Chapter 1

Introduction

This thesis presents four essays on aspects of intergenerational economic mobility in India. It examines the levels and patterns of intergenerational economic mobility in India over the last three decades and compares variations in such mobility across different social groups. Following the international literature on social mobility, this thesis measures intergenerational economic mobility in terms of the occupations of individuals. The thesis also examines changes in two factors that are strongly correlated with intergenerational mobility, inequality in educational attainment and levels of assortative marriage. There are very few studies that have analysed intergenerational mobility in India.

According to Becker and Tomes (1979, p. 1154), “Intergenerational mobility measures the effect of a family on the well-being of its children.” In other words, intergenerational socio-economic mobility is concerned with measuring how far the socio-economic achievements of people are associated with the socio-economic condition of their parents. A low degree of intergenerational economic mobility implies that the advantages and disadvantages inherent in the economic status of one generation are transmitted to the next generation. A situation of low mobility across generations may be favourable for families that are in fortunate socio-economic circumstances, but in the case of families that are less fortunate, low mobility often entails “social exclusion, material and human capital impoverishment, and restrictions on the opportunities and expectations that would otherwise widen their capability to make choices” (Hancock et al. 2007, p. 43). Intergenerational mobility is often
associated with the idea of equality of opportunity. A country with high levels of intergenerational mobility is perceived as providing equal opportunities to all individuals, irrespective of each individual’s ascribed status (Corak 2013).

1.1 BACKGROUND

After 1985, rates of economic growth in India have been higher than in preceding years. The Indian economy grew at about 5 per cent per annum in the 1980s and 1990s; that rate increased to about 8-9 per cent per annum from 2007 to 2012 (Dev 2013). At the same time, official data show a decline in income poverty (in terms of a head-count measure) over the last two decades. Between 1993-94 and 2004-05, the head count ratio of poverty, as per official statistics, declined from 45.3 per cent to 37.2 per cent (Government of India 2013). According to the Planning Commission, the decline in poverty was much sharper during the recent period; the head-count ratio fell from 37.2 per cent in 2004-05 to 21.9 per cent in 2011-12 (Government of India 2013).

Scholars have shown that this period of high economic growth has been one of increasing inequality. Inequalities with respect to income, wages and wealth increased during this period of accelerated economic growth. Motiram and Vakulabaranam (2013), using data from consumption expenditure surveys of the National Sample Survey Office (NSSO), showed that between 1993 and 2010 interpersonal inequality increased at the rural, urban, and all-India levels. The expenditure of an individual in the 90th percentile as a percentage of the median consumption expenditure increased

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1 However, the official poverty figures and the methodology used to arrive at these figures has been questioned by scholars such as Sen and Himanshu 2004a, Deaton and Kozel 2005, and Patnaik 2010.

from 212.63 per cent in 1993-94 to 234.41 per cent in 2009-10 (Motiram and Vakulabaranam 2013). Azam and Shariff (2011), based on sample surveys conducted by the National Council of Applied Economic Research (NCAER), showed that the Gini coefficient for rural incomes increased from 0.46 in 1993-94 to 0.50 per cent in 2004–05. During the same period another study by Sarkar and Mehta (2010), based on data from Employment and Unemployment Surveys (EUS) of the National Sample Survey Office (NSSO), showed that wage inequality increased among regular wage workers in India. India also experienced a rise in wealth inequality. Jayadev, Motiram and Vakulabharanam (2011, p. 88) showed that between 1992-3 and 2002-3 “the ratio of assets held by the individuals at the 95th percentile to those held by the median individual rose from 758 percent to 814 percent.” The last available income data for India shows that when income inequality is measured across households, India with a Gini coefficient equal to 0.491 ranks among the countries with very high income inequality in the world (Atkinson 2015, see Figure 1.1).
Although many studies have documented increase in economic disparities across individuals and households in India, few have focused on the transmission of inequality from one generation to another. In other words, standard methods of measuring inequality in outcomes generally utilise cross-sectional distributions (i.e., income, expenditure, health, education etc.), and refer to single points in time. However, a significant part of the observed inequality in different economic outcomes can persist over generations (Bourguignon et al. 2007). Thus, the study of intergenerational mobility provides insights into the persistence of these socio-economic inequalities across generations.

Source: Atkinson (2015, p.22)
Studies based on data from developed countries have shown that a rise in inequality tends to limit social mobility (Andrews and Leigh 2009 and Corak 2013). Corak (2013), using earnings data on individuals and their adult sons, shows the strong correlation between cross-sectional inequality and intergenerational immobility. More popularly, this inverse relationship is referred to as the “Great Gatsby Curve” (Corak 2013, see Figure 1.2).

The literature points to several channels through which inequality influences social mobility. One way in which labour market outcomes are passed on to the succeeding generation is through the investment made by individuals in their children’s educational attainment (Solon 2004). Arguing on similar lines, Burtless and Jencks (2003) stated that
as inequality rises, so does the disparity in educational advantages that can be bought by rich and low-income individuals for their children. Thus inequality leads to a decline in social mobility. We believe that in the context of a period of high economic growth accompanied by growing economic inequalities in India, the study of intergenerational mobility is important, and one inadequately addressed in the existing literature.

Indian society has been traditionally characterised by another form of inequality, that based on the caste system. In India, people of the Scheduled Castes and Scheduled Tribes occupy a lower rank than average with respect to diverse indicators of individual well being, such as educational attainment, occupation, wages, and consumption expenditure (see, for instance, Ramachandran and Swaminathan 2014 and Deshpande 2015). Even with high economic growth over the last three decades, substantial differences exist between poverty levels among Scheduled Castes and Scheduled Tribes and others. Himanshu and Sen (2014) point out that nearly half of the poor belong to the Scheduled Castes and Scheduled Tribes. Although head-count poverty ratios declined between 1983 and 2009 for all social groups including Scheduled Castes and Scheduled Tribes, the difference in the head-count poverty ratio between Scheduled Castes and Scheduled Tribes and the rest of the population is still very high (Himanshu and Sen 2014). For example, in rural India, the gap in the head-count poverty ratio between Scheduled Tribes and non-Scheduled Castes and Scheduled Tribes has only declined marginally, from 21.9 percentage points in 1993-94 to 20.9 percentage points in 2009-10 (Himanshu and Sen 2014). Similarly, in urban India, the gap in head count rate of poverty between Scheduled Tribes and non-Scheduled Castes and Scheduled Tribes only declined from 12.8 percentage points in 1993–94 to 12.6 percentage points in 2009–10 (Himanshu and Sen 2014). Although different studies have examined the high and persistent gaps in income-poverty, income, and wealth between Scheduled
Castes and Scheduled Tribes and others in India, very few studies have examined the gaps in the rates of intergenerational mobility between Scheduled Castes and Tribes and others. The study of intergenerational mobility differentiated by social group can provide insights into the persistence of disparities in economic status between Scheduled Castes and Scheduled Tribes and others. In other words, persistent economic gaps between these groups could be because of inequalities of opportunity for mobility that are predicated on social location (or ascriptive status).

1.2 LITERATURE REVIEW

1.2.1 Intergenerational Mobility

In developed countries, sociologists and economists have carried out extensive empirical investigation on intergenerational mobility, based on variables such as incomes, earnings, and occupations of individuals and their parents. One of the early attempts to document intergenerational mobility (or social mobility) was the study of Blau and Duncan (1967), which analysed the influence of social standing of individuals in the United States on their adult offspring the social standing using occupational data. Following Blau and Duncan (1967), there have been many studies of social mobility based on examination of large-scale data on occupation in the United States and elsewhere.

Early studies by sociologists of intergenerational mobility in the industrialised countries relied mainly on the occupations data of individuals and their adult children. Sociologists mainly used occupational information as a proxy for the social standing of individuals. However, studies differed in terms of the occupational classifications that

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they employed. To study intergenerational socio-economic mobility, sociologists mainly used two different approaches: an “occupational status” or “socioeconomic status” approach and a “social class” approach. In the former case, occupations were categorised on the basis of occupational status. In this approach, occupations were ranked on the basis of occupational status scores: “Occupational status is a weighted average of the mean level of earnings and education of detailed occupations” (Torche 2015, p. 38). In this approach, intergenerational mobility was measured by computing the correlation between the scores assigned to the occupational status of individuals and their parents occupational status scores.4

On the other hand, the social class approach classified occupations into a few categorical groups that were not strictly ranked. A widely used class-based classification of social mobility, developed by Erikson, Goldthorpe, and Portocarero (1979), is known as the EGP class schema. The EGP class schema classifies different occupations into broad classes on the basis of “employment relations.” In the EGP classification, occupations are first divided into three categories - employees, self-employed, and employers. Next, these three occupational categories are divided into seven different classes that are based on “qualitative differences in employment relations”. These seven classes are as follows: (1) professional and managers; (2) clerical workers; (3) self-employed; (4) Farmers; (5) skilled manual workers; (6) unskilled manual workers; and (7) farm workers. It is, however, noteworthy that there is no consensus on a single class schema (or occupational grouping) in the literature on social mobility.

Sociologists have examined intergenerational associations between the social classes to which individuals belong ("destinations") and the classes to which their parents belonged ("origins"). Erikson and Goldthorpe (1992) and Breen (2004) have conducted extensive comparative analysis of relative social mobility ("social fluidity") across different industrial countries. Breen (2004) used EGP social class schema to analyse changes in intergenerational occupational mobility across 11 industrialised countries (Britain, France, Ireland, West Germany, the Netherlands, Italy, Sweden, Norway, Poland, Hungary, and Israel) between the 1970s and 1990s. They show that on an average across these 11 countries, 33 per cent of sons remained in the same occupation as their fathers in the 1970s; the corresponding figures changed to 32 per cent by 1990. In other words, absolute mobility for men increased slightly between the 1970s and 1990s in 11 industrial countries. The study also showed that countries differed from each other with respect to levels of absolute mobility. In the 1990s, Germany had the lowest absolute mobility rate, with 40 per cent of sons remaining in the same occupation as their fathers, and Israel had the highest absolute mobility, with only 26 per cent of sons remaining in the same occupation as their fathers.

While sociologists were pioneers in the field, and also extensively analysed patterns of intergenerational mobility with respect to occupational status, economists, especially in developed countries, also used occupational data to examine intergenerational mobility. For example, Long and Ferrie (2013) used longitudinal data on fathers and sons to classify occupations into four broad categories based on the skill levels, and compared intergenerational occupational mobility in the United States with intergenerational mobility in Great Britain in the nineteenth century. They showed that, in the three

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decades after 1850, the United States experienced higher levels of intergenerational occupational mobility than Britain. They further showed that by the 1950s intergenerational occupational mobility in the United States fell from its nineteenth century levels and the United States' lead over Britain in intergenerational occupational mobility came to an end.

Apart from occupations, other socio-economic outcomes such as individual earnings, income, and wealth were also used to measure the association between individuals in developed countries and their adult offspring. Behrman and Taubman (1985) and Becker and Tomes (1986) used data on single-year earnings of individuals and their adult offspring in the United States to measure intergenerational mobility. Following Becker and Tomes (1986), several studies used multi-year earnings data of individuals and their children to analyse intergenerational mobility.

Most studies on intergenerational earnings or income mobility in developed countries use data from panel or longitudinal data sources, such as the Panel Study of Income Dynamics (PSID) in the United States and the National Longitudinal Surveys (NLS) and German Socio-Economic Panel (GSOEP) in Germany. Some studies in developed countries also use data on the incomes of individuals and their adult offspring from administrative tax records. These include, Corak and Heisz (1999) study based on data from Canadian income tax records and Chetty et al. (2014), who analysed intergenerational income mobility in the United States, used data from federal income tax records between 1996 and 2012.

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7 See Bjorklund and Jantti 1997, Corak and Heisz 1999, Solon 1999, and Mazumder 2005
Across the world, studies on intergenerational income or earnings mobility have generally used two simple metrics of immobility. They are: intergenerational income (or earning) elasticity and intergenerational income (or earning) correlation. Typically intergenerational income (or earning) elasticity is computed by regressing log income (or earning) of offspring on log income (or earning) of parents. The resulting regression coefficient, $\beta$, is interpreted as parent’s (father’s or mother’s) income and as a predictor of income of offspring (daughter or son). $\beta = 0$ implies that the income of the parent does not predict offspring's income or, in other words, it represents perfect mobility. On other hand, if $\beta \neq 0$, implies that the income of the parent perfectly predicts offspring's income, implying perfect immobility. Another commonly used measure of intergenerational income (or earning) mobility is intergenerational income (or earning) correlation, $r$. This is a standardized measure of intergenerational immobility that adjusts for differences in income inequality between father's and son's generation.

Jäntti et al. (2006) compare intergenerational earning mobility in the United States, United Kingdom, Denmark, Finland, Norway and Sweden using data on individuals’ earnings and their fathers’ earnings. Their results show that intergenerational income elasticity, a summary measure of income mobility between father and sons, ranged from 0.071 in Denmark to 0.517 in the United States. Similarly, intergenerational income elasticity varied from 0.089 in Denmark to 0.357 in the United States. In other words, their results showed that the United States and the United Kingdom had lower income mobility the Nordic countries.

Hertz et al. (2007) studied trends in intergenerational mobility with respect to educational outcomes among individuals and their adult offspring over a period of 50 years and across 42 countries around the world. They found that the Latin American
countries in their sample showed highest correlation (0.60) between the educational attainments of individuals and their children, while the Nordic nations showed the lowest correlation (0.31) in the same respect. Further, they found that, among developed countries, Italy and the United States scored lowest, that is, they were characterised by high intergenerational educational immobility.

Studies on Intergenerational Occupational Mobility in India

India lacks large scale, nationally representative, longitudinal surveys that provide information on the incomes, earnings, wealth, and other aspects of individual socio-economic status across generations. Although National Council for Applied Economic Research (NCAER) has conducted some panel studies, these studies were not nationally representative. However, recently NCAER and the University of Maryland have conducted a large scale national representative panel survey, the Indian Human Development Survey of 2004-05 and 2011-12. Data from administrative records such as income tax records cannot be used to analyse intergenerational mobility in a country like India, since only a small minority of the Indian population files income tax returns. Given the lack of suitable data, the literature on intergenerational mobility in India is scanty.

In India, sociologists have analysed occupational mobility to examine the relation between an individual's position in the caste system and his/her occupational position and to also examine the influence of modernisation on an individual’s occupational choice and mobility. These studies include Gist (1954), Driver (1962), and Sharma (1961). For example, Gist (1954) collected occupation data on individuals and their fathers from two cities from the States of Karnataka, Bangalore and Mysore, and
examined variations in intergenerational occupational mobility by caste. Gist (1954) found that in each caste group at least 40 per cent of individuals entered occupations different from those of their fathers. Gist (1954) also observed, however, that this occupational mobility between fathers and sons had taken place mostly among occupations of comparable rank. Gist (1954) concluded that intergenerational occupational mobility thus had a negligible effect on an individual's position in the caste system and occupational structure. A study by Driver (1962), based on data collected from rural and urban areas of Nagpur district, Maharashtra, followed the same methodology as Gist (1954) and arrived at similar conclusions as Gist. Further, some of the earlier studies by sociologists specifically chose the village as their site in order to examine the role of caste in influencing the choice of occupation of individuals (see, for example, Sharma 1970).

Turning to studies by economists, Sovani and Pradhan (1955) was among the earliest explicitly to analyse intergenerational occupational mobility. The study was based on a 4 per cent random sample collected from Pune city. The authors found that 54 per cent of individuals from their sample experienced upward mobility. In other words, 54 per cent of individuals entered “better” occupations than their fathers.

Another category of studies in India have analysed household economic mobility over time using household-level information on income, occupations, and landownership from panel surveys. The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) conducted longitudinal surveys between 1975 to 1985 in seven semi-arid villages in Andhra Pradesh and Maharashtra. Using ICRISAT longitudinal

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surveys, Walker and Ryan (1990) showed that between 1975 and 1985, two-thirds of their sample households slipped into poverty or moved out of it. They also found that during the same period, 23 per cent of sample households remained chronically poor. Swaminathan (1991), in a study based on panel data collected from households in Gokilapuram, a village in Tamil Nadu, found that “agricultural modernisation within the existing structural framework has provided restricted opportunities for occupational change [but] has not mitigated the extreme polarisation in the distribution of land” (Swaminathan 1991, p. 261). Lanjouw and Stern (1991) analysed income mobility among households between 1957-58 and 1983-84 based on panel data on the incomes of households from Palanpur village in western Uttar Pradesh. They measured household income mobility using a transition matrix method and found that household income mobility had increased over the study period. They argued that availability of non-agricultural employment outside Palanpur village had grown over the reference period, and that this growth contributed to a rise in the income mobility of households. However, they found that agricultural labourers experienced very little occupational mobility (Lanjouw and Stern 1991, and Dreze, Lanjouw, and Stern 1992).

Other set of studies have analysed income mobility in rural India using panel survey conducted by the National Council for Applied Economic Research (NCAER) (such as Gaiha (1988) Coondoo and Dutta (1990) Pradhan and Mukherjee (2015)). The NCAER conducted panel survey (Rural Economic and Demographic Survey (REDS)). These covered rural households in 17 States and were conducted in 1968-69, 1969-70, 1970-71, 1981-82, 1998-99, and 2005-06. Using this data Gaiha (1988, p. 296) found that “out of the poor in 1968, over one-half ceased to be poor, over 12 per cent became poorer, and about 36 per cent remained poor without becoming poorer in 1970. Out of the not-poor in 1968, over three-quarters remained not-poor, while the remaining became poor.
in 1970”. More recently, Pradhan and Mukherjee (2015) used REDS panel data to examine economic mobility over three decades (1971-2006). They found that income mobility remained low over time. They have argued that the implementation of land reforms and caste-based affirmative action did not significantly help in increasing economic mobility in rural India.

As mentioned above, there are no large-scale longitudinal data in India on incomes or earnings of both individuals and their parents. Hence, recent studies in India have used occupational data from nationally representative cross-sectional surveys to analyse intergenerational mobility.

Kumar et al., (2002a, 2002b) analysed the determinants of intergenerational occupational mobility in India using data from the National Election Study, 1996, conducted by the Centre for the Study of Developing Societies, New Delhi.⁹ They found that a high level of inequality between classes persisted with respect to opportunities for occupational mobility. They attributed this inequality to differences in the financial, educational, and social resources possessed by different classes and argued that caste alone could not explain this inequality. Vaid (2012, p.1) concluded that “Scheduled Castes have low upward mobility [with respect to occupation], [and] higher castes are not entirely protected from downward mobility.” However, the data set used by both Kumar et al., (2002a; 2002b) and Vaid (2012) not only had a small sample size but also provided limited information on occupations of individuals. Further, both these studies were limited to cross-sectional analysis of intergenerational mobility in India. Surveys undertaken for identifying patterns of voter behaviour in elections are not, generally designed to, pay detailed attention to socio-economic variables, and

⁹Earlier studies on intergenerational mobility based on election surveys include Nijhawan (1971)
hence the quality of information in these surveys on occupation and land ownership may not be reliable.

More recently, Motiram and Singh (2012) used data from the India Human Development Survey 2004-2005, jointly conducted by the University of Maryland and the National Council for Applied Economic Research (NCAER), to study intergenerational occupational mobility among men in India. This study showed that a substantial proportion of sons of low-skilled and low-paid workers remained in the same occupations as their fathers at the all-India level, in urban and rural areas combined. However, this study too was a cross-sectional analysis of intergenerational mobility, using data collected in 2004-05. Azam (2015) also used the same data set but compared variations in intergenerational occupational mobility across birth cohorts of men. He found that intergenerational occupational mobility was higher among men from the 1975-84 birth cohort than among men from the 1945-54 birth cohort. He also showed that within the birth cohort 1965–1984, intergenerational occupational mobility was higher for Scheduled Caste and Scheduled Tribe men than for men from “higher” castes.

The Employment and Unemployment Surveys (EUS) are the most reliable and regular source of nationally representative data on labour-market and demographic variables in India. These surveys do not, however, collect data on educational and occupational attainments of parents of heads of households. However, from these repeated cross-sectional data, a large sample of co-resident fathers and sons can be obtained to analyse intergenerational mobility. There are two studies of mobility that use Employment and Unemployment Surveys data exclusively. Majumder (2010) and Hnatkovska, Lahiri, and Paul (2013) have examined trends in intergenerational occupational mobility in India.
The present thesis also uses occupational data from repeated cross-sectional Employment and Unemployment Surveys to analyse changes in intergenerational occupational mobility in India.

Hnatkovska, Lahiri, and Paul (2013) presented transition matrices by classifying occupations into three categories, namely white collar, blue collar, and farmers and agricultural workers, and presented transition matrices for occupational mobility between generations. The diagonal cell values in their mobility tables show very high immobility for farmers and agricultural workers and blue collar workers in 1983 and 2004-05. Majumder (2010) used data from the 50 (1993-99) and 61 (2004-05) rounds of the Employment and Unemployment Surveys and studied mobility using a regression method. He showed that inter-generational occupational mobility was significantly lower among the “excluded classes” (comprising Scheduled Castes, Scheduled Tribes and Other Backward Classes) than among the “advanced classes.” Similarly, Hnatkovska, Lahiri, and Paul (2013) showed that between 1983 and 2004-05 the probability of intergenerational occupational switches rose from 33 to 42 per cent for Other Caste males while the corresponding figure for Scheduled Caste and Scheduled Tribe males increased from 30 to 39 per cent. They concluded that differences in intergenerational mobility among Scheduled Caste and Scheduled Tribe and non-Scheduled Caste and Scheduled Tribe males had not changed in the period between 1983 to 2004-05.

1.2.2 Factors Affecting Intergenerational Mobility

Studies on intergenerational mobility have examined a range of factors and processes affecting intergenerational economic mobility in different countries. Some of these factors and processes include imperfect credit markets, educational disparities based on
social origins, the prevalence of assortative marriages with respect to income or education, and discrimination on the basis of certain types of ascribed status such as race and ethnicity, family structure, etc. A recent study by Chetty et al. (2014) argues that, in the context of the United States, differences in intergenerational mobility based on geographical location are associated with factors such as family structure, income inequality, local school quality, residential segregation and social capital. In this thesis, we study two variables, inequality in educational attainment based on family background and levels of educational assortative marriage that the literature has found to be strongly correlated with levels of intergenerational mobility.

1.2.3 Education and Intergenerational Mobility

Several studies have argued that the extent of intergenerational mobility in a society is strongly correlated with differences in educational attainment based on people’s socio-economic origins. The higher the influence of family background on an individual’s educational attainment, the higher the educational inequality in an economy. In other words, the stronger the influence of family background on children’s educational attainments, the lower the educational attainments of children of disadvantaged family backgrounds, and the higher the educational attainments of children of advantaged family backgrounds. The high persistence of intergenerational educational inequality may imply that socially and economically disadvantaged children face barriers to gaining access to education. This can further widen the social and economic gaps between social groups in an economy. By contrast, if the influence of family background on educational attainment is low, individuals from disadvantaged backgrounds have a

better chance of achieving both better education and more positive labour market outcomes, thereby improving the general level of intergenerational mobility in an economy (Bauer and Riphahn 2007 and Huang 2013). Thus, it is important to examine the effect of social origin on individual education attainment, as this has implications not only for the level of social mobility in a society, but also for economic efficiency and social justice.

*Studies on Inequality of Educational Attainment in India*

“In a situation of the type we have in India, it is the responsibility of the education system to bring the different social classes and groups together and thus promote the emergence of an egalitarian and integrated society. But at present instead of doing so, the education system itself is tending to increase social segregation and to perpetuate and widen class distinctions. …What is worse, this segregation is increasing and tending to widen the gulf between the classes and the masses…” (Education Commission 1966, p.18).

India has made significant progress in school enrolment over the last few decades (Kingdon 2007). Despite these improvements considerable disparities persist in school participation across castes, gender, religion, and between urban and rural India (see Asadullah, Kambhampati and Lopez-Boo 2014). Thomas, Wang, and Fan, (2000) showed that, with respect to the Gini coefficients for selected indicators of educational attainments, India was among the most unequal countries in the world. Agarawal (2013) measured inequality in the number of years of education and found that, in 2009, the Gini coefficient for educational inequality was 50 per cent, indicating high educational inequality.
In India, there are substantial differences in socio-economic development between religious minorities and majorities. Muslims, who form 13 per cent of the total population of India, are more deprived than the population as a whole in India with respect to different socio-economic indicators, including education and health (see Sachar et al. 2006). A study by Asadullah, Kambhampati and Lopez-Boo (2014) showed that although the gap between Hindu and Muslim individuals with respect to both school participation and completion declined between 1983 and 2004, socio-economic characteristics and the background and gender of the child remained strong determinants of school participation and educational attainment in India. Not only did historically deprived sections of population have much lower school completion rates, their performance also in school reflected that social deprivation. For example, a study by Borooah (2012) using IHDS-2004-05 data showed that significant inter-caste and inter-religious group differences exist in test scores in reading, arithmetic and writing among school children aged 8–11 years. The study found that children belonging to Muslim, Scheduled Caste and Scheduled Tribes were most disadvantaged with respect to all three achievements.

Another set of studies have examined inequality in educational opportunity in India (see, for example, Asadulla and Yalonetzky 2013 and Singh et al. 2014) and Asadulla and Yalonetzky (2013) used data from the Employment and Unemployment Surveys to analyse temporal changes in inequality in educational opportunity in India from 1983 to 2004. They showed that India has experienced a fall in inequality of educational opportunity in the post-liberalisation period. However, they found substantial variation in inequality of educational opportunity across States in India. They find that North Indian States have exhibited higher inequality in educational opportunity compared to south Indian States. Singh et al. (2014, p.1) used data from six States from a survey titled
“Youth in India: Situation and Needs” to estimate inequality of opportunity in schooling outcomes. They found huge disparities in educational opportunity for boys and girls in India.

Studies have also documented intergenerational educational mobility in India (Jalan and Murgai 2008; Maitra and Sharma 2010; Hnatkovska, Lahiri and Paul 2013; Azam and Bhatt 2014; and Emran and Shilpi 2015). These studies have measured intergenerational educational mobility by regressing fathers’ education as a predictor of sons’ education and interpreted this regression coefficient as a measure of intergenerational mobility. Using National Family Health Survey (NFHS) 1998–99 data, Jalan and Murgai (2008) have shown that educational mobility increased significantly over age cohorts (that is, over time). They have also argued that when the effect of explanatory variables was controlled, educational gaps between different social groups were not substantial. Maitra and Sharma (2010), using Indian Human Development Survey 2004-05 data have shown that educational mobility has improved over age cohorts. Azam and Bhatt (2014, p.1) estimated intergenerational regression coefficients based on data from the Indian Human Development Survey 2004-05, and showed that educational immobility declined across different age-cohorts. They decomposed the intergenerational correlation between fathers’ and sons' educational attainment over age cohorts and found that immobility between fathers’ and sons’ educational attainments declined “at the lower end of fathers’ educational distribution” but persistence in educational attainments “has increased at the top end of the fathers’ educational distribution.” By contrast, a recent study by Emran and Shilpi (2015, p. 362) based on two rounds of the National Family and Health Surveys found strong intergenerational immobility with respect to education in India. They have shown that intergenerational educational immobility in India is greater than in Latin America. They further show that
intergenerational mobility in education remained largely unchanged between 1991-92 and 2006 India.

Most studies of educational inequality in India focus mainly on educational inequality at the school level, and few have focused on inequalities in higher education. Most of the latter have analysed changes in higher educational attainment over time and across different social groups and gender.\textsuperscript{12} Tilak (2015) reviewed inequality in higher education attainments in India. He showed that, between 1983 and 2010, inequalities in higher educational attainment by gender, caste, and religion declined. However, his results showed that disparities in educational attainments are much greater between people living in rural and urban areas than between people of different caste or between men and women. He further argued that the gap between rich and poor in attaining higher education was becoming more significant over time. Most studies of inequality in higher educational attainment in India do not consider family background as an explanatory variable in the analyses of inequality. One exception is Basant and Sen (2014). They argued that gaps in educational attainment at the graduate level between different socio-religious group should only be measured by considering individuals who have already completed their higher secondary education (that is, the population eligible for entry into higher education). Using probit analysis, they showed, that within the eligible population, and controlling for the influence of other socio-economic variables, gaps in access to higher education among different socio-religious groups disappear. Based on their results they prescribe that father’s education, rather than caste, should be the basis for implementing affirmative action in higher education. One of the major problems of this study is that it does not measure the impact of pre-existing systems of reservation (on the basis of caste) on current enrollment.

Marriage between two individuals who belong to the same socio-economic stratum is known as assortative marriage. Educational assortative marriage is an important aspect of intergenerational economic mobility as education plays a crucial role in determining individual’s earnings and occupation in the labour market. Further magnitude of similarity in wives’ and husbands’ economic and social traits can affect economic inequality across households. Studies based on data from different countries have shown that the increases in assortative marriage tend to widen income and earning inequality across households. For example, Hu and Qian (2015) have shown that the increase in educational assortative marriage between 1983 and 2007 was associated with growing inter-household earnings inequality in urban China. Similarly, Greenwood et al. (2014) have shown that, between 1960 and 2005, an increase in educational assortative marriage has contributed to increase in income inequality across households in the United States of America.

The degree of educational assortative marriage can not only affect inequality across households in the current generation, but can also slow down mobility with respect to certain socio-economic achievements between individuals and their offspring. Patterns of assortative marriage can influence levels of intergenerational mobility, as the pattern of marriage between individuals forms the “family background” for their offspring in a society (Mare 2000 & 2011 and Durlau and Shaorshadze 2014). An increase in the degree of assortative marriage implies greater disparities in resources.

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available for children in different households; it thus leads to differential investment in the next generation's education. In the context of developed countries, different studies have empirically shown how assortative marriage can lead to a decline in intergenerational mobility (Ermisch et al. 2006, Handy 2014, and Guell, Mora, and Telmer 2015). For example, Handy (2014) examined the effect of educational assortative marriage on intergenerational mobility with respect to education and earnings in the United States. His study showed that assortative marriage “can explain about one quarter of the observed intergenerational persistence of schooling and earnings” in the United States (Handy 2014. p. 2). Another recent study by Guell, Mora, and Telmer (2015) based on 2001 census data from Catalonia showed that an increase in assortative marriage among different generations in the 20th century led to a decrease in intergenerational mobility in the region.

A study of changes in educational assortative marriage can provide further insights into the persistence of economic and social inequalities in a period of high economic growth in India.

_Marriage in the Indian context_

In contemporary Indian society, marriage is nearly universal. Calculations from 68th round of Employment and Unemployment Survey data of the National Sample Survey Office show that, in 2012, only around two per cent of women aged between 30 and 35 were never married. Unlike other societies in the world, South Asian Society is peculiarly stratified on the basis of the institution called caste. Caste-based endogamy is one of the defining features of the Hindu caste system (Ambedkar 1916). Almost all marriages in India are still arranged within “marriageable” castes. Caste and religion are
the most important criteria in the selection of prospective spouses in India. According to the India Human Development Survey 2011-12 data only five per cent of Indian marriages were inter-caste in year 2011-12. A study based on caste-specific matrimonial advertisements in newspapers by Banerjee et al. (2013) showed the persistence of a strong expressed desire among individuals to marry within their own caste. In other words, inter-caste and inter-religious marriages in Indian society still continue to be shunned, despite the expansion of education and increasing urbanisation. Nevertheless, with the continuous increase in the importance of education in modern India, education can play an important role in an individual’s selection of a prospective spouse even within arranged marriages (see Banerjee et al. 2013). In other words, both families and individuals consider the educational attainment of a prospective spouse as an indicator of their families’ future economic achievement.

*Studies on Educational Assortative Marriage in India*

Educational assortative marriage is well studied in developed countries and in some less-developed countries (for reviews see Kalmijn 1998, Blossfeld 2009, and Schwartz 2013). In India, however, to the best of our knowledge, no systematic study of variations in patterns and trends in assortative marriages over a relatively longer time period has been undertaken. A few studies have analysed assortative marriages in a limited context; among them are Driver (1984) and Dalmia and Lawrence (2001). All such studies have shown a high occurrence of assortative marriages with respect to different traits or variables (See, for example, Driver 1984, Dalmia and Lawrence 2001, and Esteve and McCaa, 2008).

16 See http://www.thehindu.com/data/just-5-per-cent-of-indian-marriages-are-intercaste/article6591502.ece
1.3 RESEARCH QUESTIONS

1. The first objective of this thesis is to estimate the extent of intergenerational mobility in India from data on the occupations of individuals. The thesis uses unit level data from the Employment and Unemployment Surveys conducted by the National Sample Survey Office to examine changes in intergenerational mobility in India over the last three decades and to compare the variations in intergenerational mobility across different social groups. To supplement this analysis, we have used survey data from villages in different parts of India to examine occupational mobility in rural India across three generations.

2. The second objective of this thesis is to examine changes in the degree of educational inequality and the role of family background in determining the educational attainments of children.

3. The third objective of the thesis is to examine changes in the extent and patterns of assortative marriage with respect to educational attainment, and to compare variations in educational assortative marriage across different social groups.

1.4. DATA SOURCES AND METHODOLOGY

Data Sources

As discussed earlier, India lacks longitudinal surveys that can provide relevant information on socio-economic variables—such as income, earnings, occupations of individuals and their parents spanning several generations—to analyse social mobility. However, nationally representative repeated cross-sectional data sets from the
Employment and Unemployment Surveys of the National Sample Survey Office provide educational and occupational information about individuals. We use unit-level data from the 38 (1983), 43 (1987-88), 50 (1993-94), 55 (1999-00), 61 (2004-05) and 68 rounds (2011-12) of the Employment and Unemployment Surveys of the National Sample Survey Office to generate a sub-sample of data that contains occupational and educational information of individuals (men) and their parents (fathers).

We have also used unit-level data from the India Human Development Survey 2004-05 (IHDS 2004-05). The IHDS-2004-05 is a nationally representative survey conducted by the University of Maryland and the National Council for Applied Economic Research (NCAER) in 2004-05. As IHDS 2004-05 data also contains data on the educational attainments of fathers of heads of household, it provides a sample of matched fathers and sons pairs that is much larger than co-resident samples of fathers and sons from the Employment and Unemployment Surveys of the National Sample Survey Office.

I now come to a major limitation of the contemporary data base in India. As discussed above, India lacks panel or longitudinal data that are adequate for the analysis of socio-economic mobility from one generation to the next. This thesis thus uses co-resident fathers’ and sons’ data from repeated cross-sectional surveys of National Sample Survey Office and IHDS-2004-05. Given that most married women in India do not live with their parents, it is not possible to conduct corresponding studies of women from cross-sectional surveys. These surveys do not provide any information on the educational or occupational details of the parents of adult women. Hence, this study is restricted to the study of co-resident men and their fathers. A corresponding study of women is necessary, but awaits the collection of the data necessary for the task.
We use household-based data from 10 villages surveyed between 2005 and 2010 in six States (Andhra Pradesh, Karnataka, Maharashtra, Telangana, Rajasthan, and Uttar Pradesh). The surveys were conducted by the Foundation for Agrarian Studies as part of its Project on Agrarian Relations in India (PARI). This data provides some unique advantages over matched co-resident samples of pair data on father and sons from the Employment and Unemployment Surveys. First, the PARI surveys provide detailed information on the occupations and a range of other items of information about the current head of each household. The data base also has information on the occupation and extent of land owned by the father of each head of the household. Thus, first, PARI data provides an opportunity to examine intergenerational occupational mobility without imposing co-resident conditions in order to match fathers and sons. Secondly, since the PARI database also contains data on the ownership of land by landowning information of fathers of heads of households, we are able to examine intergenerational mobility between different classes of farmers (poor and rich farmers). Given that peasantry is heterogeneous and characterised by different socio-economic strata status, analysing mobility across peasant classes provides more insights into intergenerational mobility than is otherwise possible, especially in the context of a village in India.

Methodology

In the literature on intergenerational mobility, either matrix-based methods or regression-based methods are used to measure the association between parents (father and mother) and offspring with respect to different socio-economic outcomes, for example, occupations or level of income. Sociologists have mainly used mobility matrices and log linear models to analyse intergenerational occupational mobility (see Agresti and Kateri 2011, Xie and Killewald 2013). In this thesis, we have used mobility
matrix methods proposed by Altham (1969) and Ferrie and Long (2013) to analyse intergenerational occupational mobility. Methods used to analyse intergenerational occupational mobility are discussed in detail in the methodology sections of Chapters 2 and 3.

We have used intergenerational correlations to analyse changes in intergenerational educational mobility. Intergenerational correlation measures the association between educational attainments of parents and their children. We have used binary probit models to analyse the effects of different socio-economic characteristics of an individual’s family on their educational attainment.

Changes in educational assortative marriage have been analysed using correlation measures and matrix based methods (Altham and Ferrie 2007). Methods used to analyse educational assortative marriage are discussed in detail in methodology sections of Chapters 3 and 5.

1.5. CHAPTER PLAN


This chapter examines the pattern of intergenerational occupational mobility in India over the last three decades. The question of the degree of intergenerational mobility and the associated availability of opportunities is an important question as the Indian economy has undergone significant changes in recent decades, which have been characterised by relatively high economic growth and increasing economic inequality.
3. Intergenerational Occupational Mobility in Rural India: Evidence from Village Surveys

This chapter examines intergenerational occupational mobility among rural males in India, using data from household surveys in ten villages in different agro-ecological regions of the country. It also examines occupational mobility across three generations for co-resident males in the study villages.

4. Family Background and Access to Educational Opportunity in India

This chapter examines changes in the influence of the socio-economic background on the educational attainment of people in India between 1983 and 2012. It also examines intergenerational mobility between men and their co-resident sons between 1983 and 2012 in respect of educational achievements. The analysis is based on data from the Employment and Unemployment Surveys and Indian Human Development Surveys 2004-05.


This chapter examines changes in assortative marriages in India (with respect to educational achievements) over the last three decades (1983 to 2012). The analysis is based on data from different rounds of the Employment and Unemployment Surveys. This chapter also compares variations in educational assortative marriage across different social groups over the same period.

6. Conclusions

This chapter summarises the main findings of the thesis. It also discusses issues for further research on different aspects of intergenerational mobility in India.