# Geographical Differentials and Household Characteristics among Wealth Quintile: A Cross Sectional Study of District Ludhiana, Puniab

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#### **Abstract**

Household's basic amenities like drinking water, sanitation, electricity, housing, drainage etc are the important indicator of quality of life. Housing is the one of the important basic needs of individual after food and clothing. In current era, every individual wants basic amenities such as water, cooking and sanitation facilities. Objective is to study the household's characteristics among socio-economic status in rural and urban areas of district Ludhiana of Punjab, India.

The study used the multistage sampling procedures for data collection. District is selected using purposively in first stage. Blocks selected using cluster sampling in second stage, in third stage villages were selected stratified random sampling and fourth stage, households selected using random sampling. Total 400 households covered for the data collection rural and urban areas of Ludhiana district. Wealth quintile is generated by using Principal component statistical method for different assets of households. Monthly per capita expenditure for rural isRs.1793 and urban is Rs.1991. The study concluded that bottom quintiles such as poorest and poor shows low access to basic amenities like sanitation, cooking, water and housing. It was further seen that economic status of households is strongly related to basic amenities.

Key words: Basic amenities, Socio-Economic Status, Households Characteristics, Toilet Facility, Source of Cooking, Wealth Quintile

#### Introduction

Household's amenities show "quality of house". Household's assets and amenities present the quality of life. The word "basic amenities" refers to electricity, drinking water, sanitation Household's basic amenities like drinking sanitation, electricity, water. housing, drainage etc are the important indicators of quality of life. Housing is one of the important basic needs of an individual after food and clothing Safe drinking water and sanitation are not only important in life but also an important element to health of individuals. Housing condition and access to basic households amenities are related to the health condition of individuals. Poor conditions of housing affect the current and future health status of individuals. Both developed and developing countries have inequality in housing. Many of the developed countries highlighted inequality according to racial and ethnic difference in housing. On the other hand, in developing countries, better access to housing relates to their socio-economic and social status. Just like the developing countries, India also reports inequality in basic amenities and housing According to Census 2011, 13 percent households do not have electricity, 16 percent do not have safe water and 17 percent do not

have toilet facility. Government has taken various steps towards the improvement in housing condition and basic amenities in India and is successfully working from last few years, but still a some households lacking basic amenities especially in rural areas of India. Studies show that the households belongs to ST's and SC's and bottom quintile according to consumption shows lack of amenities.

# Data and Methodology

Objective: household's To study the characteristics among socio-economic status in rural and urban areas of district Ludhiana of Punjab, India. Study Period: Cross sectional study was conducted from June to December 2017.

# Area of study

Punjab: Punjab is the northern state of India surrounded by the four states viz Jammu & Kashmir, Himachal Pradesh, Haryana and Rajasthan. It is bounded form North side by Jammu and Kashmir, Himachal Pradesh from North-East side, Haryana form the South, Rajasthan from the South-West side. Punjab came into existence on November 1, 1966 and the city of "Chandigarh" is the joint Capital of Punjab and Haryana. The word "Punjab" is combination of two Persian words Panj (meaning five) and ab (meaning

water). This signifies the land of five rivers namely Beas, Chenab, Jhelum, Ravi and Staluj respectively. The total area of Punjab is 50,362 km (19,445 square miles) with the cultivable area and its average elevation is 300 Meters (approx. 980 ft) above the sea level with range from 100 Meters (590 ft) in the South West to more than 500 Meters (1600 ft) towards the North East border. Punjab has 22 districts which are geographically classified in to Majha, Malwa, Doaba and Poadh regions Ludhiana is a Punjab's big city with area of 310 square km. According to census 2011, Ludhiana has a population of 34,87,882, Literacy rate is 73.5 percent for total population, of which male Literacy is 76.5 percent and female literacy is 69.4 percent. The sex ratio is 973 female to every1000 male. Total SC population is 9,23,358 and the total number of households is 716,826

Data Collection: Four hundred households were taken for data collection. A wellstructured questionnaire used for collecting the information. Data collection was related like religion, characteristics education & occupation of the head of household, toilet facility, source of drinking water, source of light, type of source of cooking and different assets etc. **Sampling**: The study adopted four multistage - sampling procedures for the selection of households. In the First stage, districts were purposively selected for this study. The selection of the districts was done on the basis of the population. In the second stage, blocks were selected by using cluster analysis. Blocks were selected on the basis of higher population proportion to total population of the district. Thus, two block were selected for this study, one for urban and one for the rural. In the Third Stage, villages were selected. Two villages from rural and two from urban areas were selected. Thus, in all 4 villages were selected from the above mentioned district using stratified sampling technique. In the Fourth stage, the selection of households was selected on randomly by using random number generation. Same proportion of households will be selected for data collection from four villages from urban as well as from rural block.

**Statistical Tool**: Statistical software SPSS version 21.0 (SPSS Inc. SPSS Statistics for Windows, Version 21.0. Chicago) is used for analysis of data. Wealth quintile is generated by Principal Component Analysis (PCA)using different households assets.

### **Results & Discussions**

Majority of households belongs to Sikh (63 percent), Hindu (36.5 percent) and very few to other (0.5 percent) in rural area, where as majority of households belongs to Hindu (63 percent), Sikh (25 percent) and other (12 percent) in urban areas. Based on wealth quintile-wise results, in rural areas, majority of Sikhs belong to bottom quintile, that is poorest (73.9 percent), poor (60.8 percent), Medium (72.3 percent), Rich (48.9 percent) and Richest (65.6 percent), where as in case of Hindu, majority of households belongs to upper quintile that is Rich (51.1 percent) and Richest (34.4 percent) and very Muslim/Christian/Other households belong to bottom quintile that is poor (2.0 percent). In urban areas, wealth quintilewise results show that majority of Hindus belong to bottom quintile, that is poorest (68.4 percent), poor (62.1 percent), Medium (60.6 percent), Rich (66.7 percent) and Richest (56.3 percent), whereas in case of Sikhs, majority of households belongs to upper quintile that is Rich (43.8 percent) and Richest (43.8 percent) and whereas, Muslim/ Christian/Other households belongs bottom quintile that is poor (2.0 percent) and poor (20.7 percent).(Table1).

Majority of 58.8 percent households have between Rs.10001-15000, income percent have income between Rs.15001-20000. 26.2 percent households income less than Rs.10000 and very few 4.8 percent households have income more than Rs.20000 respectively. Majority of rural households have average income between Rs.10001-15000 (58.5 percent), less than Rs.10000 (35.5 percent), average income between Rs.15001-20000 (5.5 percent) and more than Rs.20000 (0.5 percent). Based on wealth quintile-wise results, in rural areas, households belong to upper quintile that is rich (72.3 percent) and richest (68.8 percent) have more income, whereas lower quintile have

Table 1: Religion among Wealth Quintile in Rural and Urban Areas

Area	Religion/ Wealth Quintile	Poorest	Poor	Medium	Rich	Richest	Overall
	Hindu	26.1	37.3	27.7	51.1	34.4	36.5
	Sikh	73.9	60.8	72.3	48.9	65.6	63
Rural	Muslim/ Christian/ Other	0.0	2.0	0.0	0.0	0.0	0.5
	Total	100.0	100.0	100.0	100.0	100.0	100
	Hindu	68.4	62.1	60.6	66.7	56.3	63.0
	Sikh	3.5	17.2	36.4	30.3	43.8	25.0
Urban	Muslim/ Christian/ Other	28.1	20.7	3.0	3.0	0.0	12.0
	Total	100.0	100.0	100.0	100.0	100.0	100
	Hindu	56.3	46.3	41.3	57.5	47.5	49.75
Total	Sikh	23.8	45.0	57.5	41.3	52.5	44
	Muslim/ Christian/ Other	20.0	8.8	1.3	1.3	0.0	6.25
	Total	100.0	100.0	100.0	100.0	100.0	100

Source:- Primary Survey, 2018

Table 2: Social Group among Wealth Quintile in Rural and Urban Areas

Area	Social Group/ Wealth Quintile	Poorest	Poor	Medium	Rich	Richest	Overall
	SC	34.8	35.3	14.9	8.5	37.5	24.5
Rural	OBC	39.1	17.6	19.1	19.1	21.9	21.5
Kurai	General	26.1	47.1	66.0	72.3	40.6	54
	Total	100.0	100.0	100.0	100.0	100.0	100
Urban	SC	21.1	10.3	18.2	18.2	50.0	25.5
	OBC	47.4	51.7	39.4	36.4	16.7	37.5
	General	31.6	37.9	42.4	45.5	33.3	37
	Total	100.0	100.0	100.0	100.0	100.0	100

Source:- Primary Survey, 2018

poor (52.9 percent), poorest (34.8 percent) and medium (55.3 percent) respectively. In urban area, households having average income between Rs.10001-15000, households belong to lower quintile poorest (61.4percent), poor (69 percent) shows more proportion than other quintiles, where households with average income Rs.15001-20000 shows more proportion in upper quintile that is rich (18.2 percent) and richest

(20.8 percent), whereas very few households have average income greater than Rs.20,000, upper quintiles that is rich (15.2 percent) and richest (10.4 percent) shows more proportion of average income. (see Table 3) Majority of households have nuclear (81.5 percent) followed by joint (18.5 percent) family system. In rural areas, nuclear family (79.5 percent) dominated as compared to joint (20.5 percent), where as in urban areas,

Table3: Income Level among Wealth Quintile in Rural and Urban areas

Area	Income level/ Wealth Quintile	Poorest	Poor	Medium	Rich	Richest	Overall
	<rs.10000< td=""><td>56.5</td><td>43.1</td><td>40.4</td><td>19.1</td><td>25.0</td><td>35.5</td></rs.10000<>	56.5	43.1	40.4	19.1	25.0	35.5
Rural	Rs.10001- 15000	34.8	52.9	55.3	72.3	68.8	58.5
	Rs.15001- 20000	8.7	3.9	4.3	6.4	6.3	5.5
	>Rs.20000	0.0	0.0	0.0	2.1	0.0	0.5
	Total	100.0	100.0	100.0	100.0	100.0	100
	<rs.10000< td=""><td>33.3</td><td>17.2</td><td>6.1</td><td>12.1</td><td>8.3</td><td>17</td></rs.10000<>	33.3	17.2	6.1	12.1	8.3	17
Urban	Rs.10001- 15000	61.4	69.0	48.5	54.5	60.4	59
	Rs.15001- 20000	5.3	10.3	24.2	18.2	20.8	15
	>Rs.20000	0.0	3.4	21.2	15.2	10.4	9
	Total	100.0	100.0	100.0	100.0	100.0	100
	<rs.10000< td=""><td>40.0</td><td>33.8</td><td>26.3</td><td>16.3</td><td>15.0</td><td>26.2</td></rs.10000<>	40.0	33.8	26.3	16.3	15.0	26.2
Total	Rs.10001- 15000	53.8	58.8	52.5	65.0	63.8	58.8
	Rs.15001- 20000	6.3	6.3	12.5	11.3	15.0	10.2
	>Rs.20000	0.0	1.3	8.8	7.5	6.3	4.8
	Total	100.0	100.0	100.0	100.0	100.0	100

majority of households have nuclear (83.5 percent) and joint (16.5 percent). Result based on quintile shows that in rural areas, poor quintile (90.2percent)have nuclear family followed by upper quintile rich (78.7 percent) and richest (78.1percent), where joint family found more in lower quintile that is poor (34.8 percent). In urban areas, poor quintile (96.5 percent) and poor (86.2 percent) have nuclear family followed by upper quintile rich (81.3 percent) and richest (78.1 percent), whereas joint family was found more in upper quintile that is rich (30.3 percent) and richest (18.8 percent).(seeTable 4) Majority of households have flush (40.8 percent) followed by Pit latrine (39.2 percent), open pit (13.5 percent) and very few households have other type of latrine (6.5

percent) respectively. In rural areas, majority of households have flush (59.5 percent) followed by Pit latrine (13.5 percent), Open pit (17 percent) and very few have other type of latrine (10 percent) respectively, whereas in urban areas, majority of households have flush (22 percent) followed by Pit latrine (65percent), open pit (10 percent) and other type of latrine (3 percent) respectively. Quintile-wise result shows that in rural areas, bottom quintile shows lower proportion of flush that is poorest (34.8 percent and poor (51 percent), whereas top quintile that is rich (74.5 percent) and richest (59.5 percent) shows more use of flush. Proportion of pit latrine is found more in bottom quintile like poorest (30.4 percent) and poor (15.7 percent), whereas top quintile like rich (6.4 percent)

Table 4: Family Type among Wealth Quintile in Rural and Urban Areas

Area	Family	Poorest	Poor	Medium	Rich	Richest	Overall
	type/Quin- tile						
	Nuclear	65.2	90.2	76.6	78.7	78.1	79.5
Rural	Joint	34.8	9.8	23.4	21.3	21.9	20.5
	Total	100.0	100.0	100.0	100.0	100.0	100
	Nuclear	96.5	86.2	75.8	69.7	81.3	83.5
Urban	Joint	3.5	13.8	24.2	30.3	18.8	16.5
	Total	100.0	100.0	100.0	100.0	100.0	100
Total	Nuclear	87.5	88.8	76.3	75.0	80.0	81.5
	Joint	12.5	11.3	23.8	25.0	20.0	18.5
	Total	100.0	100.0	100.0	100.0	100.0	100

Source:- Primary Survey, 2018

Table 5: Type of Latrine among Wealth Quintile in Rural and Urban Areas

Area	Poorest	Poor	Medium	Rich	Richest	Overall	
	Flush	34.8	51.0	74.5	74.5	46.9	59.5
	Pit Latrine	30.4	15.7	8.5	6.4	15.6	13.5
Rural	Open Pit	8.7	27.5	6.4	10.6	31.3	17
	Other	26.1	5.9	10.6	8.5	6.3	10
	Total	100.0	100.0	100.0	100.0	100.0	100
	Flush	1.8	6.9	39.4	48.5	25.0	22
	Pit Latrine	87.7	75.9	45.5	39.4	62.5	65
Urban	Open Pit	10.5	13.8	12.1	12.1	4.2	10
	Other	0.0	3.4	3.0	0.0	8.3	3
	Total	100.0	100.0	100.0	100.0	100.0	100
	Flush	11.3	35.0	60.0	63.8	33.8	40.8
Total	Pit Latrine	71.3	37.5	23.8	20.0	43.8	39.2
	Open Pit	10.0	22.5	8.8	11.3	15.0	13.5
	Other	7.5	5.0	7.5	5.0	7.5	6.5
	Total	100.0	100.0	100.0	100.0	100.0	100

Source:- Primary Survey, 2018

and richest (15.6 percent) show less use of pit latrine. Further, use of open pit is found more in top quintile i.e richest (31.6 percent), whereas other type of latrine is found more in use in poorest quintile (26.1 percent). In urban areas, use of flush latrine is found more in top quintile that is rich (48.5 percent) and richest (25 percent), whereas use of pit latrine is found more in bottom quintile like poorest (87.7 percent) and poor (75.9 percent). The use of Open pit is found more in bottom quintile that is for poorest (10.5 percent) and poor (13.8 percent) and top quintile that is rich (12.1 percent) use of open pit .(seeTable 5)

Majority of households used LPG (88.7 percent) source of cooking followed by Fire wood/ crop residue (8 percent) and Cow dung/coal/Kerosene (3.3 percent). In rural areas, majority of households used LPG (84 percent) source of cooking followed by Fire wood/ crop residue (10.5 percent) and Cow dung/coal/Kerosene (5.5 percent), whereas urban households used LPG (93.5 percent) source of cooking followed by Fire wood/ crop residue (5.5 percent) and Cow dung/coal/Kerosene (1 percent). Quintile-wise result shows that in rural areas, majority of households who belong to top quintile shows

Table 6: Cooking Source among Wealth Quintile in Rural and Urban Areas

Area	Cooking Source/ Wealth Quintile	Poorest	Poor	Medium	Rich	Richest	All
	LPG	60.9	86.3	93.6	89.4	75.0	84
Rural	Fire wood/ crop resi- due	26.1	11.8	4.3	4.3	15.6	10.5
Kurai	Cow dung/ coal/Kero- sene	13.0	2.0	2.1	6.4	9.4	5.5
	Total	100.0	100.0	100.0	100.0	100.0	100
	LPG	89.5	93.1	97.0	97.0	93.8	93.5
Urban	Fire wood/ crop resi- due	10.5	3.4	3.0	0.0	6.3	5.5
	Cow dung/ coal/Kero- sene	0.0	3.5	0.0	3.0	0.0	1
	Total	100.0	100.0	100.0	100.0	100.0	100
	LPG	81.3	88.8	95.0	92.5	86.3	88.7
Total	Fire wood/ crop resi- due	15.0	8.8	3.8	2.5	10.0	8.0
	Cow dung/ coal/Kero- sene	3.8	2.5	1.3	5.0	3.8	3.3
	Total	100.0	100.0	100.0	100.0	100.0	100

Source:- Primary Survey, 2018

more proportion use of LPG as rich (89.4 percent) and richest (75 percent) respectively. Fire wood/ crop residue are found more in bottom quintile poorest (26.1 percent) and poor (11.8 percent) whereas cow dung/coal is found more in poorest (13 percent). In urban areas, majority of households who belong to top quintile shows more proportion use of LPG as rich (97 percent) and richest (93.5 percent) respectively. Fire wood/ crop residue is found more in bottom quintile poorest (10.5 percent) and poor (3.4 percent) where as cow dung/coal found more in poor (3.5 percent).(seeTable 6) Majority of households have pucca houses followed by semi-pucca (20 percent) and very few households have 4 percent Katcha house. In rural areas, majority of households have pucca houses (73 percent), semi-pucca

(19.5 percent) and very few households have 7.5 percent Katcha house, whereas in urban households have pucca houses (79 percent), semi-pucca (20.5 percent) and very few households have 0.5 percent Katcha houses. Quintile wise in rural areas, top quintile have more pucca house among top quintile that is for rich (83 percent) and richest (68.8 percent), whereas bottom quintile like poorest (30.4 percent) and poor (72.5 percent), semipucaa houses are found more in bottom quintile like poorest (43.5 percent) and poor (23.5 percent). Katcha houses found more on bottom quintile like poor (26.1 percent), where as urban areas, top quintile have more pucca houses among top quintile that is for rich (90.9 percent) and richest (85.4 percent), whereas bottom quintile like poorest (63.2

Table 7: House Type among Wealth Quintile in Rural and Urban Areas

		Poorest	Poor	Medium	Rich	Richest	Overall
D .1	Katcha	26.1	3.9	6.4	4.3	6.3	7.5
Rural	Semi-Pucca	43.5	23.5	6.4	12.8	25.0	19.5
	Pucca	30.4	72.5	87.2	83.0	68.8	73
	Total	100.0	100.0	100.0	100.0	100.0	100
TT 1	Katcha	1.8	0.0	0.0	0.0	0.0	0.5
Urban	Semi-Pucca	35.1	27.6	9.1	9.1	14.6	20.5
	Pucca	63.2	72.4	90.9	90.9	85.4	79
	Total	100.0	100.0	100.0	100.0	100.0	100
Total	Katcha	8.8	2.5	3.8	2.5	2.5	4
	Semi-Pucca	37.5	25.0	7.5	11.3	18.8	20
	Pucca	53.8	72.5	88.8	86.3	78.8	76
	Total	100.0	100.0	100.0	100.0	100.0	100

percent) and poor (72.4percent), semi pucaa houses are found more in bottom quintile like poorest (35.1 percent) and poor (27.6 percent). Katcha houses are found more in bottom quintile like poor (1.8 percent). (seeTable 7) Improved water sources are found more in top quintiles that is rich (91.5 percent) and richest (90.6 percent), where bottom quintile like poorest (56.5 percent) shows less

proportion of improved source of drinking water. Poorest (78.3 percent) quintile shows less proportion of improved cooking, whereas richest (84.4 percent) quintile shows more proportion of improved cooking. Similarly, improved latrine is found more in top quintile rich (80.9 percent, whereas richest (62.5 percent) shows marginally less proportion as bottom quintile poor(65.2 percent). (See

Figure 1: Improved Latrine Source, Cooking Source and Water Source among Wealth quintile in rural area

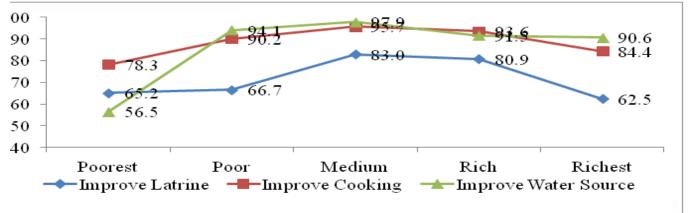


Fig. 1) In urban areas; Improved water source found more in bottom quintiles that is poorest (96.5 percent) and poor (96.6 percent), whereas top quintile like richest (95.8 percent) shows less proportion of improved source of drinking water. Poorest (89.5 percent) quintile shows less proportion of improve

cooking, where as rich (100 percent) and richest (93.8 percent) quintile shows more proportion of improved cooking. Similarly, improved latrines found more in bottom quintile poorest (89.5 percent), where poor (82.8 percent) shows less proportion as top quintile richest (87.5 percent). (See Fig 2)

00 100.095.8 96.5 95 93.8 93.9 90 89.5 87.5 85 89.5 80 75 70 Medium Rich Richest Poorest Poor

──Improve Cooking

Figure 2: Improve Latrine source, Cooking source and Water Source among Wealth Ouintile in Urban area

#### Conclusion:-

**→**Improve Latrine

Study showed that the religion - wise lower quintile in urban and rural areas that is poor and poorest reports less proportion. But it is contradictory, bottom quintile report higher proportion of OBC as that of top quintiles. Lower Income level in rural households is found more in poor as compared to top Quintile whereas in case of urban households poor quintile shows less proportion of high income level and compared to top quintiles. proportion nuclear The family varies marginally in each quintiles, whereas joint family is found more in bottom quintile that is poor and poorest in rural areas and in urban households, this is reverse mean joint family report less proportion in bottom quintile and more proportion in top quintiles. Sanitation varies across all quintile. In rural areas and urban areas, bottom quintile shows less proportion of use of flush latrine. Improved source of cooking and drinking found less in bottom quintiles than that of top quintiles. Hence, we concluded that distribution of basic amenities is unequal in all socio-economic

status of urban and rural households and also bottom quintiles reports less use of basic amenities. Further, it is seen that basic amenities and socio-economic condition are correlated to each other.

──Improve Water Source

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