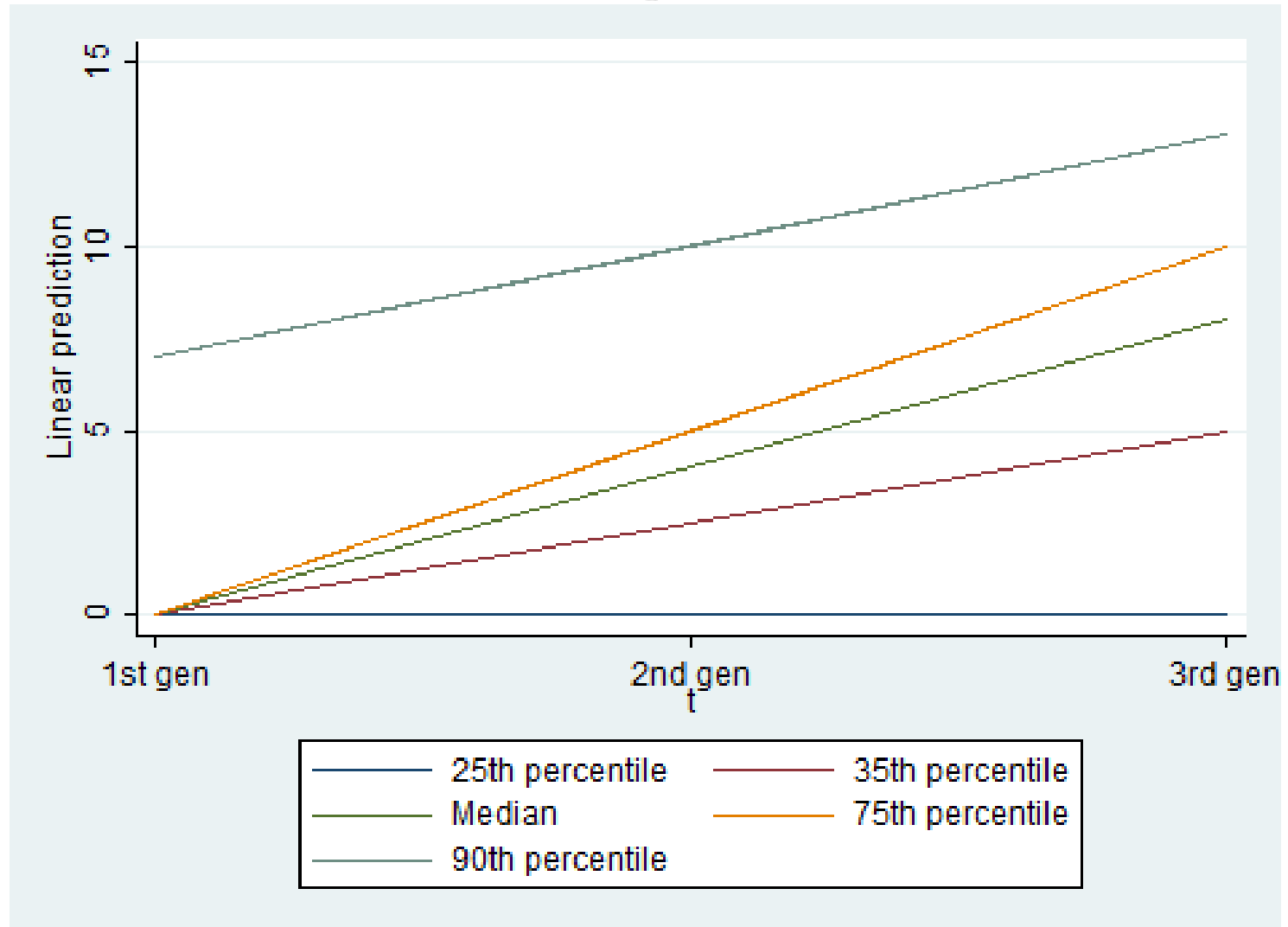
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HDQ; Propriety Estates

Quantile Plots for Educational Attainment -
Artisan; Canal Colony Estates

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Artisan; Propriety Estates