

## An Analysis of Socioeconomic Stratification, Intra-Temporal and Intra Generational Household Mobility in Central Punjab, Pakistan

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### Abstract

*The study identifies the factors of intra temporal and intra generational household mobility in three districts of Central Punjab. The intra- temporal household mobility estimates the direction of transformation as disequalizing long term income. For the current analysis, three districts of Central Punjab are selected for data collection using literacy rate as prevalence rate.*

### Key Words

Upward Mobility,  
Socioeconomic  
Stratification, Intra  
Temporal Household  
Mobility, Intra  
Generational Household  
Mobility

*The results of the study show an improvement in education of head of household and other household members which may lead to upward transformation. Furthermore, geography and occupation progression contribute to inter temporal and intra generational mobility in Central Punjab. The results show big cities of central Punjab have considerable benefits of occupational movers from one sector to another as there are sufficient job opportunities available to the households and in rural areas of all the districts households are reluctant to get the benefits of occupational movement. The study concludes that most of the heads of household are educated but occupationally deprived which lead to low extent of intra generational mobility as compared to intra temporal mobility.*

### Introduction

Economic positions of individuals change over time due to several reasons in a society, such as their participation in economic activity, improvement in education, occupation progression and geographical movement. The analyses of societal stratification based on income or socio economic variables ignore the reshuffling of individuals in the socio economic distribution over time and this transformation/mobility on different domain is an important aspect which needs to be addressed. There is a distinction between intra generational and intra-temporal socio economic mobility as an organizational device, reflecting the structure of society. Socioeconomic mobility is the ability of an individual, family or some other groups to improve their socio-economic status in respect of education, occupation prestige and income.

The academicians are more concerned about upward mobility and reduction in long-term inequality and they have given much emphasis to income inequality in the debate related to income inequality. They regarded income mobility an important complement to measure the extent of income inequality. This study is an attempt to explore the factors responsible for upward mobility of household through developing a model for analysis purpose. The significance of this study is to fill the research gap by identifying the factors responsible for intra temporal and intra generational mobility. The results of the study will be helpful for the policy makers and academicians to understand the important aspect of our society in relation to the upward transformation of the households. In spite of the rich literature, this study has its own significance for the public sector to formulate the appropriate policies because it provides micro level picture about upward transformation of the households of central Punjab, Pakistan.

The study proceeds as follows:

In section II discussion regarding the studies related to the stratification process, socio economic factors, and mobility analysis is presented. Theoretical framework, data methodology are presented in section III. Section IV presents the results of stratification, household mobility, consequences of mobility in terms of change in economic wellbeing and the last section concludes.

## Literature Review

A lot of literature is available regarding the measurement of socio economic stratification and its relationship with mobility and these studies have given emphasis to different factors like mobility, socioeconomic stratification. Fields and Freiji (2007) review a large array of results on mobility about Latin America with the help of different mobility concepts, databases, and methodologies. The results of the study indicate that income mobility is not the same as inequality changes. The studies on mobility expose different pattern and processes than the changes in inequality and rising inequality is well matched with mobility. The study points out that a convergence between high and low earners is initiated when initial reported earnings are used. Fields and Cichello (2003) used linear and non-parametric regression models for Venezuela to measure the extent of income mobility. They find a significant and negative relationship when they used reported initial income, but they failed to find a significant relationship when predicted initial income was used in the analysis.

Fields and Hernandez (2007) conducted a survey based study for three countries namely Argentina, Mexico and Venezuela. In each country they took sample of male and female workers from labor force and in a follow up survey one year later. The objective of their study was to analyze the impact of base year reported earnings, longer term earning, gender, age, education and geographic region on changes in earnings from base year to final year. In order to capture earning changes among workers and to exclude new entrants and retirees the study limits the analysis to individual between the age of 25 and 60 years in base year. The study concludes that earnings mobility is more frequent in all the three countries.

Delorenzi (2006) discusses the geographical mobility mediated by people's social position, depending on a range of characteristics. The study points out that individuals face obstacles in the way of movement from backward areas to the developed one. The study stresses that geographical mobility in the UK is easier than other European countries. Murphy (2006) points out that two- earners households have been increasing over time for the last two decades. Weitoft *et al* (2004) are of opinion that the single parent children show poor educational performance due to non-availability of sufficient resources. Blanden *et al.*, (2005) bring up that education is one of the significant variables influencing relative social mobility. They show that there exists a relationship between educational attainment and income mobility.

## Theoretical Framework, Data and Methodology

This study is based on survey directed to the households of three districts (Lahore, Sheikhpura and Chiniot) for measuring their socioeconomic status. The respondents are from working class and are in between the age of 45 and 65 years. The study considers 2000 as a base year and 2017 as a final year. The study uses random sampling technique for the purpose of data collection. The details of district wise sample is shown in Table 1.

**Table 1.** Central Punjab District Wise Sample Criteria

<b>Central Punjab, P (Prevalence rate) = 60 % ,Z_α = 95% (1.96), central Punjab region sample n = 370</b>		
<b>District sample</b>	<b>Urban share</b>	<b>Rural share</b>
Lahore, n = 240	n, 89	n, 151
Sheikhpura, n = 80	n, 30	n, 50
Chiniot, n = 50	n,18	n,32

### **Intra-Generational Mobility, ( $D_0 - D_1$ ).**

#### **Inactive Occupation Position of Labor Market: $D_0$**

It divides the households into five socio-economic strata on the basis of base year household occupation earning generated by head of the household only. This domain is considered to be the origins point of socioeconomic status index (SESI) of the household because the economic cycle of this domain is 20 year back from the current period, the year of 2000 has been taken as reference point of analysis or considered as base year observation for socio-economic period.

### Active Occupation Position of Labor Market: $D_1$

It categorizes the household on the basis of total household occupation earning generated by head of household till the time of face to face interview. This domain is to be considered the peak occupation position in terms of income or socioeconomic position of the household and taken as intra generational mobility of household due to the head of household cognitive ability in labor market.

### Intra-Temporal Household Mobility, ( $D_0$ - $D_2$ )

Intra-generational transformation describes the scenario about socio economic transformation of household on the basis of head of household intellectual ability and expertise. The question arises whether the household transformation is occurred only due to head of household socio economic factors or it has occurred as a result of other household member's socio economic participation. For this purpose, the present study shifts the intra-generational transformation toward intra-temporal household mobility which indicates how much household transformation has occurred during twenty year economic cycle due to collective occupation earning in labor market relative to the base year or a combination of other socio economic factors. This study measures two types of transformation trend with same base year domain  $D_0$ .

### Collective Household Earning in Labor Market: $D_2$

This domain divides the household into five socio-economic strata on the basis of their total income including head of household income at the time of interview. This domain is considered the destination point of SESI of the household and has been taken as measure of the extent of household's mobility from base year to final year due to participation of all earning hands in occupation market.

### The Model

$$Y_{ij} = \alpha + \beta_1 X_{EDU imp} + \beta_2 X_{EDU oth} + \beta_3 X_{DEP} + \beta_4 X_{EARNER} + \beta_5 X_{ASSET} + \beta_6 X_{MOV} + \beta_7 X_{OCC imp} + \mu_i$$

**Table 2.** List of Variables Included in Model

Variables	Description of Variable
Dependent variable is calculated through SES index	SES index based household ( $D_0 \rightarrow D_2$ ) 1= if households transform from one SE strata to other 0 = if households did not transform from one SE strata to other during 20 year economic Socio economic indicators profile.
Independent variables	Socio Economic Factors of ( $D_0 \rightarrow D_2$ )
1. Improvement of Education of head of household, $X_{EDU imp}$	It is level of education of head of household, 0 = non- improved from base year 1= Improved from high school to further diplomas/training, 2, Improved from graduate to further master/training
2. Occupation improvement of head of households, $X_{OCCU}$	It is the categories of occupation of head of household, 0 = non- improved from base year, 1= Occupation transformation from unskilled to skilled, 2= Occupation transformation from clerical to semi-professional
3. Level of education of other members, $X_{EDU othe}$	The average score of education of all the members of household.
4. Dependence ratio, $X_{DEP}$	Number of households members less than 18 years and above 60
5. Earning member, $X_{EARNER}$	It is the number of earning member among the total number of household, 0= less than 2 earner, 1 = more than 2 earner
6. Movement within country, $X_{mov}$	1 = if households move toward other cities for betterment other wise, 0
7. Ownership of assets. $X_{ASSET}$	1= ownership of assets as compared to base year increased due to more than 50% own hard work, 0= It's all depend on intergenerational assets

**Analysis and Interpretation**

**Quantitative Analysis of Mobility Pattern.**

Table 3 highlights the size of strata after the mobility in terms of more or less leakage and inject transformation.

**Table 3.** Intra-Generational and Intra-Temporal Household Mobility in Central Punjab

Socio Economic Stratification	Urban Central Punjab					Size of strata after transformation $D_0 \rightarrow D_2$	Rural Central Punjab					Size of strata after transformation, $D_0 \rightarrow D_2$
	HH $D_0$	HH $D_1$	HH $D_2$	$D_0 \rightarrow D_1$	$D_0 \rightarrow D_2$		HH $D_0$	HH $D_1$	HH $D_2$	$D_0 \rightarrow D_1$	$D_0 \rightarrow D_2$	
Ruler SE strata	10	10	10	10 - 14	10 - 18	Inject transformation,	19	19	19	19 - 24	19 - 28	Inject transformation,
Privileged SE strata	18	14(4)	10 (8)	18 - 19	18 - 27	Leakage < injection	29	24 (5)	22 (7)	29 - 38	29 - 41	Leakage < injection
Survivors/ Active SE strata	28	23(5)	11(17)	28 - 34	28 - 33	Leakage < injection	53	39(14)	32(21)	53 - 57	53 - 66	Leakage < injection
Struggling/ inactive occupation	60	50(10)	38 (22)	60 - 54	60 - 43	Leakage > injection	92	74 (18)	58 (34)	92 - 78	92 - 65	Leakage > injection
Creeper SE strata	21	17(4)	16(5)	21 - 17	21 - 16	Leakage transformation, heavy underprivileged occupiaied strata	41	37(4)	34 (7)	41 - 37	41 - 34	Leakage transformation, still heavy underprivileged occupiaied strata,

Source: Author Calculation from the Survey Data, 2018

The most benefited group due to intra-temporal household mobility/transformation is survivors/active occupation and struggling group during a 20 year economic cycle. This indicates that the households of the Central Punjab have potentials to provide the socio economic benefits to middle strata and has to take the society on the path of convergence because there is more chances to equal distribution of socio economic resources from rich to poor. In case of intra-generational mobility, the head of the households need not to have extraordinary potentials to replace their position in hierarchy with more education and high living standard.

**Table 4.** Contribution of Factors in Upward Mobility in Urban and Rural Regions of Central Punjab

Socio Economic Factors	Central Punjab Urban			Central Punjab Rural		
	$exp_{\beta}$	$slop_{\beta}$	P-values	$exp_{\beta}$	$slop_{\beta}$	P values
Education improvement of head of household						
Improve from high school to further diplomas/training,	17.719	4.05	.000	8.607	2.153	.000
Improve from graduate to further master/training	26.562	7.94	.000	19.18	5.294	.000
Education level of other Members.						
Less than equal to 2.5	6.4	2.3	.003	-	-	-
More than 2.5	14.558	1.517	.007	.346	.346	.470
Number of Dependent Members	5.063	-.062	.045	1.166	-.773	.032

Earning members	3.92	.04	.22	.03	3.5	.13
Less than 2	6.710	1.904	.05	4.79	1.568	.005
More than 2				6		
Movement within country	12.174	4.279	.161	.14	1.921	.001
Assets	4.575	1.521	.053	3.62	1.287	.025
Occupation Improvement						
Occupation transformation from unskilled to skilled,	.853	.159	.834	1.36	.312	.630
Occupation transformation from clerical to semi-professional	27.405	2.002	.020	11.6	1.530	.024
				18		
Constant		-6.8(.04)			-1.6(.09)	
Negelkerkey R square		.803			.75	
Goodness of Fit Test ( $\chi^2$ )		4.56 (.606level of significance)			13.9(.18)level of significance	
Hosmer-Lemeshow						

*Source: Author's Calculation*

The analysis presented in Table 4 suggests that several factors contribute in household upward mobility as their coefficients are statistically significant. In Central Punjab, improvement of education of head of household and other household members as well as occupation progression have positive relationship with upward household transformation which means educated head of household and other members are more likely to experience chances of upward transformation because their education is working as a transmission which convert their skills and knowledge in occupation progress and helps in raising their income level. Similar result about the positive relationship between education improvement and upward transformation are also found by (Miliband, 2003; Delorenzi *et al.* 2005; Machin, 2004; Blanden *et al.* 2005).

Considering the education level of other household members it has been observed that it is positively related to transformation process and is also statistically significant. The probability of upward transformation increases if household member (including children, women and head of household) is educated by 14.5% in urban Central Punjab. These results are consistent with the finding of on this ground, (Connor & Dewson, 2001) and (Forsyth & Furlong, 2003). But this relationship is insignificant in rural Central Punjab where, education backwardness still exists. After countersigning many international agreements on the right of education, Pakistan has made effective progress in near past on the provision of education especially in rural and remote areas but still more than 50% school are without basic facility and the quality of education and education system is still questionable (Qamar, 2014).

## Conclusion

Socio economic factors and their influence on intra- temporal mobility on the basis of literature and econometric techniques conclude that education plays a significant role in socioeconomic origins and destination years. In Central Punjab, the opportunities of education and occupations have served as a bridge to increase household income level and socio economic status. It can be concluded that in Central Punjab, household plunge themselves into the availability of opportunity of life chances. However, some factors reduce the significance of education and occupation progression together to address inequalities and lack of chances of socio economic transformation for working/struggling class. In order to improve the situation there is a need to have trickledown effect of labor market from ruler toward struggling and working strata.

The urban areas of Central Punjab provides better opportunities to the household which helps them to improve their socioeconomic status as compare to rural areas. This calls for appropriate steps to improve the economic and social infrastructure of society in remote area of each part of Central Punjab. For addressing these issues concrete measures are needed that can satisfy the unmet needs of every individual of society. This mechanism demands to make sure that both public and private sectors provide equal service structure in labor market to the individuals according to their capabilities and knowledge. Moreover, government should initiate socio economic project focusing on the reduction of poverty and other issues related to household stratification gap.

The present study tries to analyze the relationship between socioeconomic stratification, intra temporal and intra generational mobility in three districts of Central Punjab. The study does not throw light on the distribution of long term income due to mobility and its impact on consumption pattern of the household. It is left on the future researchers to conduct research on the above mentioned aspect. This will help the policymakers to formulate and implement policies to reduce the extent of poverty and inequality in Central Punjab.

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**Table A. 1**

Education Profile	Occupation Profile	Income Profile			Expenditure Pattern Profile	Living status Profile		Score
Education (rural + urban)	Occupation (rural + urban)	Adjusted income of $D_0$ (deflated by current income)	Adjusted income of $D_1$	Adjusted income of $D_2$	Expenditure pattern.	Asset Urban region	Asset Rural region	
Illiterate	Unemployed	< 1000	< 5000	<7000	Income is less than basic expenditure, $Y < C$ , borrowers income fulfill basic necessity of life	< 3	<4	<b>0</b>
Can read and write	Unskilled worker	1000-4999	6000-14999	7000-15999	expenditure $Y = C$ , Survivors income fulfill basic/education and health expenditure $Y = C$	3-5	5 -7	<b>1</b>
Primary	Semi- skilled workers	5000-9999	15000-23999	16000-24999	income fulfill basic/education and health expenditure $Y = C$	6 -8	8 -10	<b>2</b>
High school	Skilled workers	10000-14999	24000-32999	25000-33999	income fulfill basic/education and health expenditure, $Y > C$ Pitiable saver	9 -11	11-13	<b>3</b>
Intermediate + specialized training	Clerical/owner of small business	15000-19999	33000-41999	34000-43999	Income is more than expenditure, Healthy Savers $Y > C$	12-14	14 -16	<b>4</b>
Graduate	Semi professional	20000-24999	42000-50999	44000-53999	income fulfill culture and positional expenditure $Y > C$	15-17	17 -19	<b>5</b>
Master	Lesser professional /medium size business	25000-29999	51000-59999	54000-62999	Expenditure increase the value of assets/material consumption $Y > C$	18 -20	20 -22	<b>6</b>
Professionals	Professional / executive class	$\geq 30000$	$\geq 60000$	$\geq 63000$	Expenditure on all above	> 20	>22	<b>7</b>

**Table A. 2**

Assets and Living Status Profile	Occupation categories & Proprietors of Businesses or Operator Of Farm Land
Natural walls = 1	Garage workers, bus boy, carpenter helper, garbage collector, gardener, office boy, messenger, waiters, parking attendant, agriculture laborer, etc. (Unskilled worker)
Rudimentary walls = 2	
Finished walls = 3	
Natural roofing = 1	Bus driver, barbers, assembles, conductors, dyers, attendants guards, file clerk, meat cutter, butchers, library attendant etc.
Rudimentary roofing = 2	
Finished roofing = 3	
No facility, Bush, Field = 0	Bookbinder, mobile accessories installer, meter leader, tailors, lineman, plumber's electricians, blacksmith, shop owner, all type of sale workers. (Semi- skilled workers). Proprietors of Businesses or operator Of Farm Land valued at 1-2.5 million.
Pit latrine, balti, shared toilet = 1	
Flush , Pour flush = 2	



Less than 20 % of total assets (1)	Primary and Junior high school teachers, all types of junior clerk, Patwari, collectors, bill accountant and shop owners, etc. Proprietors of Businesses or operator Of Farm Land valued at 2.5 -5 million. Clerical/owner of small business.
Between 33-50% of total assets (2)	
More than 50 % of total assets (3)	
No land, house = 0	
Cost of land or house is between 2 to 5 million = 1	High school teacher, farm managers, junior administrators, technicians, associate professionals, etc. Semiprofessional. Proprietors of Businesses or operator Of Farm Land valued 10 million
Cost of land or house is more than 5 million = 2	
Cost of land or house is more than 10 million = 3	
No Animal drought = 0	
≤2 Animal drought = 1	
≤4 Animal drought = 2	
More than 4 Animal drought (rural area question only) = 3	All regional level officers, university and college professor, doctors captain and lieutenant or equivalent. Proprietors of Businesses or operator Of Farm Land valued 20 million. Lesser professional /medium size business
Note: the score of asset categories is defined separately in SES index due to region wise different questions (animal drought includes in rural region). Income and assets, both are interval variables in SES index.	Chairman, president, and beaucrates, high army rank officers etc. Proprietors of Businesses or operator Of Farm Land valued at more than 20 million. Executive/ Major Professional.

**Table A. 3**

Weight of indicator	Central Punjab urban			Central Punjab rural		
	$D_0$	$D_1$	$D_2$	$D_0$	$D_1$	$D_2$
PCA method						
Education	0.17	0.21	0.23	0.19	0.19	0.22
Occupation	0.19	0.20	0.29	0.26	0.28	0.22
Adjusted income	0.20	0.24	0.20	0.33	0.31	0.29
Expenditure	0.10	0.16	0.21	0.15	0.14	0.19
Assets	0.15	0.19	0.16	0.15	0.16	0.17
KMO Test	0.65	0.65	0.69	0.69	0.74	0.68
Bartlett's test	377.3 (000)	363.6 (000)	358.9 (000)	197.5 (000)	198.2 (000)	258.9 (000)