MULTIDIMENSIONAL POVERTY DYNAMICS: SOCIAL PROTECTION AND ITS IMPLICATION ON RURAL POVERTY DYNAMICS IN INDIA

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Abstract

The thesis is set to examine the nature of rural poverty dynamics in India and its relation to social protection schemes. In place of static monetary or consumption-based measures, the thesis focuses on multidimensional poverty measures which is able to differentiate stochastic poverty from structural one. The empirical analyses are proceeded with four research questions:1) What are the interlinkages between various dimensions of well-being in relation to poverty dynamics? 2) What explains poverty dynamics in India and are these dynamics different for different measures of poverty? 3) Can we establish a link between social protection policies and poverty dynamics? and 4) What are the transformational effect of these policies? These research questions are assessed quantitatively using the India Human Development Survey (IHDS) data for the years 2005 and 2011 as well as qualitatively by conducting face to face interviews and focus group discussions in four villages of one of the poorest states in India. A decomposition analysis on multidimensional poverty to ascertain the interdependencies between transitions in deprivation of multiple dimensions of poverty is also undertaken.

Chapter 1 provides contextual background of the research and lays down research questions. Chapter 2 presents a theoretical literature review on poverty and its causes and outlines the importance of multidimensional poverty dynamics. Chapter 3 reviews empirical literature on poverty dynamics and its causes with a special focus on India. Chapters 4 provides an analysis of relationship between social protection and poverty dynamics. Chapter 5 explains the data used in this study and the methodology adopted to answer the research questions. Chapters 6, 7, and 8 provide empirical investigations into poverty dynamics and social protection in India. Chapter 9 summarises key findings and discusses policy implications and future research directions.

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List of Abbreviations

ADB	Asia Development Bank
ADS	Average Deprivation Score
AE	Actual Estimate
APL	Above Poverty Line
ASHA	Accredited Social Health Activists
ASSOCHAM	The Associated Chambers of Commerce and Industry of India
BMI	Body Mass Index
BPL	Below Poverty Line
CPHC	Comprehensive Primary Health Care
CPIAL	Consumer price index for agricultural labourers
CPZ	Chronic Poverty Zone
DBT	Direct Benefit Transfers
DFID	Department for International Development
DRDA	District Rural Development Agencies
ERHS	Ethiopian Rural Household Survey
EU	European Union
EY	Ernst & Young
FGD	Focus Group Discussions
FGT	Foster-Greer-Thorbecke
FPS	Fair Price Shops
GDP	Gross Domestic Product
GOI	Government of India
GP	Gram Pradhan- Head of the Village
HDI	Human Development Index
HEZ	Humanitarian Emergency Zone
IAY	Indira Awaas Yojana
ICDS	Integrated Child Development Scheme
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IFPRI	The International Food Policy Research Institute
IGNDPS	Indira Gandhi National Disability Pension Scheme
IGNOAPS	Indira Gandhi National Old Age Pension Scheme
IGNWPS	Indira Gandhi National Widow Pension Scheme
IHDS	India Human Development Survey
ILO	International Labour Organisation

JAM	Jan-Dhan, Aadhaar and Mobile
JAY	Jan Arogya Yojana
JSY	Janani Suraksha Yojana
KES	Kenyan Shilling
LPG	Liquid Petroleum Gas
MCA	Multiple Correspondence Analysis
MNC	Multinational Corporations
MNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MP	Madhya Pradesh
MPI	Multidimensional Poverty Index
MT	Micawber Threshold
NABARD	National Bureau of Agricultural and Rural Development
NCAER	National Council of Applied Economic Research
NFBS	National Family Benefit Scheme
NGO	Non-Government Organisation
NOAPS	National Old Age Pension Scheme
NREGS	National Rural Employment Guarantee Scheme
NRHM	National Rural Health Mission
NSAP	National Social Assistance Program
NSSO	National Social Survey Organisation
ODI	Overseas Development Institute
OOP	Out of Pocket
OPHI	Oxford Poverty and Human Development Initiative
PBF	Programa Bolsa Família
PDS	Public Distribution System
PIDE	Pakistan Institute of Development Economics
PM	Prime Minister
PMAY	Prime Minister Awaas Yojana
PMGAY	Prime Minister Grameen Awaas Yojana
PMJAY	Prime Minister Jan Arogya Yojana
PRHS	Pakistan Rural Household Survey
PSM	Propensity Score Matching
PSNP	Productive Safety Net Program
RBI	Reserve Bank of India
RE	Revised Estimates
RRR	Relative Risk Ratio
RSBY	Rashtriya Swasthya Bima Yojana
SC	Scheduled Caste

SD	Standard Deviation
SGSY	Swarnjayanti Gram Swarozgar Yojana
SHG	Self Help Group
SP	Social Protection
ST	Scheduled Tribe
TPDS	Targeted Public Distribution System
TSC	Total Sanitation Campaign
UBI	Universal Basic Income
UIDAI	Unique Identification Authority of India
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
UP	Uttar Pradesh
UPI	Unified Payment Interface
US	United State
USD	US Dollars

Chapter 1: Introduction

1.1 Background

Poverty eradication in all its forms and dimensions, including chronic poverty, is one of the largest global challenges and an imperative requirement for sustainable development (United Nations, 2015). Addressing poverty requires a wider recognition of multiple dimensions around which lives of the poor revolve. Amartya Sen describes poverty as 'the deprivation of basic capabilities rather than merely lack of income, which is the standard criterion of identification of poverty' (Sen, 1999). As dimensions, such as health, education, standard of living, source of livelihood, etc. represent capabilities better than monetary measures such as income or consumption, multidimensional poverty measures are gaining attention worldwide. According to Oxford Poverty and Human Development Initiative (OPHI) poverty encompasses numerous deprivations, such as poor health and education, poor quality of living, disempowerment, poor standard of work, the threat of violence, and living in rural/remote areas with poor infrastructure and facilities, among others (Alkire and Foster, 2007). Deprivation in these dimensions is considered as a structural loss which would have a long-term impact on household capability (Carter and May, 1999). Therefore, studying poverty in multidimensional space reveals the dimensions that cause changes in standard of living over time.

Progress in poverty reduction is often assessed by comparing poverty rates in cross sectional data over time. This comparison, although provides useful information about the overall change in poverty levels and the characteristics of poor people at a given point in time, it does not provide insights into dynamics of poverty. It is important to track same households over a period of time to understand the factors that determine movements in and out of poverty. At the same time, it is important to consider multidimensionality of poverty while studying poverty dynamics as changes in the deprivation status of dimensions of well-being are more indicative of long-term poverty as compared to income or consumption, which is highly volatile.

While we have a vast literature on static poverty available in India, our understanding of poverty dynamics remains limited. Officially, poverty in India declined from 45.3 percent in 1993 to 37.2 in 2004-05 and further to 21.9 percent in 2011 (Government of India, 2018). Although these achievements are notable

there is limited understanding on the distribution of people who fall and who move out of poverty. Poverty decline incorporates three sets of people; those who move out of poverty, those who fall in poverty and those who deeply remain stuck in poverty. Since many of the most important aspects of poverty relate to its dynamic setting, the "static" approach measuring poverty at a given moment in time is insufficient. Change in poverty over time without tracing the same household over a period of time has limitations to explain the processes of falling into poverty and getting out of it.

According to the World Bank rapid rate of economic growth in India has helped in reduction of poverty, yet India continued to be a house of 270 million poor people in 2011 (Government of India, 2018). Moreover, it was found that 56 percent of India's population i.e., around 680 million people lacked the means to meet their essential needs (McKinsey Global Institute, 2016). There were huge interstate and inter-sector variations as well in 2011, with 25.7 percent of rural sector being poor as compared to 13.7 percent urban and poverty rates of as low as 5 percent in Goa and as high as 40 percent in Chhattisgarh (RBI, 2015). Inter-state and intersectoral differences in institutional and social infrastructure explain most of the difference in poverty reduction. States that are home to large proportions of poor people are also the ones with poor performing infrastructure. This further accentuates the need to study structural poverty represented by multiple dimensions of well-being.

The Government of India invests in variety of social protection schemes to help promote the welfare of poor and disadvantaged section of the society. It is imperative to understand why after so many social protection programs in place poverty in India is still very high. Why are 56 percent households in India deprived of basic amenities? Is it that, with social protection, households move out of poverty and at the same time new people fall in it? If that is the case, why is social protection not preventing the vulnerable from falling into poverty? Are there structural bottlenecks in our system that are preventing social protection policies to work at their best capacity? Answer to these can only be obtained by conducting a study that links dynamics in poverty to the schemes that are operational in India. While programs ranging from employment guarantee schemes and subsidised food distribution to targeted cash transfers benefit millions of poor and vulnerable in India, there is hardly any evidence that establishes a link between these schemes and poverty dynamics. India's regional divergence and lack of evidence on the linkages between graduation out of poverty and social protection schemes make India a perfect setting for my research. Moreover, availability

of Indian Human Development Survey (IHDS) dataset[1], which is longitudinal in nature and has much information needed for my study, gives me an opportunity to work on the poverty dynamics in India.

Literature of Poverty in India shows that social norms and cultures have hindered growth and movements out of poverty for disadvantageous and vulnerable groups and minorities. Elderlies, women, children and households belonging to Scheduled Caste categories often lack equitable resources that enable them to become empowered and move out of poverty. Social exclusion explains the barriers that disadvantaged people in developing countries face when trying to access social protection schemes (Kidd, 2017). Social protection has the capacity to bring a structured social transformation in the society by focussing on such segments of the society (Trivelli, Vargas and Clausen, 2017). It will be interesting to see how these schemes perform on the parameter of rural social transformation in India.

The rest of this chapter is structured as follows. Section 1.2 presents the research objective and questions, and methodology that aim to answer these questions. Section 1.3 explains in detail the significance and contribution of the thesis to the existing poverty dynamics literature in India. Section 1.4 presents the layout of the thesis and provides a brief description of each chapter of this thesis.

1.2 Research Objective, Questions and Methodology Adopted

Against the background discussed in Section 1.1, this thesis is guided by predominantly one research objective and two research questions.

Objective: The primary objective of this research is to conduct an empirical analysis of poverty dynamics in rural India with a focus on multidimensional poverty and try to understand why in spite of so many social protection programs in place for many years more than one-fifth of India's people are still poor.

To get a deeper understanding of the dynamic nature of poverty this thesis tries to understand the dynamics and factors behind occurrence of these dynamics in India. Moreover, as different policy interventions may be needed to address different categories of poverty it becomes imperative to explore the processes of poverty dynamics in order to design appropriate policy measure (McCulloch and Baulch, 2000). Drawing from Amartya Sen's capability approach where he proposed an interpretation of poverty

[1] Discussed in detail in chapter 5.

beyond monetary measures and acknowledging the presence of various theories of poverty that incorporate multiple dimensions of well-being as a cause of poverty, this thesis explores dynamics in multidimensional poverty. In line with the theories of poverty, multidimensionality in poverty can be seen as deprivations in dimensions comprising human, physical, financial, social, and institutional capital that a household endure at any given moment in time. Accumulation or deprivation of these dimensions over time can be seen as driving the process of poverty dynamics.

Two questions that precisely guide the structure of the thesis are originated from the primary objective. Each question is further divided into two sub-questions.

The research objective and the two research questions are assessed qualitatively and quantitatively using India Human Development Survey (IHDS) data for the years 2005 and 2011, and a field study conducted in four villages of one of the poorest states in India. As a first step of investigating into poverty dynamics it is important to collect and assimilate evidence at household level to understand better as to why some people remain poor and some move into it and how some move out of poverty over time. And given the vast history of social protection policies in India to eradicate poverty, studying the impact of these policies at ground level is equally important.

Q1. *What is the nature of poverty dynamics in India?*

Q1.1: *What are the interlinkages between various dimensions of well-being and their relationship with poverty entry and exits in India?*

Appreciating the multidimensional nature of poverty this study uses multidimensional poverty measure developed by OPHI to create an index that encompasses all aspects of holistic development. The aim is to broaden our knowledge of poverty dynamics by concentrating on the changes in all the dimensions that determine poverty. This research evaluates the multidimensional poverty dynamics in India and examine mathematically the inter linkages between various dimensions and their relationship with poverty entry and exits through poverty decomposition analysis. Mathematical model of decomposing poverty dynamics developed by OPHI (Suppa, 2017) is adopted to have an in-depth analysis of poverty dynamics. The model segregates behavioural and mechanical transitions to show at which point a particular deprivation occurs or disappears and how certain deprivations can be persistent. The mathematical decomposition analysis

will also guide me in my empirical analysis that examines the effect of various factors on poverty dynamics.

Q1.2: *What are the factors that affect poverty dynamics in India and are these dynamics different for different measures of poverty viz. consumption poverty*[2] *and multidimensional poverty dynamics?*

In order to conduct empirical analysis to answer this question this thesis explores the nature of rural poverty dynamics in India using both consumption and multidimensional poverty measures to get a clear understanding of how various factors impact dynamics in different poverty measures. Multinomial logit regression is conducted to model factors affecting poverty dynamics. This model allows a researcher to establish an association between different socio-economic characteristics and various poverty stages.

Empirical analysis undertaken using the IHDS data to explain the response for research question 1.2 will inform us about the factors affecting poverty dynamics from one time period to another, however, it is not sufficient to understand the changes or sequence of events that a household would have experienced between two time periods. Moreover, the non-monetary dimensions of well-being require more detailed investigation that a quantitative analysis using two-period longitudinal data may not provide sufficiently. A qualitative study is conducted in order to get a closer look at the lives of the poor and to understand their perspectives on how they define poverty, and how and why poverty prevails.

A close investigation into the poverty profile of various states in India has helped me chose a state for my qualitative study. The large number of the poor people, variation among districts in terms of movements in the poverty status, high proportion of households having access to social protection policies and poor physical and social infrastructure make Uttar Pradesh and Bihar the best choice for my study. Among the two, I chose Uttar Pradesh. Detailed face to face interviews with 10 households in each of the 4 selected villages in Uttar Pradesh provided me with the understanding of poverty dynamics on the ground. These interviews are also used to get answer to my research question 2.

Q2: What is the significance and implications of social protection programs in poverty dynamics in India?

Q2.1: *Can we establish a link between poverty entry and exit and social protection programs in India?*

[2] In India, Poverty is measured on the basis of poverty line determined using per capita consumption expenditure and not income. Therefore, monetary poverty is also referred as consumption poverty at several places in this thesis.

Regarding this question, which looks at the implication of social protection schemes on poverty dynamics, five of the central government schemes in India, guided by their size and availability of data in the IHDS, are selected. India has numerous programs funded at different government levels with different goals. In this study I am focussing on the food program called Price Distribution Scheme (PDS), guaranteed employment program under Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA), scheme encouraging institutional childbirth called Janani Suraksha Yojana (JSY), a housing scheme for poor called Prime Minister Awaas Yojana (PMAY) and national pension scheme for old people and widows called National Social Assistance Program (NSAP).

To answer this question too, I used the mixed method approach and combined quantitative longitudinal data available through the IHDS with case studies conducted in four villages in India to get people's perspective on social protection scheme under question and the processes underlying poverty transitions. Multinomial regression analysis is conducted to establish a link between these schemes and various poverty categories.

Q2.2: *Do social protection programs bring social structural transformation in rural India?*

Literature shows that there are various social parameters that define poverty. This thesis tries to see if there are any structural changes that selected social protection policies make, in the selected region, that facilitates movement out of poverty. This research question is largely guided by my understanding from focus group discussions (FGDs) conducted on the field. Much of the literature on social protection has been concerned about the mechanism through which economic security could be provided to the poor and disadvantaged. However, literature also shows that chronic poverty persists and movement out of poverty is obstructed when people endure social risk along with economic risks (Devereux and Sabates-Wheeler, 2004). In India, and also in other developing countries, discrimination on the grounds of social caste, gender, ethnicity, religion and language has made poor people more socially vulnerable. Such cultural challenges also effect other dimensions of well-being as households face discrimination while accessing healthcare, education, employment opportunities, etc.

Social structural transformation in the society is required for these households to take advantage of available opportunities to move out of poverty. Transformative impact brings structural changes in the society by providing better bargaining power to disadvantaged and promote their movement out of poverty

through equity, empowerment, and economic, social, and cultural rights (ibid). Through detailed case studies conducted on 40 households and FGDs in four villages in India this thesis tries to understand the transformative potential of the programmes to break down societal barriers. Two FGDs are conducted in each village by organising various groups within the village on the basis of gender, age and economic conditions. Two different groups, one with only women and other with elderlies are conducted.

1.3 Significance and Contribution of the Thesis

This thesis makes contribution to the empirical literature of poverty dynamics by examining the causes of multidimensional poverty dynamics and linking it to the participation in social protection programs. Policy makers are often interested in knowing how their policies fare in terms of movement in and out of poverty and whether they positively affect the life of poor or not. Using the decomposition methodology provided by OPHI, this study provides a novel way of knowing how an indicator relates to the multidimensional poverty, particularly when the panel data is available. This kind of decomposition analysis provides a useful insight into analysing the deprivations responsible for a direct movement in and out of poverty and also identifying the deprivations that are not majorly responsible for dynamics in poverty, but are indirectly impacting the movements in poverty numbers (Suppa, 2017). This also explains why some indicators or dimensions are persistent in the life of the poor and could also potentially help in the design of better poverty eradicating strategies (Yao and Stewart, 2016). So far, to my knowledge, there has not been any systematic study in India that decomposes multidimensional poverty to understand the mutually reinforcing deprivations that play major role in poverty dynamics. This thesis tries to fill this gap in literature.

In India, unfortunately, there is a dearth of studies focusing on poverty dynamics using multidimensional poverty framework. Most of the studies either used asset index to identify changes over time in the asset index or concentrate on a single asset to understand its role in poverty dynamics. Many studies talk about institutional and infrastructure arrangements but do not link them with the dynamics of multidimensional poverty. My study puts emphasis on this phenomenon of poverty and establishes a link between consumption and multidimensional poverty in rural India. The thesis examines how deprivations in various indicators of well-being impact entry into and exit from poverty. Careful investigation and explanation of analysis using two different poverty measures will offer new insights into the welfare of poor households

in India.

Literature has ample studies evaluating the effect of social protection policies on poverty and its dimensions. However, researchers in developing countries have often avoided to delve into the long-term impact of social protection policies on poverty, mainly because of the lack of availability of longitudinal data. The relationship between these policies and poverty dynamics and graduation is a new area that many researchers have not dealt with, especially in India. Building on the existing impact assessment literature, which provides valuable insights about the potential contribution of these programs in challenging the factors affecting poverty dynamics (Barrientos and Niño-zarazúa, 2011), my thesis looks into the long-term effects of the social protection policies on the poverty dynamics in rural India. My work also adds to the growing literature by going beyond looking at the implication, not only at consumption poverty dynamics but also multidimensional poverty dynamics. In my understanding, this is the first study conducted in India to evaluate the implication of social protection policies on poverty dynamics using multidimensional poverty measures.

Through empirical observations it is possible to establish a link between observable indicators like poverty status, heath indicators, education indicators, etc. However, there are some effects of social protection policies that are transformative in nature that sometimes go unnoticed (Sabharwal et al., 2014). Marginal sections of the society, mainly schedule caste households, elderlies, and women are more vulnerable to social risk. Social protection policies that empower this section of the society are transformational in nature. Studying the impact of social protection policies on the lives of disadvantageous group will inform the policy makers about the transformational impacts these policies make. Linking social protection with social rural transformation through focus group discussions generate understanding not only about the effect this may have on well-being, but also about the environments that affect people's welfare and livelihood (Babajanian and Hagen-Zanker, 2012). This link also makes it possible to go beyond studying direct impact of a program to unpack the complex connection between social indicators and poverty.

1.4 Structure of the Thesis

Rest of the thesis is divided into 9 chapters:

Chapter 2 reviews the theoretical literature on poverty and its causes and explains the poverty dynamics model used in this study drawing on the theoretical literature available on the causes of poverty.

Underlying assumptions of all the theories are discussed and critically assessed. Drawing on various theories of poverty this study stresses on the need for recognising multidimensional poverty measures and its dynamics.

Chapter 3 provides empirical literature on poverty dynamics and its causes with a special focus on India. This chapter provides the empirical analysis relevant to my research question 1. A detailed discussion about the factors that showed an association with poverty dynamics in the literature have been discussed. The empirical analysis lays the foundation for my empirical investigation in chapter 7. This chapter also provides background information on poverty and its measures in India.

Chapter 4 analyses the relationship between social protection and poverty dynamics with respect to question 2. This chapter discusses at length the poverty alleviating strategies undertaken to tackle poverty and its various dimensions. The evolution of Social Protection as a Social Policy tool and its relation to poverty dynamics along with the incorporation of multiple dimensions of well-being in its broad framework is also reviewed. The literature review of the limited studies available on the effect of social protection policies on the movement in and out of poverty is also discussed. Multiple dimensions of well-being including but not limited to physical, financial, social, institutional, and infrastructural level have shown to have a combined impact on a households' poverty level and its dynamics.

Chapter 5 provides details on the quantitative and qualitative data used in this thesis. Indian Human Development Survey (IHDS) data and the key variables constructed from the dataset are also discussed. Since there are other nationally representative datasets available in India, IHDS data is compared with other datasets to authenticate its reliability and justify its usage for my study. Households are divided into four categories of poverty dynamics,[3] and descriptive analysis on poverty and socio-economic profiles of all four categories of households is presented. To find out the extend of overlap and disparity between consumption and multidimensional poverty and their dynamics a comparative assessment is conducted and presented in this chapter. This chapter also provides detailed explanation of methods adopted to conduct qualitative analysis in this study and methodology adopted for selection of state, districts, villages, and households interviewed.

[3] Four categories of poverty dynamics: 1. Chronic poor households, 2. Never poor, 3. Became non- poor in period 2, and 4. Became poor in period 1.

Acknowledging the multidimensional nature of poverty, Chapter 6 estimates the extent of multidimensional poverty in India using the panel data from IHDS. Answering question 1.2, this chapter provides a mathematical explanation of changes in deprivation faced by people over time and investigates how multiple dimensions of poverty integrate to explain poverty exit and entry. Using the decomposition methodology adopted by OPHI, this chapter explains the dynamics of multidimensional poverty and decomposes it to understand the deprivations and endowment of indicators that have an impact on poverty dynamics. Decomposing multidimensional poverty measures across time reveals how and in what dimension poverty has changed.

Following up on the previous chapters, Chapter 7 provides an empirical understanding of the factors that contribute to poverty persistence, movement out and movement into poverty. Answering question 1.2, the characteristics of those making movement out of poverty as well as trigger events for poverty entry and exits are investigated in this chapter. In order to answer question 2.1, this chapter specifically studies the effect of social protection schemes in India on poverty dynamics along with other covariates. Estimation results are provided focussing on the role of social protection policies in India on the rural poverty dynamics. Acknowledging the regional difference between states in India a separate state level analysis is conducted to understand the factors affecting poverty dynamics within states, especially the implication of social protection schemes on graduation out of poverty. Additionally, to investigate which of the dimensions of multidimensional poverty Index are responsive to the participation in social protection schemes and how they individually behave with respect to other covariates, a separate regression is run for some of the selected indicators of multidimensional poverty Index.

In order to answer questions 2.1 and 2.2 and to enrich our understanding on why poverty prevails and how social protection schemes are conceived at the grass root level, qualitative research is carried out and is explained in Chapter 8. Detailed case studies along with focus group discussions are administered in four villages of Uttar Pradesh, which is one of the poorest states in India. Here again the focus is mainly on the social protection schemes administered in the villages and their contribution in the lives of poor people. The information gathered from these interviews largely indicates the processes of poverty dynamics and its relation to various social and economic agents. It also provided important background information that helps in the interpretation of the results from quantitative data. Apart from understanding the source of income of the household and if they themselves perceive that income to be enough to fulfil the needs of

their family, and collecting information on other dimensions of well-being, links have been made between multidimensional and consumption poverty dynamics. How quantitative analysis conducted separately for Uttar Pradesh using IHDS dataset comprehends the analysis from qualitative case studies and focus group discussions is also discussed in this chapter.

Chapter 9 concludes this thesis by summarising the key findings and discusses policy implications of this research. The chapter also suggest directions for future research.

Chapter 2: Poverty and Its Dynamics

2.1 Introduction

The basic nature of poverty is itself disheartening and it becomes alarming when poverty is self-reinforcing and makes it very difficult for people to escape poverty, generations after generations. Social Protection Report, 2017-19 by ILO shows that 71 percent of the World's population still live without any adequate social protection coverage (International Labour Organization, 2019). "Poverty has been falling", has been the claim by policy makers all over the world- but is it based on triage? Are those very close to the poverty line escaping poverty and those who are too poor to be reached by any policy are neglected and trapped in poverty? Those who moved out of poverty are still vulnerable as they are not yet resilient to shocks and any substantial shock would bring them back below the poverty line until another positive shocks pulls them out of poverty. Policy makers have been trying to understand the factors responsible for the self-reinforcing nature of poverty and factors that enable households move out of poverty and enjoy better standard of living.

The inability of monetary poverty measures to incorporate the multiple dimensions of wellbeing and the evolution of Sen's capability approach set off the relevance of studying poverty in a multidimensional space (Dehury and Mohanty, 2015). In its multidimensional nature, poverty goes beyond just lack of income to deprivations in other dimensions of well-being that define an individual or household's existence. Households experiencing poor health, illiteracy or poor quality of education, social barriers to development, poor infrastructure etc. lack ability to take decisions in the benefit of their household leading to prolong existence of poverty, and this also becomes a hindrance for movement out of poverty. These dimensions of poverty are well captured in multidimensional poverty measures that take into account multiple deprivation that households endure.

There has been a shift in the poverty research from measuring poverty to understanding poverty dynamics in order to examine the factors that provide poor people resilience in the face of growing risks to shocks and ever changing external environment and factors that support or threaten movements out of poverty (Norton, 2012). There is now a broad consensus that static poverty analyses cannot explain the processes underlying poverty and may also suppress the concepts that are critical to the dynamic nature of poverty and reduction of chronic poverty (Addison, Hulme and Kanbur, 2008). In static analysis the poor is

considered as a fixed group having characteristics whose composition does not change over time (Thomas and Gaspart, 2012). Dynamic analysis, on the other hand, makes the distinction between chronic and transient poverty possible as people move in and out of poverty over time.

This chapter explains the concept of poverty dynamics using the available theories on poverty in literature. One cannot deny that poverty, whether transient or chronic, is daunting and it is very important, for economic and psychological reasons, to understand its nature and form policies that work towards the betterment of those who are poor. Also, as income is more volatile, it becomes imperative to concentrate on structural causes of poverty that are well captured by multidimensional poverty indicators.

Section 2.2 provides a theoretical background on poverty dynamics in length. Section 2.3, drawing on the theoretical literature available on the causes of poverty describes the factors responsible for poverty dynamics and poverty persistence, and section 2.4 concludes the chapter.

2.2 Poverty Dynamics as Conceptualized by Different Schools of Thoughts

Conceptualizing poverty dynamics in a single theory is challenging, as poverty itself is a complex phenomenon arising due to various factors. As a result, a complete explanation of why poverty is dynamic in nature would require many interrelated theories (McKernan and Ratcliffe, 2002). Over time, several school of thoughts have contributed to explain the causes of poverty; Classical theories condemning individuals' deficiencies for poverty persistence; neoclassical theories emphasizing on human capital, asset accumulation, access to credit market; Keynesian theories putting great deal of stress on the provision of public goods and macroeconomic factors affecting poverty and, Marxists theories emphasizing on dual labour, class structure, minimum wages, etc (Davis and Sanchez-Martinez, 2015). These theories may have focused on a particular element on explaining its importance in poverty generation, they together form an integral interrelated set of theories necessary to explain poverty dynamics (McKernan and Ratcliffe, 2002).

The proponents of Classical theories (Lewis, 1966; Townsend, 1980) contend that individuals are themselves responsible for their poverty status and poverty begets poverty. It is said that individuals possess certain characteristics ranging from lack of work ethics, low levels of education to low competitive market skills that define poverty (Rank et al. 2003). According to them, poverty is a residual individual phenomenon rather than a structural problem (Davis and Sanchez-martinez, 2014). Neo-classicals on the other hand emphasize on market failures that are beyond an individual's control. They highlight the role of

initial endowments of assets, including social and physical assets, barriers to education, quality healthcare and employment that determine the choices made by an individual that leads to generating or moving out of poverty (ibid). Overemphasizing on just individual without taking into account the role of government and community and focus on material means of eradicating poverty by neoclassical and classical theorists led to a new strand on poverty persistence led by Keynesians. Keynesians put a lot of emphasis on public provision of goods and services and role of government in combatting poverty and inequality. Marxists on the other hand believed that economic growth alone may not be sufficient to pull certain class of people out of poverty. By highlighting the concept of class structure and focussing on community characteristics rather than individuals, Marxists provide a shift in poverty perspective, as poverty status of the community is considered to be dependent on the social and economic environment in which they live (Davis and Sanchez-Martinez, 2015).

Theories mentioned above can easily be grouped into three broader categories; Behavioural, Structural and Political (Brady, 2019). Behavioural theories claim that poverty persists because of the behaviour of a large number of people with certain demographic characteristics driven by their background and culture. Structural theories highlight causes of poverty persistence in the macro and meso level demographics and economic growth context, which causes both behaviour and poverty (Ravallion, 2001; Datt and Ravallion, 2002; Deaton and Dreze, 2002). Political theories, on the other hand, believe that relationship between poverty and behaviour is regulated by policies governed by power and institutions (Brady, 2019). Structural causes also interact with behaviour and political causes to generate poverty. Behavioural, Structural and Political theories, although provide their individual reasons for poverty persistence, they form a basis for multidimensional poverty when they interact with each other.

Theory of poverty dynamics draws implication from all theories of poverty, as no one theory can fully explain the dynamics behind poverty. Below, I am selective rather than comprehensive, in a review of the theories that I find useful for the poverty dynamics study.

Theory of Sub-Culture of Poverty

The Sub-Culture of Poverty theory, first offered by anthropologist Oscar Lewis, states that the poor get used to the conditions of poverty by creating a subculture that has distinctive self-perpetuating traits and are passed down from generations to generations (Davis and Sanchez-martinez, 2014).There are a number of

social and psychological factors that reinforce this sub-culture, such as the lack of aspiration to move out of poverty and inability of deferring gratification, making them unable to take advantage of the available opportunities (ibid).

According to subculture of poverty, the poor segment of the society is excluded from the other part of the society. In the US the culture of poverty exists as poor people tend to develop low level of aspiration and are not willing to supply their labour at lower wage as they start to derive perverse incentives from dependence on the state (Hulme, Moore and Shepherd, 2001). This type of poverty can also be associated with the concepts of underclass, social exclusion, and marginality in different parts of the world.

The culture of poverty theory provides a useful starting point for conceptualizing poverty dynamics, as it is one of the first theories that stresses on the fact that poverty is self-perpetuating. However, it would be wrong to put the entire blame on the poor and assume that the poor get enough opportunities but lack the ability and aspiration to make the best use of those opportunities. Innate abilities are important, but they are not the only and sufficient condition to cause movements in and out poverty. It is also worth mentioning that even innate abilities change with changing external environment and opportunities.

Human Capital Theory of Poverty

The Human capital theory is the theory of income that is one of the main factors determining poverty statuses (Cellini, McKernan and Ratcliffe, 2008). Developed by Becker and Mincer (Becker, 1962; Mincer, 1974), this theory ponders on an individual's decision of investing in education and its return available in the future. This strand of neoclassical theorists focuses on individual choices concerning human capital that determine the difference in income later in life. It is claimed that some people generate more income in future than others merely because they invested in educating themselves. It is also claimed that those who are perceived to work less in the labour market in future and have fewer job prospects, such as girls, disabled, etc. are less likely to invest in education (McKernan and Ratcliffe, 2002).

This theory explains the pattern of income throughout the life of an individual making it relevant for poverty dynamics. The pattern of future income is such that it starts low in the beginning as people invest in education and increases as investments start to pay off. Poor people who invest in education are more likely to earn high income in future and move out of poverty.

The Human capital theory of poverty provides a very interesting angle to poverty dynamics, as human capital itself form a very important dimension of well-being without which it would be impossible to make use of the available economic opportunities. Of course, it would be difficult to acquire education and training if there are no supporting institutions and infrastructure that facilitate it. This is where the human capital theory lacks, and therefore, cannot be considered as a complete theory of poverty dynamics.

Asset-based theory of poverty

The emergence asset-based framework can be traced back to the 1980s when multidimensional nature of poverty started to gain attention. In the late 1980s, Amartya Sen originated the idea of capabilities and defined it as the "freedom of individuals' to choose between alternative functioning combinations, where functioning refers to things that individuals might choose or have reason to value" (Crocker, 1992). It focusses on the quality of life an individual can achieve with his/her capabilities. Capabilities is seen as what people can do with their entitlements, a concept which is much wider than income.

The Asset-based theory of poverty states that an individual moves out of poverty by accumulating assets and that poor remain poor because they do not have enough resources to acquire assets. Sherraden (1990) proposed an asset-based theory of poverty suggesting that assets yield positive welfare effects on an individual, household, and the community in ways that income alone cannot. Sherraden argues that these welfare effects arise because assets are more stable than income; encourage investment in human capital, enhance risk taking abilities; and provide a sense of efficiency increasing aspirations, social security and the welfare of future generations (Kim and Sumberg, 2014). The theory also claims that since assets can be varied, households that possess sufficient level of assets, become resilient and are not much affected by negative income shocks (Davis and Sanchez-martinez, 2014).

The link between asset and poverty transition was further enriched by Moser's "Asset Vulnerability Framework". According to Moser, vulnerability and asset ownership are closely linked. The more assets people accumulate, the less vulnerable they become, and the greater the depletion of people's asset holdings, the greater is their insecurity (Moser, 1998). He also puts emphasise on the right mix of assets a household possess. If assets are possessed in the right mix, the capacity of safeguarding against external shocks increases (ibid). Drawing on previous asset-based models of poverty, Scoones (1999) emphasised on the framework of Sustainable livelihood and claimed that sustainable livelihood can be achieved through

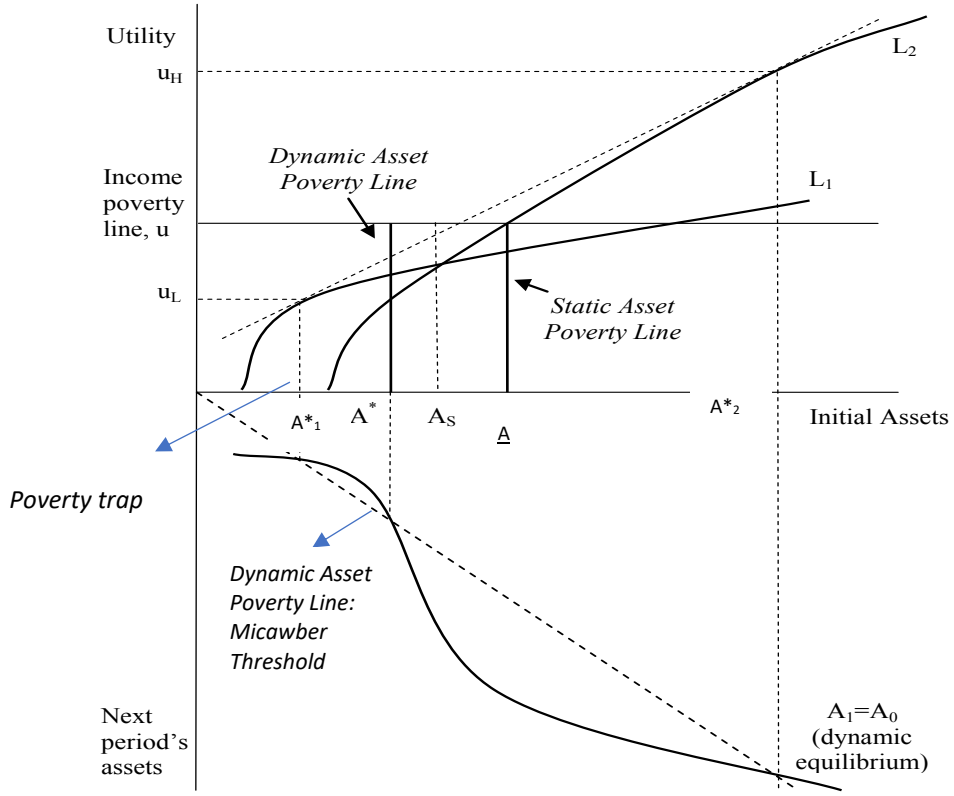
access to a range of livelihood resources that can be grouped under natural, social, human, physical and financial assets.

The growing body of research that establishes links between assets, assets dynamics and poverty dynamics is represented by Carter and Barrett (Barrett and Carter, 2006). In a dynamic poverty setting, asset holding of a household change from one time period to another regulating their poverty status over time. The authors claim that it is possible to ascertain both static and dynamic asset poverty lines; households possessing assets above the dynamic asset threshold are likely to escape poverty over time by accumulating more assets, and those below would be trapped in poverty forever (ibid).

Carter and Barrett (2006) developed a model to explain poverty persistence in a dynamic setting. A household can choose to invest its capital in two different livelihood strategies L_1 and L_2 (Figure 2.2.1). Activity L_2 has a minimum scale of operation and hence it is more expensive to switch to this activity. A^*_1 indicates the steady-state asset level for a household in livelihood strategy L_1, generating well-being level U^*_L. Similarly, A^*_2 denotes steady state asset value for strategy L_2, yielding the higher income at U^*_H. For simplicity, static asset poverty line, $\underline{A}$, is placed between A^*_1 and A^*_2. According to the model any household that has lower initial endowment and settles at the lower equilibrium would be trapped in poverty even with the presence of non-poor steady state with higher return.

Assuming there are no market imperfections and there are no risks, a household would like to move upwards by accumulating assets and eventually switch to a high return yielding activity. In this case, a household's first option would be to borrow and accumulate assets at least equal to A_s, which makes a switch to L_2 possible. However, if the poor does not have access to financial markets, or is socially excluded, then it is not always possible for the poor to borrow. The other option for the poor would be to follow autarchic strategy where the poor has to forgo current consumption in order to save and reach the asset level necessary to make a switch. But the poor, with already a low level of consumption do not find it possible to further reduce their consumption level. Unattractive autarchic accumulation and market failures together may land a household with low endowments in a poor state equilibrium.

Figure 2.2.1: Dynamic Asset Accumulation Model



Source: Adopted from Figure 4 in Carter & Barrett (2006)

According to the model, although both livelihood strategies demonstrate decreasing returns, in the proximity of A_s, locally increasing returns exist, making it feasible for households that possess assets that are not very far from the threshold A_s to forgo their current consumption a bit or borrow from private money lenders to accumulate assets till A_s. However, as the distance from that threshold increases, it will not be feasible for households to exercise autarchic accumulation strategy. The critical threshold (denoted by A*), below which it is not feasible to exercise autarchic accumulation strategy has been identified by Zimmerman and Carter (2003), and is called the Micawber Threshold (MT).[4] In contrast to static asset poverty line, the MT constitutes a dynamic asset threshold. Households with endowments above the MT (or A*) are more likely to move out of poverty over time, while those below it would be trapped in chronic poverty. Figure 2.2.1 illustrates that structurally poor households at a given point in time can be divided

[4] Micwaber is a fictional character created by Charles Dickens in his novel David Copperfield. Wilkins Micwaber, who could never break free from poverty, was persistent insolvent debtor. Micawber was imprisoned in debtors' prison after failing to meet his creditors' dues (Barrett and Carter, 2006).

into two groups. One, those who will be in chronic poverty forever as the level of assets owned by them are less than A*; and second, those who possess assets greater than A* and would find it sensible to adopt autarchic accumulation strategy to reach A_s and ultimately cross A to reach a high-level equilibrium, A_2*. The critical asset threshold, illustrated in this model, therefore, makes it possible to identify those structurally poor households that are expected to escape poverty through asset accumulation and those who stay persistently poor in face of no protection from the government. It is important to note here that in the poverty trap model of Carter and Barrett, assets are broadly defined to include various forms of assets- social, institutional, physical, natural, human, and financial, and accumulation of these heterogeneous assets have shown to improve household living standards.

Imperfect Credit Market Theory

The Imperfect credit market theory suggests that well-functioning financial markets are directly beneficial to poor as it provides access to formal credit services to those who lack resources to self-fund themselves or arrange collateral for obtaining a loan (Mehta and Bhattacharya, 2018). The evidence suggests that well-functioning financial markets accelerate economic growth, while disproportionately benefiting the poor, as long as the poor invests the borrowed funds in a profitable productive avenues and/or in human capital accumulation (Levine, 2008). Access to easy finance also empowers the poor, economically and socially, and protect them against any economic shocks and financial crisis.

The Economic theory suggests that the banks are not willing to serve the rural poor because of asymmetric information, as banks do not have complete information about the borrower's credit worthiness in rural areas (Chowdhury, 2010). High transaction and delivery costs along with the risks associated with lending to the poor forced financial institutions to charge a high interest rate in order to cover the risk of default, discouraging even trustworthy customers. This resulted in financial and capital market imperfections in rural areas leading to the exclusion of the poor from these markets (Mehta and Bhattacharya, 2018). Households with limited or no collateral are thus, reticent to invest in productive activities that may take them out of poverty.

Lack of access to credit facilities for poor households turns into a vicious circle as collateral constrained households are not able to invest in multiple dimensions of well-being to escape poverty, which in turn leads to a lower probability of having access to credit (Davis and Sanchez-martinez, 2014). This vicious

circle stimulates the process of poverty dynamics where households with access to credit may escape poverty, and those who are constrained are trapped in poverty forever or fall into poverty in times of crisis.

Institutions, Infrastructure and Poverty

Allocation of resources to generate income often depends, not only on the available resources with the households but also on the local institutional environment (Gandhi and Marsh, 2013). Proponents of this theory do not consider individuals responsible for poverty, but the institutions and infrastructures comprising economic, political, and social system that provides people with limited opportunities and resources needed to move out of poverty (Bradshaw, 2006).

Institutions could be categorized as state or non-state. State institutions comprise bodies that provide basic health and education services, law and order, and infrastructure endorsed by central government (Haar, 2013). The poor, because of lack of resources, relies more on the state for basic services. Access to and quality of services provided by the state determine the static and dynamic status of the poor. For vulnerable families, access to education and healthcare is one of the important means to help them drive their way out of poverty (DFID, 2015). Infrastructures such as better roads, electricity, banks, etc. work in coordination with other institutes to facilitate movement out of poverty or preventing those who are at the risk of falling into poverty. Non-state institutions operate outside of the formal state structure and comprise social norms and culture that determine the households' capability of embracing opportunities (Haar, 2013). Discrimination in the form of race, gender, religion, disability, etc. limits opportunities and regulates behaviour shaping the quality of social interactions that explain poverty.

Under this theory, it is the responsibility of the government to fight poverty and provide basic services and resources to its citizen to facilitate poverty elimination. This theory also has an implication on poverty dynamics, as institutions and social norms, especially in developing countries, are difficult to revise and are the main cause of the formation of chronic poverty. Development in the form of extermination of outdated social norms and culture and scaling up the quality of physical institutes such as better healthcare, education and financial institutions could help in the movement out of poverty.

All in all, poverty is an elusive concept with multidimensional character incorporating different ways to conceptualize it. Drawing from various theories presented in this chapter the multidimensional nature of poverty is validated as many factors together determine movements in and out of poverty. Theories of

poverty stressed on human capital (health and education), financial capital, physical assets, norms and culture, and economic and social institutions. This means no single theory alone could incorporate the elements of all the theories discussed above. However, the theory of poverty trap model developed by Carter and Barrett closely suits to the concept of poverty dynamics as it incorporates most of the elements of the causes of poverty and also takes into consideration dynamics in poverty over time. Saying this, it is not the aim of this thesis to provide a comprehensive theory of poverty dynamics but to draw from the theories already present in the literature to investigate into the causes of poverty dynamics beyond income and consumption.

In this context, it is worth emphasising that there are structural mechanisms through which poverty transitions arise, as discussed below in Section 2.3. These mechanisms can exist at macro, meso and micro level of evaluation or a combination of these (Mckay, 2009; Barrett, Garg and Linden, 2016). At the macro level, institutional, political, technological, and geographical failures can create poverty traps (ibid). At the meso level, social exclusion arising from outdated networks and norms can prevent households from accumulating productive assets and growing their capital base (Chantarat and Barrett, 2008; Santos and Barrett, 2011). And at the micro level, as discussed earlier, idiosyncratic shocks and risks and deprivations can make poverty self-reinforcing. Since there are multiple causes of poverty, chronic poverty may also arise from a combination of macro, meso and micro level factors (Barrett and Carter, 2006).

Although, poverty is still predominantly estimated and reported using monetary measures worldwide, there has been increasing interest in the relevance of multidimensional poverty and wider recognition of the need for further evaluating poverty dynamics beyond monetary measures. Therefore, this thesis stresses on multidimensionality of poverty, which incorporates physical, financial, social, institutional, and political aspects of household's wellbeing, and they, in combination play a major role in defining poverty status and its dynamics. Drawing from the theories of the causes of poverty reviewed in this section, I now move to discuss, in more details, the factors that can determine poverty and its dynamics in the next section.

2.3 Factors Responsible for Poverty Dynamics

Turning to the answer for why poverty dynamics is prominent or why poverty persists, we may have to go deep into the factors that are responsible for movements into and out of poverty. These factors, as mentioned earlier, can range from Macro, Meso and Micro levels.

Research exploring the factors responsible for poverty dynamics focuses primarily on the household and intra-household variables. Although, the household level factors are important in determining the transmission of poverty from one generation to another, they are alone not responsible for poverty dynamics. A number of factors beyond the households' control play a crucial role in keeping the poor household into poverty forever or helping it to move out of poverty. For example, bad governance and poor state policy and market failures may contribute in a huge way in increasing the likelihood of poverty being both chronic, transient and transmitted from one generation to another (Bird, 2010). The public provision of services is likely to be substandard in the face of poor governance and tenuous state. On the other hand, good quality healthcare facilities and education institutes combined with well-functioning credit and labour market have the potential to enable economic mobility (ibid). Poor governance, poor public provision of health and education along with inefficient labour, land and capital market hinder accumulation of physical, human, political, financial, social capital that has a profound effect on the poverty dynamics. Social norms and cultures in terms of discrimination related to social class, gender, caste, religion, disability also affect poverty dynamics (Harkness, Gregg and Macmillan, 2012). Idiosyncratic risk and shocks are also extremely instrumental in determining the poverty dynamics (Bird, 2010).

Endowment or deprivation of various dimensions of household well-being over time are determined not just by individual capabilities but are also determined by institutional and social characteristics. Households' capabilities of exercising their rights in the given structure of institutions matter for poverty dynamics. At the same time, economically dysfunctional institutions can reinforcing poverty (Tshimpanga, 2012). The institutional mechanisms that affect households' well-being and adoption of better paying technology (Azariadis and Stachurski, 2005) are discussed below.

2.3.1 Poor Governance

"it is all too clear that when governments perform poorly, the consequences are wasted resources, undelivered services, and denial of social, legal, and economic protection for citizens, especially the poor" (Grindle, 2002)

By definition, Governance is the ability of the government to enforce rules and to provide services for the benefit of its citizens (Fukuyama, 2013). It is about the functioning of agents in carrying out the desires of leaders, and not about the goals that leaders set, i.e., it is more about the execution and not results (ibid). Bad governance is the governments' inability to perform and provide enabling environment to its citizens

and hence being increasingly considered as one of the root causes of all structural problems within our societies (Sheng and Kioe, 2009).

Political will and good governance are of extreme importance when lifting poor people out of poverty is concerned. Poor governance acts like an external friction that prevents the poor from making the best use of their endowments (Ghatak, 2015). Inefficient delivery of services, inadequate policies and corruption resulting out of poor governance has a substantial impact on the poor. Good quality political institutions and governance therefore can be seen as the primary driver of development and poverty reduction.

Results from a study conducted by DFID for 10 years on governance, suggest that the impact of good or bad governance on the lives of poor is profound. It states that the 'inability of government to prevent conflict and provide basic services and security can have severe implications, and lack of economic opportunities can prevent poor households from lifting themselves out of poverty'(DFID, 2015).

A few examples of bad governance are the limited and poor quality of public services (health, education), poorly defined land and property rights, poor labour laws and poor infrastructure.

Limited and Poor Supply of Public Services: Health and Education

An important dimension that determines movement out of poverty is human capital accumulated by the poor households through improved access to basic services, especially health and education (World Bank 2000). Human capital accumulation, as has also been depicted by the theory of human capital and poverty, is a principal source of escaping poverty. But poverty becomes reinforcing when it creates conditions that inhibit human capital accumulation (Barrett, Garg and Linden, 2016). Health and education not only influences labour productivity, but also shapes one's perception towards future, thus influencing one's investment decisions (Wang and Wang, 2014).

It is a human right of all individuals, not just poor, to get access to basic health and education. It matters more for the poor as it stimulates human capital formation that plays a significant role in transition out of poverty (McCulloch and Calandrino, 2003; Bird, Higgins and McKay, 2010). Healthy and educated individuals are more capable of taking advantage of the available opportunities. Poor infrastructure, shortage of skilled medical staff and schoolteachers, and inaccessible health and education services prevent human capital formation. This leads to a vicious circle of poverty resulting in poor health, malnutrition, and

lower level of educational attainment, which in turn reinforce poverty (Deolalikar *et al.*, 2002). In many developing countries public health and schooling is available free of cost to poor families. However, studies reveal that these are generally obtained by making out of pocket expenditure, typically in the form of medicines, textbooks and other supplies and payments in the form of bribe (ibid).

As with physical capital, human capital is also passed on intergenerational. Early in the childhood where a child is too young to make investment decisions on health and education, health and education behaviour of parents helps explain poverty, and health and education status of the next generation (Bhalotra and Rawlings, 2009).

Land Inequality

Landlessness, often described as owning no land and/or not having legal rights to own land, has been associated with poverty persistence in many developing countries. Millions of poor households in the world do not own any property i.e. they do not have any legal right to the property they are dependent on. The situation is grimmer for rural households because poor households mostly live on land-based livelihoods. Land is not for housing alone, rather, it is also a source of income, food, credit, status and power. Most of the landless farmers are often indigenous tribes, indentured servants, sharecroppers, or tenant farmers who live with uncertainty and are not sure if they will be able to reap the profit from the harvest. Since they do not own the land, they see no incentive in investing in high-quality seeds, irrigation, and better appliances. This would mean that as long as they are working on the farm, they are producing small harvest, stuck into poverty generations after generations.

Land reforms initiatives are seen as a plausible tool of pulling landless households out of poverty. Land reform typically means the redistribution of land from the rich landowners to landless poor, and would include measures such as land ceiling, tenancy reform, abolition of intermediaries and consolidating landholdings (Deshpande, 2003). Although there has been evidence that land reforms do have a positive effect on the poor, there are more evidences on the failed and half successful land reforms (Besley and Burgess, 2010; Nawabi, 2015). Japan, Taiwan, South Korea and China are the ones that have set an example of successful land reforms. This has been mainly achieved by creating more conducive socio-economic and political conditions for land reforms to work. Countries like Bolivia, Brazil, Chile, and Peru showed no success of land reforms amid rent seeking behaviour and elite capture of policy process, whereas, India,

Philippines, Indonesia and Thailand showed half success (Besley and Burgess 2010; World Bank 2003).

Households that do not possess land may not have enough collateral to borrow from the credit market and hence are not motivated to make any investment in productive technology that yields higher return which could make them move out of poverty. There is no disputing the fact that weak property rights and landlessness are the fundamental obstacles to development in poor countries and explains why the poor get trapped in poverty (Hulme and Shepherd, 2003; Barrett, 2008)

Labour Laws/Regulations:

Inequality in income and ineffective use of labour resources in the economy where labour laws and regulation are either non-existent or inefficient may lead to a situation where people are stuck in poverty. Labour laws fail to make any dent in the poverty if the rules are not in line with the economic and social conditions and/or the capacity of institutions is limited. For instance, labour laws would fail; if most of the poor workers belong to informal sector and labour laws of the economy are set for formal workers; if minimum wages are set in a way that they do not take into account the inflationary mechanism. Regulatory mechanism of how these laws are enforced also determines the impact these laws can have on the poor.

Wages in developing countries are rarely determined by supply and demand of labour, instead segmented markets prevail where workers of similar skill earn different incomes. This is primarily due to social discrimination or/and barriers to mobility across occupations, sectors and locations (Perry *et al.*, 2006). Barriers to the access to labour market institutions such as labour union, law of minimum wages, labour market connections and geographic immobility induce chronic poverty and hinder movement out of poverty (ibid).

Most developing countries are generally characterized by disproportionately large informal labour sector. Informal sector often gets ignored when labour laws are designed. For example, all the labour laws in India are applicable to enterprises employing more than 10 workers and therefore, in order to avoid regulatory compliance, businesses like to remain in informal sector resulting in a huge informal workforce in India, which stands at 92 percent of the total workforce (Jafar, A. and Ghosh, 2013; Pachouri, 2014). Moreover, as the large proportion of informal sector comprises unskilled labour, they do not benefit from employment laws such as pension, health insurance and fair employment conditions.

Although labour in informal sector lacks labour laws that the formal sector enjoys, the situation of labour even in the large MNCs is also quite poor. Oxfam conducted a study in India, with the Ethical Tea Partnership in 2013 and found that tea-pluckers received wages that were even below the World Bank's poverty line of $2 a day, while in Malawi, wages were below the extreme poverty line of $1.25 a day (Hamilton *et al.*, 2015). The same study found out that in Morocco, in 2009, female strawberry pickers were getting low wages along with facing harassments at multiple levels (ibid).

2.3.2 Social Exclusion, Culture and Norms

Values, norms, culture and resulting social exclusion may reinforce persistent poverty and hinder movement out of poverty. Apart from having implication on household's material deprivation, it also reduces an individual's capability of taking rational decisions (United Nations Department of Economic and Social Affairs, 2016). Socially excluded households are often seen trapped in poverty as they are not able to reap the benefits from the opportunities to increase their income. Even social protection policies often fail to empower them unless they are specifically designed to do so (ILO, 2011).

Social Exclusion, along with poverty, creates circumstances under which the already poor are disadvantaged by their social status and hence are discriminated against getting any benefits of development (ibid). These people also have little political voice and are also denied access to public goods, which prevents them from having decent health and education and hence, moving out of poverty through human capital accumulation becomes even more difficult (World Bank 2000). Active direct discrimination may inflict psychological damage on those discriminated against and binds them in poverty forever (ibid). Social exclusion on the basis of caste has been proven to be a key determinant of poverty, vulnerability, low social status, and discrimination (Meerman, 2005; Deininger, Jin and Nagarajan, 2009). The poor and excluded thus remain vulnerable to poverty that limits their potential to improve their conditions and advance their status through available support mechanisms (Meerman, 2005).

Discrimination in the name of gender, ethnicity, social norms and cultures are not only harmful for the growth of a society as a whole but they also directly make an attack on the poor people's self-esteem and psychological well-being thereby reducing their capability to graduate out of poverty. Exclusion on the basis of gender put the lower caste women in conventionally caste-based jobs, like manual scavenging (ILO, 2011). As a result of exclusion and discrimination based on caste and gender, many women are pushed into

the precariat[5] class and are thus trapped in poverty forever (ibid). Those who face discrimination are generally found with high level of deprivations in other dimensions as well and, therefore, even if opportunities are available these norms act as an obstacle in their movement out of poverty.

2.3.3 Risk and Uncertainties Amid Poverty

The poor often live in insecure environments, have limited assets endowments and are vulnerable to shocks and uncertainties. The persistent effect of shocks on livelihood and welfare has been demonstrated by many scholars (Dercon, 2004; Barrett and Carter, 2006; Davies, 2010). The impact of the shock varies across socio-economic groups and the poor often has to face disproportionate burden of the shock because of poor resilience. Resilience is a household's ability to recover from a shock, by bringing income and consumption back to pre-shock levels (Bird, 2007). Since poor households are more prone to risk and deprivation, livelihood and savings are curtailed after a shock is induced.

Households respond to shocks, covariate or idiosyncratic, by making adjustments in their livelihood strategies and savings. Often livestock is sold off, children are put to work instead of school, health care visits are limited to more serious illnesses, adults are made to work longer and harder than usual, and meals are skipped or reduced. Their ability to cope with shock is therefore, along with the external environment, largely dependent on the control they exercise on various dimensions of their well-being, which also includes social network and their own capabilities (Bird, 2010). Usually, two types of risk management strategies are observed: ex-ante and ex-post strategies. Under ex-ante strategies the poor behaves risk averse and engage themselves into activities that are less risky: cultivating more safe crops, entering into petty jobs, migrating to nearby cities etc. (Dercon, 2008). Shocks to poor households are frequent and recurrent in nature and, therefore, inhibit their ability to move out of poverty. Risk coping or ex-post strategies involve activities to cope with the fall in income after the shock is hit. It is typically consisted of using precautionary savings, often in the form distress sale of assets, and informal credit arrangements, where people in a household's social network provide support to each other in times of hardship (ibid).

Of all the shocks that the households face, medical shocks are the worst for they not only distort the current human capital but also put the poor into a situation where unavoidable expenditures on illness are to be

[5] A precariat is a social class of people suffering from precarity. It is a condition which arises when people are uncertain and insecure about their existence.

made in order to come out of the illness. Households face distress when they do not have the capacity to meet medical expenditure from their own resources. The situation where a poor household falls into a situation where it becomes difficult to move out of poverty due to medical expenditure is called "Medical Poverty Trap". Medical expenses are largely "out-of-pocket" and low-income households are often observed to fall into poverty due to health-related expense. A study conducted on 59 countries showed that Viet Nam (10.45 percent) and Brazil (10.27 percent) topped the list with the highest percentage of households with catastrophic payments, followed by Azerbaijan (7.15 percent), Colombia (6.26 percent), Cambodia (5.02 percent) (Xu *et al.*, 2003)

There is sprouting evidence to prove that above-mentioned risk averse and risk coping strategies employed by the poor are one of the principal factors causing chronic poverty and poverty dynamics in the developing countries. For instance, poor rural households in India resorted to harvesting safe traditional varieties of crops than investing in risky but high-yield generating crops (Morduch, 1995), hence limiting their way out of poverty. Using data in China, Jalan and Ravallion (1998) showed that it took many years for a household to retrieve from an income shock, especially for the poor. Studying the long term impact of shocks, Dercon and Hoddinott (2003) found that there is a permanent effect of drought on children which includes lower adult height, poor education attainment resulting in lower lifetime income. Dercon and Krishnan, (2000) showed that rainfall shocks significantly affect Body Mass Index (BMI) and Carter *et al.*, (2007) found that asset-poor households in Ethiopia had to forego their consumption during the long drought in order to protect their assets for future.

2.3.4 Credit Market Failure: Financial Exclusion

"If you go out into the real world, you cannot miss seeing that the poor are poor not because they are untrained or illiterate but because they cannot retain the returns of their labour. They have no control over capital, and it is the ability to control capital that gives people the power to rise out of poverty." (Yunnus, 2003)

Market failures are one of an critical reasons why asset endowment matter for poverty dynamics (Decron, 2003). Of all, credit market failures, as has been claimed by proponents of this theory, have been a prominent concern, which may hurt the poor the most. This would mean that the poor is not able to make use of his endowments efficiently just because he does not have access to affordable credit facilities (ibid).

Access to finance is just not limited to providing credit facilities to households in the times of financial crisis but also offer products such as insurance and safe saving plans that motivate poor households to invest in riskier income earning prospects. However, these services are often not available or are available at a very high price making them unattractive to poor households. The poor often face numerous barriers to access financial services. These include lengthy and complex processes typically involving long list of documents, living in remote location that is far from financial institutions, lack of financial products that suit poor people's demand, limited and short-term instalments and repayment systems, low financial literacy and others (Mohammed and Uraguchi, 2017). As explained in section 2.2, there are two significant problems in obtaining financial services. First, poor generally don't have collateral and cannot obtain loan against their future income because they often do not have regular revenue streams, and second, dealing with small transactions is costly for the service providers (World Bank, 2007).

Various household level studies in different countries show that in the event of shocks, the lack of access to finance reduces the probability of the poor households sending their children to school and increases child labour in households with fewer assets (Jacoby, 1994; Beegle, Dehejia and Gatti, 2003). Similarly, from a study conducted on the households in the Indian villages, Jacoby and Skoufias (1997) show that households without access to finance are more likely to reduce their children's schooling in the face of shocks than those who have greater access to credit markets.

Financial Inclusion and microfinance, in particular, has the capacity to correct the market failures arising from market imperfections, asymmetric information, and the high transaction costs (Green, Kirkpatrik and Murinde, 2008). Access to finance enables income diversification, investment in productive assets, acquiring better health and education, consumption smoothening, and make households less vulnerable and more resilient to economic shocks and fluctuations (ibid).

The factors listed above justify the behaviour of those who are poor: Why are they not able to accumulate human capital? Why they willingly or unwillingly choose low return technologies? Why do they not send their kids to school? Why only poor become the victim of land and labour laws? Why are they low on self-esteem? Why do they not participate in social network? The answer to all these questions is that they are trapped so exhaustively in the clutches of poverty that they do not believe that it is possible to ever move out of it. Those who are non-poor, invest in multiple dimensions of well-being, earn high returns on their

investments, are socially and financially included, and are better able to take advantage of economic opportunities available to them. Those who are poor without any protection from government, would mostly be seen deprived in several dimensions at a time, such as low level of education, poor health, low asset endowments, poor quality of life etc.

2.4 Conclusion

While in theory there are multiple factors that contribute to the dynamics of poverty, this chapter made use of relevant theoretical work on poverty to link it with the poverty dynamics. These theories altogether provided a fundamental background for poverty dynamics modelling and help policy makers understand factors responsible for chronic poverty and movements in and out of poverty. Multiple dimensions of poverty are stressed upon in the theories of poverty such as human capital (health and education), financial capital, physical assets, norms and culture, and economic and social institutions, making a case for studying poverty dynamics in a multidimensional space.

Poverty dynamics and its determinates require special consideration as it differentiates between chronic and transient poverty. It is said that if one person has experienced poverty for a longer period than another, it becomes ethically imperative to support the former (Baulch, 2011). Moreover, chronic and transient poverty may differ in terms of factors affecting them, therefore making policy makers to consider them as separate groups while designing policies. Policies that would suit those who are chronic poor may not suit those who just poor and possess very little endowments. These policies may include interventions that emphasise on providing social assistance to chronically poor households, and policies that prevent non-poor to fall in poverty, such as insurance and savings plan. What is required is a properly designed framework that provide fair rules and regulations and support structures in the form of social protection policies, that would enable the households to identify economic opportunities and take advantage of them. At the same time, it is important to consider complementarities between multiple aspects of wellbeing, and effort should be made to strengthen these as they interact with each other and facilitate movements out of poverty.

Chapter 3: Poverty and Its Dynamics: Empirical Literature with the Focus on India.

3.1 Introduction

Despite major economic reforms over the last two decades and rapid fall in poverty rates the poverty rates in India are still significantly high. Between 2004-05 and 2011-12, using the official Poverty lines of the Government of India, the proportion of poor people fell from 37.2 percent to 21.9 percent and 137 million people moved out of poverty (Government of India, 2018). Although these achievements have been widely appreciated, it is of utmost important to understand the dynamics of poverty by identifying people who fell into and who moved out of poverty.

Identifying poverty dynamics using the monetary measures of poverty neglects the underlying process of income generation which critically depends on the natural, physical, financial, social, and human capital base of households (Haloi, 2019), as well as availability of quality infrastructure and institutions surrounding them. Based on this shortcoming many researchers started using multidimensional poverty measures for studying poverty over time. The concept of chronic and transient poverty is getting recognized in India as well, but estimation of poverty dynamics using multidimensional measures is not widely studied. While there is ample empirical literature available in India on consumption-based poverty entry and exits, literature on multidimensional poverty dynamics is not much established. This thesis studies this less explored subject and uses multidimensional measure to address poverty dynamics and its causes.

Following up on chapter 2, where theoretical literature review of poverty and its dynamics was explained this chapter provides a detailed empirical literature review in the field of poverty and its dynamics. Apart from providing a detailed understanding of the issue at hand, literature review motivates a researcher to fill the gaps in the literature to an extent possible, which also makes the undertaken research socially and academically more relevant. There are various issues that emerge from the literature of studies on poverty, that mostly include measurement and definition of poverty, causes of incidence of poverty, poverty dynamics and its determinants, spatial distribution of poverty and an evaluation of the performance of social protection programs. However, it is not possible to elaborate on all the studies, a brief review of the studies relevant for my research is presented in this chapter. Since the focus of this thesis is to study poverty

dynamics in India a major part of this chapter puts stress on Indian poverty literature. However, where it is particularly useful and directly relevant, selective international literature review is also presented for the purpose of comparison.

Section 3.2 discussed some of the relevant literature available on poverty dynamics for both consumption/monetary and multidimensional measures. Section 3.3 describes the trends and incidences of poverty in India, its spatial distribution and provides empirical evidence on the presence of poverty dynamics in India. Section 3.4 provides empirical literature on the factors affecting poverty dynamics in India. Section 3.5 concludes the chapter.

3.2 Poverty and its Dynamics: Literature Review

The availability of panel data on income, consumption, socio-economic conditions, and other dimensions of well-being since 1990s steered a significant number of studies towards the dynamics of poverty. However, in developing countries, reliable panel data sets are still rare, and when they are available, the samples are often relatively small, with infrequent duration, and in some cases, occur with significant attrition (Dang *et al.*, 2014). Because of this, the literature is mainly comprised of studies conducted in developed countries. Nevertheless, there are still some studies on poverty dynamics in the South Asian and Sub-Saharan African regions. Using different methodologies these studies try to understand the nature of poverty dynamics including its factors, duration, entry and exit rates, etc.

Most of the studies found that poverty dynamics prevailed amongst the poor as the poor keep moving in and out of poverty with some trapped in poverty forever. Layte and Whelan (2003) using the five waves of the European Community Household Panel Data explained the nature of poverty dynamics and its persistence across a large number of EU countries. The paper showed that the experience of poverty is more widespread when viewed longitudinally than is appreciated from cross-sectional data (ibid).

Andriopoulou and Tsakloglou (2011) analyzed the poverty dynamics and its determinants in 14 European countries in a seven-year period and found that the percentage of individuals experiencing poverty, at least once in the seven-year period of the survey, is almost twice the static poverty rate. According to them when the duration of being poor or non-poor is taken into account, the probability of escaping or falling into poverty reduces as the number of years increase. These results indicate that poverty is state dependent, i.e.

current poverty state is conditional on the poverty spells of the previous years, making poverty a self-reinforcing phenomenon. The study stresses on the importance of breaking the "vicious circle" of poverty using instruments of social protection. However, it fails to pay attention to the causes of poverty and only proposed measures to provide extra income to the poor to move out of poverty.

Dercon and Krishnan (2000) using a data of 1450 households in rural Ethiopia, conducted in three rounds, in a span of 18 months found that over 30 percent of the rural households were transient poor compared to the 24.8 percent that were chronic poor. The results suggested that a higher number of households were vulnerable to shocks than estimated by the static cross-sectional poverty measures, as some of the poor households were reported as non-poor, as they were temporally adjusting their consumption expenditure upward as a response to varying seasonal incentives (ibid). Another study by Bigsten and Shimeles (2008) in Ethiopia used a panel of 10 years over 1994-2004, to analyze poverty dynamics. They found that the probability of poverty movements of both in and out of poverty in rural areas is as high as 61 percent. They also found considerable state dependence as households found it harder to move out of poverty once in it, and less likely to move back in poverty once moved out.

In one of the studies conducted in Pakistan, using the three waves of a panel household survey conducted by the Pakistan Institute of Development Economics (PIDE) in 2001, 2004 and 2010, Arif and Farooq (2014) estimated chronic and transient poverty separately and found that 16 percent to 18 percent of the households were trapped in poverty in two rounds of the panel while 22 percent to 25 percent were transitory poor who either escaped or fell in poverty.

These studies, although provide motivation to study poverty in a dynamic space, restrict measurement of poverty and its dynamics to income and consumption. There has been an discussions in the literature on the drawbacks of measuring poverty and its dynamics in monetary space and the need for alternative approaches. As discussed in Chapter 2, various theories were formed to measure poverty in an alternative approach. All these theories in a broader sense could be grouped into multidimensional theory of poverty, as multiple dimensions, including but not limited to physical, human, social, financial, political, and institutional arrangements determine households' well-being. As mentioned before, a poor household may be deprived in various dimensions at the same time. They may have poor health, lack clean drinking water or electricity, have poor working conditions, unemployment, and poor quality of health and education

services. Considering just income or consumption as a measure of poverty, does not capture the true reality of poverty. Hulme and Shepherd (2003) and Mckay (2009) also stress on the importance of deprivations, assets, and multidimensional measures to identify poverty dynamics rather than solely relying on income and consumption expenditure. Understanding the nature of multidimensionality is important, as it is likely to emphasize long-term poverty. Income and consumption, as indicators for poverty measures are more likely to vary over short periods of time than measures such as literacy, health, access to public services or tangible assets (ibid).

Similar to the theories of poverty, explained in Chapter 2, where some theorists used flow variables (Income, Consumption and Expenditure) as a tool to measure poverty and some used stock variables (asset holding, human capital, infrastructure, social norms), empirical literature on poverty dynamics is also based on monetary and non-monetary measures. Non-monetary approaches to identify poverty dynamics began in the early 2000s with the contribution from Jalan and Ravallion (2002, 2005); Lokshin and Ravallion (2004); Lybbert *et al.* (2004); Krishna (2004); Carter and Barrett (2006) to name a few. The research was predominantly focused on the Sub-Saharan Africa and a few countries in South Asia. Researchers have focused on stochastic and structural poverty along with chronic poverty and have observed a widespread deprivation in multiple dimensions of well-being among the persistently poor. Research using non-monetary approach to measure poverty relied either on uni-dimensional asset (livestock, land, occupation, health, education etc.) or generated an index using all the assets under consideration.

In the last two decades assessing poverty dynamics focusing on non-monetary measures has gained attention. Adato, Carter and May (2006) using a mix of qualitative and quantitative methods on panel data from the 1993-98 found patterns of asset dynamics in South Africa. Drawing on asset-based poverty trap model developed by Carter and May (2001), the study showed that households that began with an asset endowment that is anticipated to generate an income less than twice the poverty line, are expected to fall towards a low-level equilibrium and those that began above this threshold are expected to move out of poverty over time (ibid). The qualitative analysis of the study confirms the quantitative finding of poverty dynamics.

Barrett *et al.* (2006) distinguished structural welfare dynamics from stochastic welfare dynamics in rural

Kenya and Madagascar and found remarkable differences in the poverty dynamics depending on whether they used total income that has an element of measurement errors or structural income based on a household's asset holdings. Since income is generated through assets, dynamics in assets lead to structural income dynamics. Using the poverty trap hypothesis developed by Carter and Barrett, 2001, they showed that there exists a positive correlation between wealth and rate of returns on assets. A household's entry into poverty could be a result of stochastic movement because household's stochastic income fell or a structural movement because of loss or sale of assets. According to the author poverty in the latter case is more likely a cause of persistent poverty. To estimate structural income dynamics at the household level they ran an ordinary least squares regression of income on a region-appropriate assets and time-specific dummy variables for each surveyed village, pooling observations across time. Each of the site-specific structural income dynamics regressions in the study exhibited multiple dynamic equilibria indicating presence of poverty dynamics (ibid).

Furthermore, Lybbert *et al.* (2004) used herd dynamics to explore poverty dynamics in largely pastoralist populations in Ethiopia. Using cattle herd histories for 55 randomly selected households over a period of 17 years, from 1980 to 1997, in the four communities of south Ethiopia, the evidence suggested that larger herd size in period 1 ensured a reasonable herd size in period 2. However large herds become unsustainable beyond a stable dynamic equilibrium of 45–75 head of cattle is reached. Moreover, once a herd size got too small, households were seen trapped in poverty.

Most of the studies on the poverty dynamics in the literature found that transient poverty and chronic comprises a large proportion of total poverty, and that poverty transitions have greater policy implications than just static poverty. Nevertheless, there are a few studies that found the contrary. McKay and Perge, (2010) using the Carter and Barrett's specification of asset-based poverty did not find the existence of poverty traps in Uganda, Vietnam, South Africa, Bolivia and Tanzania. Using the principal factor analysis asset indices (using information on physical, human and social capital) were created for each country and dataset. None of the parametric and non-parametric curves generated from seven datasets from the five countries studied indicated the presence of S-shaped asset accumulation process. However, the authors did not rule out the presence of poverty traps completely. According to them, there could be several other mechanisms, if not assets, that could trap households into poverty. Similarly, Naschold (2005) using data from two sources, IFPRI Pakistan Rural Household Survey (PRHS) and the IFPRI/Addis Ababa University

/University of Oxford Ethiopian Rural Household Survey (ERHS), constructed an asset index to be used in regressions to identify poverty dynamics. The author showed that the households in rural Pakistan and Ethiopia were not stuck in poverty but were predicted to incline towards a long run equilibrium (ibid). Naschold also showed that the speed with which a household would accumulate assets would depend a lot on the initial level of assets.

Carter and May (1999) in their study using data from National living standards from South Africa found out that poverty is not only a matter of having a smaller number of assets, but also of the restraints that limit the efficient use of these assets. Exploring the topography of the mapping between assets and livelihood they found that financial constraints and the burden of fetching water and fuelwood in South Africa, during the time period under study, limited the rural poor households' ability to put their assets and endowment to productive use.

Most of the studies either used an asset index to identify changes over time in household's welfare or concentrate on a single dimension of well-being to understand its role in monetary poverty dynamics. In most of the cases asset index is created using information on ownership of land, livestock, agricultural assets, durable goods, human capital, and social capital, among other measurable dimensions of well-being. Dynamics in asset index is seen in relation to dynamics in monetary poverty measures. Nevertheless, there are a few studies that created a composite multidimensional index and used it as a measure of poverty to study dynamics in poverty.

Najitama, Maski and Manzilati, (2020) using data from two survey periods of Indonesia Family Life Survey (IFLS) found out that multidimensional Poverty in Ethiopia is more transient and less chronic. Using Alkire and Foster's methodology they found out that the multidimensional poverty rate of households in Indonesia is 16.3 percent, of which 3.2 percent were chronic poor and 13.1 percent were transient. It was also shown that chronic poverty is mostly contributed by the dimension of living standards (34 percent), while transient poverty is determined by the health status (44 percent). Another study by Adepoju, (2018) examined multidimensional poverty transitions in rural Nigeria, using the Alkire and Foster measure of Multidimensional Poverty and showed that multidimensional poverty among rural households in Nigeria is mainly chronic (46.5 percent), where education and asset ownership contributed most to the incidence and severity of multidimensional poverty.

Alkire, Roche and Vaz, (2017) using DHS dataset for 34 countries, covering 2.5 billion people, analysed changes in multidimensional poverty. They found out that 31 out of 34 countries showed reduction in multidimensional poverty over a period of time, with Nepal, Rwanda, Ghana and Tanzania being the best performers in reducing MPI. They also found that there is a large variation in relationship of multidimensional and monetary poverty dynamics suggesting analysing each measure of poverty separately.

Drawing from the literature and understanding how important non-monetary factors are, this thesis concentrates on the dynamics of poverty using the multidimensional framework. Over the last few years studies using multidimensional poverty index as a measure of poverty have increased. However, there is still a huge gap in the studies analyzing dynamics of poverty with regard of multidimensional poverty.

3.3 Poverty Dynamics in India

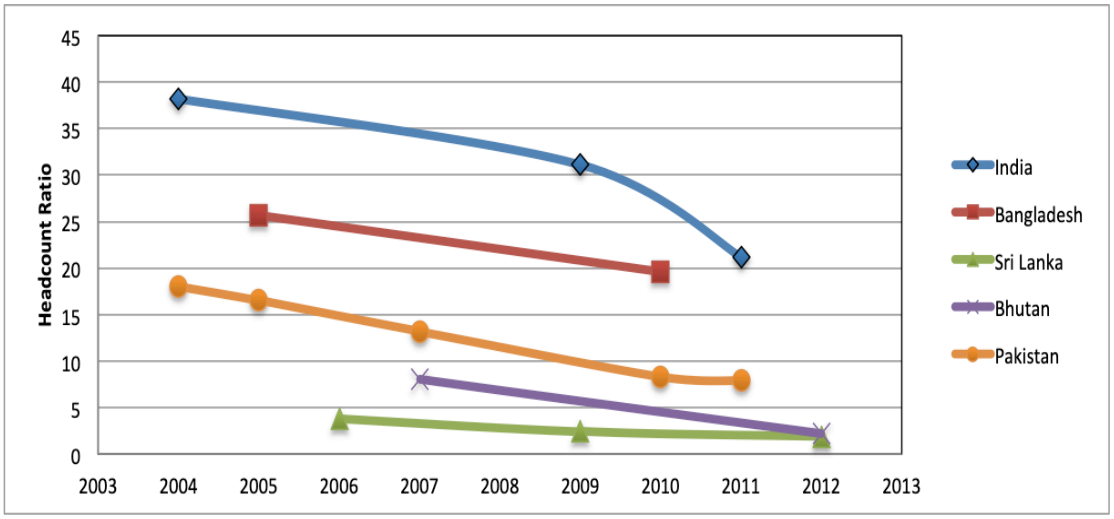
Even after seventy years of independence and development, poverty reduction has remained a bigger challenge for Indian economy. Despite high rates of growth that placed India in the category of 'Lower-middle-income country', after decades of being categorised as a 'low-income country' (Mehta and Bhide, 2010), 21.9 percent of the population was poor in 2011.[6] However, the rate at which poverty has been falling since the 90s is laudable. Between 1993-94 and 2011-12, percentage of poor in total population declined from 45 percent to 21.9 percent (Government of India, 2018). More recent estimates of poverty in India are not available but given the rate at which poverty is falling many more people would have come out of poverty after 2011.[7]

According to the World Bank, India was the largest contributor to the total population of the world in 2011, reflecting its enormous population. It was estimated that 22.5 percent of Indian population (14 percent urban and 26 percent rural), amounting to 270 million people, lived below $1.90 per day of purchasing power parity in 2011, making India the poorest country in South Asia followed by Bangladesh, where 19.4 percent of population was poor in 2010 (World Bank, 2016). Nepal, Pakistan and Maldives have 15 percent, 8 percent and 3.4 percent of their population living below poverty line, respectively. In contrast, Sri Lanka

[6] This is as per the latest available estimates of Government of India.
[7] The current pandemic must have turned the clock as many households must have fallen into poverty because of loss of job and business.

and Bhutan showed the lowest headcount of nearly 2 percent in South Asian region. In absolute terms, India is the home to the largest number of poor in the world, but as the rate of reduction is very large in the last two decades, India's share in the world's poor, measured at the international poverty line declined from 30 percent to 26 percent between 2005 and 2011 (Chatterjee *et al.*, 2016). Figure 3.3.1 shows that India's poverty has fallen rapidly between 2004 and 2011 as compared to Pakistan, Sri Lanka, Bangladesh and Nepal.

Figure 3.3.1: The Pace of Poverty Reduction: India Vs Other South Asian Countries, 2004-2012



Source: Derived from World Bank's database on poverty

Although, there has been a huge decline in the percentage of people living below poverty line in India, the growth in consumption expenditure of the bottom 40 percent of the population remains slightly lower than the average for the whole country. The poor showed a growth of 3.2 percent in their consumption expenditure annually between 2005 and 2011, which is slightly lesser than the average consumption growth of 3.7 percent annually for the overall population (Narayan and Murgai, 2016). The shared prosperity indicator[8] of India is at par with lower middle-income countries like Sri Lanka and Nigeria but lag behind upper middle-income countries like China, Russia, Vietnam, Turkey and South Africa. It would not be wrong to say that even as India outpaced most of the developing countries in poverty reduction and has also reported increased consumption, it does not show much improvement in inclusive growth. Comparing India with 51 other middle-income countries in terms of average consumption expenditure

[8] 'Shared Propensity Indicator is the rate of growth of per capita average household consumption expenditure or income among the bottom 40 percent of the population in each country, where the bottom 40 are identified by their rank in household per capita income or consumption' (World Bank).

growth, it was found that India ranked 16th when average consumption growth expenditure of the total population is compared, but 27th for the bottom 40 percent of the population in 2011 (ibid).

Although incidence of poverty has been estimated using monetary measures globally, the need to measure poverty using multidimensional measures is evident in many research writings (Tran, Alkire and Klasen, 2015; Alkire and Robles, 2016; Wang and Wang, 2016). Recently, many countries started estimating country-specific multidimensional poverty using the methodology of estimating Multidimensional Poverty Index developed by OPHI and UNDP,[9] although for official reporting still income measures are used. The incidence of multidimensional poverty in India was almost halved in ten years between 2005-06 and 2015-16, climbing down to 27.5 percent in 2015-16, a reduction of 271 million people, down from 635 million multidimensional poor to 364 million multidimensional poor in 2015-16 (Alkire, Oldiges and Kanagaratnam, 2018).

The overwhelming fact of poverty in India is the rural and urban divide. A large segment of India's poor is concentrated in rural areas. However, as can be seen in table 3.3.1, the proportion of poor for rural and urban areas has fallen from 50.1 percent in rural areas and 31.8 percent in urban to 25.7 percent and 13.7 percent respectively between 1993-94 and 2011-12. In absolute terms 216.5 million households in rural India are poor which is 80 percent of the total poor population in India.

Table 3.3.1: Number and Proportion of Poor Households in India, 1993-2011

Year	Percentage people living in poverty			Number of people living in poverty (million)		
	Total	**Rural**	**Urban**	**Total**	**Rural**	**Urban**
1993-94	45.3	50.1	31.8	403	328.6	74.5
2004-05	37.2	41.8	25.7	407	326.3	80.8
2011-12	21.9	25.7	13.7	269	216.5	52.8

Source: Government of India, (2018)

A high concentration of poor households in rural India has several manifestations, such as lack of income, constrained means for sustainable livelihood; lack of nutritious food; lack of access to quality health and education, denied access to financial services and other necessary basic infrastructure (water, electricity, roads and sanitation) and social discrimination and exclusion (United Nations, 1995). Rural poor mainly

[9] Explained in detail in chapter 6.

rely on agriculture for their income, and it is because of this reliance they become vulnerable to weather shocks. At the same time, above mentioned constraints impede their economic inclusion and investment in non-agricultural activities.

Within rural India poverty is disproportionately high among disadvantaged group such as Scheduled Castes (SCs) and Scheduled Tribes (STs). In 2011 SCs and STs accounted for 31.5 percent and 45.3 percent respectively of the people living in poverty in rural areas, although their share in the total rural population stood at 18.5 percent 11.3 percent for SCs and STs respectively (Government of India, 2016). The Schedule caste are the collection of lower caste households that suffered oppression in the form of untouchability in India. While some of them in rural areas are small and marginal farmers, majority of them work largely as agricultural labour (Kasi, 2013). The scheduled tribes (STs) on the other hand were identified on the basis of primitiveness, geographical isolation, shyness, and social, educational & economic backwardness and distinctive culture and pre-agricultural modes of production (Government of India, 2013).

Datt and Ravallion (2002) reported that poverty in India has fallen, but there remain large disparities across regions/states. According to them, during the 1990s there was a decline in poverty, but it did not commensurate with the rate of growth of the economy. Prior to 1980s when the average per capita GDP ranged between 1 percent and 2 percent, poverty rates did not show noticeable trend (Hasan, Lamba and Gupta, 2015). In 1980s when growth started picking up, poverty rates started to fall, albeit slowly. In the early 2000s, India witnessed fast economic growth and steep poverty reduction, both in terms of percentage and absolute number of poor people (ibid). However, even with high economic growth fall in poverty has remained low as compared to other Asian countries. High economic growth alone cannot ensure large reduction in poverty. Different countries/region have different elasticities of poverty reduction to economic growth. India's elasticity of poverty reduction to economic growth was -0.3 between 1981 and 2005, less than half of China's elasticity of -0.8 (Ravallion, 2011a). If India had China's elasticity it would have taken many more people out of poverty, with the given economic growth, than the actual poverty reduction rates (ibid).

In India, low elasticity of fall in poverty to economic growth is explained by low human development in terms of health, education and institutional development. The Indian economy growing at 7 percent did not reflect on the human development wherein India stood at the 129th position out of 189 nations on the

2019 Human Development Index (HDI) released by the United Nations Development Program (UNDP, 2019). It is also explained by inter-state variations in economic growth and rates of human development. In India, states where proportion of poor have been higher showed lower growth in 2011-12. Similarly, there are considerable differences in growth in urban and rural India.

Table 3.3.2 shows state-wise poverty estimates, both absolute and rate of change, for 2004-05 and 2011-12 along with the rate of economic growth and HDI. Poverty declined for almost every state, except for Northeastern States where the rate at which poverty declined is either negative or very small. However, there has been a significant inter-state differences in the fall in poverty rates. Table 3.3.2 reveals that, while HDI has been consistently high for Kerala, Gujarat, Himachal Pradesh, and Haryana, Jharkhand, Uttar Pradesh, Bihar, and Madhya Pradesh show low level of human development. Although Uttar Pradesh, Bihar and Chhattisgarh have a similar rate of economic growth as Kerala and Himachal Pradesh, their low level of human development has kept their poverty levels high. The evidence on presence of high incidence of poverty in states with low human development indicates that economic growth alone is not enough for poverty eradication. This further strengthens the argument that to reach the goal of greater poverty reduction multi-dimensional growth plays an important role.

The poverty figures quoted by the Government of India have been criticized from the academia and policy makers on the grounds of not being able to reflect the true picture of poverty. The poverty estimates in India have consistently reflected a divergence from the rest of the measures of welfare such as under-nutrition among children, chronic anemia among women, low level of education, lack of access to public service, lack of economic opportunities, ownership of assets, etc. (Mitra, 2013). Moreover, measuring poverty with a yardstick of consumption-expenditure alone is unsuitable in analyzing the foundations of poverty. Therefore, poverty measured keeping in mind multiple dimensions that represent long term standard of living of people will have the potential to provide insights into the processes of poverty and therefore, can offer appropriate policy measures for poverty eradication.

Table 3.3.2: State Wise Proportion of Population Below Poverty Line (2004-2011)

States	2004-05				2011-12					% Change in poverty	% Change in poverty
	Rural	Urban	Rural + Urban	HDI	Rural	Urban	Rural + Urban	Economic growth	HDI	Rural	Rural + Urban
Andhra Pradesh	32.3	23.4	29.6	0.298	11.0	5.8	9.2	7.51	0.309	21.3	20.7
Arunachal Pradesh	33.6	23.5	31.4	0.234	38.9	20.3	34.7	4.49	0.124	-5.3	-3.6
Assam	36.4	21.8	34.4	0.234	33.9	20.5	32.0	5.33	0.138	2.5	2.4
Bihar	55.7	43.7	54.4	0.050	34.1	31.2	33.7	10.29	0.158	21.6	20.7
Chhattisgarh	55.1	28.4	49.4	0.142	44.6	24.8	39.9	6.98	0.180	10.5	9.5
Delhi	15.6	12.9	13.0	NA	12.9	9.8	9.9	9.28	NA	2.7	3.2
Goa	28.1	22.2	24.9	0.781	6.8	4.1	5.1	20.21	0.803	21.3	19.9
Gujarat	39.1	20.1	31.6	0.429	21.5	10.1	16.6	7.66	0.477	17.6	15.2
Haryana	24.8	22.4	24.1	0.544	11.6	10.3	11.2	8.03	0.493	13.2	12.9
Himachal Pradesh	25.0	4.6	22.9	0.605	8.5	4.3	8.1	7.31	0.647	16.5	14.8
Jharkhand	51.6	23.8	45.3	0.145	40.8	24.8	37.0	4.49	0.222	10.8	8.3
Karnataka	37.5	25.9	33.3	0.436	24.5	15.3	20.9	3.69	0.420	13	12.5
Kerala	20.2	18.4	19.6	1.000	9.1	5.0	7.1	7.96	0.911	11.1	12.6
Madhya Pradesh	53.6	35.1	48.6	0.182	35.7	21.0	31.7	9.69	0.186	17.9	16.9
Maharashtra	47.9	25.6	38.2	0.583	24.2	9.1	17.4	4.82	0.629	23.7	20.7
Manipur	39.3	34.5	37.9	0.256	38.8	32.6	36.9	9.79	0.199	0.5	1.1
Meghalaya	14.0	24.7	16.1	0.340	12.5	9.3	11.9	12.58	0.246	1.5	4.2
Mizoram	23.0	7.9	15.4	0.529	35.4	6.4	20.4	-2.55	0.408	-12.4	-5.1
Nagaland	10.0	4.3	8.8	0.403	19.9	16.5	18.9	8.32	0.257	-9.9	-9.9
Odisha	60.8	37.6	57.2	0.174	35.7	17.3	32.6	3.78	0.261	25.1	24.6
Punjab	22.1	18.7	20.9	0.640	7.7	9.2	8.3	6.52	0.538	14.4	12.6
Rajasthan	35.8	29.7	34.4	0.278	16.1	10.7	14.7	5.17	0.324	19.7	19.7
Sikkim	31.8	25.9	30.9	0.299	9.9	3.7	8.2	10.77	0.324	21.9	22.9
Tamil Nadu	37.5	19.7	29.4	0.587	15.8	6.5	11.3	7.39	0.633	21.7	17.6
Tripura	44.5	22.5	40.0	0.288	16.5	7.4	14.1	8.69	0.354	28	26.5
Uttar Pradesh	42.7	34.1	40.9	0.167	30.4	26.1	29.4	5.57	0.122	12.3	11.5
Uttarakhand	35.1	26.2	32.7	0.247	11.6	10.5	11.3	9.36	0.426	23.5	21.4
West Bengal	38.2	24.4	34.2	0.462	22.5	14.7	20.0	4.72	0.483	15.7	14.3
All India	**41.8**	**25.7**	**37.2**	**0.507**	**25.7**	**13.7**	**21.9**	**6.69**	**0.554**	**16.1**	**15.3**

Source: Government of India Press Release 2013

Multidimensional poverty estimation is an important subject for India too, but very little relevant research has been conducted using available datasets in India. Subramanian and Jayaraj (2006) using the National Survey sample data for 1971-72 for 56 regions tried to explain the inter-regional differences in levels of well-being. They showed that the effect of asset holdings on poverty level was even higher than the impact of agricultural performance. They also showed that in India, with a high proportion of rural population, land was found to be the most important element of the well-being of a household.

A study by Arun, Annim and Arun (2013) suggest that assets in the form of social, financial and physical capital are not treated just as resources, but also as an agency that transform resources to improve welfare choices and tackle risks and uncertainties. Combining a household survey and semi-structured interviews with Adivasi (ST) households conducted in the Adivasi (ST) regions in Kerala from 2005-2007 they found that the type, number, and combinations of certain assets made households resilient to both idiosyncratic and covariate shocks. The results also showed that just accumulating assets is not adequate to reduce vulnerabilities unless this transform into income generation and improved ability to manage such assets. The study strongly argued for a policy intervention that strive to strengthen the productive use of the assets by providing combinations of assets that together may reduce shocks.

Most of the literature on non-monetary poverty measures in India too link multiple dimensions of well-being to monetary poverty and show how they play an important role in current income levels. For example, importance of physical and agricultural assets, financial assets, institutions, social capital, human capital etc., either individually or as an index, have been shown to have an impact on monetary poverty. Since multiple dimensions of a household's well-being play a major role in determining the standard of living of a household, and inability of income/consumption poverty measures to depict the true extent of poverty, it is important to differentiate multidimensional poor households from consumption poor households. My study puts emphasis on this phenomenon and using data from Indian Human Development Survey categorizes household into consumption poor and multidimensional poor both. Using the multidimensional framework of poverty this study establishes a link between various indicators and their deprivations, and poverty in rural India with a detailed discussion on Uttar Pradesh.[10]

In India, as mentioned earlier, unfortunately, studies focusing on multidimensional poverty dynamics lack

[10] A detailed discussion on the choice of state and methodology used in this thesis is explained in chapter 5.

systematic work. In Literature, most of the studies on poverty dynamics use consumption-based poverty measures to estimate the extent of poverty dynamics. However, the main disadvantage of analyzing poverty dynamics based on consumption indicator is that it is unable to capture the difference between the structural and stochastic nature of poverty (Naschold, 2012). Comparing income/consumption-expenditure from one time period to another doesn't give the true measure of wellbeing of a poor household. Moreover, as social protection policies in India are designed with an objective of catering to the consumption needs of poor rather than enabling the poor to move out of poverty by providing economic opportunities and high quality public services, there is a large focus on ascertaining the consumption needs of those below income poverty line and hardly any focus on households/individuals that need enabling environment in terms of high quality institutions and social infrastructures to move out of poverty (Dutta, 2013).

While in the last many years of economic growth and development, the proportion of poor in India has declined sharply, the number of people living below poverty line is still very high. Large number of households that endure poverty for an extended period of time indicates towards people suffering from persistent poverty. Moreover, there would be some households that moved out of poverty; many would also have fallen into it. It is more important to identify who are the people that are falling into poverty and those that are stuck in poverty forever. As mentioned earlier, because of the lack of availability of panel data, the studies conducted on poverty dynamics determining chronic and transient nature of poverty, are limited. India, although, has a long series of household data in the form of National Sample Surveys that dates back to 1950s, they do not track the same household overtime (Datt, Ravallion and Murgai, 2016)

Gaiha (1988), one of the first few researchers who studies poverty dynamics in India, using a household level data set collected by the NCAER[11] over a three-year period from 1968 to 1970 provided estimates of poverty dynamics of households under study. A transition matrix was created and households in all four categories of poverty were identified using consumption-based poverty line. He found that 21.09 percent households were poor in both time periods, 12.18 percent were poor in 1968 and fell further deep into poverty in 1970, 24 percent exited poverty, 12.7 percent became poor in 1970 and 30.04 percent were

[11] National Council of Applied Economic Research. It was established in 1956 and is India's largest independent, non-profit, economic policy research institute.

never poor. The study showed considerable movement across the poverty line and 33.27 percent chronically poor over the three-year period. Another follow up survey by NCAER of the same households in 1980-81 showed that over the period of 10 years spanning from 1970 to 1980, 25 percent households could move out of poverty and 17 percent fell into it while 30 percent never stayed poor and 28 percent households were chronic poor.

Gaiha and Deolalikar (1993) using the ICRISAT Village level data set for South India from 1975-1976 to 1983-1984 showed that a large number of the households (87.8 percent) in the sample data were poor at least once in the nine-year period, over 60 percent of the households were poor during five out of nine sample years and little over 20 percent of the households were chronically poor. Using the same dataset Binswanger and Singh (1993) found that 60 percent of the households in the ICRISAT data were already in poverty. And, after nine years, 37 percent of poor households could increase their income above the poverty line while 63 percent remained persistently poor.

Krishna (2004), using the qualitative techniques interviewed 6376 households at a recall period of 25 years in 35 villages in Rajasthan, India. He showed that 11.1 percent households had escaped poverty, 7.9 percent became poor, while 17.8 percent of households remained poor, and 63.2 percent remained non-poor. The study also found that the factors responsible for the escape from poverty are not the same as factors associated with households' fall in poverty. Using the qualitative method in two of the tribal villages in South Western Madhya Pradesh, Shah and Shah (2003) showed that almost 58 percent of the households under study were chronically poor.

Although India has a dearth of elaborate literature on multidimensional assessment of poverty dynamics, some researchers have tried to do this using the nationally representative household data. Dutta (2014) studied the household asset dynamics in India using the IHDS dataset for 1994 and 2005. The study used household durable, human, natural assets to create an asset index. Using the asset accumulation framework of Carter and Barrett, and the panel data regression model to test the existence of poverty dynamics the study found out that in many Indian States poverty dynamics did not take place in rural areas, as households did not deviate from their initial level of assets. This would mean that those who were already poor with deprivations in these assets would have remained poor between 1994 and 2005. Studying inter-state variations, the study found that in Bihar, Uttar Pradesh, Orissa and Madhya Pradesh, the poor saw

continuous loss of assets leading to high chronic poverty and movements into poverty in these states. Maharashtra, Gujarat, Tamil Nadu have shown that the poor lost as well as accumulated assets, therefore, in these States households were structurally falling into and moving out of poverty. It was also shown that poverty had remained stable in Madhya Pradesh, Andhra Pradesh and West Bengal in the time span of the study. Acknowledging the multidimensionality of poverty this study also estimated dynamics in nutrition and literacy levels. They found out that in the most deprived states of Bihar, Uttar Pradesh, Orissa and Madhya Pradesh, assets were significantly reduced because of illiteracy and malnutrition.

Naschold (2012) assessed the households' welfare dynamics in three villages in rural semi-arid India and looked for a threshold determining asset poverty using a semiparametric panel data estimator. An asset index, using physical, productive, financial, natural, and human assets, was created through a livelihood regression model that expressed the household's welfare as a function of household's characteristics and asset endowments. The fitted values of this regression were then interpreted as an asset-index of the household's welfare. The weights are assigned to the assets according to their marginal contribution to the household's welfare (ibid). The results suggested that these villages were characterized with economic stasis i.e., in the absence of any shock the households' asset holding followed a random walk over time and poor stay poor, and the non-poor stay non-poor. The study also showed that while all households faced stable asset endowments, higher castes, larger landowners, and well-educated households had lower likelihood of being in poverty (ibid).

There are some studies that found a high degree of poverty dynamics in multidimensional space too. Dutta and Kumar (2013) assessed poverty dynamics for the years 1992, 1998 and 2005, found that 35 percent of the rural households in India were multidimensional poor, 22 percent of these were in chronic poverty and 13 percent were transient poor. An additional 9 percent of rural non-poor households were vulnerable and lived under the threat of poverty as they were just above poverty line. In order to create a multidimensional poverty index Multiple Correspondence Analysis (MCA) was adopted as it allows to analyze the pattern of relationships for several categorical dependent variables. The study used physical, human, financial and natural capital to create an index of poverty. Social capital was not used due to unavailability of data. The study also found that States like Bihar, Orissa, Assam, Uttar Pradesh, Karnataka and Maharashtra were chronic poor across the three time periods under study, while some (Punjab, Haryana, Himachal Pradesh, Gujarat and Andhra Pradesh) were mostly transient. It was also shown that non-poor sections of the

population in Gujarat, Punjab, Himachal Pradesh, Bihar, Orissa, Madhya Pradesh and Maharashtra, were becoming vulnerable with a higher likelihood of falling into poverty.

Another study in Odisha, India, found evidence of poverty dynamics when exploring historic land distribution and credit constraints (Hatlebakk, 2014). They found that those 50 percent of the households that earn their livelihood through low paid unskilled labor work in the current period, had a grandfather as the household head, who was an unskilled farm laborer. The study also found some cases of poor agricultural laborers at grandfather's time whose grandsons have now been able to move out of poverty, and work as factory or construction workers. There are also cases of downward fall as grandfathers who were small and marginal farmers had grandsons with no land left and now work as farm laborers. Here occupation of the main earning member of the family is treated as a proxy for non-monetary poverty measure and movement from high paid to low pay and vice versa is treated as poverty dynamics (ibid).

So far there has been no study in India that talks about the dynamics of multidimensional poverty and decomposes it to understand the deprivations that play a major role in poverty dynamics. This thesis tries to fill this gap in literature by using OPHI's method of estimating multidimensional poverty and understanding the factors that cause movements in and out of poverty.[12] In India, the Government has often tried to reduce poverty through income measures, however, to improve the efficacy of policies aiming at poverty reduction, multiple dimensions of poverty, including deprivations in various indicators of wellbeing need to be taken into consideration. Empirically, this thesis adopted the decomposition analysis on multidimensional poverty index and mixed method approach to understand the factors and deprivations that cause the dynamics in poverty. This would further help policy makers understand the areas that need better targeting.

Empirical evidence on poverty dynamics indicates towards the fact that a large number of poor people stay poor for the rest of their life, sometimes, for generations; many escape poverty, and many also fall into it. Using the available empirical literature on factors affecting poverty dynamics and drawing on the theoretical background described in chapter 2, the correlates of movements in and out of poverty and chronic poverty can be grouped into following categories:

[12] Explained in detail in chapter 6,7 and 8.

Demographic factors: Many researchers have found that changes in demographic factors (family size, number of dependents, gender of the head of the household, age of the household head) have a direct impact on poverty and its dynamics (Justino and Litchfield (2002); Jalan and Ravallion (1998) Van Edig and Schwarze (2011); Brück and Kebede (2013); Adepoju (2018); Ahmed (2018); Jayne, William and Milu, (2011)). As the dependency ratio/ household size increases, the burden on the breadwinner increases making a household more vulnerable to shocks and poverty. The gender of the household head is also associated with a high probability of falling into poverty or remaining poor over a long period of time. It is considered that if a female becomes the head of the household after the death of a male head, it puts the family into a financial burden because of the death of the main breadwinner.

Bhide and Mehta (2008) in their study on Indian households found that poor households with larger number of members in 1970-71 remained poor in 1981-82 compared to those with lesser household members. Increase in the size of the household and resulting increase in dependency ratio also increased the probability of being in chronic poverty. The study also showed that a large number of females in the family did not impact chronic poverty, however, it increased the likelihood of moving out of moderate poverty. Moreover, a literate head of the household in the initial period was associated with a higher likelihood of escaping poverty, specifically when the households were already severely poor in 1970-71.

Economic Factors: Economic factors including the main income source and the occupation status of the head of the household has been looked as a main factor driving poverty dynamics (Justino and Litchfield, 2003; Muyanga, Jayne and Burke, 2013). It was found that the households whose head shifted the main source of income from agriculture to any other source was associated with increase in probability of moving out of poverty by 72 percent (Justino and Litchfield, 2003). (Nargis and Hossain, 2006; Ahmed, 2018) claimed that shift from farm to non-farm sector leads to movement out of poverty. Households that remained in poverty were mostly households who were engaged in agriculture activities or did petty jobs. Poor agriculture farmers do not have enough money to invest in better farming techniques leaving the household in a poor state forever.

Krishna (2003) claimed that the diversification of the source of income was the most significant reason for movement out of poverty. Gaiha (1988) pointed out that the escape from poverty was not the result of a trickle-down impact of economic growth to the rural poor, but it was mainly due to the cultivating poor

adopting new agricultural technologies resulting from growth itself. Another study conducted by Sen (2003) showed that those who escaped poverty overcame structural obstacles by adopting enhanced strategies such as intensifying their crops, diversifying agricultural produce, embracing off-farm activities and livelihood migration that permitted prompt accumulation of a wide range of assets. Krishna (2004) found out that some villagers have diversified their main source of income and took up additional activities within the village, such as dairying, rearing goats, making charcoal, and working as labor in mines, transportation, and agricultural activities. Moreover, many more also migrated to nearby cities, to work as carpenters, cooks, laborers, vegetable sellers, masons, electricians, construction workers, plumbers, tea stall assistants, drivers, office boys and waiters.

Human Capital: Several studies have explored the relationship between the level of education attained and poverty dynamics. It is seen that the education of the head of the household is a significant factor affecting chronic poverty and movements in and out of poverty but education alone is not sufficient to determine the movement (Ari and Farooq, 2014). Mehta and Bhide, (2010) found that obtaining education over time did help households, who were moderately poor in the first period, move out of poverty, although similar results were not seen for the severely poor. Similar to education, health is also an important factor determining poverty dynamics. According to Krishna (2004) ill-health and catastrophic expenses on healthcare (usually of poor quality) were one of the principal reasons for falling into poverty by a majority of households in India.

Shocks: Shocks experienced by family between the two time periods deplete household assets and its ability to sustain their living by reducing continuous income flow. Shocks could be idiosyncratic (prolonged illness, death of breadwinner, crop failure or death in the family) or external (drought, flood, or other weather related shocks). Justino and Litchfield (2002) and Chapoto et al., (2011) showed that household shocks significantly increased the probability of falling into poverty and had no impact on movement out of poverty, as expected. Shocks would have different impact on different people. A poor person would have a higher impact of prolonged illness than a wealthier household.

Noponen (1991) studied a panel data of 300 poor women working in the informal sector and their households in Madras, India, from 1980 to 1985, and found that over the five-year study period, on average, four economic shocks affected the sampled households. Moreover, prolonged, and severe illness had largest

influence on the poverty dynamics. Distress selling of assets and borrowing at high interest rates had put households in indebtedness. Thorat *et al.*, (2017) using the IHDS dataset in India from 2004-2011 confirmed the importance of debt as a factor associated with moving into poverty. The study showed that non-poor households who reportedly took some debt in 2004-05 had a 26 percent higher likelihood of falling into poverty seven years later; debts did not alter the likelihood of poor households moving out of poverty between the two surveyed years.

Social Caste, Social Norms and Values: Caste is one the most important factors to consider when talking about poverty, especially in south Asian countries. While the law has forbidden caste-based discrimination, the system is deep-rooted especially in rural communities and is still practiced. Households belonging to more privileged group generally fall in non-poor category and households belonging to low caste group find it difficult to move out of poverty and are generally associated with chronic poverty. Orthodox norms and values that hinder the development of people on the basis of gender, caste and creed act as a feeding ground for chronic poverty. Using the panel data from Uganda Tas, (2010) showed that households with more empowered women, in terms of their access to social, political and economic opportunities, were more likely to move out of poverty. Ahmed, (2018) showed that the households where an adult female faced domestic violence had the higher likelihood of being in chronic poverty.

Thorat *et al.*, (2017) in their work using data from India's IHDS showed that among higher caste households 75 percent moved out of poverty in the second wave of survey, however, just over 50 percent households from lower caste category escaped poverty. Lower caste households face social disadvantage, which makes their movement out of poverty difficult. It was also shown that lower caste households were more likely to fall into poverty than their wealthier counterparts (ibid). Many other researchers working in developing countries, including Mexico, Rwanda, Nepal, etc. showed similar results (Dhamija and Bhide, 2013; Thorat *et al.*, 2014, 2017). These results, however, co-exist with other studies that show that caste and ethnicity do not have an impact on poverty transitions (Justino and Verwimp, 2013).

Infrastructure and Access to Public Resources: The households' access to public resources and availability of markets and public institutions has impact on the households' poverty status mainly through human capital formation. Households that have better access to hospitals, schools, markets, roads etc. will have better opportunities to grow as compared to households that do not have access to these resources.

Jayne, William and Milu (2011) showed that an increased distance to the nearest healthcare facility reduced the households' asset holdings by 26 percent. Justino and Litchfield (2002) showed that households with living in communes with better infrastructure availability had increased probability of leaving poverty than their counterparts with poor infrastructure.

In India, Majumder (2012) stated that the enhancement of regional infrastructural facilities increased average consumption expenditure of the people and reduced the likelihood of people living in poverty. He also claimed that availability of better-quality health and education facilities led to reduction in poverty, as well as convergence through decreased interpersonal disparity. Datt and Ravallion (1998), using pooled state-level data for India from 1957 to 1991, found that states that had better infrastructure and human resources saw significantly higher rates of poverty reduction in the long-run.

Assets: The impact of asset holding on poverty dynamics does not need any explanation as many researchers have established its relevance (Jalan and Ravallion, 1998; Justino and Litchfield, 2003; Mckay, 2009). Loss in assets is considered as a structural loss which would have a long-term impact on household capability (Carter and May, 2001; Barrett and Carter, 2006). Increase in households' ownership of assets, land, remittances, livestock are all associated with movements out of poverty and the fall in these are associated with a movement in poverty or remaining in chronic poverty (Chapoto et al., 2011; Teguh and Nurkholis, 2011).

Mehta and Bhide (2011) in their study on poverty dynamics in India found out that the probability of moving out of poverty or falling into it is highly sensitive to initial level of asset holdings. They also showed that the likelihood of being in chronic poverty is associated with an increase in the crop area cultivated by the poor and accumulation of assets in terms of better housing and investment in livestock. A study in Orissa, India by Hatlebakk (2014) found that land asset transitions determine poverty levels over time, and larger land ownership indicated movement out of poverty while lower indicated falling in poverty.

The evidence that financial assets in the form of saving accounts, access to credit and insurance have an impact on poverty dynamics in India is limited. Burgess and Pande (2005) used state-level panel data in India to provide evidence that poverty reduction is associated with opening of bank branches in rural unbanked locations. Evidence from pilot studies in India by Cole, Giné and Vickery (2017) suggested that micro insurance did have an impact. They found that provision of rainfall insurance stimulated investment

towards cash crops (which provide higher return but are rainfall sensitive) and provided pathway out of poverty and prevention from falling into it.

3.4 Conclusion

Research on poverty in India has experienced a prolonged history as periodic estimation of poverty in India, including its measure and incidence, has been undertaken right since the 1950s. The consumption expenditure surveys, conducted by the government of India, have been used to identify the poverty line below which households have been classified as poor (Mehta *et al.*, 2011). Over time several amendments have been made in the methodology for estimating poverty in India; however, the prevalence of poverty in India remains high irrespective of the measure of poverty used. The multidimensional measure of poverty (MPI) also shows a high poverty incidence.

Literature on poverty show that since households keep moving in and out of poverty static poverty measures do not present the true extent of poverty. Studies on poverty dynamics suggest that substantial proportions of households are experiencing chronic poverty. Therefore, it becomes essential to track the same set of households to gather information about the movements in and out of poverty and determine the factors or events that generate these movements. Both empirical and theoretical literature on poverty shows that physical assets such as land and livestock, availability of affordable credit and insurance, health status and attainment of education, have been shown to be important determinants of chronic and transient poverty. Studies also showed that infrastructure and institutions, both at physical and social level, determine dynamics in poverty.

While there has been large literature available on poverty dynamics focusing on income/consumption-expenditure as a measure of poverty, there has been limited to no studies enriching our understanding on dynamics of multidimensional poverty. Although monetary measures of poverty do provide insights into the consumption pattern of households on food, housing, medicine, education etc. it does not take into account the standard of living of households by ignoring non-monetary dimensions of well-being such as health status, nutrition, education attainment, quality of public infrastructure, access to markets etc. Factors affecting movements in and out of poverty extends beyond income or consumption and therefore, raising a need to measure poverty dynamics considering several non-monetary dimensions, and how they interact with each other. At the same time, it is important to note that it is not recommended to

completely abandon the official monetary poverty line as these measures are equally important to understand how non-monetary dimensions of poverty are interacting with each other to generate long-term income stream. One cannot just concentrate on standard of living without studying the relationship between income and other measures as they go hand in hand. Alternate measures of poverty should complement monetary poverty measures instead of acting as a substitute (Alkire and Santos, 2013).

Chapter 4: Social Protection and Poverty Dynamics

4.1 Introduction

In chapter 2 and 3 we put across the contextual framework of Poverty dynamics using theoretical and empirical literature and showed how multiple dimensions of well-being are important determinants of poverty dynamics. This chapter takes the issue of poverty dynamics further by deeply understanding the poverty alleviating strategies undertaken to tackle the reality of devastating poverty. It is deliberated that without proper support mechanism it is hard for the poor to move out of poverty. This chapter reviews the evolution of Social Protection as a Social Policy tool and its relation to poverty dynamics along with incorporation of multidimensionality of poverty in its broad framework.

Social Protection is an essential element of poverty eradicating strategies promising effective contribution towards reduction of poverty and vulnerability (Barrientos and Hulme, 2009). Governments are said to have taken various measures to reduce poverty in their countries over several decades. Efforts have been made to trickle down the impact of economic growth and development for the poor. Efforts have also been made to confront poverty by providing employment and skill development, food and nutrition, better quality education, shelter, separate provisions for disadvantageous groups, to name a few. Some of the countries, especially East Asian Countries and Europe, have made the provision of good quality public services a priority in their fight against poverty. Although many studies exist to understand the effect of these policies on poverty and other measures of well-being, to my knowledge, not much work has been carried out on the implications of these policies on poverty dynamics. Do these policies enable and encourage households, who have been previously stuck in poverty, to escape poverty or do the poor remain poor amid polices that by nature of its design make the poor more dependent on these policies? Do countries have enough institutional and infrastructural support for poor households to facilitate movement out of poverty?

The objective of this chapter is to provide a conceptual background of Social Protection as a response to poverty eradication. The concept of social protection has undergone tremendous changes since its inception. Right from being a provider of basic income to providing an array of multidimensional support, ranging from asset creation to risk management, social protection is seen as an integral part of anti-poverty

policies across the world. The focus of this chapter is also on the strategies adopted by India as a response to poverty eradication, and its relationship with poverty dynamics. The empirical literature presented in this chapter shows a dearth of studies analysing this relationship, especially in India, thereby providing a motivation to study this concept more in detail in this thesis.

Section 4.2 explains the evolution of social protection program from residual welfare approach to policies that accommodate multi-dimensional deprivations faced by the poor. This section also describes the implicit and explicit incorporation of non-monetary factors of poverty in social protection policies. Section 4.3 presents a brief overview of social protection programs in India and its relation to poverty dynamics. Section 4.4 explains in detail the limited empirical literature examining the relationship between social protection policies and poverty dynamics. Section 4.5 concludes this chapter.

4.2 Social Protection: Background

As discussed in chapter 2 many theorists came up with different solutions to tackle poverty. Classical theorist put stress on economic growth while Keynesian deemed government intervention necessary for poverty eradication. Across the globe the policy makers have embraced social protection policies as a framework that has the ability to strengthen the efforts at reducing poverty and vulnerability (Devereux and Solórzano, 2016). It is widely believed that social protection is now better grounded in its ability to foster both economic and social development and understand the barriers that prevent access to economic opportunity and enforce vulnerability and poverty (ILO, 2017) .

Social protection as a concept emerged by shifting focus from residual welfare poverty alleviation strategies, typically comprising short-term social safety nets, of 1980's and early 1990's to a much broader array of poverty reducing policies that along with safety nets focus on multiple interventions necessary for human and economic development (Sabates-Wheeler and Devereux, 2008; Barrientos and Hulme, 2009) These include, but not limited to, protecting basic levels of consumption, facilitating investment in productive assets that were deemed necessary in order to make a way out of poverty, and strengthening the capability of the poor so that they are better able to make use of economic opportunity (ibid).

In early 2000s, along with the World Bank many other organizations including ILO, ADB and ODI put emphasis on risk and vulnerability and promote mechanisms that were necessary to mitigate and reduce

risk and enable poor to cope with the shocks. These mechanisms although useful, came with certain drawbacks. The most important is the complete ignorance of structural poverty and focus on just monetary poverty. Barrientos and Shepherd (2003) argue that although risk and vulnerability are important determinants of poverty dynamics, the relationship between the two cannot be ascertained with certainty. They believed that even though income is an important consideration for poor people, "structural vulnerability" is an impediment to movement out of poverty. Structural vulnerability are structural bottlenecks with regard to social, political, and economic structures and relationships, and processes of exclusion that restrict a household's ability to make use of available opportunities in a productive manner (Barrientos and Shepherd, 2003). Social protection that concentrates mainly on risk cannot comprehend poverty dynamics, as the factors affecting chronic and transient poverty range beyond risk, and include structural factors (ibid)

The risk management framework of social protection programs, where aid was provided after the shock has hit, has been considered inadequate by the policy makers to protect the poor from increasing chronic and transient poverty. This is further considered inadequate in the wake of rapid economic growth unaccompanied by adequate state provision of basic social and economic infrastructure and appropriate social protection (Kabeer and Cook, 2010). With this emerged the right based approach where poverty is claimed to be "embedded in complex social and political contexts that create social as well as economic risks, which interact with and reinforce each other" (Devereux and Solórzano, 2016). Under the rights-based approach, it is the responsibility of the government to provide rules, regulations and programs that have the capacity of enhancing households' risk taking abilities and improve their standard of living (Shepherd, Marcus and Barrientos, 2004).

Social Protection, in theory, thus evolved from being a mechanism to manage risk and uncertainties to the one which creates an enabling environment. Embedded in this evolution are the four fundamental categories that social protection is composed of: *Protection, Prevention, promotion and transformation* (Devereux and Sabates-Wheeler, 2004).

Protective Measures: Protective measure of social protection is largely comprised of social assistance programs targeted at the poor with an aim of providing immediate relief from poverty and vulnerability. These programs are more common in developing countries and are typically targeted towards those who

are unable to earn a living. Conditional cash transfers, social pensions, disability benefits, social service to the disadvantaged section of the society, employment schemes come under protective measures.

Preventive Measures: Preventive measures are ex-ante measures that aim to make household more resilient in the times of shocks and crisis. These are designed to prevent vulnerable people falling into destitution. Examples of this would include health insurance, crop insurance, informal community saving clubs, micro insurance, etc.

Promotive Measures: Promotive measures are also ex-ante measures aiming to reduce risks by providing income generating opportunities. These measures aim directly at capital formation and include programs, such as free primary education, school feeding programs, immunization, provision of microcredit etc.

Transformative measures: Transformative measure is the most recent addition to the social protection framework and the one that believes that even though income is an important consideration for poor people "structural vulnerability" causes chronic poverty and impedes movement out of poverty. Transformative measures aim to raise the bargaining power of those at the lower stratum of society. This measure believes that the issue of poverty can be tackled through the delivery of social services and not necessarily through resource transfer (Devereux and Sabates-Wheeler, 2004). The poor would not be able to move out of poverty if the institutions around him do not welcome him completely into the non-poor world. The ILO originally conceptualized the first three measures. The incorporation of the transformative component positions social protection not just as a mechanism to tackle poverty but also to pursue policies that balance the imbalanced power relations that cause vulnerabilities and impedes movement out of poverty (Browne, 2015).

There are several objectives that Social Protection plays, ranging from tackling poverty and vulnerability, promoting investment in human and social capital, improving livelihoods, and building resilience in face of shocks and stress (ibid). According to a specific objective, the design and purpose of social protection programs can vary. There are various instruments that a country may choose as part of their social protection framework, which may be of a protective, preventive, promotional, transformative nature, or a combination of these.

Social assistance and social insurance are the most used categories of social protection by agencies such as

the ILO, World Bank, and others. Social assistance is a non-contributory basic income support, in cash or kind, to the poor to smooth their consumption pattern. The income support can be conditional, where households have to fulfil certain requirements (education, immunization, health, work hours, asset creation, business start-up, etc.) in order to be eligible for transfer or completely unconditional. Conditional cash transfers are the most common form of social protection policies implemented in most developing countries (Barrientos, 2010). Social insurance, on the other hand, consists of programs preventing households against contingencies that a household may face during the course of their life, such as maternity, widowhood and old age, medical or employment related contingencies (ibid). The scope of social insurance has mostly been limited to the formal labour market hence excluding those belonging to informal work force. This is one of the reasons why social insurance for poor is not very common in developing countries as large chunk of working population consist of informal workers. This proportion is even higher at the bottom of the pyramid.

The non-monetary framework of Social Protection started to become recognized after World Bank made policy recommendations to tackle poverty in their "World Development Report, 2000-01. The report itself overlooked the inclusion of multiple dimensions of well-being in the social protection agenda and put stress on ex-post strategies, such as social assistance, cash transfers, subsidies etc. (Moser and Stein, 2011). Nevertheless, there has been an implicit focus on tacking multidimensional poverty in the recommended actions by the Bank: "promoting opportunities by stimulating overall growth and by building up their assets (both physical and human) and increasing returns to asset through market and non-market interventions; facilitating empowerment, by making state institutions responsive to poor people and also through removing social barriers resulting from gender, ethnicity, caste etc.; and enhancing security by reducing vulnerability to shocks and building resilience post shock" (ibid; World Bank, 2000).

Table 4.2.1 below summarized how social protection programs or instruments have an implicit incorporation of various dimensions into the design of interventions. However, it is important to note here that much of the focus has been on human and financial capital and very little on productive and social capital (Banks and Moser, 2011). There is always a need of an effective institutional and infrastructural set up along with integrated social protection policies that promote a household not only to enhance their capital base but also take advantage of the economic opportunity and find a way out of poverty (ibid).

Table 4.2.1: Focus of Non-Monetary Dimensions in Social Protection Programs

Type of social Protection	Program Example	Dimensions achieved
Provision/Protective	Cash transfer or In-kind transfer e.g., food. Employment Guarantee schemes	**Financial capital** through increased income **Human capital** through improved nutrition
Prevention	Insurance (Crop, health, life etc) Pensions, disability benefits Employment Guarantee schemes	**Financial Capital** through cash **Human capital** through improved nutrition and increased skills at work Increased **infrastructure** through public works
Promotion	Free education and health care programs Assets transfer programs Cash transfer programs	**Productive capital** through asset transfer **Financial capital** through cash transfer **Human capital** through access to education and health care facilities
Transformative*	Integrated Asset Transfer Programs Women oriented cash transfer programs Micro finance and saving opportunities Financial training and technical skill development camps	**Financial Capital** **Human capital** through increased skills **Empowerment** as focus is more on disadvantaged group **Capacity building** through micro credit and savings opportunities.
* The focus has traditionally been on financial (income) and human capital and less on capacity building.		

Source: Moser & Bank 2011 with author's modifications.

It has been seen that even with the incorporation of non-monetary dimensions of poverty in social protection policy making, the emphasis has been on achieving an impact on a single dimension. Such policies, although important, have ignored focusing on reducing multidimensional poverty. Multidimensional poverty comprises multiple deprivations experienced by poor people in their daily lives – such as poor health, lack of education, poor living standards, social exclusion, unemployment, the threat of violence, and living in environmentally hazardous areas, etc. (Alkire and Foster, 2007). Designing policies that consider multidimensionality of poverty and aim at reducing it may improve effectiveness of these policies. Inclusion of multidimensionality of poverty in policy making is also relevant as improvement in one indicator (monetary or non-monetary) alone does not guarantee movements out of poverty as the poor lack basic amenities and are deprived in various indicators at a time inhibiting their capability to take-up income earning activities. Moreover, literature shows that there is very low association between two kinds of poverty as significant proportion of multidimensional poor households are not monetary poor and vice

versa (Borga, 2020). Therefore, as one indicator alone cannot truly represent the well-being of a household, measuring the impact of social protection policies not only on unidimensional measure of poverty but on multidimensional poverty too is highly relevant for policy making. At the same time, although social protection policies may include interventions that implicitly or explicitly strengthen individual level indicators, it is imperative to draw a framework that has clear rules, norms and regulations and provides an enabling environment that facilitates move out of poverty and prevent a movement down into poverty (Moser and Stein, 2011). For example, providing access to education would not mean that all the children would start attending school and obtaining higher skills would not immediately mean that a well-paid job is obtained. A household will, no doubt, accumulate human capital but will that be sufficient to take him beyond the poverty line? This issue is further discussed in detail in my thesis where an association between various dimensions of poverty and their role in poverty eradication is discussed.

4.3 Social Protection in India

Since the beginning of the 1950s, the Government of India launched various programs aiming at reducing poverty. The aim was to eradicate poverty by provision of food and other essential commodities at subsidized prices; investment in research and development, especially in agriculture and technology; financial inclusion by increasing access to credit market; promoting education, employment generation and asset creation (Rawat, 2012). However, the aim of the programs launched in the early years of India's independence was not poverty eradication, but high economic growth. It was assumed that economic growth would have redistributive effects and hence no systematic attempt was made to design policies that could directly address poverty. All the five-year plans until the fifth one focused on sectoral growth and it was believed that there will be a trickle-down impact of economic growth on poor. It was only during the fifth five-year plan (1974-1979) that the focus shifted to poverty eradication with the slogan "Garibi Hatao" (Eradicate Poverty) that a social protection framework directly focussing at poverty eradication started to develop (Chibber, 2012).

As discussed in chapter 3, the way poverty is measured in India evolved a lot since the inception of planning Commission which also changed the way social protection schemes were designed. Along with the provision of food, employment and basic income, more and more emphasis was put on other dimensions of poverty by designing programs that mainly encourage human development. However, most programs

aimed at providing adequate nutrition, education, and employment, and there was not much focus on programs that mitigate contingency risks largely arising due to health shocks. Programs aiming at risk mitigation strategies started to take off in the first decade of the 21st century, although the outreach was small. Recent addition to social protection programs in India brought focus toward financial inclusion of the poorer segment of Indian society by linking their bank accounts with direct benefits from pension, subsidy, and insurance.

In India, social protection schemes could be provided by the Central government, the State governments, or the jointly by both. make provisions for health and education, housing, employment, and other related services that has the capacity of stimulating the welfare of the poor. To cater to the disadvantageous group (SC, ST, disabled and other vulnerable groups) distinct programs have been taken up. Programs that aim to facilitate self-employment through skill development, along with public works programs that facilitate people to cope with the hardships of poverty, are also a part of the social protection strategy of the Government of India. The food program safeguards food and nutrition security at reasonable prices and protects the poor from the unfavourable consequences of the increase in food prices. These measures have been beneficial to the poor; however, the results have been inequal and have different impacts on different categories of poor. As described in section 4.2, social protection programs in India also can be categorised in preventive, promotive and provision categories. Some of the most important programmes for poverty alleviation in the rural areas are presented below.

Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA)

The Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA), introduced in 2005, represents a constitutional commitment aiming to deliver livelihood security in rural areas by providing at least 100 days of unskilled manual work as a guaranteed wage employment in a year to all the households in rural areas that demand work (Babu *et al.*, 2014).The scheme is protective and preventive in nature as it provides employment to the poor rural households protecting their daily consumption needs and prevent them from further falling into poverty because of unemployment and lack of skills. Different wage rates prevail across states and are revised, whenever required. In most of the states these wages fall behind even the stipulated minimum agricultural wage rate of the state (Rengasamy and Kumar, 2011; DownToEarth, 2019).

MNREGA is of particular importance in rural area, where underprivileged households are concentrated, and their exploitation at social and structural level create divisions within the poor (Roy, 2015). Under MNREGA applicants are bestowed with the right to demand work, which is made to the Gram Panchayat (rural local authority). It is mandatory for the authority to return to an application by providing work within 15 days of application. If the demand cannot be met, an applicant is also eligible to get unemployment allowance (Babu *et al.*, 2014).

The scheme has evolved eminently since its inception. It is the largest rural development programme in India with an annual budget of USD 8.44 billion in 2019-20, compared to 1.6 billion in 2006-07 (McCord and Paul, 2019). It is also the biggest employment guarantee programme in the world employing 52 million people and creating 2.34 billion workdays in 2017-18. 128.5 million rural households are registered in the scheme and are eligible for work on demand (ibid). However, the implementation of MNREGA has always been questioned because of various challenges it faces. MNREGA's effectiveness is questioned because of poor administrative capacity and rampant corruption, especially in the states that by virtue of their poverty status are most in need of social protection policies (Sen, 2016).

Swarnjayanti Gram Swarozgar Yojana (SGSY)

The SGSY, again designed as a protective scheme, is a holistic program of rural development with emphasis on organizing the self-help groups among rural poor, and providing them with training, technology, infrastructure support, and credit and market linkages (RBI, 2000). The main aim of the scheme is to support the poor household's movement out of poverty by providing them sustainable opportunities for self-employment through both, bank credit and government subsidy (ibid). The Gram Panchayat selects poor families for enrolment in the program and form Self-help groups (SHGs) with 10-20 people. The District Rural Development Agencies (DRDA) provide training and income-generating assets to these SHGs to develop and strengthen savings and financial activities.

The enormity of poverty and inequalities among social groups arising due to various social norms and culture, as also discussed in chapter 3, stipulated government to focus on vulnerable groups. In order to ensure that benefits of the scheme reach the disadvantaged groups, it is specified that at least 50 percent of beneficiaries are from SC and ST categories, 40 percent of the coverage comprise women, and 3 percent disabled.

The Centre and state share the expenditure of SGSY in the ratio of 3:1. The subsidy is provided at 30 percent of the cost of the project and is subject to a ceiling of Rs 7,500 and 50 percent for SC and ST, subject to a ceiling of Rs 10,000. For group projects, the subsidy is 50 percent with a maximum limit of Rs 1.25 lakhs (Sundar and Angles, 2011).

Various studies indicated the positive social and economic benefits of the scheme to a significant number of households. Study conducted by Bori (2014) in Assam, India, showed that households were found to have increased saving, access to formal credit facilities and increased income. The study also showed that many households also experienced a fall in family debts, interest and dependence on money lenders. Another study conducted in West Bengal states that although SGSY is able to reduce acuteness of poverty, it fails to reduce a household's vulnerability to poverty (Kundu, 2011).

Pradhan Mantri Gramin Awaas Yojana (PMGAY)

The Pradhan Mantri Gramin Awaas Yojana (PMGAY), previously Indira Awaas Yojana (IAY) introduced in 1995 by the Ministry of Rural Development, was introduced to provide shelter to the rural poor. Under the scheme, which is protective in nature, financial assistance worth Rs 1,20,000 (Rs 1,30,000 in difficult areas) is provided for building houses. The scheme provides enhanced security to the women, as houses are registered in the name of the women or both husband and wife. Along with the financial assistance the scheme also provides the beneficiary with 90 days of unskilled labour from MNREGA and a facility of availing an optional loan of up to ₹70,000 for constructing the house (www.pmgay.nic.in).

It is the sole responsibility of the household to get the construction done. Additional financial assistance through "Total Sanitation Campaign" and "Rural Electrification Scheme" for the construction of toilets and smokeless stove, respectively can also be availed. Given that all these schemes fall in the domain of different ministries, the administrative inefficiencies in implementing these schemes hamper integrating the three together.

The scheme by its nature looks transformative. A house is an economic asset and contributes to social inclusion and sustainable communities. Security of having own home develops security, confidence and a huge incentive to overcome the difficulties of poverty. Improvements in housing condition leads to increased labour productivity (Sharma, 2011) and positive health benefits on nutrition, sanitation,

maternal and child health (Planning Commission, 2013). However, the inefficient implementation and targeting process of beneficiaries exclude many households from accessing the scheme (Samuel *et al.*, 2013).

Janani Suraksha Yojana (JSY)

Janani Suraksha Yojana (JSY), launched in 2005, implemented by the Ministry of Health and Family Welfare, is a safe motherhood intervention under the National Rural Health Mission (NRHM), introduced with the objective of increasing access to safe pregnancy and delivery services, and eventually reducing maternal and neonatal mortality (Carvalho and Rokicki, 2019). JSY is one of the largest conditional cash transfer programs in the world (ibid). This is a promotive scheme encouraging households to opt for institutional deliveries and build human capital. The scheme focuses on poor pregnant women, with special attention on states that show low institutional delivery such as, Uttar Pradesh, Bihar, Assam and many more (Rawat, 2012). Along with healthcare, this scheme also provides cash assistance to pregnant women to encourage them for institutional deliveries. Performance-based incentives are also provided to the health workers, known as Accredited Social Health Activists (ASHAs), for their role in facilitating institutional deliveries and spreading awareness about other health behaviours (Carvalho and Rokicki, 2019).

Even though rates of delivery in institutions have increased with time, there are inequalities, with rich women six times more likely to give birth in an institution than poor women (Banerjee *et al.*, 2017). Evaluations of the JSY showed that despite the increase in hospital deliveries, many women reported operational difficulties and out-of-pocket expenditures incurred at the facility (Sidney *et al.*, 2016). It was found that almost all pregnant women participated in the scheme and non-participation was often unintentional and caused by personal conditions, poor location and are also driven by a perception of poor quality of the facility providing healthcare services (ibid).

Public Distribution Scheme (PDS)

The Public Distribution System (PDS) is another protective scheme aiming at providing food grains to poor households at highly subsidised prices. Under PDS, established in 1997, the States are required to make transparent arrangements for identification of the poor, delivery of food grains to Fair Price Shops (FPSs) and its distribution (Rawat, 2012). The focus is mainly on the really poor and vulnerable sections of society.

Different prices for food grains prevail for different categories of poor, with poorest of the poor entitled to the food grains at the lowest price. Poor are classified according to a special food card, called ration card. There are three types of ration cards; Antodaya (poorest of the poor), BPL (below poverty line) and APL (above poverty line).

PDS is an important program of Government of India that takes care of food needs of poor households. However, identification of vulnerable households is a serious concern leading to non-deserving households being included in the beneficiary list and exclusion of deserving households. In a study conducted by the National Council of Applied Economic Research (NCAER), Chhattisgarh showed the lowest exclusion of the poor households at 2 percent, while Assam had the highest exclusion rate of 71 percent. 18 percent of the beneficiaries in Bihar and 47 percent in West Bengal were non-poor households, who, as per the eligibility criteria of the scheme were not eligible to participate (NCAER, 2015). Apart from this high amount of a corruption leads to leakages of food grain, mainly at the fair price level where some owners exchanged high quality grains provided by government with low quality grains from local stores (Gulati and Saini, 2015).

Even with all these drawbacks those who receive benefit from public distribution system continue to unanimously acknowledge the important role of the PDS in mitigating hunger (ibid).

National Social Assistance Scheme (NSAP)

The National Social Assistance Programme (NSAP) is a centrally sponsored scheme of the Government of India that came into effect from 15th August,1995. The scheme is protective in nature and aims at ensuring decent standard of living for disadvantageous group. NSAP comprises Indira Gandhi National Old Age Pension Scheme (IGNOAPS), Indira Gandhi National Widow Pension Scheme (IGNWPS), Indira Gandhi National Disability Pension Scheme (IGNDPS), National Family Benefit Scheme (NFBS) and Annapurna (www.nsap.nic.in). These schemes provide social assistance in the form of targeted cash transfers to elderly, widows, vulnerable families and differently abled individuals in the form of social pensions.

The NOAPS provides a monthly pension of Rs 200 to BPL people above the age of 60 and Rs 500 for age 80 and above. The eligible age for women in IGNWPS is 40 years and the pension is Rs 300 per month. After reaching the age of 80 years, the beneficiary gets Rs 500 per month. Under NFBS Rs 20000 is given as a one-time assistance to the household in the event of death of the main breadwinner. The State governments

are expected to top up the amount provided by the central government with any amount they want. However, there is a substantial difference in the amount different states add to the pension - Rs 200 per month in some states and Rs 1,800 or more in others (Jha and Nilachala, 2013).

It is true that these pensions would be an important source of income for vulnerable population. Many show how social assistance aside from supplementing the vulnerable with additional resources is actually reducing the vulnerability. Garroway (2013) in their study on pension in India found that estimated poverty among pension recipients declined by 2.68 percentage points due to the widow's pension. However old age pension showed contrasting results as there were no positive gains to its recipients. The amount, though small, proves useful to recipients as it means less dependence on the family and greater dignity and confidence (ibid).

Integrated Child Development Scheme (ICDS)

The ICDS Scheme, launched in 1975, was outlined for providing pre-school education and reducing malnutrition, morbidity, mortality and increasing their learning capacity. The Ministry of Women and Child Development implements ICDS throughout the country.

This scheme could be categorised as transformational in nature as it promotes safe childhood and empowers women and children for better future. This scheme was introduced to (i) improve health and nutrition of children below 6 years of age; (ii) setting a foundation for the holistic development of the child; (iii) reduce the occurrence of mortality, morbidity and school dropout; (iv) achieve efficient coordination among the various departments working towards the betterment of children; and (v) enhanced health and nutrition awareness for the mother (Rawat, 2012)

Studies have found that the among the rural women who participated in nutrition and health education conducted by ICDS had 12.3 percent higher instances of institutional delivery as compared to those who did not participate (Dixit *et al.*, 2018). However, nutritional status of children did not see any positive relation with the uptake of the scheme (ibid). Although this scheme is in its 41st year, there are still many malnourished children in India.

Rashtriya Swasthya Bima Yojana (RSBY)

Rashtriya Swasthya Bima Yojana (RSBY) is a government-run health insurance scheme established in 2008 for the poor households in India. The scheme is preventive in nature as it prevents households' from falling into poverty due to the out-of-pocket medical expenditure. Cashless health insurance cover is provided for hospitalisation in public as well as selected private hospitals. The beneficiaries under RSBY are entitled to hospitalization coverage of up to Rs 30,000 per year for a family of five, for all pre-existing and future diseases. Both public and private hospitals are eligible to participate in the scheme. The government has listed an indicative package rate for the hospitals for a number of interventions.

For people living in poverty, an illness not only reduces an individual's income generating capacity, but it can also result in a household falling into a debt trap. Due to the lack of access to finance the treatment could lead to preventable distress. Additional burden on the family in the event of death/ terminal illness may end up putting the poor into chronic poverty. Health insurance with very little premium from the poor can avoid such situations by providing timely cashless treatment and preventing household from resorting to distress sale of assets or borrowing with high interest rates.

RSBY protects poor people from falling into poverty in the event of health shock as most of the household resort to selling assets under such circumstances. However, the provision of healthcare is not sufficient to ensure better access. This is more important for rural areas where the number of private hospitals is less, and the government healthcare centres are not in good conditions. Moreover, many poor households get excluded from the program because of lack of supportive documents. Moreover, high out-of-pocket expenditure related to non-medical expenses for healthcare, not covered by RSBY still discourages a high proportion of households from availing the healthcare services (Dutta and Lahiri, 2015).

Pradhan Mantri Jan Arogya Yojana

Acknowledging the healthcare needs and growing concerns over high out of pocket expenditure, RSBY was extended into a new scheme called the Pradhan Mantri Jan Arogya Yojana (PM-JAY) that was launched in September 2018 with an aim of providing affordable and accessible healthcare to the poor. PM-JAY is the largest health assurance scheme in the world with an objective of providing a health insurance of Rs 5 lakhs per family per financial year for in-patient treatments to over 107.4 million poor and vulnerable

households, comprising approximately 500 million individuals. The households eligible for the scheme are based on the data collected in Census 2011 for both rural and urban areas (pmjay.gov.in). By its very nature this scheme falls into preventive category.

According to NSSO in-patient expenditure in India has increased by almost 300 percent between 2008 and 2018, and more than 80 percent of this is met by out of pocket expenditure (Ministry of Health and Family welare, 20AD). Out of pocket expenditure in India is over 60 percent leading to nearly 6 million households falling into poverty due to catastrophic health expenses (ibid). In light of this PM-JAY promises to have a big impact on the reduction of out-of-pocket expenditure in India protecting millions of families falling in poverty. PM-JAY is funded by the Government, whereas implementation cost is shared between Central and State Governments.

Apart from these major schemes designed by the government of India there are certain pilot-based schemes run by NGOs and International Organisations. Given the financial constraints these schemes are generally put in place for a short period of time. There are also community level schemes deigned by the poor themselves by pooling resources. Although this thesis will be mainly focused on long term social protection schemes, the role pilot schemes, and short-lived schemes play in the life of the poor cannot be ignored. Sometimes such short-term policies may act as a catalyst in facilitating movement out of poverty. Although to sustain that increase in livelihood continuous support from social protection is needed, not to forget the institution within which that support is provided forms the foundation for sustainability.

4.4 Social protection and Poverty Dynamics: Empirical Literature

In spite of growing importance of poverty dynamics in research, measures to deal with poverty ignores movements in and out of poverty and focus on reducing static poverty. Therefore, there is dearth of literature focusing on the long-term impact of social protection policies on poverty dynamics. In this section I try to explain the limited literature available on social protection policies and its impact on poverty dynamics. Most of the social protection policies are designed keeping poverty eradication as one of the major objectives. However, the empirical evidence on the effect of social protection policies on movements in and out of poverty show mixed results.

Using a nationally representative panel dataset of 5,260 rural households interviewed in 2011-12 and

2015, Ahmed (2018) found that substantial safety net transfers is a key factor in breaking persistent poverty and prevent households from falling into poverty in rural Bangladesh. The results showed that the size of safety net transfers mattered a lot. Regressions results showed that there was a significant reduction in the probability of households remaining in chronic poverty and the likelihood of falling into poverty when households received transfers of at least 1,500 taka per month. The model was run with various amounts of the transfer below 1,500 taka but saw a significant reduction in chronic and transitory poverty only when a monthly transfer of at least 1,500 taka was provided to the household. Along with this, the study also showed that women's empowerment was a critical factor determining movement out of poverty in rural Bangladesh, indicating that social protection policies targeted towards women empowerment could lead to significant gain in poverty reduction.

Another study in Indonesia using an ordered logit model on the National Socio-Economic survey balanced-panel data sets of 2005 and 2007 found out that food programs and health insurance programs did not have any significant impact on poverty dynamics (Dartanto and Nurkholis, 2013). The same study showed that households receiving microcredit had higher probability of being non-poor. Although they could not establish any statistically significant evidence in support of these policies altering the poverty status of a household (ibid).

Merttens et al. (2013) in their impact evaluation study of Kenya's Hunger safety net program found out that those who received social assistance continuously every month for two years are 10 percent less likely to fall in poverty then their counterparts. Using a randomised control trial approach, they also found that both, the poverty gap[13] and the severity of poverty[14] improve as compared to control households by 7 percentage points each. Households receiving benefit from the program saw an average increase of KES 247 per adult in their monthly consumption expenditure.

Bandiera *et al.* (2017) conducted a large-scale randomized control trial, on 21,000 households in 1,309 villages surveyed four times between 2007 and 2014 and evaluated a nationwide program in Bangladesh that transferred livestock assets and provided skills to the poorest women in the villages. In 2007, the poor women typically worked as casual wage labour, while wealthy women mainly reared livestock. The study

[13] Poverty gap shows how far on average a household is below a given poverty line.
[14] Severity of poverty gives more weight to poorer households

found that poorer women were enabled by the program to start engaging in livestock rearing leading to an increased aggregate labour supply and earnings. Four years after the transfer, ultra-poor women devoted 217 percent more hours to livestock rearing, 17 percent less hours to casual labour, and 26 percent fewer hours to maid services relative to their counterparts in control villages. There was a net positive effect of 17 percent and 22 percent on number of hours and days worked, respectively. Earnings of ultra-poor households were also 21 percent higher than their counterparts in control villages because of reallocation of labour supply across work activities. Moreover, the likelihood of being below the $1.25 extreme poverty line was 14 percent lower for ultra-poor households receiving asset transfers.

Literature on poverty dynamics have only limited studies looking at the impact of physical social infrastructure on poverty dynamics, however, no one negates the importance on infrastructure for poverty eradication. Sawada et al. (2014) in their study evaluated the role of irrigation infrastructure in reducing poverty dynamics by regulating water availability across seasons in Sri Lanka. They collected household level panel data every month over a period of two year. The results from the propensity score matching method showed that with accessible irrigation, the per capita income and the per capita food and non-food consumption expenditures increased by 17.8 percent, 12.2 percent and 37.6 percent, respectively, compared to the control group. It was also seen that irrigation improved household access to credit, further contributing in reduction of transient poverty.

Traditionally the impact of social protection programs is measured by assessing the difference in household income of the beneficiary before and after the scheme has been put in place. However as described in detail in previous chapters income or consumption is just one way of assessing a household's well-being. Poverty is multidimensional; therefore, emphasis should be placed on analysing the implication of social policies on poverty dynamics with a focus on multidimensionality of poverty too.

A study by Borga (2020) examined the impact of three large-scale social protection schemes, the Productive Safety Net Program (PSNP) in Ethiopia, the Mahatama Gandhi National Rural Employment Guarantee Act (MNREGA) in India, and the Juntos conditional cash-transfer program in Peru using multidimensional poverty measures. The findings suggest that multidimensional poverty declined in all three countries between 2006 and 2016, and the decline was more for participants than non-participants. While PSNP participants in Ethiopia experienced a decrease in the multidimensional headcount ratio by 17 percentage

points, households covered by MNREGA in India experienced a decline in the multidimensional headcount ratio by 8 percentage points. The study also showed that all indicators of multidimensional poverty showed a larger decline for participants than non-participants.

Lack of panel data limits the number of studies on the impact of social protection policies on poverty dynamics, especially in developing countries. Nevertheless, the literature on social protection and its impact evaluation provides important insights into the potential role of social protection policies in tackling the cause of chronic and transient poverty (Barrientos and Niño-zarazúa, 2011). This gives me an opportunity to look into the long-term impact of social protection policies on poverty dynamics in India. My work also adds to the growing literature by going beyond looking at the impact not only on the consumption poverty dynamics but also multidimensional. In my understanding, this is the first study in India to study the implication of social protection policies on poverty dynamics using multidimensional poverty indicators.

4.5 Conclusion

India has come a long way in terms of poverty eradication; however, transient poverty is still a major cause of concern for India. Social protection policies in India have largely been preventive and promotive in nature neglecting the structural limitations in the system. Although risk and vulnerability are very important factors determining poverty dynamics, structural factors that make a household stay non-poor once they are out of poverty also play an important role. Therefore, it is important for policy makers to focus on correcting the structural issues in the system along with providing mechanism for risk mitigation.

Social protection policies reviewed in this chapter, have reported achievements in tackling poverty and facilitating households in accumulating human, financial, physical, and social capital, and therefore addressing multiple causes of poverty. However, there are a number of drawbacks in the current form of social protection framework. First, the focus has mainly been on smoothening the consumption expenditure of the poor through the provision of cash transfers and other social assistance programs (Moser and Dani, 2008). Second, instead of focusing on multiple dimensions they tend to focus on one or two dimensions at a time (Moser and Stein, 2011). For instance, while MNREGA helps in creation of jobs it is not enough to bring poor out of deep poverty given its meagre wages and irregularities in the availability of work. Similarly, the focus of PDS and JSY has been on human capital formation through provision of

better nutrition and safe motherhood, but for the long-term benefit, an integrated approach creating an environment that generates income earning opportunities for these households to get a higher return on accumulated human capital is necessary. Social protection policies have also neglected the social risks arising from the exclusion of the poor households from getting access to services and opportunities (Sabates-Wheeler and Devereux 2008). Third, evaluation of social protection program has mainly focused on achieving the outcome of reducing poverty, but rarely do they study the alteration in the structural factors leading to poverty and vulnerability. In particular, it is important to recognise the circumstances under which social protection policies can challenge the society that generates poverty and vulnerability (Babajanian, 2012).

Chapter 5: Data and Methodology

5.1 Introduction

Analyses of poverty and its components in India mainly rely on the large-scale annual consumption expenditure sample surveys conducted by the NSSO (National Sample Survey Organisation). This hitherto standard analysis, although provides useful information for continuous monitoring of national progress and the characteristics of poor people at a given point in time, it does not provide insights into dynamics of poverty. It is important to track same households over a period of time to understand the factors that determine movements in and out of poverty. The unavailability of nationally representative panel datasets prevented researchers from studying the circumstances or events that lead to the increase in the probabilities of exiting poverty or entering in it? Availability of IHDS data, which is nationally representative and track same households over a period of time has made studying poverty dynamics possible for India.

At the same time, no matter how extensive the quantitative data is, it is important to gather on the ground realities and people's perception with respect to the question under study. We cannot do justice with any research on development without employing qualitative research tools, which are essential for answering the 'why' and 'how' questions. Quantitative research tells us a great deal about 'what' is happening but that may not be adequate for us to comprehend the reality we are investigating. Qualitative analysis is a way of studying stakeholders systematically, allowing observational interpretation while also looking for causality between variables (Devereux et al., 2013). The information gathered from these interviews largely indicates the processes of poverty dynamics and its relation to various social and economic agents. It also provides important background information that helps in the interpretation of the results from quantitative data.

Section 5.2 introduces IHDS dataset which is used for my empirical analysis in this thesis. Section 5.3 provides detailed descriptive comparative analysis for both consumption and multidimensional poverty dynamics. Section 5.4 explains the qualitative methodology used in this thesis, section 5.5 discusses in detail the wealth ranking exercise conducted to select households for qualitative analysis, and section 5.6 concludes this chapter.

5.2 Quantitative Data

This study uses the India Human Development Survey (IHDS) Data, which is a nationally representative survey jointly administered by University of Maryland and NCAER (National Council of Applied Economic Research), India. The survey collects detailed information on multiple topics ranging from socioeconomic and demographic indicators, health, education, assets, livelihood, income, and consumption expenditure. The surveys were conducted in 1993-94, 2004-05 and 2011-12. The first survey, called the Human Development Profile of India (HDPI), was conducted in 1993-94 solely by NCAER without the consideration of creating panel data by conducting future rounds of surveys. While the data has now been placed in the public domain, there are considerable data gaps, and no technical assistance is provided.[15] Moreover, only 33 percent of the households surveyed in 2004-05 were surveyed in 1993-94. Inadequate information available for 1993-94 and high attrition rate between the two surveys discouraged me from using HDPI for my empirical estimation. In 2004-05, IHDS-I interviewed 41,554 households comprising 215,751 individuals residing in 1,503 villages and 971 urban blocks from states and union territories all over India. The same households were again contacted in 2011-12 for IHDS-II, with a high re-contact rate of 83 per cent. Re-contact rate for rural households was 91.2 percent as compared to 72 percent for urban blocks.

High re-contact rate of IHDS-1 households in IHDS-2 provided India's first large-scale nationally representative panel data of over 40,000 households. IHDS I and IHDS II are available in public domain separately. The two datasets are merged to create the panel data used in this study. The final dataset contains 40,018 households, 28,117 rural and 11,901 urban, that were surveyed in both the rounds.

Sampling[16]

IHDS is a nationally representative data of the households of rural and urban India selected from villages and urban blocks that form the primary sampling units of the survey. Different method of sampling households has been used for rural and urban blocks. Using probability proportional to population (PPP) method urban sample of towns and cities within states were selected. Number of blocks within a state were listed in the order of their population size and sample blocks were selected based on probability

[15] https://ihds.umd.edu/data/hdpi-data
[16] https://www.icpsr.umich.edu/web/pages/DSDR/ihds-II-data-guide.html#sample

proportional to size (Desai *et al.*, 2010). Using the household information from Office of the Registrar General of India the blocks were randomly selected after the number of blocks to be selected in each urban area is determined. From these blocks consisting of 150-200 households, a random sample of 15-20 households were selected for the survey.

Stratified random sampling technique was used to draw rural sample consisting of three set of households. The first set of households comprises all households surveyed in 1993-94 for HDPI. From the HDPI survey, that had 33,230 households, about 11,153 households were interviewed again in IHDS I, and 2440 split households that could be traced in the same village were also interviewed. The second set of households were drawn from the districts surveyed in HDPI as well as districts in states not covered under HDPI (The Asia Dialogue, 2011). Using Probability to proportional size sampling, villages from these districts were selected and 20 households from each village were interviewed. Comparing households from set one to set two it was found that variables such as caste, religion and economic status in the re-interviewed sample do not substantially differ from the fresh sample (ibid). The third set of 3,993 households were randomly drawn from districts that were not considered for HDPI in 1993-94.

IHDS II re-interviewed 40,018 households from the IHDS-I. As some households from IHDS I were lost because of attrition additional 2,134 households were selected for IHDS II. Merging IHDS I and IHDS II provides a nationally representative panel data of over 40000 households.

As mentioned earlier, households that could not be traced mostly belonged to urban areas. At rural level, panel attrition is very small and should not cause any problems to my estimates as my analysis is purely based on rural households. Nevertheless, table 5.2.1 lists the attributes of household level attrition from IHDS-1 for rural households. The loss of sample was higher among households belonging to high consumption expenditure quintile and therefore for households that were not poor in 2004. However, the loss of sample for each asset quintile do not show any systematic difference. Households with a smaller number of members found it much easier to migrate and maximum attrition was seen among Schedule tribe households followed by general category. At the same time attrition is high among households where main source of income is non-agricultural.

Table 5.2.1: Analytical Sample vs Attrition

	Analytical sample (Percent)	Attrition (Percent)
Consumption quintile		
0-20	92.6	7.4
20-40	92.54	7.46
40-60	91.88	8.12
60-80	90.9	9.1
80-100	87.95	12.05
Poverty Status		
Non-poor in 2004	90.37	9.63
Poor in 2004	92.49	7.51
Asset quintiles		
0-20	91.53	8.47
20-40	91.19	8.81
40-60	90.74	9.26
60-80	91.32	8.68
80-100	91.07	8.93
Household Size		
1-2	74.51	25.49
3-5	89.42	10.58
6-8	95.09	4.91
More than 9	97.8	2.2
Caste		
Other Backward Class (OBC)	92.1	7.9
Schedule Class (SC)	92.16	7.84
Schedule Tribe (ST)	88.31	11.69
General	89.72	10.28
Main source of Income		
Cultivation and allied agriculture	93.71	6.29
Agriculture labour	90.55	9.45
Non-agriculture labour	91.09	8.91
Petty trade and artisans	90.09	9.91
Salaried and professionals	89.69	10.31
Pensioners	82.65	17.35

Source: Author's calculation using IHDS 1

As mentioned earlier, households that could not be traced mostly belonged to urban areas. At rural level, panel attrition is very small and should not cause bias in my estimates. Nevertheless, no matter how small the attrition bias could be, effort should be made to find out if the attrition is occurring at random when factors affecting attrition are observable. Therefore, I conducted an Attrition analysis wherein I examined whether attrition is affected by the households' characteristics from IHDS I. Results from probit analysis is presented in table 5.2.2. If variables in the final analysis are related to attrition, it is unlikely that attrition occurred completely at random (Young and Johnson, 2015). In my analysis except number of members in the family and dependent children none of the variables are significantly impacting attrition. Moreover, the only two variables significantly impacting attrition show low magnitude and are significant only at 10

percent level of significance. The analysis indicates that attrition should not be a major concern for my panel sample as mostly attrition appears to be at random.

Table 5.2.2: Analysis of Attrition of Rural Households in IHDS I

	Attrition=1
	Coefficient
Age of head of the household	0.005
Number of members in the family	-0.004*
Number of children (0-14) in the family	0.085*
Total Physical Assets	0.005
Highest adult education	0.005
Source of income-Labour work	0.045
Livestock	-0.020
Caste- Brahmin	0.000
Caste-OBC	-0.167
Caste-SC	-0.128
Caste-ST	-0.109
Number of hours electricity available	-0.023
Availability of Bus service	0.002
Post Office in the Village	-0.020
Constant	-1.152***
State Fixed Effects	Yes
Observations	24960
Pseudo R2	0.088
chi2	625.9

*Significant at 10 percent level, **Significant at 5 percent level, ***Significant at 1 percent level

Comparison with other datasets

IHDS is not the only survey that provides extensive information on socio-economic characteristics of households and its members in India. National Sample Survey (NSS) and National Family Health Survey (NFHS) are two of the most used large scale surveys datasets in India. Indian policy making has largely been dependent on NSS as it provides information on poverty and employment through repeated cross-section surveys. The NFHS surveys on the other hand follow the Demographic and Health Surveys and collects essential data on health and family welfare in India with additional questions on gender and sexual behaviour. These surveys although provide useful starting point of estimating poverty and related variables they fail to provide a snapshot of poverty dynamics as the households are not traced over a period of time. The advantage of using panel data is that it eliminates the impact of time-invariant unobserved characteristics on the outcome variable, providing a robust finding (Hausman and Taylor, 1981). For each

round of NSS new households are sampled failing the opportunity of creating panel data. These cannot provide information on who moved out of poverty and how many remained poor over time. It also fails to understand the reason behind those that fell in poverty.

To check the reliability of IHDS data set, the common figures relevant for this study such as poverty rate, consumption expenditure, access to amenities etc. are compared with NSS. Comparison with NFHS was not possible as no NFHS survey was conducted in the year 2011-12. Table 5.2.3 below provides assessment of the quality of IHDS data by comparing it with NSS in the same years of survey.

Table 5.2.3: Comparison of IHDS with NSS

	NSS 2004-05	**IHDS-I 2004-05**	**NSS 2011-12**	**IHDS-II 2011-12**
Percent Urban	25	27	29	32
Average per capita consumption-rural	560	656	1430	1618
Average per capita consumption-urban	1052	1141	2630	2623
Poverty rate-rural	41.8	42.8	25	22
Poverty Rate-urban	25.7	29.7	13.7	12.6
Poverty Rate- Total	37	38	21.9	21
Percent literate	67	68	75	73
Work Participation	55	49	55	51
Social Caste:				
SC	41	42	44	43
ST	20	21	19	22
OBC	9	7	9	8
Others	31	30	28	27
Amenities				
Households with electricity	65	71.3	80	83
Piped water	41	40	44**	44
LPG used for cooking	22	33.2	32	34
Households have access to toilets	19.2	22.7	47**	51

Source: Author's calculation using IHDS I IHDS I and NSS 2004-05 and NSS 2011-1.

** Because of unavailability of these figures in NSS 2011-12 data from Census 2011 has been used.

The average consumption expenditure for both NSS and IHDS show small differences although difference of approximately Rs 200 is seen between average per capita consumption expenditure between rural households in IHDS and NSS for 2012. This difference can be attributed to the difference in the information available on consumption expenditure in NSS and IHDS. IHDS asked a series of 47 questions on consumption that were modelled and tested in the employment and unemployment section of NSS (ICPSR, 2012). NSS, on the other hand collects information on expenditure made on more than 400 consumables

and services. Moreover, about half the households in IHDS were surveyed in the second half of 2012, the period that was hit by high inflation (NCAER, 2016). At the same time, collection of data in NSS 2011-12 got over by 30th June 2012. This may justify the higher average monthly consumption expenditure incurred by IHDS households compared to the NSS households. Overall, taking urban and rural households together it can be said that the consumption distribution broadly matches between IHDS II and NSS 2011.

It was also found that the national estimates of poverty (Headcount ratio) based on IHDS are similar to the estimates of poverty from NSS. Estimates of poverty rate using NSS data was 37 percent in 2004–05 and 22 percent in 2011–2012, which compares well with IHDS poverty estimates of 38 percent and 21 percent in 2004-05 and 2011-12 respectively. A slight variation is seen when comparison is made between rural and urban poverty rates, which is attributed to the variation in consumption expenditure reported in NSS and IHDS in 2011-12.

The IHDS 2004-05 show higher percentage of households having access to electricity and LPG gas for cooking than the NSS 2004-05, but this difference faded in 2011. Mostly, IHDS estimates appear to be consistent with NSS estimates. However, it is important to keep into consideration that overall similarities between IHDS and NSS data remain robust only at the national level as the NSS sample is significantly larger than IHDS and, therefore requires caution in assessing state-level estimates (Desai *et al.*, 2010).

NSS and NFHS fail to collect extensive information on social protection schemes under study. For example, the survey does not ask any question about national old age pension or Janani Suraksha Yojana, though information is collected about MNREGA and PDS. To my knowledge IHDS is the only nationally representative data set that collects comprehensive information on many social protection schemes together. This further substantiates the reason to choose IHDS over other available datasets. Comparisons between IHDS-I and IHDS-II in terms of participation in social protection programs makes it possible to evaluate the implication of these programs on poverty dynamics.

All data sets across the globe come with some caveats that must be taken into consideration while choosing to work with them. Depending on the research motive and requirements of the research design, datasets need to be chosen and interpretation of variables under consideration have to be made. I feel, IHDS dataset serves the panel data requirement and availability of information on multiple social protection schemes for all households over a period of time gives IHDS an upper hand over other dataset. Credibility of the dataset,

of course, is maintained as the results from IHDS are in line with NSS.

Key Variables in the IHDS dataset

The key variables that are relevant for this thesis are poverty status estimated using consumption-based poverty line and per capita consumption household expenditure, multidimensional poverty, participation in various social protection schemes, asset ownership, health, and education.

Consumption expenditure: As mentioned earlier, IHDS administered a shorter consumption module than NSS for 47 items that include information on expenditure made on food, health, education, housing, transport etc. Total expenditure on such items is considered as a reliable measure of economic status of households. 30 items with higher purchase frequency used a 30-day recall period while the remaining 17 items used 365 days recall period. IHDS constructed a variable called 'copc' that reports expenditures on a monthly basis, so items with 365-day recall were divided by 12 before being summed in the final variable (Desai, Dubey and Vanneman, 2015). Although consumption expenditure has been used as a measure of standard of living for many years, the fact that each consumption item is measured with some error can't rule out the possibility of measurement error in consumption expenditure (Hulme and Shepherd, 2003). It is also exposed to variations occurring from temporary alterations made in consumption due to agricultural season, contingencies, other commitments etc. All consumption surveys are prone to such measurement errors. Reasonable similarity between NSS and IHDS data although gives us a reason to believe in the quality of data.

Asset ownership: IHDS gathered information about physical assets household owned and the quality of the housing. Such kind of information reflect long-term economic status of the household in place of income or consumption. A variable called "hhassets" is constructed that sum 30 dichotomous items measuring asset endowment and quality of housing. It ranges from minimum zero to maximum 30 items per household, with an average of 12.25 items and standard deviation of 6.25. Simply adding the number of items was chosen as the most appropriate measure for using it as a comparison to other similar scales and for subsequent comparisons to other rounds of IHDS.[17] Principal Component Analysis is another method that is widely used to create an asset index. When an asset index was created using PCA from IHDS dataset

[17] https://ihds.umd.edu/household-assets

the correlation between this index and the one constructed earlier is close to 0.9. Also, the "hhassets" has a Cronbach's reliability coefficient[18] of 0.914 (Desai, Dubey and Vanneman, 2015).

Simply summing up the assets has the virtue of simplicity, but also has the limitation of assigning equal weight to each asset (Moser and Felton, 2007). However careful consideration is given to this, and items are modified and dropped to get a reliable asset index. Three items were dropped because they significantly reduced the reliability coefficient. Dropped assets were 'owning a generator'; 'excrement found in the vicinity; and 'standing water in the vicinity'. Modification to four items were made because they were less expensive alternatives for other items: 'air coolers' (vs. air conditioners); 'black and white TV' (vs. coloured); 'motor scooter' (vs. an automobile); and 'a bicycle' (vs. a scooter or automobile). If more expensive alternative is owned (e.g., scooter), then the less expensive item (e.g., bicycle) was recoded as owned (Desai, Dubey and Vanneman, 2015). If these modifications are not made, the less expensive items did not scale well; either the household was too rich or too poor to possess any (ibid).

Poverty: IHDS provides a measure pf poverty based on the monthly per capita consumption expenditure and the official poverty line provided by Planning Commission. Poor is a binary variable indicating whether the household is below the poverty line or not. The poverty line varies by state and sector of residence. Planning Commission recognized the advantage of multidimensionality of poverty and started calculating poverty lines based on consumption of food items, intoxicants, fuel and light, clothing, footwear, education, medical (non-institutional and institutional), entertainment, personal goods, miscellaneous goods and services (Rath, 2010). Multidimensionality was acknowledged but only from expenditure side and it continued estimating poverty based on consumption expenditure data. Other dimensions such as lack of education, poor health, poor quality of work, poor housing quality etc are completely ignored. Using IHDS dataset consumption poverty in year 2004 was 38 percent and 22 percent in 2011.

Health and education: Health and education form the main component of multi-dimensional aspect of household's welfare. The questionnaire for health and education in IHDS was mostly administered to the spouse of the head of the household. Information on fertility, marriage, and gender relations in the households was collected from an ever-married woman between 15 and 49 in the household (Desai, Dubey and Vanneman, 2015). At the same time, height, and weight measurement of children under age 5, aged 8–

[18] Cronbach's alpha is a measure of internal consistency, i.e., how closely related a set of items are as a group

11, their mothers, and other available household members were recorded. Further, information on education pattern of all children and adult members of the household is also collected in the survey.

Participation in Social Protection Schemes: The IHDS collected information on household level consumption of food grains through **PDS,** and individual level participation in **Old age and widow pension** scheme, Janani Suraksha Yojana (**JSY**), and **MNREGA**. Since MNREGA and JSY were implemented after IHDS-I was administered it provides a baseline for our study. Although, PDS and pension schemes were already in place, significant modifications were made to extend their coverage after 2005.

Multidimensional Poverty: The IHDS data available in public domain already has a variable for consumption poor households. However, to identify the multidimensionally poor households this study uses the Alkire Forster Methodology, discussed in detail in Chapter 6. This methodology identifies dimensions and corresponding indicators of deprivations faced by households to construct a weighted score of deprivation for each household. This deprivation score identifies household as multidimensional poor if they suffer deprivation in more than one-third of the weighted indicators. This technique is a flexible technique of measuring poverty as dimensions and indicators can be chosen based on country specific contexts and weights can be assigned based on the priorities set by policy makers. For India, the selected dimensions and corresponding indicators comprise of; health, measured by malnutrition and morbidity status of members of the households; Education, measured by education level of children and adults in the households; standard of living, measured by availability of safe drinking water, sanitation, safe cooking fuel and quality housing; and assets and livestock owned by households. Using IHDS dataset proportion of people who were identified as multidimensional poor in 2004 was 62.6 percent, and 48.4 percent in year 2011.

5.3 Comparative Analysis: Consumption Poverty and Multidimensional Poverty

In this section I compare the dynamics of consumption and multidimensional poverty between the two time periods. Before comparing the dynamics between the two measures of poverty it is interesting to see the extent of overlap in the households identified as poor by both measures of poverty. It is found that approximately 60 percent of the sample was both multidimensional and consumption poor and approximately 40 percent of the sample households show mismatch between two poverty status in 2004

and 2011. It is also found that approximately 33 percent of households identified as multidimensional poor are not consumption poor. This is partially attributed to the obvious difference between how poor is identified in the two poverty measures and partly due to measurement errors.

Coming back to the dynamics of poverty I find significant difference in the dynamics between the two measures of wellbeing. Table 5.3.1 depicts the trends in poverty dynamics for both consumption and multidimensional poverty between 2004 and 2011. In contrast to 12.56 percent rural households that face chronic consumption poverty, 41.13 percent households face chronic multidimensional poverty indicating that multidimensional measures are rather stubborn to change in short term. It also indicates the poor standard of living of the households in rural India. It is also observed that consumption-based poverty shows more dynamics in terms of proportion of households changing poverty status between the two time periods. 34.5 percent households moved in or out of consumption poverty as compared to 28.8 percent movement in or out of multidimensional poverty.

Table 5.3.1: Consumption and Multidimensional Poverty Indices

		Consumption Poverty (2004)	
	Poverty Status	**Poor**	**Non-poor**
Consumption poverty (2011)	**Poor**	12.56	26.14
	Non-Poor	8.36	52.94
		Multidimensional poverty (2004)	
	Poverty Status	**Poor**	**Non-poor**
Multidimensional Poverty (2011)	**Poor**	41.13	21.49
	Non-Poor	7.33	30.04

Authors calculation using IHDS I and IHDS II

When comparing trends between two poverty measures it is exciting to see the overlap and the mismatch between consumption and multidimensional poverty between 2004 and 2011. 11 percent of the households that moved in multidimensional poverty in 2011, as their weighted score of deprivation increased, also fell in consumption poverty, and 10 percent of those that moved in consumption poverty also became more deprived and eventually fell in multidimensional poverty. At the same time, only 26.6 percent of the households that became consumption non-poor in 2011 also became multidimensional non-poor, and close to 50 percent remained multidimensional poor.[19] This mismatch between the trends in

[19] These findings pose a dilemma for policy makers as the two measures of poverty do not seem to be moving together. To assess this further, it is important to understand the factors that affect these measures independently. Are there any factors that presumably be affecting one measure of poverty but not other? This question is further explored in detail in Section 7.4 in chapter 7.

poverty for the two measures suggests that knowing trends in household's multidimensional poverty status between 2004 and 2011 does not provide any insight on the pattern of household's consumption expenditure, and vice versa.

The above comparison between movements in and out of poverty for both consumption and multidimensional poverty does not show the intensity of poverty. The stark difference in the dynamics between consumption-expenditure per capita and the deprivation score of a household is demonstrated in figure 5.3.1 and 5.3.2.

Figure 5.3.1: Per Capita Consumption Expenditure, 2004 and 2011

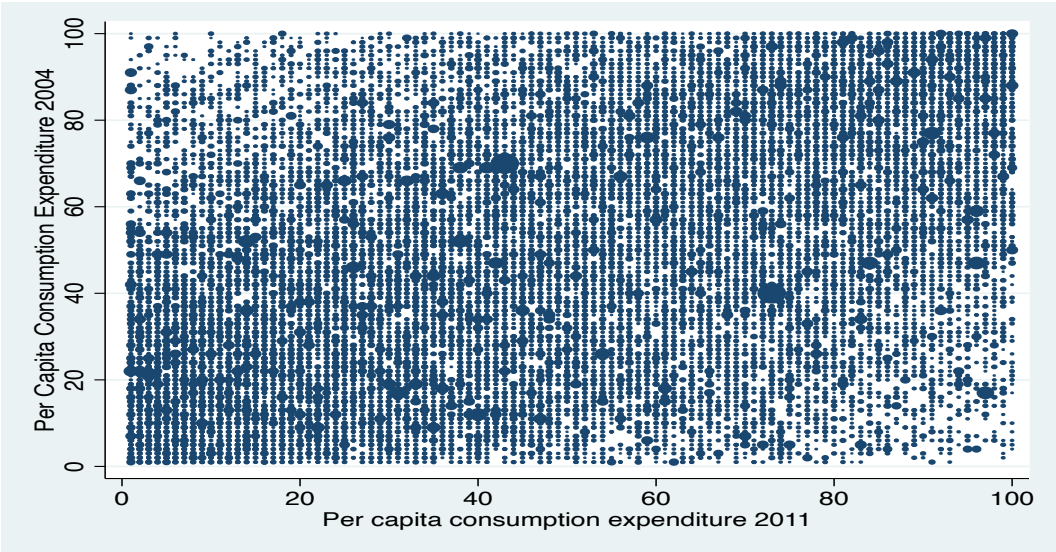
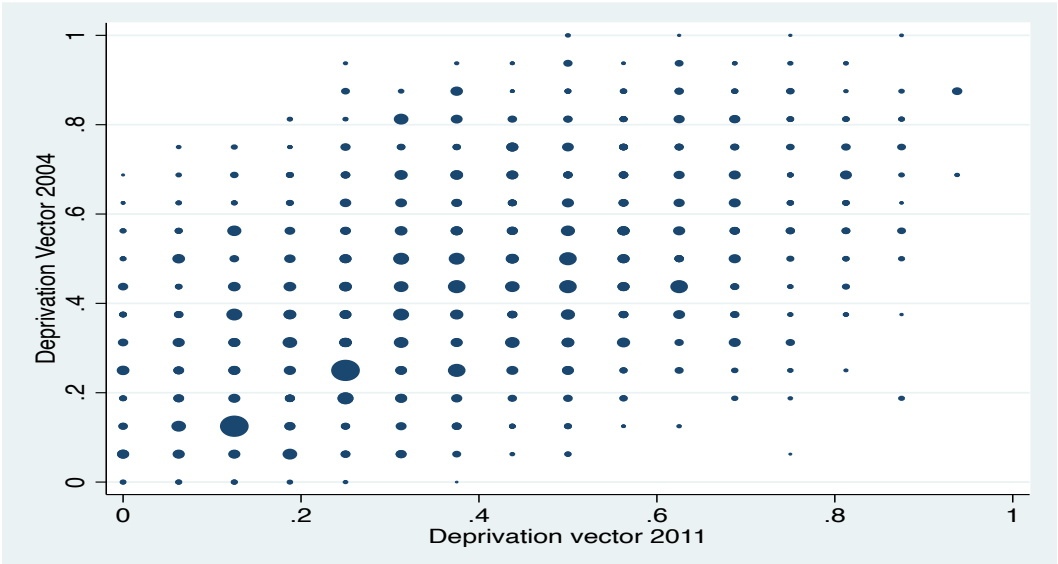


Figure 5.3.2: Deprivation Scores 2004 and 2011



The plot of consumption expenditure is widely scattered, and substantial variation is observed even though

many households hover around the 45-degree line. This indicates the volatility of consumption expenditure over a short period of time as against a rather consistent nature of deprivation score in figure 5.3.2 where the scatter plot of deprivation score is significantly more concentrated at the 45-degree line. Figures 5.3.1 and 5.3.2 also suggest that deprivation score in 2004 is more indicative of deprivation score in 2011. The correlation coefficient of deprivation score between the two time periods is 60 percent as compared to 40 percent correlation between the consumption expenditure in two time periods. Correlation however does not mean causation. Of course, there are other factors that lead to changes in poverty status of households. This is later strengthened by conducting regression analysis in this thesis.

In this sub-section, I make a further comparison between poverty dynamics of multidimensional poverty and monetary poverty as revealed in the Indian Human Development Survey's (IHDS) data set for 2004-05 and 2011-12. Using this data set, households are divided into four categories according to their movements in and out of poverty. Separate categories are made for transitions in multidimensional poverty and monetary poverty. There are four categories of poverty transitions; chronic poor: those who remained poor in both periods, transient poor (+): those who have moved out of poverty, transient poor (-); those fallen into poverty and, never poor: those who were not poor in both time periods. Table 5.3.2 presents descriptive statistics of households in each of the four categories for both consumption and multidimensional poverty. Below I present the comparison across categories of poverty dynamics for household and village level characteristics.

Household demographics: It is observed that not much disparity is seen between the average age of the household heads amongst four categories of households both for consumption and multidimensional poverty. This indicates that age of the head of the households does not determine dynamics in poverty. There is an overall decline in the number of members in the family in the two time periods but the households that made a movement out of consumption poverty show a substantial fall in the number of members. On the other hand, households that became multidimensional poor in the second period showed decline in the number of members. The difference in the way household size behave for two measures of poverty is attributed to the difference in identification strategy of poor in both measures. Lower household size would mean less burden on the family in terms of per capita consumption expenditure made. At the same time, lower average household size for multidimensional poor households could be because of mortality which is also one of the dimensions of multidimensional poverty index. Dependency ratio,

depicted by the average number of children aged 0-14 in the households show similar pattern. Another pattern that stands out in descriptive analysis is that the female head of the households are associated with movement in poverty for both consumption and multidimensional poverty.

Table 5.3.2: Descriptive Statistics, Percentage of Households in Each Poverty Category

	Never Poor		**Chronic Poor**		**Non-Poor Now**		**Poor Now**	
	MD*	**Cons.***	**MD***	**Cons.***	**MD***	**Cons.***	**MD***	**Cons.***
Percentage of Household	30	53	41.13	12.5	21	26.1	7.33	8.4
Demographic Variables								
Average Age of head of the household 2011	52.0	50.54	47.22	50	49.7	47.82	48.27	49.25
Average Age of head of the household 2004	50.88	48.61	46.26	46.47	46.86	47.92	51.33	48.49
Average Household Members 2011	5.19	4.55	4.58	5.84	5.18	4.83	4.45	5.74
Average Household Members 2004	6.31	5.49	5.67	6.59	5.77	6.79	6.85	5.54
Average number of Children in the house 2004	1.26	1.14	1.67	2.39	1.44	1.49	1.45	2.21
Average number of Children in the house 2011	1.8	1.6	2.2	2.7	2.03	2.6	2.07	1.7
Female headed household 2011 (%)	11.36	14.62	16.93	12.86	13.35	14.29	15.72	15.56
Female headed household 2004 (%)	7.03	9.42	10.40	7.32	10.05	8.98	6.10	8.80
Education and Livelihood								
Average number of years of education 2011	10.7	8.17	3.6	4.82	8.35	5.95	6.34	5.77
Average number of years of education 2004	10.08	7.33	3.36	4.26	5.76	5.4	8.35	5.2
Agricultural/Non-agricultural Labour 2011 (%)	20.77	32.38	57.06	57.09	38.14	47.77	42.56	50.55
Agricultural/Non-agricultural Labour 2004 (%)	18.39	29.63	53.3	52.76	40.2	47.47	27.72	40.84
Salaried 2011(%)	55.39	71.78	17.31	5.11	21.98	18.34	5.32	4.78
Salaried 2004 (%)	57.90	75.8	18.02	4.88	17.51	13.45	6.56	5.89
Assets and livestock								
Average number of assets 2011	17.09	14.19	7.95	7.92	13.47	10.53	10.09	9.34
Average number of assets 2004	14.01	11.13	5.96	5.95	8.55	7.45	10.19	7.82
Livestock 2011 (%)	54.12	41.52	24.06	32.62	54.96	40.60	21.02	33.76
Livestock_2004 (%)	63.79	46.75	27.78	35.5	33.13	39.40	73.28	42.91
Land ownership 2011	36.25	29.75	16.97	21.01	30.46	21.90	19.26	20.59
Land ownership 2004	44.80	36.40	22.04	25.94	30.01	26.71	39.84	28.45
Loan/Savings and shocks								
Loan taken in last 5 years (%)	57.95	60.76	58.26	54.71	65.20	61.61	57.09	53.07
Savings in last 5 years (%)	73.16	63.82	50.98	54.60	63.82	61.23	54.52	48.13
Major illness in last 5years (%)	28.02	31.39	28.90	20.68	29.80	31.06	31.63	20.36
Lost job in last 5 years (%)	3.29	3.04	2.17	2.06	3.26	2.69	2.27	2.19
Crop Failure (%)	23.39	23.16	20.86	21.48	24.90	23.29	20.76	17.19
Loan taken in last 5 years (%)	57.95	60.76	58.26	54.71	65.20	61.61	57.09	53.07
Savings in last 5 years (%)	73.16	63.82	50.98	54.60	63.82	61.23	54.52	48.13
Major illness in last 5years (%)	28.02	31.39	28.90	20.68	29.80	31.06	31.63	20.36
Lost job in last 5 years (%)	3.29	3.04	2.17	2.06	3.26	2.69	2.27	2.19

Table 5.3.2: Descriptive Statistics, Percentage of Households in Each Poverty Category …. continued

	Never Poor		Chronic Poor		Non-Poor Now		Poor Now	
	MD*	**Cons.***	**MD***	**Cons.***	**MD***	**Cons.***	**MD***	**Cons.***
Percentage of Household	30	53	41.13	12.5	21	26.1	7.33	8.4
Caste and social network								
SC_ST (%)	18.67	25.38	45.86	54.75	33.55	39.5	31.42	40.00
Social network_2011 (%)	64.45	61.06	50.38	53.11	64.65	55.99	51.27	49.34
Social network_2004 (%)	43.12	41.95	31.54	29.24	40.23	30.86	37.88	40.77
Well Connected	60.3	48.25	28.06	25.89	45.34	38.00	39.0	33.0
Infrastructure and amenities								
Average number of hours electricity available 2011	14.11	13.42	12.88	13.61	13.17	13.20	12.64	13.21
Average number of hours electricity available 2004	13.52	10.74	5.15	5.63	9.31	7.22	9.34	7.06
Bus service 2011 (%)	65.48	63.41	53.61	50.28	63.45	56.66	55.06	55.33
Bus service 2004 (%)	54.79	53.28	44.41	42.32	54.08	47.54	47.22	46.16
Village accessible by pucca road 2011 (%)	90.54	88.21	84.13	82.71	87.26	87.44	88.34	84.19
Village accessible by pucca road 2004 (%)	68.22	63.78	55.21	53.04	62.10	61.42	63.82	56.69
Post Office in the village 2011(%)	56.96	56.29	49.31	44.49	55.59	50.93	49.00	50.04
Post Office in the village 2004 (%)	54.41	55.21	48.59	42.95	53.55	48.78	47.98	47.52
Access to Social Protection Schemes								
Household member worked in MNREGA (%)	13.89	19.91	29.95	33.90	27.80	27.57	22.08	24.91
Household received pension 2011(%)	11.93	15.06	19.28	19.48	17.03	16.66	18.92	20.97
Household received pension 2004(%)	3.65	4.00	5.53	6.84	4.37	4.63	4.44	5.47
Household participates in PDS 2011(%)	48.97	54.23	61.33	68.77	64.13	55.62	47.05	63.25
Household participates in PDS 2004(%)	29.61	33.07	33.98	36.37	40.61	34.63	29.03	31.01

Source: Author's calculation based on IHDS I and IHDS II
*MD: Multidimensional; *Cons.: Consumption

Education and Main source of Income: There is no debate on how important education is for the development of overall human capital and long-term gains in the well-being. IHDS data shows that there is only slight change in the average number of years of education of any adult in the family in the two years for households experiencing consumption poverty and its dynamics. However, households showing dynamics in multidimensional poverty show significant change in the number of years of education. Average number of years of education fell from 8.35 to 6.34 for those who fell in multidimensional poverty and increased from 5.67 to 8.35 for those who experience movement out of poverty. This doesn't come as a surprise as education forms a main component of multidimensional poverty. No correlation between changes in number of years of education with dynamics of consumption poverty could be because of the nature of return to education, which is not immediate but is realized in the long run.

Irrespective of education level received, if the income earned is not sufficient in the current period the

household would be considered consumption poor. It is seen that there is a small increase in the proportion of households with the main source of income coming from labour work. However, this increase is quite substantial for households that are moving into both multidimensional (~15%) and consumption poverty (~10%). The dependence on labour work as main source of income has also increased overtime indicating unavailability of better work opportunities. It is also observed that households that became poor in 2011 have considerable increase in their dependence on labor work as a main source of income. At the same time, increase in proportion of households that were into salaried employment is associated with movement out of both consumption and multidimensional poverty. For chronic poor households no change in seen in the main source of activity and average years of education indicating the importance of education and employment for dynamics of poverty.

Assets and Livestock: Although there is an increase in the number of assets possessed overtime by all categories of households, maximum increase is seen for those who moved out of multidimensional poverty, as assets form an important component of the measurement of multidimensional poverty. Not surprisingly, households that moved in multidimensional poverty do not show any increase in the assets possessed. Surprisingly, households that moved in multidimensional poverty also showed an increase in the number of assets possessed. The increase in assets overtime is also observed for those who move out of consumption poverty, but the increase is less than the increase for movement out of multidimensional poverty. It is difficult to establish any relation between assets and consumption poverty dynamics as households even in chronic consumption poverty showed an increase in assets owned over time. This indicates that just accumulating physical assets is not enough.

Livestock forms a very important component of rural livelihood. Households keep livestock as a buffer against income fluctuations and future contingencies. Households engaged in seasonal labour also use livestock related activities as a second source of income. However, between the two time periods, there has been a decline in the proportion of households that own productive livestock from 43.09 percent to 39.4 percent. The decline has been consistent across chronic poor, never poor and poor in 2011 categories of poverty dynamics for consumption poverty, however, substantial decline, from ~73 percent to 21 percent, is observed for households that became multidimensionally poor in 2011. Households that moved out of multidimensional poverty also show significant increase indicating that livestock is an important component for multidimensional poverty dynamics. Not much change is seen for households that moved

out of consumption poverty, but households falling in consumption poverty show a significant decline in proportion of household owning livestock. Ownership of land has also decreased over the two time period across all categories of poverty dynamics for both measures of poverty, however the fall is significantly high for households falling in multidimensional poverty.

Debts, Savings and shocks: Chronic poor households and poor falling in poverty demonstrate similar characteristics when it comes to debt, savings and shocks. Although 54.71 percent of chronic poor households have saved in the last five years, 48.13 percent of those who became poor in 2011 could save. Talking about debts, poor people do not have much debt according to the data. As the amount of loan taken increases the proportion of households in never poor category increases. Most of the higher amount of loans belong to the family who are never poor and large outstanding debts also belong to the non-poor families. It is difficult to establish any relation between the loan taken and movements in poverty as some people take loan to establish/grow business and move out of poverty and some take loan for consumption purposes and eventually fall in the burden of debt and poverty. Also, no specific trend for debt and saving with multidimensional poverty is seen in the analysis. 65.2 percent of households that moved out of poverty had taken loan in the past five years and 63.8 percent could save. More than 50 percent of the households in all categories have taken loans and had saved in the last 5 years.

Caste and Social Network: 55 percent and 46 percent chronic poor households, respectively for consumption poor and multidimensional poor belong to lower caste (SC and ST) indicating their inability to benefit from the available opportunities. On the other hand, only 25 percent and 21 percent households from never poor category, respectively for multidimensional and consumption measures, belonged to lower caste. Large proportion of SC and ST households are also shown to have movements in and out of poverty. It is also shown that chronic poor households are not well connected, and they also do not participate in the social groups in the village. It can be seen from the data that social network, indicated by the membership any adult member has in one or more of women groups, agriculture society, credit cooperatives etc., for all categories of household has increased, and the increase is much less for those who moved into poverty. This would mean that social network plays an important role in poverty transitions. However, it is also seen that although social network for poor household has tremendously increased it is still less than those who moved out of poverty and have never been in poverty. Households in chronic poor category also have the least acquaintance with local government official, policemen, political party member

or elected official (25.9 percent as compared to 48.25 percent for those who have never been in poverty). These results are more prominent for multidimensional poor households. Households becoming multidimensional non-poor in 2011 and those who are always multidimensional non-poor have a large proportion of households that have high social network as compared to their counterparts in consumption poor households.

Infrastructure: No clear association between infrastructure and poverty dynamics for both multidimensional poverty and consumption poverty can be seen in the IHDS data. Given a short time period of 6 years (2005-2011) it becomes difficult to establish any association between structural factors such as social infrastructure and poverty dynamics. However, it is still interesting to see from the data that those who are chronic poor are the ones that have the minimum access to social infrastructure as compared to other three categories.

Participation in Social Protection Scheme: Coming to the proportion of households having access to social protection scheme, it is seen that households that belong to chronic poor category are the ones that get the maximum benefit of these schemes, except pension where maximum beneficiaries are those that were non-poor in 2004 but became consumption poor in 2011. 34 percent of chronic poor households had somebody in their family that worked for MNREGA in the year preceding the survey, 36 percent benefited from PDS in 2004 and 69 percent had PDS in 2011, 7 percent got pension in 2004 and 19 percent received pension in 2011. It is interesting to see that even though these policies are designed for poor people there are still significant percentage of non-poor households that benefit from these schemes, PDS (54 percent) being the highest followed by MNREGA (20 percent), and pension (15 percent). Interestingly, a large percentage of households who were non-poor in 2004-05 are receiving benefits from all the schemes and have become poor in 2011. This jump in the number of households receiving benefits in this group could be a result of households becoming poor first and then started receiving benefit from the government indicating that poor people are dependent on such schemes for their living and social protection policies are also not able to protect households from falling into poverty. Here again similar trend for many non-poor households taking benefits from the schemes is seen for multidimensional poor households. It is important to note here that in contrast to chronic consumption poor households receiving maximum benefits from the schemes, households that became multidimensionally non-poor in 2011 showed maximum participants in PDS. This is mainly driven through the impact PDS has on nutrition of the

members of the household.

5.4 Qualitative Data

While the data from IHDS is a rich data giving insights into what is happening on the ground and covers mostly all aspects of my research, it is important to understand people's perspective on how and why poverty dynamics prevail. Complementing quantitative data, primary data for this research is collected through qualitative interviews in two villages, each in two districts of Uttar Pradesh. Detailed case studies along with focus group discussions are administered in all four villages. The information gathered from these interviews provides information about the processes of poverty dynamics and its relation to socio-economic dynamics. It also enhances the interpretation of the results from quantitative data by providing useful on the ground information.

Two main methods have been used to conduct qualitative research in this study, i) case studies through open ended questionnaire and, ii) Focus group discussions (FGDs). Case study is a novel way of finding out people's own perception of poverty and their experience with social protection schemes. The purpose was to identify the factors that made people move across poverty statuses and if social protection policies made any contribution in that movement. Using the case study methodology, it is also possible to find out how people perceive poverty; is it mostly perceived as income or multidimensional, and if it is multidimensional what all dimensions of poverty are deemed responsible for movements in and out of poverty and chronic poverty. At the same time focus group discussions provide community perspective on poverty dynamics and social protection policies through group discussions. Whilst the main aim of both, one-to-one interviews and FGDs is to collect data that accurately reflects the perceptions, attitudes, beliefs, opinion or ideas of respondents, the purpose of focus groups is to gather people from similar backgrounds and stimulate in-depth discussions and gather information about the social issues that cannot be explained statistically (Overseas Development Institute, 2009).

Qualitative case studies

Understanding of poverty using secondary data alone always face a challenge of losing the information at the local level and on the ground realities. A qualitative open-ended questionnaire was designed to undertake in depth one to one interview with the respondents in order to gain insights on the processes

that work behind poverty dynamics. The set of qualitative questions include various dimensions of a household's life including but not limited to demographic, survival, livelihood, economic and social shocks, resilience and coping strategies, access to social protection schemes, implementation and utilization of social protection schemes, health, and education patterns of members of the family, ownership of assets and livestock etc. Appendix 5 presents the Interview guide used in collecting information from the households and the questions that were prompted to the respondent at the time of interview. 40 households comprising four villages and two districts were selected for the process of interviews. 10 household each in four villages were selected that represented different categories of poverty dynamics. In each village four households that were chronic poor, three that moved out of poverty and three that moved in poverty were selected using the wealth ranking exercise explained later in this chapter. Household head and the spouse were targeted to be the respondents for the interview. If one of them was not available another adult member of the family was chosen. Two respondents per households were chosen so that genuine and authentic information could be gathered as one person can verify and cross check the information provided by another. Approximately two hours were spent with one household and not more than two households were interviewed in one day. With respondent's permission written notes and audio recording were taken at the time of interview.

One of the main objectives of the interview was to collect information about life experiences by households that have impacted their poverty and livelihood status. At the beginning of the interview, I always introduced myself and tried to make respondents comfortable so that they could share their life stories with me. Talking about random things such as "How lovely the weather is", "It's too hot today", "Have kids gone to school?", "You look lovely today", "Your saree is very nice, where did you buy it from?" etc helped respondent to settle a bit setting the pace for the formal interview. Households were then asked a series of questions on their perception of poverty. This was undertaken by asking open ended questions incorporated in the interview guide. The household is then asked to differentiate themselves from a different category of poverty. Who according to them are more poor or less poor to them and why? The response from these questions determines the dimensions that households consider as important dimensions of not being poor, moving out of poverty, falling in poverty, or staying poor forever. The respondent is then asked to narrate their life history with specific attention to the reasons for changes in their poverty status. Respondents were also probed with questions on the shocks and how they dealt with

it. The questions specifically focused on why the households belonged to one of the four poverty dynamics categories and what events did each household experience. Particular attention was given to households' experience with social protection programs. Access, awareness, participation, and utilization of each program in question was discussed with the respondent in each household. How each program contributed to their livelihood and what limitations and restrictions households face in order to take benefits from these programs was also discussed. A mix of open-ended questions along with life histories provided an opportunity to gain information at grass root level that is critical to rural households but cannot be collected through structured questionnaires.

Focus Group Discussions (FGD)

Eight focus group discussions were conducted as part of the interview process. The focus group discussions are conducted for the purpose of understanding how the lives of the people in the villages have evolved through time and how social protection schemes have helped in this evolution. The focus group serves as a value addition in understanding the socio-cultural factors involved in shaping a household's poverty status.

Two FGDs were conducted in each village by organising various groups within the village on the basis of gender, age and economic conditions. Two different groups, one with only women and the other with the elderlies were conducted. Initially it was difficult to gather women at one place, but after some persuasion from Anganwadi workers,[20] women agreed to gather. Having separate women focus group leads to a constructive discussion which would have been difficult with men around.[21] Similarly the elderlies were talking more freely when they were in a group of similar age adults. To have a constructive discussion with the elderlies, I took my father along, which really helped as the elderlies talked to him more freely.[22]

Sampling process of households began with choosing a state that was best suited for my analysis. The process and reason behind selection of the suitable state, districts, and villages is explained below.

[20] Anganwadi workers are a group of community health workers that work in rural India as part of Integrated Child Development Services Program. They are responsible for spreading awareness about health and nutrition, family planning, and immunizations to the women and children, at the same time maintaining detailed registers containing key beneficiary data, updates on health status, and supply inventory beneficiaries.

[21] While I was in the villages, I noticed that women were not very vocal when a male member was around. They would talk freely when only women were around.

[22] The purpose of the study and the questions to be asked were discussed with my father in advance. Although I was initiating the discussion, they were responding to my father.

Selection of State

Poverty rates declined in almost all states of India between 2004 and 2011. However, as explained in chapter 3, there has been large differences between the states when poverty dynamics is studied. Uttar Pradesh, Bihar and Madhya Pradesh accounted for 44 percent of the poor in India in 2011 reflecting the large number of people living below poverty line and sizeable populations of these states (Narayan and Murgai, 2016). These three states are compared with each other in terms of their poverty status, dynamics, and other deprivations to select a state for fieldwork and deeper study. Geographic location is important, as persistent poor households are concentrated in the poor states of India with low Human Development Index (Mehta *et al.*, 2011). And those suffering persistent poverty, face deprivation not only in terms of income or consumption, but also in many other dimensions, including but not limited to, access to healthcare and education, discrimination due to caste, availability of work etc.

The IHDS data show that in Uttar Pradesh, Bihar and Madhya Pradesh not only the proportion of those who always stay in poverty (consumption poverty) is high; there is a lot of dynamics in poverty as well. Table 5.4.1 presents state-wise movements in and out of poverty between 2004 and 2011.

Table 5.4.1: State-wise Movements In and Out of Poverty- Rural (2004-2011)

STATE	Never Poor (in %)	Chronic Poor (in %)	Non-Poor now (in %)	Poor now (in %)	STATE	Never Poor (in %)	Chronic Poor (in %)	Non-Poor now (in %)	Poor now (in %)
Himachal Pradesh	80.57	4.77	8.02	6.64	**Jharkhand**	36.25	21.03	34.44	8.28
Punjab	78.03	2.25	14.85	4.88	**Orissa**	29.97	24.15	33.23	12.65
Uttaranchal	55.24	14.38	16.18	14.2	**Madhya Pradesh**	38.98	18.94	37.14	4.94
Haryana	67.42	6.71	16.52	9.35	**Gujarat**	65.15	7.69	22.04	5.12
Rajasthan	54.09	9.56	28.14	8.21	**Maharashtra**	45.36	15.79	29.49	9.36
Uttar Pradesh	42.24	14.38	35.6	7.79	**Andhra Pradesh**	80.08	1.2	15.9	2.82
Bihar	51.9	10.99	21.45	15.66	**Karnataka**	65.7	6.82	17.67	9.8
Assam	49.2	12.63	25.5	12.67	**Kerala**	68.31	4.69	24.79	2.21
West Bengal	52.67	12.91	21.83	12.58	**Tamil Nadu**	69.27	7.41	17.6	5.73

Source: Author's calculation from IHDS Panel Data

While Uttar Pradesh (UP) and Madhya Pradesh (MP) both show a large number of households moving out of poverty, they also show a reasonably large number of households in chronic poverty, 14.38 percent and 18.94 percent respectively, and relatively a smaller number of households falling in poverty (7.8 percent and 5 percent respectively). Bihar, on the other hand show a lot of dynamics as 15.66 percent households

fell in poverty, largest among the selected states, and 21.45 percent moved out of it with 11 percent being in poverty forever.

Officially, the share of the population below the poverty line, as has already been mentioned in Chapter 3, fell from 45 percent in 1993 to 38 percent in 2004 and further to 22 percent by 2011 (GOI, 2013b). Although, the official poverty estimates are falling, 56 percent of households in India do not have enough resources to maintain a decent standard of living (McKinsey Global Institute, 2014). The decent standard of living, depicted by Empowerment Line (Box 5.4.1), is 'the level of consumption required for an individual to meet the necessities of human development' (ibid). Moreover, on an average, Indians do not have access to 46 percent of the basic services (schooling, healthcare, sanitation, drinking water, housing, and energy) i.e. their Average Deprivation Score (ADS) is 46 percent (Box 5.4.1). There are vast variations among states here as well. Bihar had the highest deprivation score of 62 percent followed by Uttar Pradesh (57 percent) and Jharkhand (54 percent), and Goa has the least deprivation score of 26 percent.

District level analysis of deprivation also show that Uttar Pradesh and Bihar are the home to India's 126 most deprived districts, having awfully poor access to all types of services (McKinsey Global Institute, 2014). Their deprivation scores for healthcare is 67 percent and for sanitation it is 76 percent, that are sizeably higher than the average deprivation score of 53 and 57 percent, respectively, for the entire country. Similarly, their average deprivation score for energy is 82 percent, way beyond the national average of 59 percent (ibid). Although inter district variation on the access to basic services in Uttar Pradesh (Standard Deviation: 0.05) is not as bad as Madhya Pradesh (0.07) and Haryana (0.08), almost all of the districts in Uttar Pradesh and Bihar have a deprivation score higher than the average deprivation score of India. The Census of India 2011 also confirmed that Uttar Pradesh and Bihar fall behind on their access to basic amenities. Uttar Pradesh and Bihar have poor conditions of electricity supply, high number of households without toilet supply, below national average literacy rates and many other infrastructural difficulties (GOI, 2013b).

The large number of the poor, variation among districts in terms of movements in the poverty status, high proportion of households having access to social protection policies and poor physical and social infrastructure make Uttar Pradesh and Bihar the best choice for my study. Among the two, I chose Uttar Pradesh.

Box 5.4.1: Measuring Empowerment Line and Average Deprivation Score

'Empowerment Line is an estimate of the minimum economic cost for a household to fulfil eight basic needs: food, energy, housing, drinking water, sanitation, health care, education, and social security. For each basic need, acceptable standards of consumption in physical terms are defined, at an individual or a household level, using goals and norms established by the Indian government and expert bodies. For each component of consumption estimates of normative cost is developed. This cost is then added for each element to arrive at the total economic cost of achieving a minimum standard of living'.

ADS, on the other hand evaluate access to various basic services. 'To arrive at the ADS, access is measured using nine variables such as school enrolment, immunisation rates, the use of oral rehydration solution (ORS) as a proxy for basic medical care, health infrastructure, student-teacher ratio, drinking water and sanitation, electrification, housing and access to LPG for cooking. The nine variables are combined to reach the overall ADS. ADS score of 100 percent represents the point of complete deprivation while 0 represents universal access.' - McKinsey Global Institute (2014)

Selection of Districts

India is a huge country comprising 29 states and 7 Union Territories (UTs). The States and the UTs are further divided into the administrative units of the Government of India, called Districts. These districts comprise sub-districts or blocks, that contain Gram Panchayats (a rural local authority), which are often a large village or a group of small villages (Ministry of Home Affairs, 2001). According to IHDS dataset there is a vast variation in poverty dynamics among districts in Uttar Pradesh. Table 5.4.2 compares districts in terms of poverty dynamics, social indicators, and access to social protection schemes. The data shows that there are districts where a lot of households have moved out of poverty but there are districts where many have fallen into poverty, even though the proportion of households receiving some or the other form of social protection benefit has risen. On one hand there are districts like Khushinagar where 61.2 percent of the households have moved out of poverty between 2004 and 2011, there are districts like Kannauj and Banda where more than 35 percent of the households have fallen into poverty even after a sharp increase in the number of households receiving benefits.

For the purpose of this study, districts where the proportion of households that are never-poor is less and

poverty dynamics is large are selected. Districts are also chosen on the basis of high proportion of households receiving social protection benefits. As discussed in chapter 3 a large proportion of scheduled caste (SC) households are vulnerable to poverty as their access to opportunities is low as compared to non-SC households. To capture the poverty dynamics among SC households, one district with high proportion of scheduled castes household is chosen while the other district is a heterogeneous group of households. Two districts, Kanpur Nagar and Kannauj[23] match the sampling criteria.

Table 5.4.2: District-wise Poverty Dynamics in Uttar Pradesh (2004-2011)

District	Never poor (in %)	Chronic poor (in %)	Non-Poor Now (in %)	Poor Now (in %)	Social protection beneficiaries 2004 (in %)	Social protection beneficiaries 2011 (in %)	Scheduled Caste (in %)	HDI 2004	HDI 2011
Kanpur Nagar	30	25.5	43.5	0.96	34.3	89.3	59.3	0.65	0.73
Kannauj	26.8	22.4	13.4	37.3	34	88.6	14	0.58	0.59
Banda	15.66	23	21.5	39.81	34	89	9.6	0.54	0.62
Khushinagar	34.29	2.32	61.2	2.2	4.39	48.73	22.6	0.50	0.55
Moradabad	54.78	6.83	35.96	2.43	7.7	34.33	26.19	0.53	0.58
Sitapur	48.05	11.38	32.03	8.54	20	61.5	38	0.51	0.55
Farukabad	48.28	11.89	25.56	14.27	23.83	52.74	11.73	0.58	0.59
Kaushambhi	43	28.39	17.24	11.36	9.33	71.19	45.84	0.52	0.57
Ambedkar Nagar	27.01	24.26	35.96	12.77	17.23	57.2	21.26	0.56	0.60
Sultanpur	45.01	10.91	38.98	5.1	32.77	57.39	21.57	0.53	0.64
Bahraich	19.74	15.72	62.56	1.98	30.75	57.52	28.38	0.44	0.53
Sharawati	32.27	15.58	50.7	1.46	20.9	63.16	28.24	0.41	0.44

Source: Author's calculation using IHDS

In general, Kannauj appears poorer and has a lower Schedule caste population. Kanpur Nagar is better in terms of social infrastructure than Kannauj, but it is difficult to interpret unless we go on the field to see how exactly these infrastructures work with the local economy. In terms of amenities and assets ownership, Kanpur Nagar takes a lead over Kannauj (National Family Health Survey, 2017). Human development Index derived using the health index, education index and standard of living also show that Kanpur Nagar is ahead of Kannauj (Maurya et. al, 2016).

The IHDS surveyed two villages in Kannauj and 4 villages in Kanpur Nagar districts. Two villages from each district were chosen as a case study for this study. Both the villages from Kannauj and two villages from Kanpur Nagar that best represented the districts poverty profile were selected. Although IHDS provides a

[23] Initially Kanpur Nagar and Banda districts were chosen for my analysis. However, there were some adverse circumstances that I faced at Banda, which made me chose another district, which is as similar as possible to Banda in terms of my sampling process.

whole range of information about a village, the data itself is anonymous at village level, so getting names of the villages was not possible. However, Census 2011 data provides names of the villages along with other information that IHDS also provided. In order to choose villages that matched as closely to the villages IHDS selected, both datasets, IHDS and Census 2011, are matched across key amenities and physical infrastructure available in the villages. The indicators matched were distance to district headquarters, number of primary schools in the village, availability of public transport system, distance to the nearest railway station and availability of a health care centre. Matching exercise provided me with the names of the villages to be surveyed.

Profile of selected villages in Kanpur Nagar and Kannauj District

As explained above, four villages, two each from both districts, were selected for fieldwork. Table 5.4.3 provides a descriptive statistic of the four villages selected. The IHDS data shows that 43.5 percept households have come out of poverty in Kanpur Nagar district as compared to 13.5 in Kannauj. Moreover, proportion of people falling into poverty is also higher in Kannauj (37 percent) against just one percent in Kanpur Nagar. Through observations made on the field and using Census of India 2011 dataset, village profile can be explained along with the reasons behind the poverty dynamics.

Table 5.4.3: Selected Villages Descriptive Statistics

	Kanpur Nagar		**Kannauj**	
	Village 1	**Village 2**	**Village 1**	**Village 2**
Number of Households	684	126	330	404
Percent SC	46	32.6	7.4	25
Percent women	48	46.5	47	47.3
Main agricultural commodity	paddy	Jowar	Corn, potato	Corn, potato
Main Source of Income	Agriculture/casual labour	Agriculture/casual labour	Agriculture/casual labour	Agriculture/casual labour
Nearest Town	25km	30km	12km	3km
Distance to railway station	Less than 2 km	More than 5 km	More than 5km	More than 5 km
Number of primary schools in village	1	1	1	1
Number of secondary schools in village	1	0	0	0
Type of drainage	Closed	Open	Open	Open
Distance to post office	Within 2 km	More than 5 kms	Within 2 kms	More than 5 kms
Availability of public bus service	Yes	No, private bus available within 2 kms.	Yes	No
Self Help Group	Yes	No	Yes	No

Source: Author's calculation using Census 2011 data.

Village 1, District Kanpur Nagar

Village 1 is a large village located in Kanpur Nagar district with a total of 684 households. Total population of the village was 3427 in 2011, of which 1788 were males and 1639 were females. The population of children in the age group 0-6 was 475, making up 14 percent of the total population of the village. The average Sex Ratio (females per 1000 males) was 917, which was slightly higher than the average sex ratio of 912 in the entire state of Uttar Pradesh. The child Sex Ratio was 848, lower than the average child sex ratio of 902 in Uttar Pradesh.

This village also had a higher literacy rate as compared to average literacy rate of Uttar Pradesh. In 2011, the literacy rate of Village 1 was 73 percent as compared to 67.5 percent of Uttar Pradesh. Literacy rate for men stood at 82.43 percent while female literacy rate was 63.41 percent. High literacy rate could explain part of the reason for more households moving out of poverty between 2005 and 2011.

1163 adults, out of the total population, were engaged in some sort of work activities. Out of the total 1163 workers engaged in main work, 401 were cultivators while 414 were agricultural labourer. The on-going wage rate at the time of survey was Rs 250 per day and the same wage rate was offered to both men and women. The wage rate is also negotiable depending on demand and supply of labour at the time of the availability of work. From field study it was found that households who fell in poverty were highly dependent on labour work. Land in this village is fertile but high dependency on marginal labour and petty jobs makes some households stuck in poverty forever.

The village has one primary school and one secondary school. The nearest railway station is less than 2 kms away and the public bus service is frequently available. There used to be a Self-Help Group in the village whose presence faded slowly and now its non-existent altogether. The village has a paved road that connects it to the nearby villages and district headquarters. This village also has a bank branch but as per the branch poor people only come to the branch to collect their social transfers.

Study on the field showed that not many households have fallen in poverty in this village. The GP (Gram Pradhan- head of the village)[24] whom I interacted with during the fieldwork suggests that households in

[24] Gram Pradhan is the head of the village that is elected by the village level constitutional body of local self-government called Gram Sabha in India.

this village are not biased against the SC households and there is harmony and peace in the village. However, a large proportion of households that are poor belong to the SC category. According to the villagers, the GP of the village works towards the betterment of the village. However, there are still households that are stuck in chronic poverty.

Village 2, District Kanpur Nagar

Village 2 is a small village with a total of 126 families. The total population of the village was 638 in 2011, of which 341 were males while 297 were females. The population of children in the age group 0-6 was 53, i.e., 8.7 percent of total the population of the village. The average Sex Ratio was 871, which was lower than Uttar Pradesh state average of 912. Child Sex Ratio was 656, much lower than the average sex ratio of 902 for children in Uttar Pradesh.

Even though the sex ratio was low the village has higher literacy rate as compared to the average literacy rate of Uttar Pradesh. In 2011, literacy rate was 84.62 percent compared to 67.68 percent of Uttar Pradesh. Male literacy stood at 94.17 percent while female literacy rate was 74 percent.

Out of the total population, according to census 2011, 99 percent workers were classified as agricultural labourers. The prevailing wage rate at the time of fieldwork was Rs 230. However, the main source of income as reported in the census was agricultural labour, but on the field, it was found that many households have now made non-farm activities and petty trade their main activity.

The village has one primary school and no secondary school. The nearest railway station is less than 5 kms away and public bus service is not available. There is, however, availability of private bus service. There is no SHG in the village and the nearest bank branch is less than 5 kms away.

Study on the field showed that not many households have fallen in poverty in this village too. The GP told us that since it was a small village, everyone was family to each other, and in times of need, everybody helped each other. According to the GP, education played a very important role for the people of his village. He himself was very keen that all children from his village had access to good education.

Village 3, District Kannauj

Village 3 is a medium size village with a total of 330 families. The total population of the village was 1732

of which 918 were males while 814 were females. The population of children in age group 0-6 was 257, i.e., 15 percent of total population of the village. The average Sex Ratio was 887, which was lower than the average sex ratio in Uttar Pradesh. Child Sex Ratio was 847, again lower than the average sex ratio of 902 for children.

The literacy rate of the village was almost the same as the average literacy rate for Uttar Pradesh. In 2011, the literacy rate was 68.5 percent compared to 67.68 percent of Uttar Pradesh. Male literacy stood at 80 percent while female literacy rate was very low at 55.75 percent. Low literacy rates among women also explain the high poverty rate in the village.

This village has a low proportion of SC households (7 percent). Although Chapter 8 shows that caste has come out as an important factor determining the poverty dynamics, it is important to note that many households belonging to the non-SC category in this village have fallen in poverty over the span of 6 years from 2004-2011.

Out of the total working population, 74 percent were cultivators, and the rest were agricultural labourer. From the filed study, it was found that even though there is a high proportion of a cultivators they do not own much land. Land is fertile but illiteracy and lack of necessary resources hinder their growth. Although, the government has fixed the minimum wages not all employers follow it. It was told that the wage rate falls between Rs 150-250 depending on the season and nature of job.

The village has one primary school and no secondary school. The nearest railway station is less than 2 kms away and public bus service is available on regular basis. The nearest bank branch is more than 5 kms away.

My field study showed that many households have fallen in poverty in this village. It is also observed that village communities are sharply divided based on caste and there is a well-defined hierarchy. The lowest on the caste-hierarchy generally being the poorest too. The interaction with the GP was not too fruitful, as the GP did not look interested at all in the well-functioning of the village. The irony was that the GP had a very big well-made house, and the rest of the houses were not in good condition. The inequality in the village was quite evident.

Village 4: Kannauj District

Village 4 is a large village located in Kannauj district with total 404 families. The total population of the village was 2468 in 2011, of which 1301 were males while 1167 were females. The population of children with age 0-6 was 17.5 percent of the total population of village. The average Sex Ratio was 897, which was lower than Uttar Pradesh state average. Child Sex Ratio as per census was 782, lower than Uttar Pradesh average of 902.

The village has a little higher literacy rate compared to Uttar Pradesh. In 2011, the literacy rate was 69.58 percent compared to 67.68 percent of Uttar Pradesh. Male literacy stood at 79.11 percent while female literacy rate was 59.26 percent.

The village also had a substantial number of SC households in 2011. 25 percent of the total population belonged to the SC category. Out of the total working population, 60 percent workers were classified as agricultural labourers working on another people's fields. The average daily wage rate was Rs 250 at the time of the survey, although not much work is available throughout the year.

The village has one primary school and no secondary school. The nearest railway station is less than 5 kms away and public bus service is not available. There is no SHG available in the village and the nearest bank branch is less than 5 kms away. As per the GP, the previous GP did not do much work for the villagers.

Overall, the availability of good social infrastructure, financial institution, paved roads, high literacy rates and good governance makes Kanpur Nagar district better between the two, and Village 1 in Kanpur Nagar the best among all four villages. Village 3, despite having good social infrastructure, a post office, financial institution, lags mainly because of low literacy rates and high inequality among households.

5.5 Selection of Households to be Interviewed: Wealth Ranking Exercise

A wealth ranking exercise was conducted to select 10 households in each village according to their poverty status. Since I am using the case study method I had to largely depend on people's perceptions and my own observation in the villages.

"Participatory wealth ranking is a tool that captures differences in standards of living as perceived by the community themselves, thus making it possible to gain insight into relative social stratification." - Chambers (ICRISAT, 2009)

Wealth ranking is an important tool to understand community's perception of poverty, specific to their own village. It is not only used to determine the dimensions and measures communities use to define poverty, but also to get knowledge about the socio-economic stratifications that exist within communities. The main objective of wealth ranking exercise is to, i) examine the perceptions of wealth disparities in the community, ii) identify and understand local dimensions and yardsticks of wealth and well-being, and iii) map the relative position of households in the community (ICRISAT, 2009).

Since the total number of households in the selected villages is not big, almost everyone knew each other and their status. It was easy for me to talk to people and understand who moved and who fell in poverty over time. But before doing that it was important to conduct a wealth ranking exercise, so that all key members were on the same page. The purpose of this exercise was not to find the wealthiest and the poorest households, but to figure out who has moved out of poverty and who fell into poverty, as far as, the village people understood.

The process of wealth ranking begins with finding out a number of key informants who are well-versed with the village and know its residents very well. Four key members from a village were selected. One was the GP of the Village, one Anganwadi Member, One PDS shop owner and one person recommended by the GP. At the start of the survey, it was made clear to the GP that I was not a government official, and that no material benefit of any sort would be provided to any household. These key informants are asked to divide households in various categories as required by the study. All participants were given a set of cards for this exercise. They were then asked to write down the names of the five poorest families in the village on the cards. The cards were then stacked together on one side. Similarly, cards for those households who have moved out of poverty, according to the members, were stacked together aside. A similar exercise was done for those who have fallen in poverty and those who have always been poor. After this exercise we had three sets of cards containing names of the households who belong to the chronic poor, moved out of poverty and fallen into poverty.

Separate piles of each category are made, and the key informants were asked about the criteria that they

used to classify households in different categories. Households were classified into various categories according to non-monetary observable measures of poverty such as investment on education, health indicators, death of the main earning member of the family, evident sale of assets to finance an event or to pay off debts, mortgaging home or jewellery for loans, remittances, type of employment, unemployment, housing conditions, etc. Although there was a little variation in the ranks used by these respondents, we came to a consensus after a discussion and came up with four households who have always been poor, three households who moved out of poverty and three households who fell into poverty in each village. Hence a total of 40 households were selected from a total of 4 villages. The criteria and indicators used by the informants for classifying these categories are shown in table 5.5.1.

Table 5.5.1: List of Factors Considered for Categorizing Households

Chronic Poor	Moved out of Poverty	Fallen into Poverty
1. Landless 2. Unable to work 3. Disabled members 4. Casual/agricultural labour 5. MNREGA labour 6. Large families 7. Unmarried daughters 8. No livestock 9. Lack of employment	1. Bought Land in the last few years 2. Children started earning 3. Kids started going to private school 4. Have bought more assets over the period of time 5. Sold livestock and started business	1. Burden of unpaid debt 2. Disability in the family 3. Death of the main earning worker 4. Sold off their land 5. Sold livestock 6. Illness and Injury

Since I did not have any socio-economic panel data of the households, wealth ranking was the suitable way of finding out which household to go to for detailed case study. Since key informants know villagers very well and a consensus is reached among key informants about ranking of all households, wealth ranking method proved to be an accountable method of selecting households for face-to-face interview. Moreover, wealth ranking exercise when clubbed with one-to-one interviews provides a way to cross check the information provided by households at the time of interview.

While wealth ranking is a useful tool of classifying a community in various categories of poverty dynamics, it fails to provide information on factors that impact a particular household in the process of these dynamics, hence providing only a relative measure of movements in poverty. Wealth rankings shows the general dynamics in poverty from the point of view of the community, therefore making it necessary to

conduct face-to-face interviews to examine the underlying factors and events in the lives of the households that determine movements in and out of poverty.

5.6 Conclusion

Availability of IHDS data, which is nationally representative has made studying poverty dynamics possible for India. IHDS data set serves the panel data requirement, and availability of information on multiple dimensions of households' well-being along with their participation in social protection schemes over a period of time gives IHDS an upper hand over other datasets. Credibility of the dataset is also maintained as the results from IHDS are in line with other nationally representative datasets of India, such as NSS.

While the data from IHDS gives useful information for identifying the pattern of changes in poverty over time, it is important to understand how people perceive poverty dynamics. Qualitative data analysis conducted in this study is a way to understand poor households' perspective without exclusively relying on the yardstick of poverty line. Moreover, it is also a great way of understanding multidimensionality of poverty and processes that reflect the complexities of poverty dynamics that are difficult to comprehend from the quantitative datasets. Using both qualitative and quantitative approaches in my study will provide useful insights into poverty dynamics, which will constitute a sound basis for effective policy making.

Although both consumption and multidimensional poverty have declined in India there is minimal overlap between the two. It is also observed that consumption-based poverty shows more dynamics in terms of proportion of households changing poverty status between the two time periods. Also, there is a lack of correlation between two measures, and the distribution of changes in multidimensional score and consumption expenditure are quite independent. These findings pose a dilemma for policy makers as it determines how we evaluate improvement in the welfare of households/individuals over time. Focussing only on one measure of poverty would lead to loss of information about households' wellbeing. Therefore, it is important to track progress in both consumption and multidimensional measures.

Chapter 6: Measuring and Decomposing Poverty Dynamics: Evidence from India

6.1 Introduction

It is quite clear from previous chapters that while consumption poverty has mostly been the central point when it comes to the dynamics of poverty (Dercon and Krishnan, 2000; Addison, Hulme and Kanbur, 2008; D.Oduro, 2009; Dang and Lanjouw, 2015), underpinning the dimensions that are longer lasting than income would clearly give us a better view on poverty dynamics and its causes (Hulme and Shepherd, 2003; McKay and Lawson, 2003; Hulme and Mckay, 2006). Since the poor face multiple deprivations beyond income, measuring poverty dynamics taking into account these deprivations that determine poverty has become crucial (Yao and Stewart, 2016). Moreover, decomposing multidimensional poverty measures across time reveals how and in what dimension poverty has changed. Decomposing the change in poverty across time using panel data offers the opportunity of analyzing the factors that can determine dynamics in poverty and also explain transition within and outside poverty (Alkire *et al.*, 2014; Apablaza and Yalonetzky, 2012).

The aim of this chapter is to broaden our knowledge of poverty dynamics, in answering research question 1.1, "*What are the interlinkages between various dimensions of well-being and their relationship with poverty entry and exits in India?*" by concentrating on the changes in all the dimensions that determine multidimensional poverty. The mathematical modelling adopted in this chapter will also inform us about the factors that are significant for the empirical analysis on poverty dynamics in this thesis too. I follow the methodology proposed by Suppa (2017) that allows explaining the driving forces of indicators/assets that are more permanent in the lives of the poor and could possibly help in designing better social protection policies. By taking account of changes in transitions in poverty and deprivations simultaneously using panel data provides a novel way to study the interdependencies between various dimensions.

Section 6.2 explains in detail various mainstream methods used to measure multidimensional poverty. Criticism of these methods is also discussed. Section 6.3 explains the procedure to estimate multidimensional poverty in India and its dynamics. Section 6.4 explains in detail the methodology used to decompose multidimensional poverty dynamics along with its mathematical description. Section 6.5 provides an empirical illustration from India using this methodology and section 6.6 concludes the chapter.

6.2 Measuring Multidimensional Poverty

Although there has been consensus that poverty is multidimensional there is no consensus on how to measure it. There are many inter-related components in the lives of the poor that determine their poverty status. Moreover no one formula used to measure multidimensional poverty suits everybody as it is dependent on regional and spatial circumstances as well. The complexity of using multiple dimensions of well-being while measuring multidimensional poverty makes it even harder to come up with a method to arrive at it.

While the acceptance of multidimensional poverty as a concept started to develop in the second half of 1970s, specific attention to the measurement gained attention in the beginning of 2000s only. In order to measure multidimensional poverty, multiple dimensions of an individual or household well-being are required. The measurement would in turn be contingent on the quality and type of data available and the theoretical framework chosen to measure poverty. Amartya Sen's framework define these dimensions as functioning or capabilities. On the other hand, in Basic Needs Approach, which emerged in 1970s, these dimensions would be called basic needs that are required to be met to attain a decent standard of living. The indicator representing these dimensions are then compared with the acceptable level of cut-off for that indicator, and those under this level are identified as deprived in that particular indicator. Similarly, deprivation status for each indicator for every individual/household is identified and aggregated to estimate a composite multidimensional poverty.

The method of determining multidimensional poverty could be aggregative or non-aggregative, as has been classified by Brandolini, (2008). In aggregative approach a composite index is created that summarizes all dimensions of deprivation under study. On the other hand, in non-aggregative approach (also called a dashboard approach), poor is identified by allocating separate threshold for each attribute and creating a dashboard of all dimensions (ibid). Estimating multidimensional poverty does not necessarily imply aggregating different indicators in a single index (Ravallion, 2011b). Non-aggregative approach although offers rich amount of information about each indicator and allows assessment of specific policies on indicators it fails to provide a joint distribution of indicators and makes it difficult to present a well-defined picture on poverty. On the other hand, aggregation permits simplifying the complexity handling multiple dimensions and makes comparison easy. Example of composite index found in the literature includes the

Physical Quality of Life Index, the Human Development Index (HDI), the Gender Empowerment Index and the Human Poverty Index (HPI) (Alkire, James E. Foster, *et al.*, 2015b). Depending on the research objective and country specific setting a suitable method can be chosen.

Multivariate methods such as factor analysis, principal component analysis (PCA), multiple correspondence analysis (MCA) and structural equation models have been widely used to construct a measure of multidimensional poverty. PCA and MCA extract information on the association between various indicators to reduce the number of dimensions (Alkire, James E. Foster, *et al.*, 2015b). On the other hand, factor analysis and structural equation models are used to construct a composite index of wellbeing. Filmer and Pritchett, (2001) applied PCA on the National Family Health survey (NFHS) in India and used the first principal component to construct an asset index. Klasen (2000) used PCA to derive weights for various components used for measuring deprivation index for households in South Africa. To study poverty dynamics in Vietnam between 1999 and 2002, Asselin and Anh, (2008) applied MCA and constructed a composite asset index. Similarly, for several Sub-Saharan countries Batana and Duclos, (2010) constructed a multidimensional index of assets using MCA. Kuklys, (2005) applied structural equation modelling and obtained factor scores and used them to create an aggregate measure of well-being. Similarly, Ballon and Krishnakumar (2015) created an index for Bolivian children, using structural equation models estimating children's capabilities. Although widely used in literature these methods have certain limitations. The overall poverty measures estimated using these techniques lack intertemporal and cross-country comparability as these techniques rely on a particular dataset to be used and statistical methods would weigh each indicator differently in each dataset making results relative (Alkire, James E. Foster, *et al.*, 2015b). It is also difficult to make an intuitive interpretation of deprivation values and poverty index using these methods (ibid).

Non-statistical methods such as Venn Diagrams, dominance approach, fuzzy set approach and counting method have also used multiple dimensions to estimate multidimensional poverty. While Venn Diagrams visually represent the combined distribution of deprivations in multiple dimensions, the dominance approach, unambiguously rank countries, and region in a relative scale of poverty with respect to various parameters and functional forms (ibid). Both Venn Diagrams and dominance approach become difficult to comprehend when the number of dimensions under study is large. Also, both the approaches do not offer a summary measure of poverty. Duclos, Sahn and Younger, (2006; Batana and Duclos, (2010); Anacka and

Kobus, (2012) used dominance approach of ranking regions in poverty frontiers however the application has been limited to two dimensions only. The fuzzy set approach does not identify deprived individuals on the basis of deprivation cut-offs but uses a band of cut-offs for each dimension. Those who fall above this band are identified as non-deprived, and those falling below are identified as deprived (Alkire, James E. Foster, et al., 2015b). A membership function is then assigned within the range of ambiguity to evaluate the extent of deprivation. A composite index of poverty and deprivation is constructed through fuzzy set approach, but it is difficult to validate and justify the chosen membership function (ibid).

A measure of multidimensional poverty that has attained global attention has been introduced by Alkire & Foster. A composite Multidimensional poverty index (MPI) is created using household/individual level data. The process of identification of multidimensional poor individual/household is carried out in two parts. First, deprivation cut-offs are defined for each indicator and those who fall below the specified cut-off are identified as deprived in selected indicators. Second, each indicator is assigned a weight to arrive at an aggregate weighted deprivation score, and another cut-off (poverty cut-off or k) is applied as a threshold of minimum acceptable level of aggregate deprivations. Those having a deprivation score of more than this cut-off are identified as multidimensionally poor. As cut-offs are assigned twice in the identification process, this method is also known as a dual-cut-off approach. One of the main advantages of using this methodology is that it can handle multiple dimensions based on country specific priorities. Moreover, it is also capable of handling both continuous and categorical data. At the same time, it also fulfils the axiomatic properties that are borrowed from the monetary approach and adapted for multidimensional poverty measurement (Foster and Santos, 2012) [25]. Estimation of MPI is also more data demanding as it requires information for each member of the household to identify deprived population for each indicator separately.

Multidimensional nature of poverty has been accepted worldwide but there is still a debate around the best method to measure it. Ravallion, (2011b) is the main critic, as according to him there is no need to aggregate several dimensions into single measure as dashboard approach is easy to understand and provides larger information than a composite index. It is argued that aggregation is arbitrary as it involves selection of weights and other collapsing mechanisms. Moreover, identification is complex as along with defining a

[25] The properties are summarized in appendix A6.1

threshold for each indicator the choice about what indicators to consider for the purpose of achieving multidimensional index is to be made (ibid).

On the other hand, the main proponents of multidimensional poverty, UNDP and OPHI, claim that multidimensionality can only be achieved if joint distribution of indicators is studied indicating interdependencies among dimensions. One at a time comparison of dimensions cannot capture the interdependencies among dimensions (Duclos, Sahn and Younger, 2006). For example, increase in the income of the poor households would lead to a larger decline in poverty if the recipient also faced deprivation in health, education, livestock etc. Multidimensionality allows the level of deprivation in one indicator to alter the poverty levels if there is an improvement is some other dimensions (ibid). Another advantage of using composite indices is that they rank countries, regions, or individuals according to their performance on multiple dimensions, even when the rankings do not match across individual dimensions (Lugo and Ferreira, 2012).

There is no write way of measuring multidimensional index. The approach of calculating multidimensional poverty should be flexible and adaptable to region specific dimensions. The weight should be assigned to address the priorities of a country, its regions, districts, and villages. This, however, does not take away from the fact that studying individual indicators is equally important as it enables policy makers to effectively target resources and accordingly adapt policy measures that can reflect local circumstances. Both aggregative and non-aggregative measures are required to assess poverty situation and the progress made by social protection programs in eradicating poverty. This chapter, therefore, uses both dashboard and composite approach to analyse multidimensional poverty dynamics in India.

Alkire Foster Global - Multidimensional Poverty Index (MPI)

The Global MPI is composed of three dimensions (health, education and living standards), comprising ten indicators such as lack of safe drinking water, poor health, lack of education, malnutrition etc. Each indicator is assigned a minimum value beyond which an individual or a household is said to be non-deprived in that indicator. This minimum level is called the deprivation cut-off. As explained earlier MPI is calculated in two steps; i) each individual/household is assessed against each indicator to determine if they fall below the deprivation cut-off and households/individuals below the cut off are classified as deprived in that indicator, ii) in the second step, deprivation status of each household/individual is weighted by a

chosen weight and if the sum of the weighted deprivation is more than 33 percent of all deprivations under consideration the household/individual is classified as MPI poor. If weighted deprivations do not add up to 1/3 of the total, then the household/individual is considered non-poor. Global MPI estimation assigns equal weight to each dimension, and with each dimensions equal weight is assigned to each indicator. A weighted deprivation score, using chosen weights and assigned deprivation status of these indicators, is calculated for each individual/household. Deprivation score ranges between zero and one, and multidimensional poverty status is assigned if the weighted deprivation score is more than the global cut-off of 33 percent of total weighted deprivation.

There are two components of global MPI; The Incidence of poverty/Headcount Ratio (H) i.e., proportion of people who experience multiple deprivations and, the intensity of poverty (A) i.e., the average proportion of weighted indicators in which the poor are deprived. The headcount ratio is computed as:

H= q/n

where, q is number of multidimensional poor, n is total population. However, one of the main drawbacks of headcount ratio is that it violates the 'dimensional monotonicity'[26] and sub-group decomposability conditions mentioned in Appendix A6.1. To fix this, Alkire and Foster, (2011) ignored the deprivations of the non-poor households and calculated censored vector of deprivations,[27] which is defined as,

$$A= \frac{\sum_{i=1}^{n} ci(k)}{q}$$

where, c(k) is the censored deprivation score of individual i and q is the number of people who are multidimensionally poor. Deprivations experienced by people not identified as MPI poor are censored, i.e., if an individual/household is not identified as multidimensional poor then it's weighted deprivation score is replaced by zero and hence not included in A. A, therefore, shows the intensity of deprivations experienced by poor people.

[26] If a poor household becomes deprived in an additional indicator, H remains same, but intensity rises.
[27] If an individual/household is not identified as multidimensional poor, then her weighted deprivation score is replaced by zero.

Finally, the multidimensional poverty index (MPI) is the product of the two measures and is computed as:

MPI= H * A

6.3 MPI in India

As mentioned in chapter 1 this thesis makes use of the panel data from Indian Human Development Survey (IHDS) for empirical analysis. Using the same dataset MPI for India is calculated for year 2004 and 2011. MPI for India is composed of four dimensions made up of 10 indicators explained below. Each household is assessed against each indicator to determine if it is deprived in that indicator. A step-by-step method of estimating India's MPI is explained below.

Estimating Multidimensional Poverty index starts with the selection of appropriate and relevant dimensions affecting a household's wellbeing. Selection of dimensions and corresponding indicators using which poverty is evaluated is crucial to multidimensional poverty. The inclusion of specific dimensions and indicators is a normative judgement based on the specific country and regional settings and availability of data. Given the country and region context many countries have modified the indicators specified by the global MPI. Some have added extra indicators to the same dimensions, and some added new dimensions altogether. Countries such as Mexico, Colombia, Bhutan and Philippines modified dimensions and indicators to its cultural and political context (Dawas, 2018). Pakistan, on the other hand, adopted global MPI as is by retaining all three of its core dimensions: education, health and living standards. However, the corresponding indicators reflect country specific concerns and data availability (UNDP and OPHI, 2018). My analysis too builds upon the global MPI and retains its three dimensions of health, education, and living standards. However, to keep physical assets separate from living standard indicators and to emphasize on livestock,[28] assets and livestock are clubbed together to form another dimension called "livelihood". Description of all four dimensions selected for constructing rural India's MPI, corresponding ten indicators and the weight assigned to each indicator is presented in table 6.3.1.

[28] Since the focus of this study is to assess poverty dynamics in rural India, livestock is one of the main components determining livelihood. During my field visits as well, households gave larger emphasis to livestock.

Table 6.3.1: MPI-India Selected Dimensions, Deprivations Indicators, and Weights

Dimensions	Deprivations	Weights
Education		
Children's School attendance	Household where at least one school going age child is not enrolled in school	1/8
Adult Education	Household where at least one member more than 12 years old has not completed primary education	1/8
Health		
Malnourished	Household where at least one child below the age of 5 is malnourished and or, at least one of ever married women had BMI less than 18.	1/8
Mortality	Household where at least one child less than 5 year old died in the last 5 years.	1/8
Living Standard		
Safe drinking Water	Household does not have access to drinking water from a clean source such as piped tap, tube well, hand pump, covered well, or rainwater.	1/16
Safe sanitation	Household does not use pit latrine, semi-flush or flush toilet.	1/16
Cooking Fuel	Household does not use *chulla* with chimney or fuel other than biomass (kerosene, LPG, etc.) for cooking. The household cooks with dung, wood or charcoal.	1/16
Pucca Roof	Household is deprived in housing if HH does not have pucca roof	1/16
Livelihood		
Asset Ownership	Household does not own at least one of these items—television, refrigerator, washing machine, motorbike, tractor, mixer/grinder, generator set, air cooler and does not own a car.	1/8
Livestock	If Household does not own at least one of milch cow or milch buffalo.	1/8

Choice of indicators and dimensions:

Education: As has been mentioned in chapter 2 and 3 education is one of the most important components that determine poverty, therefore including indicators representing education is crucial in estimation of multidimensional poverty. To acknowledge the dimension of education, many national measurements of multidimensional poverty include enrolment in schools and some indicator of the level of education attained. Some of the examples are the highest level of education attained by an adult member of the household, at least one child in the school going age not attending school, literacy outcomes of family members, etc. Early childcare is also used by many countries to measure the cognitive development of their young population.

Education is undoubtedly an important element for well-being in India as well. The IHDS collected basic information on educational attainment for all household members through questions about ever attending school, the ability to read and write a sentence, repeating or failing a class, and level of education attained

(Desai *et al.*, 2010). From this information household is considered deprived in education if i) at least one school going age child is not attending school, and/or ii) at least one adult member has not completed primary education. Using these indicators makes sure that both current education and education already attained are taken into consideration. As primary education indicator pertains to all members of the family, it represents the overall status of the household under review (Brück and Kebede, 2013). At the same time, child school attendance only refers to child education. Taking education indicators for both children and adult members of the households gives a complete assessment of households' education attainment.

Health: Like education, health is also a prominent part that shapes households' welfare. Malnutrition and food insecurity are the two most frequently used health indicators. Malnutrition in children and married women is generally used as an indicator for lack of nutrition and health insurance is used as indicator for lack of access to healthcare. For children, lack of nutrition in the early years of life can have long term implications on their cognitive and physical growth. These children are also more vulnerable to other health disorders and improver cognitive development slows down their learning curve (Alkire and Santos, 2013). Another indicator that is commonly found in multidimensional literature is child survival which is measured by child mortality. Child mortality is disproportionally concentrated in poorer regions across the world. Like education dimension where indicators for both adults and children were assessed, incorporating child mortality and nutrition status of both children and women in the family provides a comprehensive evaluation of health in the household.

Between 1990 and 2019 India's child mortality rate declined substantially, still India along with Nigeria, accounted for almost a third of all under-five deaths globally in 2019 (WHO, 2019). IHDS data collected anthropometric information for women and children. For the purpose of defining malnourishment each individual child's z-score was computed. Children are considered malnourished if their z-score of weight-for-age is below -2 SD from the median of the reference population. Women were considered malnourished if their BMI was less than 18. Using the same data child mortality is extracted and household is identified as deprived in health if in the five years preceding the survey there has been at least one child death in the family.

Standard of Living: Most of the countries use at least a couple of indicators reflecting the standard of living of their people. Many use indicators on housing quality such as condition of floor, roof, and walls of the

house. Many used access to amenities like type of cooking fuel used, access to safe sanitation facilities, availability of clean drinking water, electricity, and garbage disposal. Availability of good quality standard of living enhancing resources such as electricity, toilet, cooking fuel, drinking water may not directly impact households' income but they may impact an individual's notion of well-being by lessening the number of hours spent on routine work and increased time for leisure, building social connections and other productive activities.

In India less than 33 percent of the population have access to improved sanitation, and about 25 percent of the world's population without improved sanitation lives in India (WHO and UNICEF, 2014). IHDS data provides comprehensive information on the source of drinking water, number of hours of electricity available, type of cooking stove used, and type of toilet used. Households using pit latrine, semi-flush or flush toilets are considered non-deprived in sanitation. Having access to clean drinking water through piped tap, tube well, hand pump, covered well, or rainwater makes a household non-deprived in availability of safe drinking water. Households using clean cooking fuel rather than biomass such as cow dung and wood are considered non-deprived in clean cooking fuel.

Livelihood: Assets is the most common indicator of livelihood used by many countries for the estimation of multidimensional poverty. Less developed countries such as Bhutan, India, Pakistan, Bangladesh use livestock and land ownership alongside physical assets as these are a major source of livelihood in large rural economies. Productive assets like land, livestock, and agricultural equipment have income-generating potential because they can be used for living as well as can be used as mortgage. Livestock is considered as an alternate source of capital that the poor can accumulate to become resilient against fluctuations arising due to shocks (Kazianga and Udry, 2006). In rural areas households own livestock or earn income from livestock-related occupations. Although earnings from livestock directly is not high, livestock owners get indirect benefits as livestock is treated as a buffer against shocks (Akter *et al.*, 2008).

Household durable assets such as TV, refrigerator, washing machine that shows a household's lifestyle, and productive goods such as motorbike, tractor, generator have been included as indicators under the livelihood dimension, indicating the critical importance of durable assets, productive assets, and livestock (Vollmer and Alkire, 2018). Assets and livestock are considered as an alternative form of insurance as well, as these can be sold off in times of crisis.

Livestock is kept separate from physical assets as they form a very important component of rural livelihood in India. IHDS provide information on the number of livestock available and their usage. Since the focus is on rural economy, assets that are relevant for rural sector are included in the livelihood dimension. A household is considered deprived in physical assets if it does not at least one of these items; television, refrigerator, washing machine, motorbike, tractor, mixer-grinder, generator, and air cooler; and, deprived in livestock if it does not own at least one of milch cow or milch buffalo.

Once the indicators are selected, the next step is to assign weight to each indicator. Since all the dimensions are equally important for poor household's wellbeing equal weights are assigned to each dimension. The weights used assign one-fourth of the total weight to each of the four dimensions of education, health, living standards and livelihood. Each indicator further is assigned equal weights. Further assigning weights to indicators make weights unequal across indicators. For example, living standard indicators now weigh less than ownership of asset indicator. Household access to resources indicators weigh less than others because there are more indicators in living standard dimension.

Next, for each household a deprivation score is calculated based on its deprivation in the selected indicators. The sum of the weights of the indicators in which the person is deprived is called the deprivation score, which lies between 0 and 1. Higher the number of deprivations a household has closer will be the deprivation score to 1 and when the household is deprived in all indicators the score is 1. A household not deprived in any indicator will have a score equal to 0. A person is identified as poor if the weighted sum of their deprivation score exceeds the poverty cut-off.

As mentioned earlier, Global MPI fixed poverty cut-off at 33% of all deprivations, i.e., a household is MPI poor if it is deprived in more than one-third of the weighted indicators. For India I used the same cut-off so that the MPI numbers for India can be compared with other studies. A poverty cut-off of 33% would mean that to be identified as poor a household must experience deprivations in multiple indicators, deprivation in just education or just health will not make a household multidimensional poor. This cut-off ensures that poor are actually multidimensionally poor as deprivation in any one dimension alone will not be enough for a household to be identified as multidimensional poor (Santos *et al.*, 2015). For example, a household has to be deprived in all the indicators of living standard plus at least in one other indicator from the remaining dimensions to be considered multidimensional poor. In order to check the robustness of the

poverty cut-off used I also conducted a sensitivity analysis to see how the MPI ranking changes across different groups when a poverty cut-off is allowed to vary. The sensitivity analysis was performed for the MPI of each social group in India and it was found that the ranking of social groups in terms of multidimensional poverty remained same at different poverty cut-off levels (see appendix A6.2). This indicates that our poverty estimates are robust to the choice of poverty cut-off made.

At the same time, it is important to check if the constructed MPI is comprehensive and is parsimonious. Comprehensiveness means that MPI should include the deprivations that are broadly recognized as essential components of poverty in a specific region. It, however, will always be constrained by the kind of information available in the household level data. While it is not possible to capture all the relevant deprivations while creating MPI, I included relevant variables from what was available. The dimensions and the corresponding indicators used for constructing MPI for India have been justified as relevant from the literature on poverty and for their significance for the region. In order to justify the normative argument and to validate the significance of the variables used to construct MPI, exploratory factor analysis is performed. Results show that 8 out of 10 variables selected from the data are relevant for constructing the MPI. Two variables namely, livestock and drinking water have low average loading yet they are considered to be included in the construction of MPI on the grounds of intuitive arguments (see appendix A6.3).

Since many variables capturing poverty are related to each other it is important to identify redundant variables to rule out the chances of 'double-counting'. Moreover, two deprivations occurring together at the same time does not necessarily imply redundancy (Santos *et al.*, 2015). MPI is measured using joint distribution of the deprivations, therefore, it is important to keep in mind the normative arguments also and not completely rely on empirical estimation. Measures of redundancy proposed by Alkire, James E. Foster, *et al.*, (2015) were used to identify the possible redundancies between the indicators. Results show that except for cooking fuel and availability of safe sanitation measure of correlation and the redundancy show moderate association between chosen indicators within each dimension and across dimensions (see appendix A6.3).

Before proceeding with the measured MPI and its analysis it is extremely important to address the analytical concern that arise in the process of computing MPI. First, treatment of households where not even one member in the family qualifies for a particular indicator. Composition of the household can

influence the deprivation status of the household in an indicator under consideration. For instance, there may not be any children in the eligible age group for child mortality or education indicator. Treatment of these households require special attention as simply dropping them would make the estimates biased, as the irrelevance of a specific indicator to some households is not random (Alkire, James E. Foster, *et al.*, 2015a). At the same time, excluding the indicator where some households do not have eligible population altogether and redesigning the MPI with new weights for rest of the indicators would compromise comparability across people and violate dimensional breakdown (ibid). Global MPI considered households where eligible population is not found as non-deprived in that indicator. For example, a household without any children cannot be deprived in child nutrition, hence is considered non-deprived in nutrition. However, the household would have to be deprived in a total of 33% of weighted dimensions to be called a poor household. Second, number of members in the family may determine if a household faces deprivation in any indicators. Households with large family size are more likely to report deprivations in health and education parameters making it more likely for large households to be deprived in nutrition, schooling, and longevity. Hence, there is a likelihood of being selected as a deprived household due to the large household size. I feel that having a large number of people in a house in itself puts a lot of burden on a household. This burden often leads to neglect of important dimensions of human life and are captured in the form of deprivation in health and education. This issue also concerns consumption poverty as large households are more likely to be spending less per capita. This potential bias in the MPI is most likely to be balanced by simultaneous inclusion of indicators that are not affected by household size (Brück and Kebede, 2013).

Now that we have chosen the dimensions, their respective indicators, weights, and the poverty cut-off, and various checks on the feasibility of MPI and treatment of missing information has also been discussed, MPI can be calculated using the Alkire Foster methodology explained earlier.

Table 6.3.2 shows India's MPI along with its components for 2005 and 2011. Since households living in urban Areas and rural areas would experience different deprivations, it is not recommended to calculate urban and rural MPIs using same deprivation. Since the focus of this thesis is on rural India, MPI is calculated for rural India only. Proportion of people who were identified as MPI poor in 2004 was 62.6 percent, which fell to 48.4 percent in year 2011, a fall of 23 percent. Similarly, on an average, each MPI poor household is deprived in 52.6 percent of the total weighted deprivations, which fell to just 49 percent in 2011. This would mean that although people are moving out of poverty, remaining households are still

facing a higher deprivations count. MPI, which is the product of intensity and incidence, H*A, indicates the percentage of deprivations poor people experience, as a share of the possible deprivations that would be experienced if all people were deprived in all dimensions (Apablaza and Yalonetzky, 2012) . In rural India poor people experience deprivation in 33 percent of the indicators in 2004, which fell to 24 percent in 2011.

Table 6.3.2: MPI and its Components, India: 2004 & 2011

Poverty cut off (k)	Index	Value	Standard error	Confidence interval (95%)	Poverty cut off (k)
k-value =33%	**Head Count Ratio (H) 2004**	62.6%	0.005	0.617	0.635
	2011	48.4%	0.005	0.475	0.493
	Absolute Change	0.142			
	Relative Change	23%			
	MPI (M0) 2004	0.33	0.003	0.324	0.334
	2011	0.24	0.002	0.234	0.243
	Absolute Change	0.09			
	Relative Change	0.28			
	Intensity (A) 2004	52.6%	0.001	0.523	0.528
	2011	49.2%	0.001	0.489	0.494
	Absolute Change	0.034			
	Relative Change	6%			

Source: Author's calculation using IHDS dataset

In the next section I present the mathematical approach of decomposing poverty dynamics before applying it on Indian dataset. I follow the methodology proposed by Nicolai Suppa, 2017 that allows explaining the interrelationship between indicators in a dynamic setting and allows for other advanced analyses by taking simultaneous and comprehensive account of transitions in deprivations and poverty (Suppa, 2017).

6.4 Decomposing Poverty dynamics

Since intensity and Head count ratio both contribute to calculate MPI, change in MPI can also be decomposed into changes in their contribution to M0 (Apablaza and Yalonetzky, 2012). Since MPI fulfils a dimensional breakdown, it can be denoted as the weighted average of dimensional contribution.

$$M\text{PI} = \frac{1}{N}\sum_{d=1}^{D} w_d h_{-d} \text{ = H*A} \quad \ldots\ldots\ldots\ldots \quad 1$$

Where, h_{-d} = censored headcount ratio

Censored headcount ratio (h_{-d}) is the proportion of poor people deprived in a particular dimension d and Uncensored head count ratio (h_d) is the proportion of people (both poor and non-poor) who are deprived in a particular deprivation irrespective of their poverty status. H_d is an uncensored headcount ratio in dimension d. Since we are looking at poverty dynamics, if we have two-point data set, change in MPI can be denoted as,

$$\Delta M0 = \frac{1}{N}\sum_{d=1}^{D} w_d \Delta h_{-d} \qquad \ldots\ldots\ldots\ldots \qquad 2$$

Change in M0 can also be decomposed into population-specific changes or dimensional changes by subgroups (Alkire, Roche and Vaz, 2017). When the panel data is available, segregating the population into dynamic subgroups can also be made (Alkire, James E Foster, *et al.*, 2015). This decomposition then allows M0 to be defined in each time as an aggregated weighted sum of these subgroups (Suppa, 2017). Difference between two time periods shows that the change in M0 is the sub-grouped weighted sum of the changes for the current poor, which increases due to movements in the poverty and movements out of it. Together, dimensional and subgroup decomposition allows an advanced analysis of poverty dynamics through transitions of deprivation and multidimensional poverty (Suppa, 2017).

Transitions in Poverty and Deprivations

Since dynamics in multidimensional poverty overtime is linked to the movements in and out deprivations, the relationship between the two can be ascertained by their joint transitions. At any given point in time, a household can be either deprived in dimension d and poor (denoted as PD), poor but not deprived in dimension d (denoted as PN), non-poor but deprived in dimension d (demoted as ND) or non-poor and not deprived in dimension d (denoted as NN). For simplicity, assuming that there are two-time periods t1 and t2, a household could take any of these stages in both the time periods and their transitions. According to Suppa (2017), movement from PD to PN, PD to NN and PD to ND would decrease the censored headcount ratio since censored headcount ratio is a proportion of household that are both poor and deprived. Similarly, movement in the opposite direction would increase the censored headcount ratio. At the same time movements between these four states of deprivation and poverty status define the uncensored headcount ratio. In order to answer my research question 1.1, this chapter decomposes the censored

headcount ratio, uncensored headcount ratio and MPI separately to better understand the deprivations and their interdependencies that together drive changes in poverty.

Decomposing Censored Headcount Ratio

Transitions in poverty and deprivations can be divided into those that are due to interdependencies between deprivations and those that drive changes in poverty. Change in censored headcount ratio, h_{-d} may result from a change in deprivation status of the poor but could also result from the change in poverty status due to developments in some other dimension. For example, a household that was deprived in health but was not deprived in any other indicator would not be counted in censored headcount ratio as the household did not have more than 33 percent of the total deprivations and hence considered non-poor. Now as the household becomes deprived in more indicators and cross 33 percent cut off it would no longer be considered non-poor and would be counted in censored head count ratio for health. Similarly, a household that was poor but non-deprived in health would be counted in censored headcount ratio of health when it becomes derived in health. Formally, change in censored headcount ratio can be more precisely divided into following movements:

$$\Delta h_{-d} = P(PD|ND) \times h_{-d} - P(ND|PD) \times (h_d - h_{-d}) + P(PD|PN) \times (H - h_{-d}) - P(PN|PD) \times h_{-d} + P(PD|NN) \times (1 - H - h_d + h_{-d}) - P(NN|PD) \times h_{-d} \quad \ldots 3$$

where,

$h_d - h_{-d}$, is the proportion of people who are deprived in deprivation d but are non-poor

$H - h_{-d}$, are the poor people not deprived in deprivation d

$1 - H - h_d + h_{-d}$, are non-poor and non-deprived in deprivation d

The first two terms in equation 3 show the change where only poverty status changes without change in that deprivation. Since these changes have arisen due to the mechanics of interdependencies between indicators/dimensions, Suppa, (2017) denoted these as $T_d^{mec} = P(PD|ND) \times h_{-d} - P(ND|PD) \times (h_d - h_{-d})$. The other four movements in equation 3 are more behavioural as these change the deprivation status and are denoted as T_d^{beh}. Behavioral changes are further divided into those that occur within poverty, i.e. movement in and out of deprivation without making any change in poverty status, $T_d^{wit} = P(PD|PN) \times$

$(H-h_{-d}) - P(PN|PD) \times h_{-d}$ and those that determine poverty status, $T_d^{det} = P(PD|NN) \times (1 - H-h_d+h_{-d}) - P(NN|PD) \times h_{-d}$. Given this, change in censored headcount ratio can be written as,

$$\Delta h_{-d} = T_d^{beh} + T_d^{mec} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4$$

$$\Delta h_{-d} = T_d^{wit} + T_d^{det} + T_d^{mec} \ldots\ldots\ldots\ldots\ldots\ldots 5$$

Regrouping mechanical transitions and determining transitions together would give us the measure of poverty entry and exit. $T_d^{emtry} = P(PD|NN) \times (1 - H-h_d+h_{-d}) + P(PD|ND) \times h_{-d}$ and $T_d^{exit} = - P(ND|PD) \times h_{-d} - P(NN|PD) \times h_{-d}$. Thus, change in censored headcount ratio can be written as,

$$\Delta h_{-d} = T_d^{wit} + T_d^{entry} + T_d^{exit} \ldots\ldots\ldots\ldots\ldots\ldots 6$$

Decomposing Change in Multidimensional Poverty

Since the change in adjusted headcount ratio can be denoted as the weighted sum of the change in dimensional specific censored headcount ratio (equation 2), further segregation to the change in M0 can be made by substituting equation 4 in equation 2.

$$\Delta M0 = \sum_{d=1}^{D} w_d (T_d^{beh} + T_d^{mec}) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 7$$

Decomposition poverty in equation 7 shows those changes in deprivations that drive changes in household's behaviour that ultimately leads to the change in poverty status. Equation 7 can further be decomposed into 'within' and 'determining' transitions in poverty and deprivations.

$$\Delta M0 = \sum_{d=1}^{D} w_d (T_d^{wit} + T_d^{mec} + T_d^{det}) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 8$$

Equation 8 decomposes M0 into transitions that take place entirely within poverty (T_d^{wit}), transitions in deprivations that also change the poverty status (T_d^{det}) and mechanical changes that are a by product of poverty entry and exits (T_d^{mec}). Finally using equation 6, M0 can be further decomposed into transitions that determine entry, exit and those that occur entirely within poverty status.

$$\Delta M0 = \sum_{d=1}^{D} w_d (T_d^{wit} + T_d^{entry} + T_d^{exit}) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 9$$

Since this is the weighted average of all the dimensions, it may or may not be possible to distinguish dimensions in this decomposition.

Decomposing Uncensored Headcount Ratio

Decomposing the uncensored headcount ratio is essential as it establishes a relationship between multidimensional poverty and the dashboard approach [29] and assess the effect of policy measures that are specific to a particular indicator or dimension (Suppa, 2017). For example, sanitation and housing department wants to know if the measures taken to improve sanitation and housing condition also affect the poor.

Since its uncensored headcount ratio, the transitions can occur within poverty and outside poverty as the focus is on deprivation status only, irrespective of change in poverty status. Changes in deprivation status of non-poor households are also considered in uncensored headcount ratio. Change in uncensored headcount ratio can be decomposed as:

$$\Delta h_d = P(PD|PN) \times (H - h_{-d}) - P(PN|PD) \times h_{-d}$$

$$+ P(PD|NN) \times (1 - H - h_d + h_{-d}) - \quad P(NN|PD) \times h_{-d}$$

$$+ P(ND|PN) \times (H - h_{-d}) - \quad P(PN|ND) \times (h_d - h_{-d})$$

$$+ P(ND|NN) \times (1 - H - h_d + h_{-d}) - \quad P(NN|ND) \times (h_d - h_{-d}) \ldots\ldots \qquad 10$$

Again, like censored headcount ratio, transitions can be grouped into those that occur within poverty, i.e. movement in and out of deprivation without making any change in poverty status, $T_d^{wit} = P(PD|PN) \times (H - h_{-d}) - P(PN|PD) \times h_{-d}$ and those that determine poverty status, $T_d^{det} = P(PD|NN) \times (1 - H - h_d + h_{-d}) - \quad P(NN|PD) \times h_{-d}$. Changes due to mechanical transitions are missing here, as mechanical transitions are transitions in poverty status without any change in deprivation status, which by nature of uncensored headcount ratio are invalid in this case. However, two other transitions form a part of change in h_d; transitions in the deprivation status of the non-poor and transitions in deprivations that run in the opposite direction of the transition in poverty status (Suppa, 2017). Transitions in deprivation status of non-poor do not affect their poverty status and run entirely outside poverty, therefore, $T_d^{out} =$

[29] Dashboard approach is similar to uncensored headcount ratio as the focus is only on the households that are deprived in a particular dimension irrespective of their poverty status.

$P(ND|NN) \times (1 - H - h_d + h_{-d}) - P(NN|ND) \times (h_d - h_{-d})$. Transitions that run counter to each other have transitions in some other dimensions that dominate the change in d, $T_d^{dom} = P(ND|PN) \times (H - h_{-d}) - P(PN|ND) \times (h_d - h_{-d})$. Change in uncensored headcount ratio, thus can be written as,

$$\Delta h_d = T_d^{wit} + T_d^{det} + T_d^{out} + T_d^{dom} \dots\dots\dots \quad \dots\dots \qquad 11$$

Equation 11, effectively shows that change in a particular deprivation status may, only change the intensity of poverty among already poor, or change along with the poverty status, or not affect poor at all as only non-poor experienced change in deprivation d, or be dominated by changes in some other dimension such that changes in dimension d run counter to change in poverty status (Suppa, 2017). The transitions can also be regrouped to get the following equation:

$$\Delta h_d = T_d^{wit} + T_d^{entry} + T_d^{out} + T_d^{exit} \dots\dots\dots \quad \dots\dots \qquad 12$$

Where, $T_d^{entry} = P(PD|NN) \times (1 - H - h_d + h_{-d}) - P(PN|ND) \times (h_d - h_{-d})$

$$T_d^{exit} = P(ND|PN) \times (H - h_{-d}) - P(NN|PD) \times h_{-d}$$

Equation 12 could reveal large quantities of deprivation related movements in and out of poverty, which may cancel each other out if only changes in uncensored headcount ratio is studied. Equations (11) and (12) explains how the poor are affected by changes in deprivation status, for example, an overall decrease in deprivation in assets or an increase in deprivation of access to toilet facilities.

Examining Poverty Dynamics

Availability of panel data also allows decomposing poverty entry and exit by distinguishing deprivations that made a household enter or exit poverty due to change in deprivations itself, from those that were already entered into previously or those that were dominated by the change in some other dimension. Particularly, it is possible to identify behavioural and mechanical transitions among those who change their poverty status (Suppa, 2017). This can further inform us about the process of how deprivations vary and can be a reason for movements in and out of poverty. It also helps to identify if some deprivations are more persistent than others. The share of mechanical and behavioural transitions into a deprivation among those who move in or out of poverty can be denoted as,

$$s_{d-beh}^{p+} = \frac{p(PD|NN) \times (1 - H - h_d + h_{-d})}{household\ entering\ poverty} \ and \quad s_{d-mec}^{p+} = \frac{p(PD|ND) \times (h_d - h_{-d})}{household\ entering\ poverty}$$

$$s_{d-beh}^{p-} = \frac{p(NN|PD)\times(h_{-d})}{household\ leaving\ poverty}\ and\quad s_{d-mec}^{p+} = \frac{p(ND|PD)\times(h_{-d})}{household\ leaving\ poverty}\ldots \quad \ldots\ldots\ldots 13$$

Section 6.5 empirically provides evidence from India using decomposition analysis discussed above.

6.5 Poverty Decomposition in India

In order to understand the dynamics in multidimensional poverty across years it is important to see the trends in the deprivations of MPI indicators across time. I continue to use data from IHDS round 1 and 2 for this analysis. In this section I present year-to-year decomposition analysis using the panel data-based decompositions explained above. The elementary analysis using uncensored headcount ratio is shown in table 6.5.1 below. Although data shows that there is widespread deprivation across all dimensions in both the years, households are most deprived in basic amenities (safe cooking fuel, better toilet and secure roof) along with deprivation in ownership of assets and livestock. Deprivation in schooling and longevity is not very high which could be the result of a smaller number of households eligible for these indicators in the first place. Similar trend in deprivation is seen in both the years.

Table 6.5.1: Changes in Uncensored Headcount Ratio/ Dashboard Approach

Indicators (Deprivation in)	2005	2011	Δ	δ	Significance
Schooling	10.467	3.411	7.055	0.674	***
Adult Education	37.153	31.437	5.716	0.154	***
Health	31.956	26.048	5.909	0.185	***
Longevity	4.390	1.976	2.414	0.550	***
Toilet Facilities	84.065	76.029	8.036	0.096	***
Cooking Fuel	95.917	75.124	20.793	0.217	***
Drinking Water	18.456	13.785	4.671	0.253	***
Secured Roof	61.762	42.396	19.365	0.314	***
Livestock	56.926	60.491	-3.565	-0.063	***
Physical Assets	60.363	46.448	13.915	0.231	***

Source: Calculated using IHDS

Table 6.5.1 also shows the absolute and relative change in the deprivations over two-time period along with their significance in difference using McNemar's test.[30] Although there has been a decline in deprivation in all dimensions, except livestock, deprivation in some of the indicators remains very high. A huge proportion of population in rural India is still deprived of basic amenities, with over 70 percent

[30] McNemar's test is a statistical test conducted on paired nominal data to check for marginal homogeneity i.e., if the row and column marginal frequencies match.

household having no access to toilets and better quality of cooking fuel and 42.4 percent households not having secure roof over their head. Not many households are in possession of assets[31] (46.5 percent) and livestock (60.5 percent). The fall in deprivation is not consistent across dimensions. While there is a decent decrease in the deprivation in assets (14 percent), cooking fuel (20 percent) and secure roof (19.35 percent), indicators like adult education, schooling, health, mortality, toilet and drinking water do not show much improvement. Schooling, with an absolute decline of only 7-percentage point, from 10 percent to 3 percent, show 67 percent decline in relative terms. A similar trend is seen in mortality where the relative change is deprivation is more than 50 percent. A decrease in deprivation in schooling and longevity could be a result of overall availability of more schools, better health service, better awareness, or just increased income. An increase in deprivation of ownership of livestock can be justified by increasing shift towards other form of assets and occupation from livestock rearing. It is difficult to say just by looking at trends in individual deprivations what triggered the decline in overall poverty since these depict deprivation in each indicator irrespective of deprivations in other indicators. However, policy makers need to understand the impact of their policies because of which a detailed analysis of individual deprivations is important.

While studying the changes in deprivation across times, it is important to keep into consideration that some of the indicators change as households' composition change. These indicators, typically pertaining to health and education are specific to certain members of the households. These indicators follow a natural process of households' life cycle, for example deprivation in well-nourished children under the age of 5 disappears when that child turns 6 years old, and the household will no longer be considered deprived in child nutrition. But at the same time the household will become eligible for school education for kids in that age group as the child enters school age. As explained earlier the possible bias in health and education indicator is balanced by including indicators that are relevant to all household members in the analysis. Moreover, it is also worth mentioning that as an indicator becomes irrelevant for a household, the household has to worry about a smaller number of deprivations if there is not a parallel increase in deprivation in some other dimension. Looking at the aggregate measure, this should not affect the estimation of MPI as at any given point if one individual moves out of eligible age for that deprivation, another would enter it too. Nevertheless, the change in the indicators pertaining to individual members of the family, shall be

[31] At least one of these: television, refrigerator, washing machine, motorbike, tractor, mixer/grinder, generator set, air cooler and a car.

interpreted with caution. In case of India deprivation in terms of education enrolment of school going children and child mortality are two such indicators that need special attention. Deprivation in these indicators is already very low, which is also due to non-eligibility of many households for these indicators.

Table 6.5.2 shows multidimensional poverty index and its components along with their absolute and relative changes, for the poverty cut-off (k-value) of 33 percent. Clearly there has been a fall in all aggregates on multidimensional poverty, which is attributed to the fall in dimension specific deprivations. There is 14.2 percentage point fall in the head count ratio as compared to only 3.4 percentage point fall in the intensity of poverty. This indicates that although many people have moved out of poverty those who remained have a high intensity of poverty, i.e. they are deprived in 49 percent of the deprivations.

Table 6.5.2: Aggregate Indices of Multidimensional Poverty and Censored Head Count Ratios

	2005	**2011**	**Δ**	**δ**	**Significance**
M0	0.329	0.238	0.09	0.28	
H	62.60%	48.40%	0.142	23%	***
A	52.60%	49.20%	0.034	6%	***
Deprivation in: (in %)					
Schooling	9.937	3.101	6.837	0.688	***
Adult Education	35.120	27.745	7.375	0.210	***
Nutrition	27.075	19.546	7.529	0.278	***
Longevity	3.938	1.524	2.414	0.613	***
Toilet Facilities	59.298	45.333	13.965	0.236	***
Better mode of cooking	61.120	44.502	16.618	0.272	***
Safe drinking water	13.857	7.935	5.923	0.427	***
Secure roof	45.807	27.980	17.827	0.389	***
Livestock	44.059	37.007	7.053	0.160	***
Physical assets	53.125	38.742	14.383	0.271	***

Source: Calculated using IHDS 2005-2011, India

Table 6.5.2 also shows the level of censored headcount ratios. It is worth noting that the level of censored headcount ratio is a bit smaller than uncensored headcount, indicating that some part of deprivation is ignored when multidimensionality is taken into consideration. It is important to note that indicators show lower deprivation in censored head count ratio as censored headcount ratio filters out non-poor households that are deprived in that indicator. For instance, 46.5 percent households were asset deprived in 2011 according to the uncensored head count ratio, the number fell to 38.7 percent when focus shifts to

the censored headcount ratio. Another point to consider is that the direction of change for censored and uncensored headcounts could also be different from each other (e.g. livestock). This would mean that those who are poor are buying more livestock as a source of livelihood but those who are non-poor or those who moved out of poverty sold off their livestock to move to better business prospects. Data also tells that there are certain quantitative changes in deprivations that show different stories. For example, while share of all households deprived in toilet facilities fell by 7 percentage points the proportion of poor households deprived of toilet facilities fell by 14 percentage points. This could be because of the total sanitation scheme wherein new toilets are being made for poor households improving their health and sanitation. On the other hand, proportion of people deprived of safe cooking fuel fell by 20.8 percentage point in total population, the share of poor household deprived of cooking fuel fell by 16.5 percentage point indicating that poor household are not able to afford better cooking fuel. Changes in the deprivation status of individual indicators using censored and uncensored headcount ratios, although important, do not provide adequate evidence about their contribution in poverty dynamics making it necessary to decompose these further. As households face deprivations in multiple dimensions together at a time it is important to study the interdependencies among these indicators and how one indicator behave with a change in another indicator.

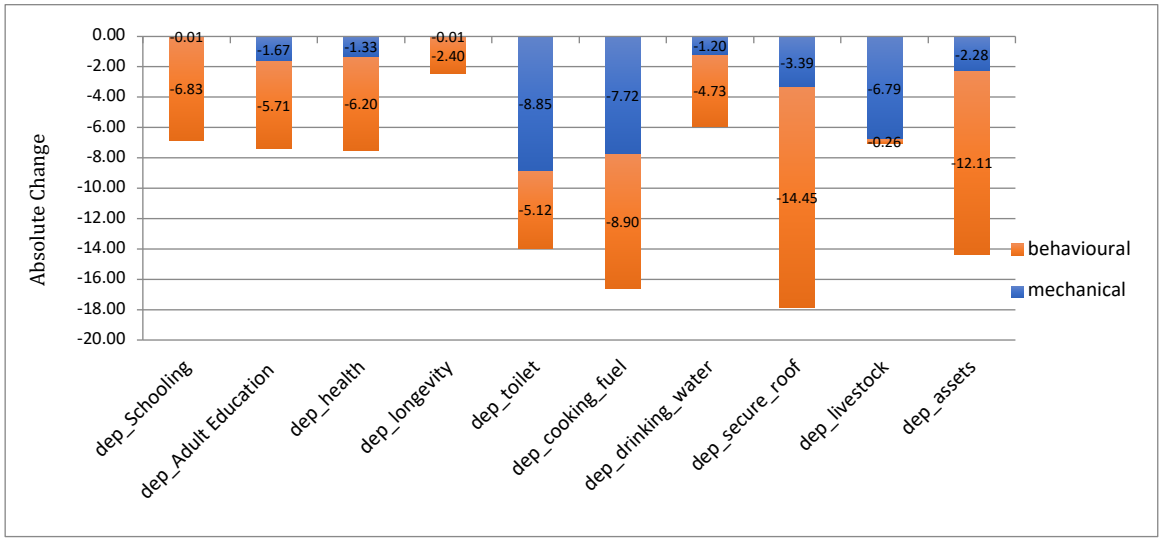
Decomposing Censored Headcount Ratios

As described earlier (equation 4 and 5) the transitions in censored headcount ratios can be decomposed into mechanical and behavioural changes. Behavioural changes in turn are decomposed into transitions within poverty and transition outside poverty (equation 6). Figure 6.5.1 below presents the decomposition of censored headcount ratios for all deprivations. As can be seen from the graph almost entire decline in deprivation in schooling and longevity is behavioural, implying that poor people are actually leaving these deprivations and the change is not due to a household getting non-deprived in some other dimension.

Moreover, most of the other deprivations show that the change in censored headcount ratio is primarily due to behavioural change, except for deprivation in access to toilet and ownership of livestock, where mechanical transitions play a major role. It is worth noting that mechanical change indicates that the household was already deprived in that indicator but because of censoring the household was not counted in headcount ratio. Now when there was a change in poverty status due to change in deprivation status of

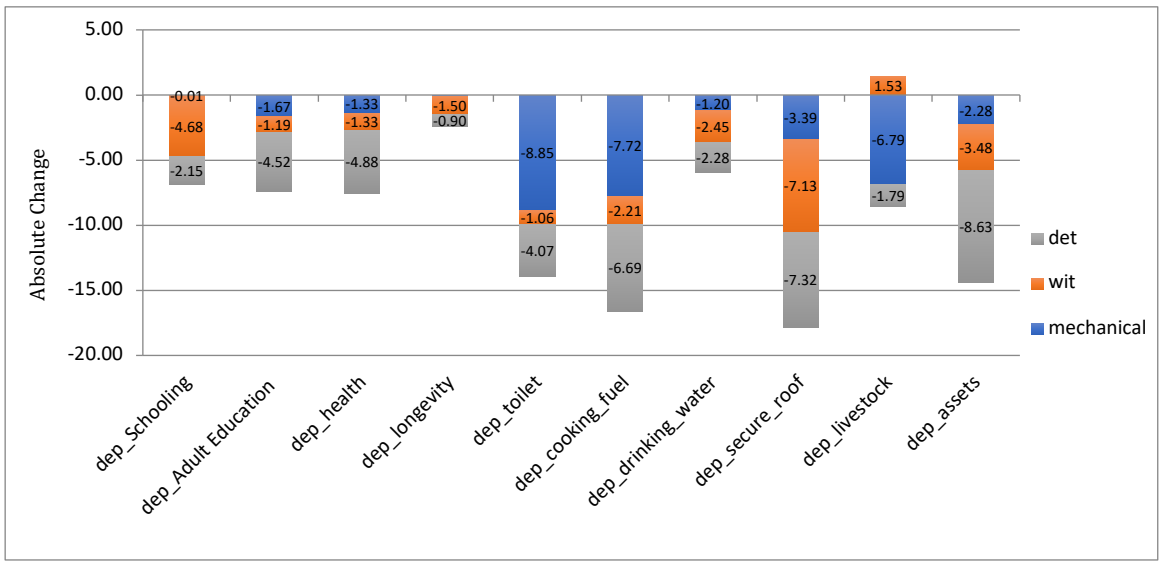
some other indicator the household is a part of censored headcount ratio for the given deprivation. In case of livestock in rural India, it is seen that the censored headcount ratio fell by 7 percentage point and out of that 6.8 percentage point was due to mechanical change, i.e households remained deprived in livestock but as they became non-deprived in some other dimension they moved out of poverty and became ineligible for censored headcount ratio, eventually declining the censored headcount ratio for livestock. This also validates the increase in the uncensored headcount ratio of livestock deprivation.

Figure 6.5.1: Decomposing Censored Headcount Ratio



Source: IHDS I and IHDS II

Figure 6.5.2: Decomposing Censored Headcount Ratio, Cont.



Source: IHDS I and IHDS II

Using equation 5, behavioural transitions are further divided into changes that lead to change in

deprivation status without any change in poverty status (T_d^{wit}) and changes in deprivation status that determine the change in poverty status (T_d^{det}). Figure 6.5.2 above provides a snapshot of movements within poverty and those that determine poverty. Since we are considering multidimensional space, we can easily see that leaving a deprivation does not always mean that the household will also leave poverty. For example, out of the total fall in censored headcount ratio in schooling of 6.87 percent, 4.68 percent do not change their poverty status in spite of coming out of deprivation, i.e., 68.5 percent households even after becoming non-deprived in schooling still remain in poverty indicating that they have deprivations in other indicators that do not allow them to leave poverty. However, there are still 31.42 percent households who have left deprivation in schooling and have left poverty as well. Similarly, there are many households that left deprivation in secured roof but did not leave poverty and many that left poverty because they became non-deprived in secured roof. Assets, adult education, and health indicator show that more than 60 percent poor households leave poverty along with leaving these deprivations making them important dimensions for poverty exits. Within and determining transition in livestock run counter to each other. There are more poor households who enter this deprivation as compared to those who leave this deprivation, although determining change is more than within change leaving an overall positive behavioural change. The analysis indicates that leaving a particular deprivation alone does not guarantee movement out of poverty as a poor household endure multiple derivations at a time.

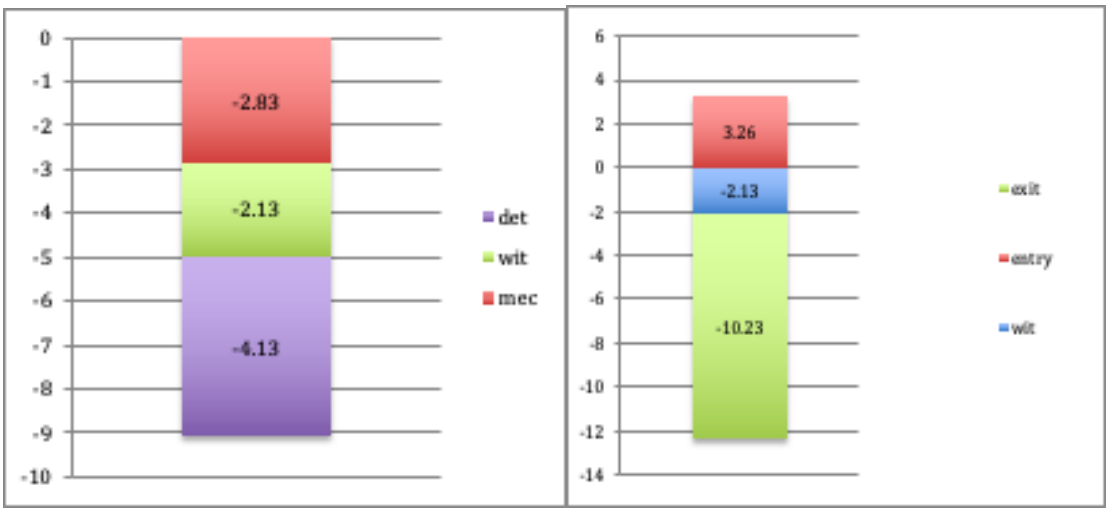
This analysis shows that most of the change in censored headcount ratio in dimensions is because of behavioural change, except in cooking fuel, livestock, and toilet, and within behavioural change most of the change is determining the exit from poverty, except for schooling and secured roof.

Decomposing the Adjusted Headcount Ratio

Since the adjusted head count ratio is a weighted summation of dimension-specific head count ratios, changes in adjusted headcount ratio can also be decomposed into changes in dimension-specific headcount ratio (equation 1) (Apablaza and Yalonetzky, 2012). Figure 6.5.3 show two decompositions of change in M0. First, aggregating over dimensions and partitioning M0 into transitions that take place entirely for those who were already poor (T_d^{wit}), those that also determine poverty status (T_d^{det}) and mechanical transitions that arise as a result of a change in some other dimension (T_d^{mec}). Second, rearranging three transitions just mentioned above according to their associated changes in poverty status. The left side of

figure 6.5.3 shows that the decrease in M0 for the period under investigation results mostly from people leaving deprivation (T_d^{det}), partly from changes in deprivation status that do not change poverty status (T_d^{wit}) and partly due to prior deprivations (T_d^{mec}). The right side shows that the net fall in M0 is a result of many households exiting poverty (10.23) as compared to households entering poverty (3.26).

Figure 6.5.3: Decomposing the Adjusted Headcount Ratio



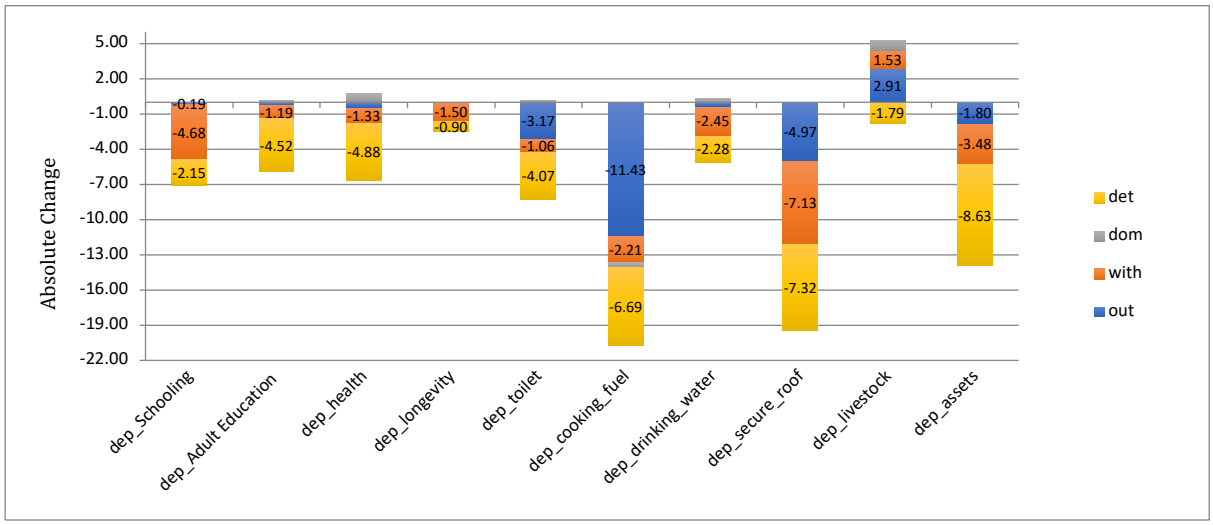
Source: Calculated using IHDS dataset

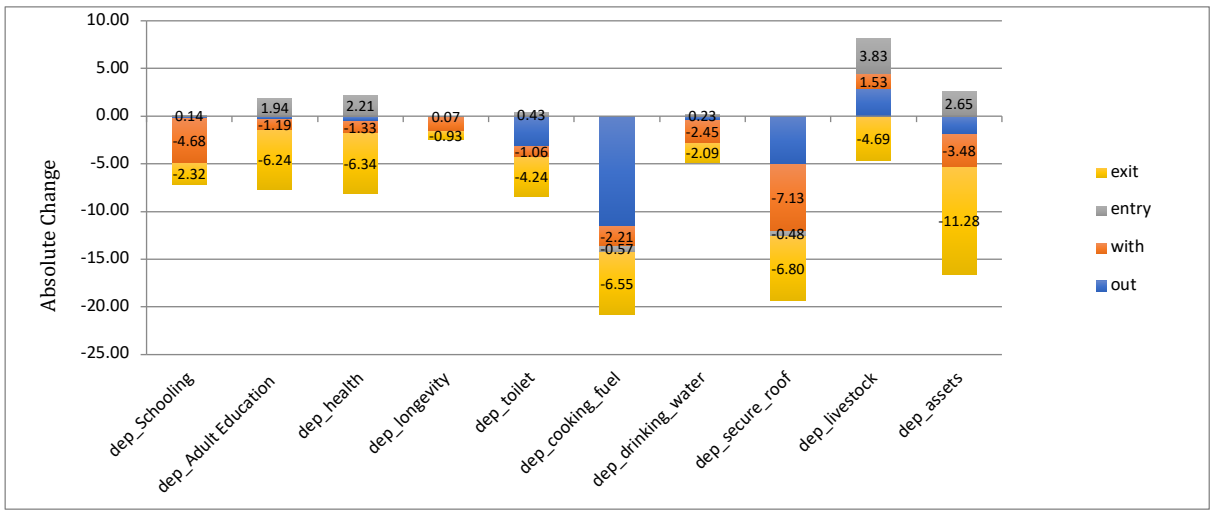
Decomposing the Uncensored Headcount Ratio

Since I am also focussing on looking at the impact social protection policies make on poverty dynamics it is important to decompose uncensored headcount ratio too. Policy makers are often interested in knowing how their policies fare in terms of movement in and out of poverty, whether they impact the life of the poor or they mainly benefit the non-poor. Using equation 11 & 12, decomposition in uncensored headcount ratios could be made.

Figure 6.5.4 illustrates decompositions of change in uncensored headcount ratio. Using equation 11, the first figure indicates that poverty status is mainly determined by indicator-specific transitions (i.e. transitions in deprivations collected in (T_d^{det}), clearly making the lives of poor better as they move out of deprivation and thereby poverty. Assets followed by livestock, cooking fuel, secure roof and health & education are shown to be playing the most important role in poverty exits.

Figure 6.5.4: Decomposing Uncensored Headcount Ratio





Source: Calculated using IHDS dataset

Although, as shown in equation 11, there are some transitions that affect non-poor too, for example transition in deprivation in cooking fuel, toilet, secure roof and to some extent assets affect non-poor as well (T_d^{out}). This could be due to the fact that there are many households who are deprived in just a couple of these indicators but have a deprivation score of less than 33%. Any transition in the deprivations that these households face will be considered taking place outside poverty as these households are categorised as non-poor to begin with. At the same time, there are transitions that take place within poverty, i.e., movement out of deprivation in a particular indicator does not show a corresponding movement out of poverty. Many poor households have left deprivation in schooling, secure roof and assets but could not move out of poverty. Change is livestock has been an interesting observation all throughout this analysis. As noted earlier, livestock is the only indicator that shows increased deprivation, although point worth

considering here is that most of the increase in deprivation in livestock has taken place outside poverty, i.e. the increased deprivation has affected the non-poor more. A small proportion of poor household that have moved out of this deprivation have moved out of poverty too, verifying that censored headcount ratio for livestock has fallen and the increase in uncensored headcount for deprivation in livestock is because of outweighing transitions happening outside poverty.

The second graph in figure 6.5.4, using equation 12, displays significant amount of poverty entries and exits and, therefore, reveals that net headcount ratio does not represent the true picture of poverty. Although many households have moved out of poverty many have entered into poverty as well. This is particularly true in case of livestock, health, education, and physical assets, making these indicators not just important factor for poverty exits but important indicators to consider when designing policies for poor.

Poverty Dynamics: Entries and Exits

In India, although overall multidimensional poverty declined between the two time periods, there are many households who continued to remain poor in 2011 as well. 41 percent of the households are chronically poor as they remain stuck in multidimensional poverty in both the waves. Movement into poverty is low at 7.3 percent as compared to movement out of poverty, which stands at 21.5 percent. A large number of households remaining stuck in multidimensional poverty clearly shows that the change in the deprivation status of a particular indicator does not necessarily bring a change in multidimensional poverty. Figures 6.5.5a and 6.5.5b illustrate a detailed analysis of multidimensional poverty dynamics using equation 13. The first graph shows transitions in deprivations for those who fell into poverty, and the second graph displays the shares of transitions out of deprivations for those who escaped poverty. Some indicators only appear to matter indirectly for both entry and exits. For example, while 23 percent and 32 percent households have exited poverty because of leaving deprivation in access to toilet and cooking fuel respectively, most people who leave poverty remained deprived in these two indicators. Likewise, 12 percent and 3 percent households enter poverty as they become deprived in these indicators, 78 percent and 86 percent households were already deprived in these deprivations and became poor, may be due to entering some other deprivation. This would mean that in rural India better cooking fuel and hygienic toilet facilities although are considered important for good standard of living they do not determine a households poverty status much. At the same time, it is important to consider that these dimensions although are

important from policy perspective, they are not considered as important by rural households. In terms of priorities households would like to make changes in their asset portfolio, invest in livestock, send kids to school, and get proper nutrition rather than building a toilet at home or changing source of cooking fuel. Deprivations in assets, education, health, and livestock play an important role in poverty entry and exits. Many households enter/exit poverty because of transitions in these dimensions. 54 percent and 42 percent households entered poverty because they became deprived in livestock and assets respectively. Very few households entered these deprivations when they were already deprived in these and very few exited and still remained deprived in these, except livestock.

Figure 6.5.5a: Transitions in Deprivations among Poverty Entries

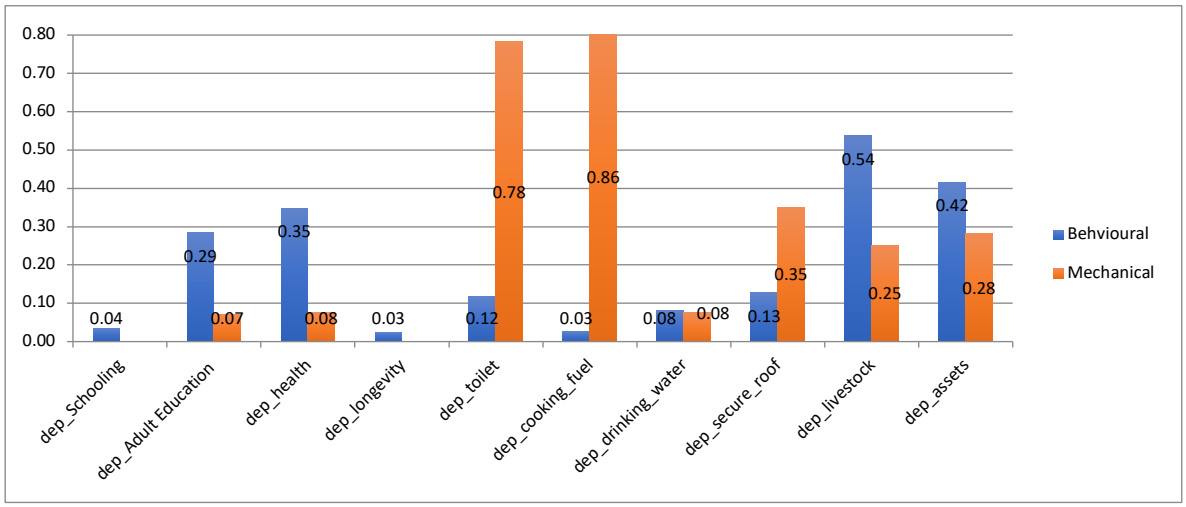
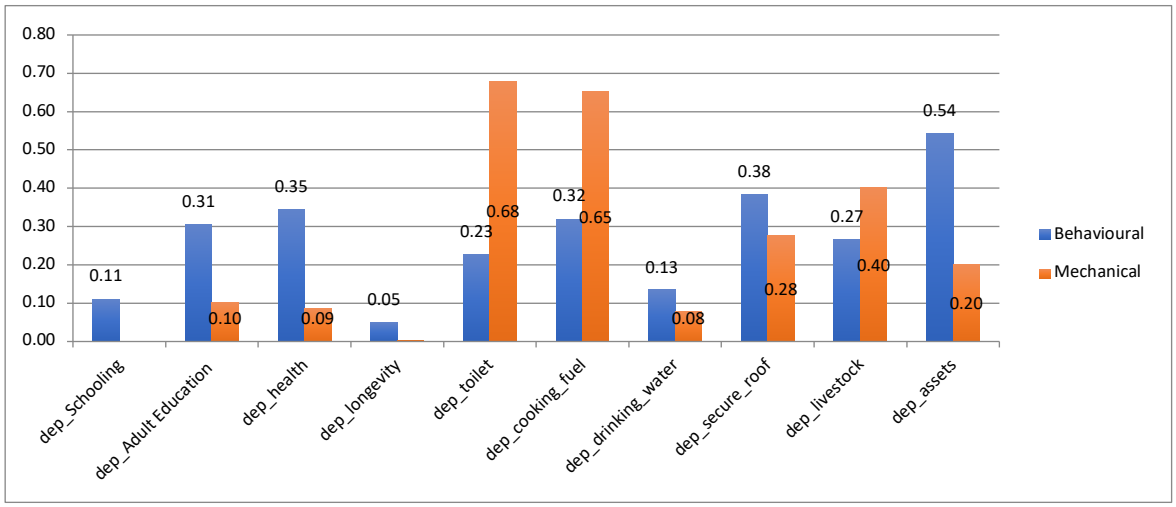


Figure 6.5.5b: Transitions out of Deprivations among Poverty Exits



Source: IHDS I & II

6.6 Conclusion

The joint analysis of poverty and deprivation in this chapter allows looking into the interdependencies between multiple dimensions deeply. This chapter outlined the decomposition analysis for uncensored headcount ratio, censored headcount ratio and multidimensional poverty and established a link between deprivations and movements in and out of poverty. Multidimensional nature of poverty and so the social protection policies tackling multidimensionality of poverty are gaining attention amongst policy makers. Generally, policies are made keeping in mind a particular indicator, it becomes necessary for policy makers to know how this indicator affects the multidimensional poverty dynamics, especially when the panel data is available.

Examining uncensored and censored headcount ratios together is imperative as it gets difficult to know just by looking at the changes in uncensored headcount ratio how a change in particular deprivation has affected the poor. For example, in my analysis, uncensored headcount ratio for toilet decreased by 8 percentage points whereas censored headcount ratio decreased by 14 percentage point, making leaving this deprivation more relevant for poor households.

A detailed analysis of poverty dynamics shows which dimension needs more attention in order to address a specific target group. This kind of analysis provides useful insight into analysing the deprivations responsible for direct movement in and out of poverty, and also identifying deprivations that are not majorly responsible for dynamics in poverty but are indirectly impacting the movements in headcount ratios. In my analysis, assets, health, education, and secured roof show that they are very important factor when it comes to movement out of poverty. Another point worth mentioning here is that although there are some deprivations accounting for a huge contributor in the change in Adjusted headcount ratio, when their contribution to poverty dynamics is seen individually, they do not contribute much. For example, changes in the deprivation ratio of secured roof, toilet and cooking fuel decently contribute to the change in M0 but many of them exited poverty without leaving these deprivations and many entered poverty while they were already deprived of these dimensions.

The comprehensive analysis of poverty dynamics in India, replicating the decomposition analysis developed by Nicolai Suppa (2017), provides me with an understanding of the transitions in deprivations

that can have an impact on multidimensional poverty dynamics without having an immediate impact on consumption poverty. Over time as a household gets deprived in multiple dimensions, it is possible for a household to develop consumption poverty as well. At the same time, overcoming multiple deprivations can have a positive impact on movements out of consumption poverty.

Chapter 7: Poverty Dynamics and Its Relation to Social Protection in India

7.1 Introduction

In previous chapters, I laid out the foundation of poverty dynamics and reviewed the relevant theories that best explain poverty dynamics. I also discussed why studying poverty dynamics through the lens of multidimensional poverty is relevant. In chapter 6, multidimensional poverty is measured and decomposed to give a meaningful explanation of why and how interdependencies among different dimensions affect poverty dynamics over time. Following up on previous chapters this chapter provides an empirical understanding of the factors that contribute to poverty persistence, movement out and movement into poverty.

Despite significant achievements, poverty rates in India are unacceptably high. As mentioned in previous chapters, between 2004 and 2011 consumption poverty declined from 37.2 percent to 21.9 percent and the proportion of multidimensional poor declined from 62.6 percent in 2004 to 48.4 percent in the year 2011. Although these achievements have been widely appreciated it is of utmost importance to understand the distribution of people who fall into and who move out of poverty. Moreover, as mentioned in the previous chapters, while dynamics in consumption poverty is a short-term phenomenon capturing short-term movements in and out of poverty, multidimensional poverty dynamics captures long-term well-being of a household. Therefore, it is important to analyse the determinants of poverty dynamics using both consumption and multidimensional poverty measures.

While analysing poverty alleviation, the role of social protection policies can't be overlooked. Social protection policies have had a very important place in Indian poverty alleviation history. Some programmes, prima facia, look crucial for poor people but are not substantial enough to make poor people resilient. Some unintentionally do the opposite effect, as they have an eligibility criterion attached to it, making poor household demotivated to make an effort to move out of poverty in a fear of losing benefits from schemes. Although social protection schemes are widely prevalent their impact on poverty dynamics is still under question. Many researchers have looked into the impact these policies have on poverty and other socio-economic variables, however, the relationship between these policies and poverty dynamics and graduation is a new area not many researchers have dealt with, especially in India. This chapter aims

to fill this gap in literature by investigating the effect of some of the social protection schemes in India on poverty dynamics.

India has a numerous program funded at different government levels with different goals. All social protection schemes available in India have been discussed in detail in Chapter 4. In this chapter we are focussing on Public Distribution System (PDS), Mahatma Gandhi Rural Employment Guarantee Act (MNREGA), and National Pension Scheme. Following the descriptive analysis of IHDS data in chapter 5 this chapter further analyses the factor affecting poverty dynamics using econometric modelling. Section 7.2 explains the matching technique used to create a balanced dataset to get rid of selection bias in my data. Section 7.3 elaborates on the methodology used to study the impact of social protection schemes on Poverty dynamics along with other covariates. Section 7.4 discusses the results obtained, and section 7.5 explains the social protection challenge faced by India. Section 7.6 completes the chapter by summarising the results.

7.2 Data Balancing: Entropy Balancing

Before setting up an econometric modelling to see how social protection policies, along with other confounders affect poverty dynamics, it is important to keep in mind that my data is not randomized. Households choose to participate in social protection schemes making results prone to selection bias. Ideally, if one has to look at the outcome of a certain policy, randomized control trial works the best (Deaton and Cartwright, 2018). Under randomized control trials, allocation of treatment is random ensuring that treatment status does not get confounded by measurable or unmeasurable baseline variables (Austin, 2011). However, it is not always possible to undertake a randomized control trial experiment as many times observational studies have to be made where evaluation is planned after the treatment has already been administered and the assignment of treatment is unknown. These studies are subject to selection bias as baseline (pre-treatment) covariate distribution of those treated could systematically be different from those not treated. Making direct estimate of the effect of being treated without taking into account endogeneity arising due to selection bias brings confounding effects into a causal relationship and result in bias in the estimation (Heckman *et al.*, 2006). Such endogeneity makes it difficult to establish causal relationship between the dependent and explanatory variable in question as both affect each other. In my case transitions in poverty could cause changes in households' decision to participate in social protection

schemes and participation in the schemes in return could impact poverty transitions.

A common method of dealing with such endogeneity is to use instrumental variables methods that involves at least one instrumental variable which must be correlated with the treatment variable but uncorrelated with the error term. Estimation with instrumental variable typically involves a two-stage least squares (2SLS) analysis, where in stage 1 participation in treatment is estimated and predicted as a function of an instrument variable that is uncorrelated with the outcome variable; in stage 2 outcome is modelled as a function of the predicted value of treatment from stage 1 (Huang, 2018). Duflo and Pande, (2007) used gradient of land as instrument for dam construction in order to control for endogeneity while estimating the impact of dam placement on poverty. Similarly, Khandker *et al.*, (2012) studied the welfare impacts of households' electricity connection in Bangladesh, and used household distance from electric pole as an instrumental variable. The main advantage of using Instrumental Variable is that it is very straightforward to use and if correct instrumental variable is chosen it can control for endogeneity occurring both from observable and unobservable variables. The drawback of using it is that it is very difficult to find a strong instrumental variable and working with a weak instruments may lead to over or underestimation of estimates (White and Raitzer, 2017). Moreover, it is never known with certainty that the chosen instrument is not correlated with unobserved variables that are causally related to the outcome (Lokshin and Sajaia, 2004).

Another method that has been commonly used by researchers to correct for endogeneity is called the endogenous switching regression (ESR) model that estimates simultaneous equations through modelling both selection and outcome equations. ESR model two outcome equations, generally called two 'regimes', one for treatment and one for control, allowing for endogeneity of selection into treatment (Lokshin and Sajaia, 2004). ESR controls for factors affecting treatment and disentangle the factors influencing the outcomes among treated and control groups (Tesfaye and Tirivayi, 2016). Adela and Aurbacher, 2018, using the ESR, explored whether access to irrigation water enhances livelihood of the farmers. Since farmers decision to irrigate is an endogenous variable leading to bias and inconsistent estimates, endogenous switching model was used to correct for self-selection and endogeneity. Just like Instrumental Variables method this method also requires at least one Instrumental variable, and poor instrument may lead to biased estimates. Moreover, if the chosen selection model is weak it can be difficult to achieve convergence while estimating equations (White and Raitzer, 2017).

Matching is another popular method of correcting data to get rid of endogeneity bias in the estimation (Ho *et al.*, 2007). Matching reduces pre-treatment data imbalance between the treated and control groups in a way that the covariate distribution between both the groups matches with each other (Stuart, 2010). Lowering imbalance lowers the degree of model extrapolation in the statistical estimation of causal effects (ibid), which as a result would generate unbiased and efficient estimates. The resulting data would be very close to the one that could have been obtained had an experimental randomised control trial was undertaken.

The most popular matching technique used by researchers is propensity score matching (PSM) (Caliendo and Kopenig, 2005). The propensity score is defined as an estimated probability of a unit receiving a given treatment as against control group that does not receive treatment given the observed baseline covariates. Propensity score matching creates balanced sets of treated and control groups who share a similar value of the propensity score (Rubin and Rosenbaum, 1983). Propensity score matching allows estimation of the Average Treatment Effect, which is claimed to be an unbiased estimate of the true treatment effect (ibid).

Propensity score matching is quite eminent as a tool to correct selection bias in non-experimental studies, however, this does not come without various shortcomings (Watson and Elliot, 2016). It is found that PSM does exactly opposite of what it claims to do by increasing imbalance, model dependence, inefficiency and bias (King and Nielsen, 2019). In propensity score matching, propensity scores are estimated using a logistic function where participation in treatment is regressed on observed baseline characteristics. The predicted probability of participation estimated from the fitted regression model is called the propensity score. Propensity scores from the treated and non-treated units are matched and those that do not find a good match are pruned, which reduces the sample size and results in loss of information. Moreover, as matches are found based on the propensity score, which is a scalar that summarises covariates, the individual covariates have a possibility of being randomly matched even when propensity scores match closely (DeFond, Erkens and Zhang, 2014). Even with these drawbacks PSM has been widely used for matching purposes as there are many researchers who believe that PSM only distorts the data if unlimited pruning is conducted (Ripollone *et al.*, 2018).

Another method, called entropy balancing, that builds on propensity score matching while addressing its shortcoming has been introduced by Hainmueller (2012). Entropy balancing involves a re-weighting

process that makes the distribution of covariates in the re-weighted treatment and control group satisfy a set of specified moment conditions (ibid). While propensity scores are generally calculated through a binary regression model with the resulting balance evaluated to check if the estimated weights makes distribution of covariates similar, entropy balancing computes weights to correct for difference in sample distributions, and therefore directly incorporates the covariate balance into the weights (ibid; Watson and Elliot, 2016).

Although matching has been a very efficient method to condition on observables, it does not take into account unobserved factors that may affect the participation in the treatment (Nielsen, 2010). Therefore, if the bias in estimates is due to unobservable variables, then matching technique may not reduce biasness. At the same time, it is difficult to comprehend if other methods of correcting endogeneity fully take unobservable variables in account. Researchers in favour of matching methods tend to believe that there are not many unobservable, and those who are in criticism of matching techniques always argue that there are many unobservable hanging around and there is no way, empirically, to find out how many of them are there (ibid). Researcher's judgement, and quality and comprehensiveness of the data available become a deciding factor for which method to be used to control endogeneity. Although both matching and non-matching techniques rely on some assumptions. While matching ignores unobservable variables non-matching techniques make a very strong assumption that instrumental variable only affects the outcome through its relationship with the exposure variable (Lousdal, 2018). It is very difficult to find an instrumental variable that fulfils this assumption. Matching can tackle endogeneity if the variables influencing selection in the treatment can be measured. Availability of large scale nationally representative datasets covering an array of information makes it possible to measure wide variety of variables influencing selection. Matching also protects against extrapolation as more weight is put on observation with similar covariates (Hainmueller, 2012).

This chapter uses entropy balancing technique to correct for endogeneity. I cannot say with certainty that there are not any unobserved covariates, but a thorough investigation is made in order to include all evident variables affecting a decision to participate in the schemes. Below I present a number of favourable features of entropy balancing as pointed by Hainmueller (2012). They can be summarised as follows:

1. Entropy balancing attains high degree of balance by correcting the disparities in representation

regarding the first, second, and even higher means of the covariate distributions.

2. Unlike other matching techniques such as propensity score matching, where unmatched units are discarded, the entropy balancing provides more flexibility as balance is achieved by reweighing units, also keeping the weights as close as possible to the base weights to prevent loss of information and thereby preserves effectiveness of the data for the consequent analysis (ibid).

3. The weights estimated using entropy balancing are flexible, as they can be used with almost any commonly used estimator for estimating treatment effects. Since entropy balancing orthogonalizes the treatment indicator with the other covariates that are included in the balance constraints, the resultant estimates show lower model dependency compared to estimates from the unbalanced data (ibid).

Where entropy weights are to be used to reweight the control group in order to balance the data for subsequent estimation, entropy weights, w, are calculated by minimizing the entropy distance metric, which is defined as:

$$\min_{w_i} H(w) \;=\; \sum_{(i|D=0)} w_i \,\log\left(\frac{w_i}{q_i}\right) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 1$$

subject to balancing and normalising constraints

$$\sum_{(i|D\,=\,0)} w_i \; c_{ri}\,(X_i) = m_r \qquad with\; m_r \;\in 1, 2, \ldots\ldots\ldots\ldots, R \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 2$$

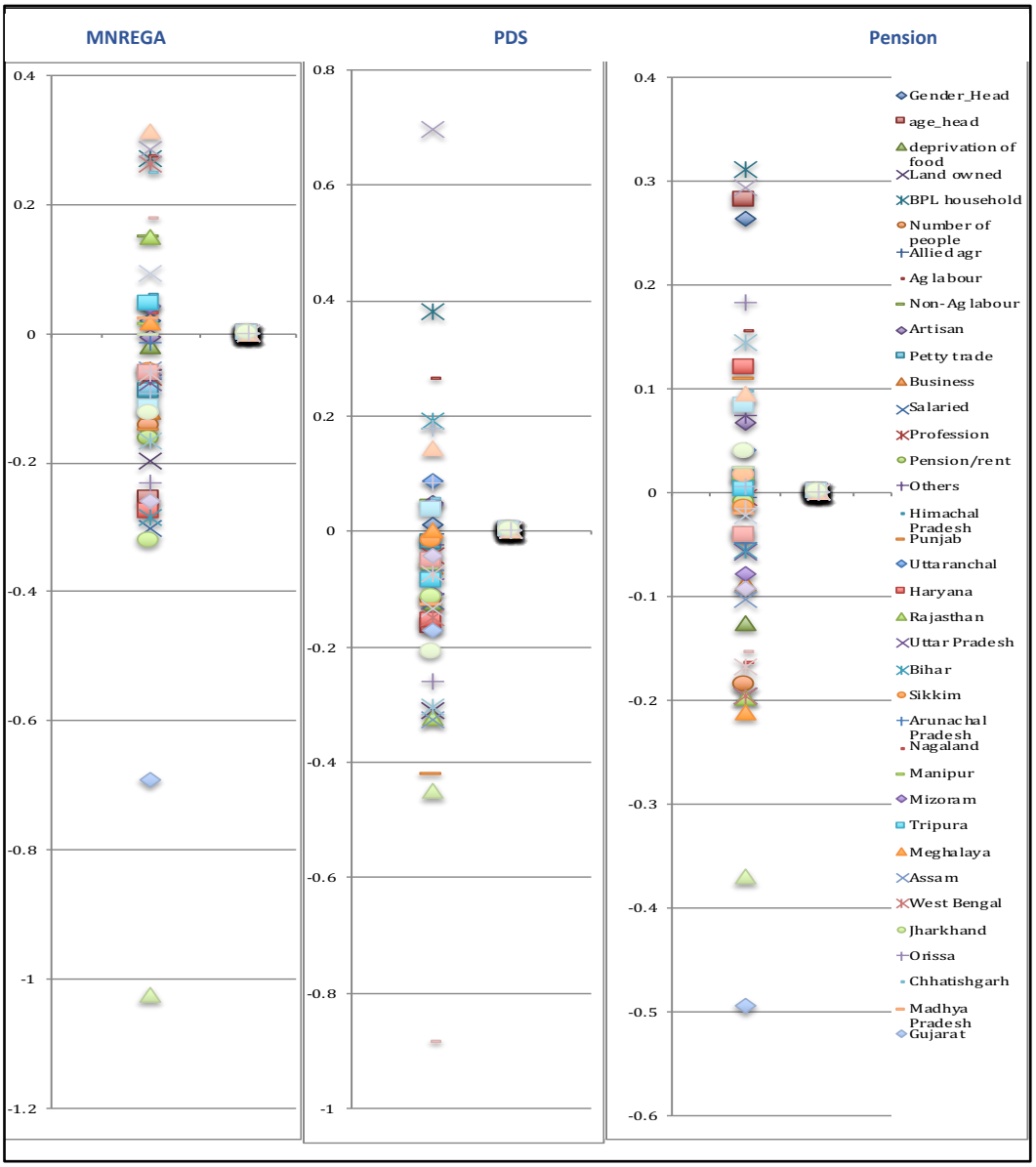
$$and \sum_{(i|D\,=\,0)} w_i \;= 1 \;\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3,$$

$$and, \quad w_i \;\geq 0 \; for\; all\; i\; such\; that\; D = 0$$

Where qi = 1/n0 is a base weight and describes a set of balance restrictions imposed on the covariate means of the reweighted control group (Hainmueller and Xu, 2013). Balanced weights are calculated by minimizing equation 1 subject to the constraints in equation 2 and 3. Stata package “ebalance” has been used to implement this procedure. At first the covariates to be included in the reweighting process are selected and then, for each covariate a set of balance constraints is specified that equates the means of the covariate distribution between the treatment and the reweighted control group (Egger and Litchfield, 2017). Once the weights are estimated they are passed on to subsequent estimation models.

In my study the participation in social protection schemes is not random and households choose to participate, leading to selection bias and inefficient results. To correct for selection bias, I performed entropy balancing on households participating in MNREGA, PDS and Pension schemes. The resulting weights are fed into regression estimates to estimate the effect of these schemes on poverty dynamics. Figure 7.2.1 presents the standard difference between treatment and control variables that were included in the construction of the entropy balancing before and after balancing.

Figure 7.2.1: Standardised Difference for Covariates



Source: IHDS I & II 1

Since people participate in different schemes separately, separate matching was done for MNREGA, PDS and Pension scheme participants. It is seen that before control group was reweighted there was still some

variation between means of two different groups. Reweighing variables in control group makes all the means of the variables identical leaving only a little variation in means for some variables. Standardized difference between all of the control and treated variables is zero now (figure 7.2.1). Hence a comparable sample for all categories of social protection schemes is created reducing the problem of endogeneity.

Three separate entropy weights are created to identify three different control groups each for MNREGA treated households, PDS treated households, and Pension treated households. In my dataset, not many households were recipients of MNREGA, Pension, and PDS schemes simultaneously (3.8 percent), hence the effect of all of them together on poverty dynamics is not feasible to estimate. However, it is observed that 72 percent and 74 percent of the households that received benefits from MNREGA and Pension, respectively, also received PDS. However, in my understanding if a household is receiving benefits from all the schemes it is highly likely that the household is still poor, as the household would not have been receiving benefits if it moved out of poverty.

7.3 Modelling Poverty Dynamics in India

There has been no consensus on the models used for poverty dynamics and different researchers use different method of modelling poverty dynamics based on the kind of data available. Chapter 3 elaborated on the available empirical literature on the identification of a household being chronic poor or transient poor for a given period of time, along with the factors affecting poverty dynamics. When the data is available for only two time periods and factors affecting poverty dynamics between two time periods is to be studied discrete outcome models should be used, as poverty can only be categorized into chronic, never-poor , moved out of poverty, and moved in poverty. I, in this chapter, therefore, use multinomial logit model (MNL) to study the determinants affecting movements into and out of poverty in rural India. The model allows a researcher to establish an association between different socio-economic characteristics and various poverty stages.

MNL, although has been widely used by researchers for modelling poverty dynamics, it has also been criticized on the ground of collapsing continuous variable to a discrete one. For example, it is argued that using discrete variable where continuous variable is available leads to loss of information about the units of inquiry (Ravallion, 1996). Another criticism faced by MNL is that it ignores the natural order of poverty dynamics, as outcomes are put in unordered categories making occurrence of one category independent of

the other (Baulch and Dat, 2010). To overcome these limitations a continuous dependent variable approach can be used where changes in household income/expenditure between two time periods is studied to analyse the factors affecting households' poverty status. However, since the focus of this thesis is on the movements in and out of poverty and its relation to social protection policies, use of multinomial regression analysis suits the purpose. An alternate to using multinomial regression model is to use sequential probit model where a series of probit models are run in a sequential manner. For comparison purpose I modelled poverty dynamics using both multinomial logit and sequential probit models. In sequential probit model three probit models are estimated (i) non-poor or poor in t-1, where the poverty status takes the value 1 if the household is poor in t-1 and 0 if otherwise. (ii) non-poor or poor in t, given that the household was poor in t-1. Chronic poor households take the value of 1 if the household is poor in t, given household was poor in t-1, and for movement out of poverty the dependent variable becomes 0, conditional upon being poor in t-1. (iii) non-poor or poor in t, given that the household was non-poor in t-1. Never poor households take the value of 0 if household is not poor in t, given it was non-poor in t-1, and for movement into poverty household takes the value 1 in t, conditional upon being non-poor in t-1. Similar sets of explanatory variables were used for analysis in both models. The results (reported in Appendix A7, tables A7.1, A7.2 and A7.3) from sequential probit model in my study are found to be consistent with those of the multinomial regression model of poverty dynamics. Therefore, the thesis only focuses on reporting results from multinomial regression model to avoid unnecessary repetition.

Multinomial logit methods are generally applied to model regressions that has a categorically distributed outcome variable that cannot be ordered, for example, different colour of cars, different modes of travel, etc., cannot be categorized in a particular order (Justino and Litchfield, 2003). As discussed in chapter 5, poverty dynamics for two time periods can be classified into four categories: (i) never poor: not poor in period 1 and 2, both (ii) chronic poor: poor in both periods, (iii) moved out of poverty: poor in the period 1 and non-poor in the 2nd and (iv) fall in poverty: non-poor in period 1 and poor in the 2nd. Households belonging to the third and fourth category are classified as transient poor. By nature, all these categories are mutually exclusive, as no one person can be in two categories at the same time.

The multinomial logit model estimates the probability of household i falling in one of the j outcomes mentioned above (Justino and Verwimp, 2013). The probability is given by:

$P(Y_i = j) = \frac{e^{\beta_j x_i}}{\sum_{k=1}^{j} e^{\beta_k x_i}}$, j=0,1, 2, 3, …….J …… 4

Where, Yi is the outcome variable i, βk are the set of coefficients to be estimated and xi includes covariates based individual households' characteristics. As there are more than one solution for β1, ..., βJ leading to the same likelihoods for all values of Y, the model becomes unidentical (Greene, 2000). The model has to be made identified by setting one of the coefficients to zero and estimating all other coefficients in relation to this benchmark (ibid). It doesn't matter which coefficient is set to 0 as they all yield the same probabilities. Assuming β1 is set to 0, the probability function above becomes:

$$P(Y_i = j) = \frac{e^{\beta_j x_i}}{1+\sum_{=1}^{j} e^{\beta_k x_i}} \quad \text{for j=0,2,3,……., j} \qquad \text{…….. 5}$$

$$and, \qquad P(Y_i = 1) = \frac{1}{1+\sum_{k=1}^{j} e^{\beta_j x_i}} \qquad \text{……. …. 6}$$

This, in turn, leads to the following probabilities relative to the reference group.

$P(Y = 0)/P(Y = 1) = e^{\beta_0 x_0}$; $P(Y = 2)/P(Y = 1) = e^{\beta_2 x_2}$; $P(Y = j)/P(Y = 1) = e^{\beta_j x_j}$

Coefficients, β0 β2 βj represent the log odds (also called relative risk) of being in the comparison group as compared to the reference group.

When poverty dynamics is studied the number of outcomes will be 3, i.e., J = 3, where P(Y=0) is the likelihood that a household is not poor in both years, P(Y=1) is the probability of household being in poverty in both years, P(Y=2) depicts the probability of being poor in 1st year and non-poor in 2nd, i.e. moving out of poverty and, P(Y=3) is the probability of being poor in period 2 and non-poor in period 1, i.e. falling into poverty. Since one of the coefficients is set to 0 the model will estimate k-1 models, where k is the number of categories of the dependent variable. By default, in this case, the category of households that have never been in poverty is set as a reference group. The coefficients are presented in the log-odd units and are interpreted relative to the reference group.

For ease of interpretation relative risk ratio is calculated, which shows how the likelihood of the outcome variable falling in the control group compared to the likelihood of the outcome falling into the reference group changes with the change in the variable whose coefficient is to be estimated (UCLA, 2020). Given covariate x and x+1, the relative risk would be,

$$P'(Y = j)/P'(Y = 1) \ = e^{(\beta j(x+1))}, \qquad \ldots\ldots\ldots 7$$

And the relative risk ratio, which is the exponentiated coefficient of the two relative risks would be,

$$\text{RRR or exp } (\beta_j) = \frac{P'(Y = j)/P'(Y = 1)}{P(Y = j)/P(Y = 1)} \qquad \ldots\ldots\ldots\ldots\ldots\ldots 8$$

An RRR > 1 indicates that the likelihood of the outcome variable to fall in the comparison group relative to the likelihood of the outcome variable to fall in the referent group increases with an increase in the variable under question. In other words, there is a higher probability of falling in this category (UCLA, 2020). An RRR < 1 indicates that the likelihood of the outcome variable to fall in the comparison group relative to the likelihood of the outcome variable to fall in the reference group decreases with the increase in the variable under question. In general, if the RRR < 1, the probability of being in the comparison group is less (ibid; Stata Technical Bulletin, 2000).

Variables used in multinomial logit model

The dependent variable in this study is the four unordered categories of poverty transitions. As explained earlier the categories are never poor, chronic poor, those who moved out of poverty, and those who fell into poverty. With the IHDS dataset the dependent variable takes value 0 if household is not poor in 2004 and 2011, 1 if household is poor in both 2004 and 2011, 2 if household has moved out of poverty in 2011, and 3 if household has fallen into poverty in 2011.

Control variables are selected on the basis of conceptual framework discussed in the chapter 2; variables used in the literature, as explained in chapter 3; descriptive data analysis conducted in chapter 5; and the research objective this study sought to establish. Selected explanatory variables can be categorized into demographic, regional, economic (including economic shocks), asset ownership, social norms and culture, infrastructure and access to public resources, social networks, and social protection schemes.[32] Although most of the studies used consumption poverty as the basis for dynamics some did make multidimensional poverty status their dependent variable. The control variable used in my analysis are:

- Participation in social protection scheme

[32] All these variables are already discussed in detail in chapter 3 and 5.

- Demographic variables, namely age of the household head, gender of the household head and number of members in the family.
- Education variable represented by the highest level of education achieved by any adult member of the family
- Employment variable representing by the type of employment, farm, or non-farm
- Physical assets represented by the number of assets owned by the household
- Livestock in the form of number of productive cows and buffalos
- A set of shock dummies represented by death of the bread winner, illness in the family, large amount of expenditure made on social obligations, like marriage and funeral
- Social network represented by membership in any of the rural societies
- Institutional and infrastructure variables, such as number of hours of electricity available, post office in the village, availability of bus service and access to paved road
- A set of state level dummies

In my model, since movements in and out of poverty are affected by variables in the baseline, I included lagged variables, i.e., variables from the baseline, in my regression analysis. With lagged variables, it is ensured that the control variables occurred well prior in time to the dependent variable (Deaton, 1997). Many variables at the household level, such as ownership of physical assets, ownership of livestock, and participation in social protection scheme may strongly become endogenous to poverty dynamics. Self-selection bias arising due to endogenous nature of participation in social protection scheme has been discussed earlier in this chapter, and correction has been made by using entropy balancing technique. To avoid endogeneity and reverse causality arising due to other factors I only incorporated independent variables that were measured in 2004, at the baseline, and variables defining events occurred between the baseline and the end line, such as shocks and social protection participation.

Checking for assumption of irrelevant alternatives

Multinomial logit models are often considered for analyzing poverty dynamics, as binary outcome variables do not assume normality, linearity and homoscedasticity (Abdulhafedh, 2017). However, there is a very important assumption that must be validated before going ahead with my analysis. Assumption of

irrelevant alternatives is one of the main assumptions, which states that inclusion or exclusion of categories in the multinomial logit model do not alter the likelihood associated with the regressors in the other categories (Justino and Litchfield, 2003; Van Edig and Schwarze, 2011). For my analysis this would mean that a household's probability of falling in one of the poverty categories mentioned above is independent of the households falling in any other category.

The assumption of *independence of irrelevant alternatives* can be tested using Hausman tests proposed by Hausman and McFeddan (Greene, 2000). However, when Hausman test was applied to IHDS dataset the results from the test were not defined properly. To overcome this problem, I used *suest* (seemingly unrelated estimations) to test if the estimates are same for two different regression models. I did not find any disparities in the estimates from each alternative in the model, thus satisfying the assumption of Independence of Irrelevant alternatives. Therefore, omitting one of the categories will not change the coefficient estimates systematically in any of the three cases. The positive result from this test also validates the use of multinomial logit models.

Diagnosing multicollinearity

Multicollinearity is said to be present in estimation model when two or more covariates are highly correlated with each other. This would mean that one independent variable becomes a predictor of another. When multicollinearity is present, a unique estimate of the regression coefficient with all the independent variables is difficult to estimate. In order to test for multicollinearity, I used Variance inflation factor (VIF) that determines the degree of association among variables. It is predicted by regressing one independent variable against all other independent variables. Serious multicollinearity is identified if VIF exceeds 10 (Senaviratna and Cooray, 2019). I found that most my variables have VIF close to 1 and none of my variables have VIF more than 4 indicating weak correlation between my independent variables, hence no multicollinearity was found in the model.

This chapter presents estimates of possible changes in poverty status between 2004-05 and 2011-12 using both consumption and multidimensional nature of poverty. In chapter 6 the probability of falling in poverty and moving out of poverty was shown using the decomposition analysis. This chapter focuses on econometric analysis using multinomial logit modelling to determine the factors affecting poverty dynamics.

7.4 Determinants of Poverty Dynamics in India

In this section I present the result estimates of the multinomial model specified earlier in this chapter. As discussed above, factors affecting both consumption and multidimensional poverty dynamics are studied. Moreover, the implication of MNREGA, PDS, and Pension schemes is studied separately as not many households receive benefit from all the three schemes jointly. Data collected and information gathered is arranged and structured into different categories as guided by research questions 1.2 and 2.1. Apart from estimating fixed level state effects, regression is run for selected states separately in order to understand the factors affecting poverty dynamics within states, especially the implication of social protection schemes on graduation out of poverty. Additionally, to investigate which of the dimensions of multidimensional poverty Index are responsive to the participation in social protection schemes and how they individually behave with respect to other covariates, a separate regression is run for some of the selected indicators of multidimensional poverty Index.

Results from multinomial regression modelling: Factors affecting poverty dynamics in India

Tables 7.4.1 through 7.4.3 show the results from multinomial logit regression run on households for datasets balanced for participation in MNREGA, Pension and PDS schemes respectively. Results for consumption and multidimensional poverty are shown alongside for comparative analysis. As described in section 7.3, multinomial regression coefficients are exponentiated and are presented as relative risk ratios that shows the likelihood of being in one poverty category as compared to base category with a unit change in the explanatory variable, keeping other variables constant. The standard errors of the estimates for all models are corrected for heteroscedasticity using White's adjusted heteroscedasticity-consistent variances.

A number of tests that are usually used with the multinomial logit model were conducted post estimation. Wald test was conducted to test the validity of the overall model specification. The null hypothesis that the coefficients associated with each covariate are jointly equal to zero is rejected as the p-value associated with the null hypothesis is equal to zero. The result confirms that each covariate individually is important for the specified model. Also, from LR tests for independent variables, all the variable effects are significant at 1 percent level except one variable that is significant at 10 percent in my Wald tests for independent

variables. LR chi2 also showed that at least one of the predictor coefficients is not equal to zero.

Table 7.4.1: Relative Risk Ratios for Dynamics in Consumption and Multidimensional Poverty for Households Balanced for MNREGA-Multinomial Model

	Consumption Poverty Dynamics			Multidimensional Poverty Dynamics		
	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now
	RRR			RRR		
MNREGA_2011	1.350***	1.164**	1.228**	1.294**	1.355***	1.305**
Age of head of the household	1.007*	1.008***	1.008**	0.993*	0.995	1.007
Gender of head of the household-Female	0.733*	1.116	0.850	1.039	1.378**	1.081
Number of members in the family	1.147***	1.186***	1.118***	0.961	0.925**	1.072*
Number of children (0-14) in the family	1.440***	1.281***	0.940	1.321***	1.297***	0.987
Highest adult education	0.991	1.003	0.979*	0.755***	0.843***	0.950***
Source of income-Labor work	1.228**	1.222***	0.898	1.342**	1.318**	1.116
Total physical assets	0.683***	0.789***	0.863***	0.580***	0.718***	0.849***
No livestock	1.527***	1.571***	0.992			
Not more than 2 acres of land	1.048	0.789***	0.801*	0.724***	0.855	1.027
Major illness	0.507***	0.900	0.548***	0.994	1.054	1.264*
Death of main bread winner	1.536***	1.375***	1.049	1.081	0.960	0.946
Marriage expense	0.988	1.163**	0.804**	0.765**	1.122	0.944
Crop Failure	1.115	1.056	0.886	0.795**	0.954	0.613***
Caste-SC/ST	2.012***	1.297***	1.432***	1.713***	1.213*	1.361**
No social network	1.433***	1.379***	1.201*	1.107	0.966	1.372**
Availability of Bus service	0.946	1.134*	0.806**	1.126	1.330**	1.087
Number of hours electricity available	1.029***	1.027***	0.997	0.978**	0.988	0.976**
Post office in the village	0.656***	0.755***	0.766***	1.254*	1.287**	0.931
Village accessible with paved road	0.881	0.961	0.946	0.939	1.002	1.058
Uttar Pradesh	1.417**	1.715***	1.065	0.716*	0.630**	1.225
Punjab	0.398***	1.153	0.904	0.336***	0.503***	0.489**
Haryana	1.636	1.231	2.643***	0.509**	0.826	1.217
Bihar	0.489***	0.599***	2.416***	2.067***	0.862	1.844
Rajasthan	0.666***	1.118	1.169	1.657***	1.244	1.122
Madhya Pradesh	1.269**	1.857***	0.726**	1.575***	1.043	1.421**
Observations	28015			28030		
Pseudo R^2	0.161			0.295		
chi2	2372.6			2723.3		
Prob > Chi2	0.000			0.000		

*Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

Table 7.4.2: Relative Risk Ratios for Dynamics in Consumption and Multidimensional Poverty for Households balanced for Pension Treatment-Multinomial Model

	Consumption Poverty Dynamics			Multidimensional Poverty Dynamics		
	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now
	RRR			RRR		
Pension_2011	1.311***	1.022	1.493***	1.293***	1.168*	1.351***
Age of head of the household	1.006	1.007**	1.005	1.002	0.996	1.006
Gender of head of the household-Female	0.774	0.953	0.748**	1.186	1.487***	0.919
Number of members in the family	1.255***	1.280***	1.175***	0.965	0.935**	1.060*
Number of children (0-14) in the family	1.293***	1.147***	0.881**	1.332***	1.286***	0.988
Highest adult education	0.984	0.991	0.996	0.753***	0.831***	0.946***
Source of income-Labor work	1.130	1.280***	0.985	1.306**	1.182	1.027
Total physical assets	0.702***	0.805***	0.857***	0.616***	0.756***	0.826***
No livestock	1.458***	1.462***	1.006			
Not more than 2 acres of land	0.686***	0.636***	0.830	0.760**	0.729***	1.007
Major illness	0.516***	0.892	0.520***	0.818*	0.841*	1.129
Death of main bread winner	1.105	1.278***	1.017	1.058	1.031	1.050
Marriage expense	0.936	1.118	0.855	0.676***	1.016	0.830
Crop Failure	1.075	1.019	0.764**	0.763**	1.048	0.725**
Caste-SC/ST	2.118***	1.271***	1.593***	1.939***	1.476***	1.866***
No social network	1.277**	1.335***	1.149	1.050	0.928	1.071
Availability of Bus service	0.960	1.156*	0.993	0.995	1.097	0.947
Number of hours electricity available	1.033***	1.023***	0.994	0.973***	0.986**	0.987
Post office in the village	0.587***	0.769***	0.735***	1.222*	1.178*	0.868
Village accessible with paved road	0.923	1.033	0.898	0.950	0.932	1.106
Uttar Pradesh	1.027	1.515***	1.071	0.436***	0.452***	0.985
Punjab	0.247***	0.550***	0.743	0.177***	0.397***	0.550**
Haryana	1.174	0.885	1.540**	0.390***	0.711**	0.991
Bihar	0.283***	0.382***	1.358	1.610*	1.028	1.694
Rajasthan	0.674*	1.008	0.965	1.359	1.028	0.756
Madhya Pradesh	1.282**	1.783***	0.844	1.098	0.815	1.098
Observations	28009			28024		
Pseudo R^2	0.159			0.299		
chi2	1880.7***			2598.5***		
Prob > Chi2	0.000			0.000		

*Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

Table 7.4.3: Relative Risk Ratios for Dynamics in Consumption and Multidimensional Poverty for Households balanced for PDS Treatment-Multinomial Model

	Consumption Poverty Dynamics			Multidimensional Poverty Dynamics		
	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now
	RRR			RRR		
PDS_2011	1.699***	0.846*	1.539***	1.202	1.271*	0.716**
Age of head of the household	0.999	1.008*	1.006*	0.995	0.993	1.002
Gender of head of the household-Female	0.759*	1.155	0.707**	0.545	0.621	1.191
Number of members in the family	1.293***	1.292***	1.137***	0.934*	0.941	1.083**
Number of children (0-14) in the family	1.260***	1.141***	0.937	1.436***	1.325***	1.046
Highest adult education	0.983	0.999	0.986	0.748***	0.830***	0.939***
Source of income-Labor work	1.126	1.372***	0.957	1.107	1.104	0.933
Total physical assets	0.718***	0.783***	0.858***	0.614***	0.754***	0.839***
No livestock	1.518***	1.497***	0.983			
Not more than 2 acres of land	0.999	0.735***	1.010	0.910	0.893	1.048
Major illness	0.515***	0.955	0.564***	0.878	0.831	1.409*
Death of main bread winner	1.269**	1.105	1.142	1.256*	1.165	1.183
Marriage expense	0.826**	0.969	0.842*	0.760**	1.021	0.765*
Crop Failure	0.909	1.004	0.760**	0.773*	1.011	0.736**
Caste-SC/ST	1.839***	1.038	1.493***	1.791***	1.262	1.615**
No social network	1.403***	1.157	0.998	1.193	1.140	1.085
Availability of Bus service	1.238**	1.571***	1.006	1.105	1.340*	1.207
Number of hours electricity available	1.012*	1.020**	0.990	0.988	1.007	1.005
Post office in the village	0.688***	0.857*	0.677***	1.000	1.000	0.920
Village accessible with paved road	0.816**	0.955	1.093	1.104	1.275	0.884
Uttar Pradesh	1.301**	1.593***	1.093	0.739	0.679*	1.321
Punjab	0.436***	0.866	1.021	0.286***	0.461***	0.655
Haryana	1.453*	1.062	2.120***	0.555***	0.687**	1.085
Bihar	0.336***	0.322***	1.340*	2.459***	1.344	1.780*
Rajasthan	0.683***	0.953	1.133	1.661***	1.203	1.124
Madhya Pradesh	1.450***	1.705***	0.829	1.479***	0.974	1.158
Observations	28015			28030		
Pseudo R^2	0.170			0.302		
chi2	2088.8***			2671.7***		
Prob > Chi2	0.000			0.000		

*Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

More or less similar findings on factors affecting poverty dynamics across households balanced for different schemes are found. The findings from all three tables above show that the age of the head of the household is a significant factor in determining the probability of a household falling in a given poverty category, however the relative risk ratio of a household falling in one category as compared to the base

category in all the models is close to 1. This would mean that as the age of the head of the household increases the probability of falling in any of the four categories remain same. This holds true both for consumption and multidimensional poverty both. If the head of the household was female in 2004-05 the relative risk of falling in chronic poverty and moving in poverty is less than being in never poor category when poverty in terms of consumption is considered. However, being a female-headed household makes a household more likely to move out of multidimensional poverty. No significant results on multidimensional poverty for households balanced for PDS treatment is observed.

When the impact of number of members in the family is studied results show that higher the number of members in the family, the higher is the likelihood of falling in chronic and transient consumption poverty. Not much significant impact is seen on multidimensional poverty and wherever the effect is seen it shows less likelihood of being in chronic poverty and moving out of poverty, and more likelihood of being in falling into multidimensional poverty. The impact on consumption poverty is straightforward as the consumption poverty is identified on the basis of consumption per capita, which is more likely to put families with large size in poorer category, ignoring the economies of scale (Deaton and Paxson, 2002). The impact on multidimensional poverty transitions is straightforward too as death of young family members or maternal mortality is one of the indicators of multidimensional poverty index. If there is an instance of child or maternal mortality in the family, there is a higher likelihood of that family being multidimensional poor. This relationship can further be elaborated by incorporating number of children in the family indicating dependency ratios. Similar result is seen for both consumption and multidimensional poverty as with every additional child in the family the likelihood of being in chronic poverty increases. There is also higher likelihood of moving out of poverty for both consumption and multidimensional poverty, but the relative risk ratio is more for households being in chronic poverty. The results from household size and dependency ratio corroborates the findings of Mehta and Bhide, (2010) and Akter et al., (2008) but are in contradiction with the findings of Dang and Lanjouw, (2018) who found that larger families are more likely to move out of consumption poverty. The results for multidimensional poverty is consistent with Adepoju, (2018) who found out that larger households are less likely to be in chronic and transient multidimensional poverty

The education of adult members of the household does not seem to play any significant role in consumption poverty dynamics. It is seen that the higher number of years of education by any adult member of the family is associated with almost the same likelihood of being in any poverty category. Contrary results are seen

by Lawson, Mckay and Okidi, (2003) in their study on Uganda, Akter et al., (2008) and Dutta and Kumar, (2013) in their studies on India. The impact of education on multidimensional poverty appears to be very prominent. It is seen that families with educated adults are less likely to fall in chronic and transient multidimensional poverty. The relative risk ratio for being in chronic poverty is close to 0.7, indicating that educated households are 30% less likely to be in chronic multidimensional poverty compared to never poor in the long term. More educated people are better informed and take care of multiple aspects of their lives simultaneously rather than just income, making it a significant factor when multidimensional poverty is studied. Brück and Kebede, (2013) in Ethiopia and Adepoju, (2018) in their study on multidimensional poverty dynamics in Nigeria showed that educated head of the households reduces the likelihood of being chronic poor and pushes the movement out of poverty.

Another important factor affecting poverty dynamics is the main source of income of the household. Different results are seen for MNREGA, Pension and PDS balanced datasets. Households balanced with MNREGA treatment show that where the main source of income comes from labour work (agricultural or non-agricultural) households are more likely to be in consumption and multidimensional poverty both. A point worth noting, however, is that a households involved in labour work are also more likely to move out of poverty as compared to being non-poor always. This is mainly because impacts (coefficients) are interpreted with reference to the base category, which in this case has been set to never poor category. Households balanced for pension treatment show higher likelihood of moving out of consumption poverty and higher likelihood of being in chronic multidimensional poverty. Results are consistent with Dutta and Kumar, (2013) who found out that households engaged in agricultural labor work are more likely to be chronic and transient poor.

Households that owned a higher number of physical assets in 2004 showed a lower relative risk ratio of falling in chronic and transient poverty (both consumption and multidimensional) as compared to being never poor. This result is in accordance with literature that physical assets form a main factor affecting poverty dynamics (Justino and Litchfield, 2003; Brück and Kebede, 2013). Households without any productive livestock are more likely to be in chronic consumption poverty and transient poverty. Akter *et al.*, 2008 in their study in India also showed that households who owned livestock along with working on the farm are able to escape poverty in the long run. As having livestock is one of the indicators of multidimensional poverty it was not kept as a covariate in the model estimating factors affecting

multidimensional poverty dynamics. Households that own more than 2 hectares of land are less likely to fall in poverty as compared to staying never poor. Lawson, Mckay and Okidi, (2003) also found out that the descent in poverty is associated with ownership of land in rural areas in Uganda. My results also show that households that own more than 2 hectares of land are also more likely to stay in poverty if they are already poor. This is mainly because if they own more than 2 acres of land and are initially non-poor it is less likely that they will fall in poverty as land serves as a good asset base which can be used as a collateral to obtain loan and can also be used for productive purposes. And, if households are already poor and own land that means that a good use of that land was not being made hence leaving a poor landowner in chronic poverty. Ownership of land although show that a household is less likely to be in chronic poor category when multidimensional poverty dynamics is considered, which does not raise any concern. Adepoju, (2018) also showed that the possession of land reduces the likelihood that households will slip into poverty.

Caste, as expected, shows a very strong positive likelihood of being in chronic poverty and transient poverty, and the likelihood of being in chronic poverty as compared to never poor is much higher, indicating lack of income earning opportunities for this group. Krishna and Shariff, (2005) & Dutta and Kumar, (2013) on their studies in India found out that lower caste is always associated with higher chance of being in chronic poverty. Many other researchers working in developing countries, including Mexico, Rwanda, Nepal, etc. showed similar results (Dhamija and Bhide, 2013; Thorat *et al.*, 2014, 2017). These results, however, co-exist with other studies that show that caste and ethnicity do not have an impact on poverty transitions (Justino and Verwimp, 2013).

Infrastructure variables, such as number of hours of electricity available, post office in the village, and availability of bus service is significantly linked to poverty dynamics indicating strong importance of social amenities in poverty dynamics. Better access to social infrastructure had made a household less likely to be in chronic and transient consumption poverty. Availability of bus service in the village has made households more likely to move out of poverty. Post office in the village makes household less likely to be in chronic and transient consumption poverty. Studies by Justino and Litchfield, 2003; Dhamija and Bhide, 2013; Ari and Farooq, 2014 confirm the importance of commune infrastructure for poverty exits and lowering likelihood of falling in poverty. My results also show that better infrastructure is also associated with higher likelihood of moving out of multidimensional poverty.

Four kinds of shocks, viz. death of main breadwinner, prolonged illness, crop failure and large expense on marriage are included in my analysis to see the impact of shocks on household poverty dynamics. It is observed that mostly shocks have contradictory sign of coefficients. Impact of crop failure and large marriage expense show that the household is less likely to fall into poverty if it would incur losses due to large marriage expense and crop failure. The only explanation that I could think of in this case is that households that already have some amount of money to spend hugely on marriage will not be impacted by this expense.[33] Crop failure will only impact a household if it has enough land on which crop can be grown and hence again making a household less likely to be impacted by this shock, at least in short run and if not accompanied by any other shock.[34] Large expenditure made on illness, however, is seen as having opposite impact on consumption poverty dynamics but is positively related to multidimensional poverty dynamics, showing the likelihood of falling in transient poor category when incurred a huge loss due to medical expenditure. The impact on multidimensional poverty is justified because illness has direct impact on health, which forms a part of multidimensional poverty measure. Impact on consumption poverty depends mainly on how much expenditure is made. Huge expenditure on medical is quite subjective and different people would have different perceptions. It is also plausible that transient poor households and chronic poor households do not incur much medical expenditure, or they take loan to tackle this expenditure and keep consumption smooth. Similar result was found in a study conducted in Pakistan by Ari and Farooq, (2014) where they found that only inflation and natural shock would make a household more likely to fall in poverty but not any other shocks. Justino and Litchfield, (2003) also found out that households' idiosyncratic shocks were not a significant factor affecting poverty dynamics. Brück and Kebede, (2013) found out that in rural Ethiopia multidimensional poverty measures do not identify shocks as clearly as consumption poverty ones. Rather, for multidimensional poverty, they found that the number of shocks faced by households has a significant effect.

Moving on to the participation in social protection schemes to a household and its impact on poverty dynamics we can see that households that have people working in MNREGA are significantly more likely to be chronic poor and fall in poverty (table 7.4.1). This result is quite drastic because these schemes are

[33] In my qualitative study it is found that rural households do not spend lavishly on marriages. Only households who can afford to lake loan indulge in this kind of expense.

[34] Many rural households are either involved in labor work or do petty jobs. Households that are cultivators are less likely to experience poverty dynamics.

designed with a purpose of making household move out of poverty. If these schemes are associated with keeping a household in poverty and a reason for someone to be motivated to be in poverty, then the whole purpose is defeated. This would mean that MNREGA in itself is not enough. The results also show that households taking benefits from MNREGA are also more likely to move out of consumption poverty although the relative risk ratio of moving out of poverty is smaller than moving in poverty and chronic poverty, indicating that there is more likelihood of staying in poverty than moving out. Same inference is made when multidimensional poverty is concerned. Results show that households who receive benefit from MNREGA are more likely to be chronic and transient multidimensional poor as compared to being never poor. This is particularly true, as never poor households are hardly unemployed and hence less likely to indulge in MNREGA scheme. However, households more likely to fall in poverty and remaining poor even after receiving benefits from MNREGA raise a concern.

Pension, like MNREGA also makes a household more likely to be chronic poor and fall in poverty as compared to being never poor for both consumption and multidimensional poverty (table 7.4.2). The relative risk ratio of falling in poverty is higher than being in chronic poverty. This result from my analysis could be attributed to the targeted nature of pension policy that requires a household to be poor for it to take benefit from the scheme. This result indicates the disadvantage of using two period panel data which does not allow us to investigate the events that would have happened between the two time periods. It is likely that some households would have become poor between 2004 and 2011 and became eligible for pension scheme. Pension, no doubt would increase consumption expenditure of the beneficiaries. The increase in consumption expenditure will be highest for households that belong to the lowest consumption expenditure percentile, as 30 percent of pension recipients fall in this category. While pension should certainly benefit poor, there will be a significant difference in the benefit they can attain depending on the level of consumption expenditure they are already on. The benefit of the scheme can be seen specific to vulnerable population like widows, elderlies, and other vulnerable categories rather than the poor in general. Moreover, there is also state wise variation in the amount of pension received. The amount of pension received by these households vary from Rs 300 in Assam to Rs 1800 in Haryana in 2011. Therefore, separate state level analysis is conducted in the next subsection to understand the implication of social protection schemes in selected states. Similar implication of pension is seen on multidimensional poverty.

Results shows that PDS, like Pension, also makes a household more likely to be in chronic consumption

poverty and fall in poverty as against being never poor (table 7.4.3). Household benefitting from PDS would remain poor over a period of time is understandable as PDS is just supplementing household with food that is just enough for them to sustain. It is, however, interesting to see that the households are less likely to fall in and more likely to move out of multidimensional poverty if they are PDS beneficiary. The impact on this category of poverty is coming from the impact PDS has on nutrition of the family members. There could also be an indirect impact on schooling and other dimensions of livelihood as households do not have to worry about food and can focus on other dimensions. It would not be wrong to conclude that PDS is achieving its desired intention by providing proper nutrition to people and therefore make an impact on multidimensional poverty but has no direct impact on consumption poverty.

State level analysis

In order to understand regional variation in factors affecting poverty dynamics, six individual states have been selected for the state-level analysis. Although the sample size of households in IHDS is large in absolute terms for all India, the observation for each state is not sufficiently large to allow a detailed analysis of poverty dynamics at a regional and state level. The choice of six states added in the analysis is therefore made based on: their absolute size in the sample, their static poverty status for both consumption and multidimensional poverty and degree of poverty dynamics in those states (as presented in table 7.4.4). Six states selected are: Punjab, Haryana, Uttar Pradesh, Bihar, Rajasthan, and Madhya Pradesh.

The important difference across all states is visible in table 7.4.4. On average 26 percent household have moved out of poverty and 8.36 moved into poverty, but some states (such as Uttar Pradesh, Madhya Pradesh, Orissa) have a higher escape rate than the national average while states like Karnataka, Tamil Nadu, Haryana, and Punjab had lower escape rates. Similarly states like Bihar, West Bengal and Orissa had higher rates of people falling in poverty as compared to the national average. At the same time there is large variation across states in terms of multidimensional poverty where states like Punjab, Himachal Pradesh and Kerala show very low multidimensional poverty, and states like Bihar, Orissa and Madhya Pradesh show high incidence of multidimensional poverty. Moreover, there is also a large variation across state governance in terms of how various social protection schemes are implemented and how much each state spends on social public expenditure. States like Haryana and Kerala spend almost two times of what Bihar and Uttar Pradesh spend on per capita social expenditure (Suhag and Tiwari, 2018). Uttar Pradesh and

Bihar are reported to have lowest public expenditure on health, education and rural development (ibid) .

Table 7.4.4: State-level Poverty Dynamics, Sample Size and Poverty Status

STATE	Never Poor	Chronic Poor	Non-Poor now	Poor now	Sample Size	Cons.* Poverty 2004	Cons.* Poverty 2011	MD* Poverty 2004	MD* Poverty 2011
Himachal Pradesh	80.57	4.77	8.02	6.64	1,192	14.68	8.5	20.86	14.7
Punjab	78.03	2.25	14.85	4.88	1,189	18.5	7.7	24.69	15.26
Haryana	67.42	6.71	16.52	9.35	1,566	23.12	11.6	33.48	23.07
Rajasthan	54.09	9.56	28.14	8.21	1,864	39.03	16.1	66.13	51.67
Uttar Pradesh	42.24	14.38	35.6	7.79	2,758	49.06	30.4	63	55.52
Bihar	51.9	10.99	21.45	15.66	1,106	34.99	34.1	80.36	70.8
West Bengal	52.67	12.91	21.83	12.58	1,387	36.19	22.5	68.7	59.99
Orissa	29.97	24.15	33.23	12.65	1,525	62.62	35.7	70.41	63.48
Madhya Pradesh	38.98	18.94	37.14	4.94	2,514	54.53	35.7	71.42	61.42
Gujarat	65.15	7.69	22.04	5.12	1,109	29.4	21.5	62	39.43
Maharashtra	45.36	15.79	29.49	9.36	2,228	43.36	24.2	59.47	42.61
Andhra Pradesh	80.08	1.2	15.9	2.82	1,372	18.51	11	68.26	42.06
Karnataka	65.7	6.82	17.67	9.8	2,754	25.34	24.5	68.69	40.03
Kerala	68.31	4.69	24.79	2.21	992	23.99	9.1	28.09	7.86
Tamil Nadu	69.27	7.41	17.6	5.73	897	29.43	15.8	49.3	28.32
Total	52.94	12.56	26.14	8.36	28117	38.69	20.92	62.63	48.47

*Cons.- Consumption; *MD- Multidimensional
Source: IHDS I and IHDS II

To reveal the divergence across-states, further regression analyses have been carried out in two steps. First, dummies for a household being in Uttar Pradesh, Madhya Pradesh, Bihar, Rajasthan, Punjab, and Haryana are added in the regression analysis to understand the state fixed effects, as shown in Tables 7.4.1, 7.4.2 and 7.4.3. Results show that while being in Uttar Pradesh and Madhya Pradesh considerably makes a household more likely to move out of consumption poverty, households in Bihar are less likely to move out of consumption poverty and more likely to fall in poverty. Surprisingly, being in Bihar is also associated with less likelihood of being chronic poor. Although Bihar, Madhya Pradesh and Uttar Pradesh are all considered poor the erratic results on consumption poverty dynamics demands deeper state level examination. Results from multidimensional poverty dynamics, however, show somewhat robust results. Households in MP, Bihar and Rajasthan are more likely to be multidimensionally chronic poor. Bihar with

the highest relative risk ratio of being in multidimensional chronic poverty indicates towards the poor social development and lack of amenities in this state. More developed states such as Punjab and Haryana show less likelihood of households being in chronic or transient multidimensional poverty.

As the second step in examining inter-state differences in poverty dynamics, the aggregate analysis is complemented with the similar analysis conducted for individual states. The same set of independent variables used for all-India analysis were considered for separate state analysis. The results of these regression analysis run separately for consumption and multidimensional poverty dynamics for Uttar Pradesh, Punjab, Haryana, Rajasthan, Bihar, and Madhya Pradesh are shown in tables 7.4.5 through 7.4.10. Results show substantial difference in the significance and intensity of the factors affecting poverty dynamics across states. For example, number of members in the family that was found to be an important factor affecting households falling into consumption poverty at the national level in tables 7.4.1, 7.4.2 and 7.4.3 shows similar result for only Punjab for all datasets. No other states showed likelihood of falling into poverty due to higher number of members in the family. At the same time the intensity of the impact represented by relative risk ratio is higher for Punjab as compared to all-India. Results for multidimensional poverty show different results for households balanced with different schemes. Table 7.4.6 shows that households with large family size in Punjab, Rajasthan and Uttar Pradesh are more likely to fall in multidimensional poverty in 2011, table 7.4.8 shows the same result for only Punjab. Contrasting results are seen for the households balanced with PDS treatment. All the states showed lower likelihood of being in chronic multidimensional poverty with similar relative risk ratios. Only Haryana showed likelihood of moving out of multidimensional poverty, but intensity is small. At the same time, Rajasthan, Uttar Pradesh, Bihar and Madhya Pradesh show less likelihood of falling in multidimensional poverty.

Table 7.4.5 Relative Risk Ratios for Poverty Dynamics in Consumption Poverty for Households Balanced for MNREGA Treatment in Selected States-Multinomial Model

	Punjab			Haryana			Rajasthan			Uttar Pradesh			Bihar			Madhya Pradesh		
	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now
	Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio		
MNREGA_2011	0.226	1.623	0.883	1.688	2.904**	3.667***	1.628**	1.629***	1.495*	2.510***	1.203	1.562	1.132	1.310	2.539**	1.595***	1.447**	1.069
Age of head of the household	0.948	0.993	0.991	0.997	1.026*	1.033**	1.003	1.010*	0.993	0.999	1.019***	1.002	0.984	0.991	0.994	1.001	1.006	1.018*
Gender of head of the household-Female	1.564	1.355	0.431	1.123	0.981	0.221	0.456	1.000	0.865	0.640	0.509**	0.706	1.511	1.323	0.615	0.661	0.823	0.753
Number of members in the family	1.738***	1.465***	1.429**	1.222**	1.203*	0.994	1.161**	1.130***	1.078	1.227**	1.127**	1.054	1.118	1.411***	1.133	1.193***	1.303***	1.136
Number of children (0-14) in the family	1.247	1.281	0.934	1.813***	1.498***	1.202	1.201*	1.181**	0.921	1.670***	1.613***	1.033	1.625***	1.137	1.020	1.150	0.989	0.667***
Highest adult education	0.818***	0.928*	1.004	0.995	0.955	0.958	1.024	1.005	1.001	1.012	1.022	1.016	0.987	1.039	0.883***	0.964	1.044**	0.950
Source of income-Labor work	1.640**	1.086	1.612	0.782	0.811	2.443	2.668***	1.660***	1.246	1.137	1.256	0.868	1.606	2.664***	1.022	1.166	0.862	0.777
Total physical assets	0.756***	0.807***	0.738***	0.731***	0.836***	0.842**	0.699***	0.802***	0.944	0.648***	0.779***	0.775***	0.806**	0.878**	1.036	0.646***	0.674***	0.878***
No livestock	7.693***	1.852	2.030	2.838**	5.674***	1.978	1.982***	1.356*	1.365	1.315	1.575**	0.825	2.066**	2.552***	1.610	1.678***	2.218***	1.076
Not more than 2 acres of land	0.473	0.196***	0.299	0.045***	0.179***	3.122*	0.613**	0.573***	0.620**	0.298***	0.373***	0.822	0.206**	0.394**	0.604	0.643*	0.543***	0.470**
Major illness	3.387*	1.221	1.458	0.830	0.545	2.133	0.488**	0.862	0.617	0.689	0.926	0.761	0.412**	0.845	0.607	0.332***	0.872	0.522**
Death of main bread winner	0.827	0.511	1.298	1.904	3.207***	0.478	0.624	0.907	0.881	0.873	1.459*	0.794	1.954*	1.210	0.696	1.879***	1.354*	1.510
Marriage expense	0.862	1.698	0.324*	3.104**	2.179	1.671	0.684*	0.826	0.928	0.598**	1.431**	0.885	1.664	1.620*	0.805	0.954	1.220	0.582**
Crop Failure	0.916	0.213	0.000***	1.293	0.168**	0.111*	1.042	1.159	1.027	0.674	0.534***	0.406***	0.306***	0.833	1.064	1.070	1.244	0.568*
Caste-SC/ST	2.147	0.390**	0.404	0.909	0.524*	2.120*	2.687***	1.147	2.091***	1.351	1.326	0.721	3.303***	1.925**	1.581	2.020***	1.214	0.841
No social network	Omitted	1.893	4.858	0.869	0.859	0.654	1.287	1.203	0.918	3.351***	1.414	1.116	0.734	0.547*	0.535*	1.626**	2.105***	1.001
Availability of Bus service	0.362	0.518*	0.526	1.055	0.997	0.455*	1.679**	2.501***	1.114	0.688	0.989	0.680	2.286**	3.088***	2.150**	0.731*	0.628***	1.554
hours electricity available	1.058	1.035	1.130***	1.024	1.079*	1.054*	0.986	0.996	0.960	1.017	0.998	1.069**	1.085	1.029	1.014	1.076***	1.100***	1.032
Post office in the village	0.520	0.964	0.381*	1.499	1.174	2.973**	0.899	1.035	0.815	1.361	1.016	2.131***	1.608	0.955	0.893	1.102	1.172	0.675
Village accessible with paved road	1.708	1.083	0.305*	omitted	omitted	8.967*	0.696	0.543***	0.583*	1.608*	2.102***	0.813	0.376**	0.353***	0.845	0.696*	0.803	0.602*
Observations	1188			1562			1858			2758			1105			2513		
Pseudo R^2	0.337			0.256			0.167			0.198			0.184			0.197		
chi2	6551.6			3195.9			399.1			428.8			241.6			597.2		
Prob> Chi2	0.000			0.000			0.000			0.000			0.000			0.000		

*Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

Table 7.4.6: Relative Risk Ratios for Dynamics in Multidimensional Poverty for Households Balanced for MNREGA Treatment in Selected States-Multinomial Model

	Punjab			Haryana			Rajasthan			Uttar Pradesh			Bihar			Madhya Pradesh		
	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now
	Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio		
MNREGA_2011	0.799	0.513	0.467	0.440	1.024	2.653*	1.350	1.261	1.282	1.510	1.369	2.038**	3.986	2.392	3.319	1.349	1.374	1.026
Age of head of the household	0.971	0.971*	0.998	1.022	0.996	1.024	0.992	0.996	0.993	0.980**	0.984	0.996	0.975	1.001	0.976	0.981**	0.985*	0.987
Gender of head of the household-Female	4.026**	2.552	0.000***	3.757**	3.756***	3.646*	2.360**	2.686***	0.427	0.501	1.383	1.170	1.597	2.491	0.421	6.885***	5.441***	2.591
Number of members in the family	1.195	1.010	1.479***	0.812	1.076	0.993	1.210***	1.060	1.205***	1.054	0.930	1.207***	0.840	0.933	1.072	1.067	0.966	1.102
Number of children (0-14) in the family	1.229	1.338	0.726	2.168***	1.310	1.162	0.873	1.035	0.771**	1.118	1.214	0.824	1.602**	1.349	0.827	1.006	1.194*	1.014
Highest adult education	0.640***	0.739***	0.822***	0.700***	0.773***	1.079	0.746***	0.836***	0.949*	0.769***	0.830***	0.969	0.689***	0.834***	0.954	0.821***	0.888***	1.004
Source of income-Labor work	0.903	0.837	1.370	0.657	0.648	2.721***	2.114***	1.360	2.695***	0.984	1.019	1.338	1.597	0.900	2.033	1.102	0.904	0.862
Total Physical Assets	0.658***	0.755***	0.781***	0.617***	0.689***	0.840***	0.532***	0.639***	0.861***	0.652***	0.801***	0.866***	0.567***	0.705***	0.834*	0.533***	0.679***	0.801***
Not more than 2 acres of land	0.417	0.795	0.117***	0.516	0.312***	0.733	0.440***	0.703	0.983	0.516**	0.663	0.857	0.061***	0.132***	0.727	0.824	0.674	1.191
Major illness	2.959***	1.411	4.121***	3.251**	1.090	1.348	0.959	1.177	1.399	0.754	1.240	1.101	0.228***	0.417*	0.499	0.873	1.049	1.616*
Death of main bread winner	1.385	1.843	0.948	0.699	1.367	0.823	0.544**	0.544**	0.963	1.457	1.410	0.708	1.583	2.110	1.874	1.651**	1.609*	1.085
Marriage expense	0.512	0.753	0.299**	0.371**	0.762	0.754	0.377***	0.766	0.536**	0.753	1.415	1.494	0.396**	0.741	0.770	0.681*	1.098	0.807
Crop Failure	0.917	3.564**	0.755	0.121**	2.647*	0.957	0.966	0.887	0.643	0.798	1.240	0.354***	0.384*	0.706	0.142***	0.396***	0.555**	0.482***
Caste-SC/ST	5.482***	2.253*	3.290**	3.929***	2.541**	2.608**	2.777***	1.634*	2.419***	2.362***	2.472***	2.055**	1.845	1.354	1.089	3.622***	2.299***	3.475***
No social network	0.754	0.553	omitted	1.114	0.587	0.476	0.701	1.118	0.767	1.596	2.239*	1.432	0.719	1.042	0.331*	0.970	1.050	1.181
Availability of Bus service	0.753	0.344***	1.142	1.359	0.900	1.075	1.274	1.031	1.513	1.325	1.145	0.940	0.879	1.100	0.740	0.586*	0.525**	0.769
Number of hours electricity available	1.024	1.019	0.986	1.031	1.043	0.978	1.028	1.030	1.015	0.895***	0.942**	0.952	1.005	0.987	0.993	1.108***	1.113***	1.021
Post office in the village	3.429**	2.712**	1.479	4.353***	2.987***	1.036	0.889	1.252	0.882	1.133	0.794	0.901	0.944	1.120	0.650	0.658*	1.062	0.790
Village accessible with paved road	0.079**	0.278**	0.429	0.611	0.396	0.463	2.038**	1.500	0.635	1.131	1.236	1.708	0.793	0.625	0.530	1.737**	1.699**	1.669*
Observations	1188			1563			1863			2758			1105			2514		
Pseudo R^2	0.371			0.340			0.320			0.272			0.437			0.268		
chi2	1733.7			306.5			582.2			526.3			368.6			670.8		
Prob> Chi2	0.000			0.000			0.000			0.000			0.000			0.000		

*Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

Table 7.4.7: Relative Risk Ratios for Dynamics in Consumption Poverty for Households Balanced for Pension Treatment in Selected States- Multinomial Model

	Punjab			Haryana			Rajasthan			Uttar Pradesh			Bihar			Madhya Pradesh		
	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now
	Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio		
Pension_2011	2.024	1.890**	0.853	0.485*	1.361	1.273	1.100	0.883	1.118	1.529	1.367	1.635*	0.338***	0.613*	1.114	1.486*	1.658***	1.725*
Age of head of the household	0.945**	0.982*	0.985	1.000	1.011	1.005	1.006	1.005	1.005	1.006	1.010	1.006	0.980	1.002	0.984	0.995	0.998	1.012
Gender of head of the household-Female	1.005	1.192	1.002	4.537***	1.023	0.598	0.434*	0.852	0.821	0.885	0.613*	0.790	2.284	1.143	0.779	0.495*	0.705	0.653
Number of members in the family	1.470**	1.534***	1.436***	1.358***	1.345***	1.086	1.299**	1.360***	1.168	1.132	1.134*	1.124	1.277**	1.307***	1.182	1.270***	1.323***	1.170
Number of children (0-14) in the family	1.265	0.951	0.596*	1.174	1.062	0.891	1.114	1.070	0.923	1.941***	1.617***	0.987	1.331*	1.170	0.892	1.172	1.072	0.647**
Highest adult education	0.789***	0.930*	0.910	0.978	0.911***	0.941*	0.967	0.982	0.962	0.985	1.011	1.007	0.975	1.003	0.897***	0.974	1.054**	1.012
Source of income-Labor work	6.548***	0.996	1.749	2.164*	1.478	1.701	3.040***	2.137***	1.500	2.117**	1.538*	1.555	1.617	1.989**	0.851	1.060	0.840	0.859
Total physical assets	0.853*	0.801***	0.816***	0.724***	0.846***	0.907***	0.730***	0.814***	0.981	0.653***	0.772***	0.804***	0.760**	0.881**	0.961	0.685***	0.705***	0.810***
No livestock	6.893***	3.511***	1.400	2.528**	3.584***	1.499	7.311***	1.741**	2.168**	1.030	1.273	0.872	0.598	1.236	1.177	2.001***	1.911***	0.981
Not more than 2 acres of land	1.100**	0.399**	0.319	0.127***	0.351***	0.860	0.730	0.716	0.379***	0.423**	0.489***	0.589	0.159**	0.292**	0.435	0.579**	0.480***	0.446*
Major illness	1.238	1.443	1.943	0.470*	0.616*	0.928	0.775	1.144	0.533	0.773	1.138	0.660	0.428**	0.823	0.755	0.297***	0.777	0.312***
Death of main bread winner	1.093	0.493*	1.321	1.374	1.531	0.641	0.462*	0.580*	0.724	0.468**	1.445*	1.066	1.618	1.195	1.061	1.883**	1.036	1.949*
Marriage expense	0.869	1.198	0.324**	0.765	0.995	1.208	1.566	1.008	0.699	0.520**	1.451*	0.905	0.923	1.138	0.825	0.962	1.259	0.620
Crop Failure	0.571	0.407	0.000***	0.955	0.558	0.629	0.780	0.949	0.915	1.069	0.536***	0.697	0.813	1.467	0.878	0.882	1.304	0.455**
Caste-SC/ST	2.850	0.839	0.481	1.156	0.926	1.907**	3.123***	1.058	1.801*	1.423	1.124	0.630	3.559***	2.518***	1.379	1.549**	1.343	0.685
No social network	omitted	1.876	7.101**	0.374*	0.766	1.650	1.302	1.167	0.638	2.255	1.668	1.054	0.833	0.732	0.681	2.435***	2.311***	1.301
Availability of Bus service	0.339*	0.389***	1.076	1.485	1.308	0.899	0.516	1.835**	0.503*	0.682	1.068	0.702	0.998	1.757*	0.926	1.007	0.693*	1.392
Number of hours electricity available	1.057	0.985	1.090***	1.089***	1.066***	1.030	0.990	0.997	0.920**	1.004	1.006	1.051	1.187*	1.018	1.094	1.017	1.051**	1.048
Post office in the village	0.574	0.933	0.490	0.629	1.196	0.893	1.186	1.923**	1.135	0.995	0.992	1.765*	1.301	1.253	1.473	1.190	1.254	0.985
Village accessible with paved road	1.211	1.843	0.322	omitted	1.462	1.236	0.426*	0.421***	0.442**	1.034	1.876***	0.420***	1.395	1.447	1.921*	0.363***	0.625**	0.539*
Observations	1187			1562			1858			2758			1105			2513		
Pseudo R^2	0.286			0.238			0.231			0.217			0.156			0.209		
chi2	6394.8			1576.7			279.2			358.1			241.1			415.1		
Prob> Chi2	0.000			0.000			0.000			0.000			0.000			0.000		

*Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

Table 7.4.8: Relative Risk Ratios for Dynamics in Multidimensional Poverty for Households Balanced for Pension Treatment in Selected States-Multinomial Model

	Punjab			Haryana			Rajasthan			Uttar Pradesh			Bihar			Madhya Pradesh		
	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now
	Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio		
Pension_2011	0.496*	0.560**	0.261***	0.712	1.113	1.294	1.558	0.749	1.012	0.948	1.284	1.281	0.955	1.511	1.532	0.978	1.193	1.225
Age of head of the household	0.988	0.983	1.001	1.004	0.991	1.007	0.990	0.984	0.975	1.000	0.990	1.003	0.993	1.003	0.977	0.993	0.995	0.984
Gender of head of the household-Female	1.772	2.196*	0.000***	4.868***	3.295***	1.252	3.266**	3.693***	0.920	0.851	1.072	0.903	16.251***	13.207***	7.239*	12.608***	9.798***	3.850*
Number of members in the family	1.169	0.924	1.328**	1.027	1.072	0.985	1.074	1.057	1.044	0.963	0.859**	1.094	1.013	0.904	1.241	1.173**	0.985	1.155*
Number of children (0-14) in the family	1.067	1.209	0.748	1.221	1.105	1.095	1.067	1.088	0.996	1.398***	1.417***	0.970	1.148	1.239	0.564**	0.892	1.219	0.919
Highest adult education	0.678***	0.771***	0.988	0.697***	0.798***	0.929**	0.737***	0.836***	0.950	0.738***	0.819***	0.947	0.745***	0.853***	0.927	0.815***	0.911***	1.031
Source of income-Labor work	0.960	0.485**	0.807	2.631***	1.608*	2.123**	4.170***	1.916	3.550***	1.019	0.839	0.910	0.863	0.465	1.090	1.166	0.903	1.380
Total Physical Assets	0.595***	0.753***	0.668***	0.770***	0.816***	0.808***	0.547***	0.611***	0.916*	0.624***	0.812***	0.847***	0.620***	0.727***	0.797**	0.507***	0.620***	0.757***
Not more than 2 acres of land	0.389	0.319***	0.298	0.194***	0.324***	1.492	0.583	0.541	1.755	0.740	0.609	0.818	0.074***	0.154***	0.426	0.568	0.455**	1.010
Major illness	3.007***	0.660	2.173*	1.060	1.091	0.624	0.691	0.808	1.788	0.793	1.287	1.120	0.267***	0.355**	0.503	0.623*	0.744	1.116
Death of main bread winner	0.884	1.866*	1.400	1.557	2.399***	0.736	0.629	0.344***	0.524	0.952	1.087	0.973	1.195	1.461	1.395	2.936***	2.935***	1.814*
Marriage expense	0.468*	0.750	0.505	0.525*	0.729	0.267***	0.461**	0.957	1.171	0.593	1.009	0.985	0.328**	0.397*	0.280**	0.389***	0.617*	0.718
Crop Failure	0.397	3.763**	0.110*	0.175	1.102	0.500	0.375**	0.506*	0.398**	0.883	1.277	0.583	0.893	1.123	0.534	0.398***	0.766	0.681
Caste-SC/ST	3.122***	2.265**	8.191***	1.410	0.818	2.144**	1.159	1.110	1.155	2.015**	2.781***	2.562***	7.453**	5.036*	4.455	2.446***	1.301	1.430
No social network	5.506	0.770	17.150**	1.534	1.177	0.455*	0.663	1.675	0.912	0.779	1.150	0.956	0.429	0.507	0.343	1.356	1.219	1.348
Availability of Bus service	0.770	0.440***	5.396***	1.372	1.169	1.139	0.738	1.023	1.452	1.460	1.164	0.699	0.376	0.516	0.240**	0.588*	0.424***	1.054
Number of hours electricity	0.996	0.999	0.911**	0.874***	0.941***	0.976	1.044	1.060*	0.964	0.912***	0.927**	0.979	1.033	1.016	1.159	1.056**	1.076***	1.021
Post office in the village	2.602**	1.681	1.527	3.498***	1.461	2.203**	1.464	1.220	1.281	1.313	0.844	0.825	0.901	1.170	0.666	0.603*	0.862	0.595*
Village accessible with paved road	0.120***	0.649	0.104**	omitted	0.541	1.089	3.027*	3.908**	0.717	1.114	1.035	1.310	1.921	1.122	0.681	0.957	1.170	0.996
Observations	1187			1563			1863			2758			1105			2514		
Pseudo R^2	0.432			0.318			0.336			0.290			0.315			0.322		
chi2	1195.7			320.6			490.8			534.1			280.4			641.0		
Prob> Chi2	0.000			0.000			0.000			0.000			0.000			0.000		

*Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

Table 7.4.9: Relative Risk Ratios for Dynamics in Consumption Poverty for Households Balanced for PDS Treatment in Selected States- Multinomial Model

	Punjab			Haryana			Rajasthan			Uttar Pradesh			Bihar			Madhya Pradesh		
	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now
	Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio		
PDS_2011	2.021	1.186	1.322	1.097	1.598*	2.327***	2.047***	1.008	1.599**	2.906***	1.345*	2.265***	1.639	1.532*	2.206***	2.092***	1.355**	1.655**
Age of head of the household	0.947**	0.976**	1.002	0.990	1.004	1.005	1.001	1.009	1.001	0.999	1.013**	1.004	0.977*	0.985	0.990	0.998	1.003	1.011
Gender of head of the household-Female	0.989	0.975	1.597	2.708	1.457	0.659	0.542	0.877	0.845	0.536	0.596*	0.690	1.059	0.680	0.527*	0.646	0.713	0.799
Number of members in the family	1.567***	1.552***	1.286*	1.469***	1.419***	1.087	1.157*	1.181***	1.084	1.266***	1.170***	1.071	1.230**	1.283***	1.108	1.340***	1.384***	1.157*
Number of children (0-14) in the family	1.380	1.029	0.867	1.165	1.073	0.954	1.338**	1.193*	0.951	1.727***	1.641***	1.115	1.355**	1.208	0.947	1.108	1.002	0.705***
Highest adult education	0.780***	0.914***	0.914	0.969	0.959	0.955	1.036	1.013	0.996	0.992	1.008	1.037	0.953	1.010	0.927**	0.984	1.064***	0.969
Source of income-Labor work	6.331**	1.164	2.069	1.139	1.380	2.168**	2.543***	1.702***	1.377	1.401	1.357*	1.073	2.040**	2.651***	0.870	1.171	0.888	1.052
Total physical assets	0.744***	0.794***	0.855***	0.749***	0.810***	0.940*	0.709***	0.798***	0.941	0.666***	0.760***	0.776***	0.878*	0.936	0.951	0.665***	0.693***	0.894**
No livestock	6.555***	3.657***	1.626	3.521***	3.332***	1.712*	2.405***	1.586***	1.578*	1.170	1.593***	0.823	0.960	1.612*	1.071	1.653***	2.109***	0.999
Not more than 2 acres of land	0.531	0.785	0.694	0.079***	0.705	3.226***	0.736	0.633***	0.634*	0.372***	0.514***	1.109	0.256*	0.496*	0.246***	0.756	0.569***	0.646
Major illness	1.686	1.173	1.275	0.876	0.784	1.340	0.570*	0.931	0.707	0.759	1.040	0.801	0.408***	0.927	0.595**	0.268***	0.823	0.496**
Death of main bread winner	0.392	0.405**	1.605	1.637	1.924**	1.050	0.705	0.897	0.797	0.781	1.252	0.677	1.918*	0.896	0.885	1.513**	1.023	1.481
Marriage expense	0.915	0.943	0.509	0.909	1.205	1.490	0.638*	0.845	0.888	0.501***	1.191	0.614*	0.786	1.093	0.886	0.987	1.208	0.656*
Crop Failure	1.724	0.377	0.000***	2.281	0.295**	0.654	0.993	1.183	1.075	0.509**	0.557***	0.426***	0.731	1.019	0.565**	0.989	1.296*	0.487***
Caste-SC/ST	2.663	1.072	0.391**	1.152	0.730	1.306	2.896***	1.117	1.972***	1.767**	1.328*	0.932	2.134**	1.441	1.439	1.847***	1.299*	0.871
No social network	omitted	2.006	2.231	0.646	0.773	1.211	0.942	0.931	0.800	2.222**	0.914	1.047	0.886	0.852	0.593**	1.950***	2.320***	0.965
Availability of Bus service	0.417	0.651	0.956	1.266	1.031	0.882	1.398	2.359***	1.256	0.817	1.180	0.765	1.056	1.526*	1.083	0.802	0.620***	1.368
Number of hours electricity available	1.066*	1.000	1.093***	1.068***	1.057**	1.068***	0.994	1.005	0.961	1.001	1.021	1.053	1.050	0.950	1.050	1.040**	1.073***	1.014
Post office in the village	0.458	1.207	0.502	0.856	1.003	0.857	0.954	1.106	0.740	1.034	1.113	1.649**	1.582	1.184	0.988	0.954	0.969	0.696
Village accessible with paved road	0.826	1.350	0.410	omitted	4.111**	0.458	0.629	0.506***	0.593*	1.169	1.644***	0.502***	0.875	1.143	1.332	0.544***	0.721**	0.547**
Observations	1188			1562			1858			2758			1105			2513		
Pseudo R^2	0.283			0.185			0.176			0.211			0.151			0.201		
chi2	6533.9			2087.4			396.5			486.0			305.0			595.7		
Prob> Chi2	0.000			0.000			0.000			0.000			0.000			0.000		

*Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

Table 7.4.10: Relative Risk Ratios for Dynamics in Multidimensional Poverty for Households Balanced for PDS Treatment in Selected States-Multinomial Model

	Punjab			Haryana			Rajasthan			Uttar Pradesh			Bihar			Madhya Pradesh		
	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now	Chronic Poor	Non-Poor Now	Poor Now
	Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio		
PDS_2011	0.670	0.767	0.758	1.384	1.391	1.578	1.292	0.962	1.297	1.150	1.631*	0.946	2.483**	1.848	2.386*	1.373	1.238	1.124
Age of head of the household	0.988	0.978**	1.012	0.993	0.994	1.017*	1.004	1.001	1.004	0.981**	0.984*	1.010	0.991	1.002	1.005	0.997	0.994	0.993
Gender of head of the household-Female	1.331	2.046	0.000***	8.682***	4.312***	1.479	1.278	2.055	0.498	0.409**	0.772	0.467	3.288	3.961*	2.056	6.534***	5.522***	1.751
Number of members in the family	0.692***	0.935	0.881	0.819**	1.114**	0.884	0.758***	0.937	0.796***	0.874**	0.988	0.831***	0.829**	0.947	0.820*	0.841***	1.050	0.859***
Number of children (0-14) in the family	1.509***	1.262***	1.190	1.463***	1.165**	1.119	1.271***	1.175***	1.093	1.297***	1.106*	1.179**	1.415***	1.248**	1.066	1.164***	1.088	1.171**
Highest adult education	0.675***	0.771***	0.916**	0.707***	0.816***	0.939**	0.726***	0.811***	0.928***	0.748***	0.805***	0.926**	0.760***	0.867***	0.967	0.813***	0.897***	1.025
Source of income-Labor work	1.208	0.638	1.046	1.669*	1.137	1.637*	2.755***	1.557	3.123***	1.248	1.100	1.175	1.259	0.584	1.435	1.463	1.144	1.487
Total Physical Assets	0.644***	0.779***	0.766***	0.745***	0.793***	0.880***	0.580***	0.686***	0.896**	0.640***	0.799***	0.906**	0.599***	0.721***	0.801***	0.545***	0.665***	0.792***
Not more than 2 acres of land	0.581	0.404**	0.300*	0.225***	0.415**	1.195	0.596*	0.726	1.169	0.542**	0.734	0.657	0.060***	0.155***	0.328**	0.972	0.659*	1.738**
Major illness	2.739***	0.917	2.056**	1.262	0.915	0.878	1.136	1.300	1.143	0.917	1.217	1.159	0.461*	0.805	1.027	0.904	1.028	2.068***
Death of main bread winner	0.796	1.434	1.072	1.397	2.678***	1.197	0.479**	0.502**	0.766	0.935	0.813	0.953	1.624	2.020*	1.585	1.562*	1.534	0.910
Marriage expense	0.668	0.862	0.535	0.590*	0.709	0.550*	0.637*	1.047	1.002	0.631*	1.120	1.422	0.494*	0.763	0.702	0.469***	0.667*	0.697
Crop Failure	1.413	2.503	0.128**	0.078***	1.159	0.690	1.197	0.846	0.792	0.631*	1.054	0.325***	0.643	0.768	0.395*	0.472***	0.688*	0.534**
Caste-SC/ST	3.138***	1.538	3.391***	1.578	1.347	1.925**	3.492***	2.130***	3.293***	1.790**	2.025**	2.277***	4.230**	3.523**	2.459	2.859***	1.768**	2.167***
No social network	3.753	1.507	omitted	1.049	0.541	0.437*	0.553*	0.776	0.648	1.777	2.253*	1.368	0.767	0.780	0.492	1.001	1.030	1.151
Availability of Bus service	0.995	0.556*	2.430*	0.828	0.993	0.911	0.896	0.927	1.178	1.639*	1.488	1.184	0.573	0.587	0.516	0.671	0.644*	1.091
Number of hours electricity available	1.010	1.012	0.966	0.913***	0.965*	0.971	1.019	1.029	0.980	0.910***	0.947*	0.953	1.006	0.961	1.059	1.082***	1.090***	1.024
Post office in the village	2.055*	1.571	1.085	2.253**	1.632*	1.470	1.150	1.444	1.230	0.885	0.839	0.760	1.205	1.414	1.294	0.552***	0.860	0.781
Village accessible with paved road	0.227**	1.051	0.843	omitted	1.021	0.911	2.172**	1.261	0.581	0.823	0.881	0.968	1.161	1.192	0.643	1.293	1.251	1.248
Observations	1188			1562			1863			2758			1105			2514		
Pseudo R^2	0.338			0.280			0.340			0.276			0.325			0.297		
chi2	3237.6			352.9			532.2			601.6			375.3			690.8		
Prob> Chi2	0.000			0.000			0.000			0.000			0.000			0.000		

*Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

Table 7.4.5, 7.4.7 and 7.4.9 showed that of all states Punjab and Bihar showed significant impact of higher education of the adult member of the family on consumption poverty dynamics. Punjab showed low likelihood of being in chronic consumption poverty and Bihar showed low likelihood of falling in consumption poverty as education increases. Highly consistent results from the impact of education on multidimensional poverty from tables 7.4.6, 7.4.8 and 7.4.10 is seen across all states. Across all states education of an adult member of the family is associated with a lower likelihood of being in chronic and transient multidimensional poverty.

As expected, number of assets owned by households are shown to be an important factor affecting both consumption and multidimensional poverty dynamics for all the selected states. Almost similar relative risk ratio is observed for all the states in terms of likelihood of falling in one of the three categories of poverty dynamics. Households without any productive livestock are more likely to be in chronic poverty and transient poverty in all the states. It is interesting to see that Punjab and Rajasthan show higher likelihood of households without livestock to be in chronic poverty as compared to Haryana, Uttar Pradesh, Bihar and Madhya Pradesh, where higher likelihood of moving out of poverty is seen. Livestock serves multiple purposes; on one hand it serves as a source of income and on the other hand it can be sold off to pay off debts or start a new business. It can also be used to temporarily boost consumption expenditure.

Similarly, caste, which proved to be a deterrent for movement out of poverty and made households prone to chronic poverty (both consumption and multidimensional) at national level was not consistently significant for consumption poverty dynamics in Uttar Pradesh, Haryana and Punjab, and multidimensional poverty in Bihar and Rajasthan. Comparing the relative risk ratios across states it is seen that for consumption poverty relative risk of being in chronic poverty is always more than being in transient poverty indicating that the lower caste households are stuck in the clutches of poverty forever and less economic opportunities are available to them. A very high relative risk ratio in Punjab, Bihar, and Uttar Pradesh points towards the deep-rooted problem of inequality in these states. Punjab although is a developed state, shows the highest inequality in terms of income and inter-caste marriages (Chakrabarti, 2021). Uttar Pradesh and Bihar rank high in terms prevalence of untouchability (ibid).

Discrepancy in results across states is clearly shown in the effect of social protection policies on poverty dynamics. Results from tables 7.4.5 through 7.4.10 show that there is not a single scheme that matter

commonly across states for both consumption and multidimensional poverty dynamics. Starting with households balanced with MNREGA scheme (table 7.4.5), it was found that those who participated in MNREGA in Rajasthan, Uttar Pradesh and Madhya Pradesh are more likely to be in chronic consumption poverty with the highest relative risk ratio shown in Uttar Pradesh. Haryana and Bihar showed households receiving MNREGA to fall in poverty in 2011. Haryana also showed likelihood of moving out of poverty but relative risk ratio of falling in poverty after receiving MNREGA is more than moving out of poverty. Difference in the impact of MNREGA in different states is likely to come from the difference in operations and implementation of the scheme across states. Moreover, there is a considerable variation in MNREGA wages across states ranging from Rs 136 in Haryana, Rs 100 in Uttar Pradesh to Rs 70 in Bihar (Rengasamy and Kumar, 2011). Among all Indian states, Uttar Pradesh and Bihar were the worst performers of MNREGA as Uttar Pradesh created work equivalent to just 37 average person days and Bihar generated 36 average person days of work indicating the inefficiency of the policy in these states (Thakur, 2021). The impact of MNREGA on multidimensional poverty is seen only in Haryana and Uttar Pradesh (table 7.4.6) where participating households are more likely to fall in multidimensional poverty. No other states show any significant implication of MNREGA on multidimensional poverty dynamics.

Inconsistent results from the implication of pension on poverty dynamics is seen across states. Table 7.4.7 shows that while Punjab showed higher likelihood of moving out of consumption poverty, Haryana and Bihar showed lower likelihood of being in chronic consumption poverty. Bihar also showed lower likelihood of moving out of poverty and Uttar Pradesh makes its pensioners more likely to fall in poverty. Madhya Pradesh on the other hand showed high likelihood of being in chronic and transient poverty both as compared to never poor. The Government of India recommends state governments to provide additional assistance to eligible beneficiaries from state budget. Haryana government has been generous with their pension scheme and provides Rs 1600 over and above the pension already received by the beneficiary. This explains the impact pension has on consumption poverty if a household is a beneficiary in Haryana. Punjab, although does not provide pension as high as Haryana but still provides a decent amount of pension (Rs 750) and is one of the developed states in India explaining higher likelihood of households moving out of poverty. Other states have not been very generous and have only topped up the Government of India's pension by a slight amount. Madhya Pradesh, for example, only gave Rs 100 extra to the beneficiaries, Uttar Pradesh gave Rs 200, Rajasthan Rs 300 and Bihar Rs 200 (HelpAge India, 2018). Punjab is the only state

that showed low likelihood of being in chronic and transient multidimensional poverty for pension recipients (table 7.4.8). As mentioned earlier apart from providing a decent pension Punjab is also one of the developed states in India. This explains low likelihood of being in multidimensional poverty in Punjab.

PDS, although does not directly impact household's income, it does impact household's consumption expenditure in the form of reduced expenditure on food items. It also directly impacts nutritional status of the members of the family which is an important component of multidimensional poverty. Regression analysis in table 7.4.9 show that households getting benefit from PDS in Uttar Pradesh, Rajasthan and Madhya Pradesh are more likely to be in chronic consumption poverty with Uttar Pradesh showing the highest relative risk ratio of being in chronic poverty as compared to the other two. These states also showed higher likelihood of falling in consumption poverty. Haryana and Bihar showed that it was more likely to fall in consumption poverty than moving out if a household is a beneficiary of PDS scheme. The results are mostly driven from targeting of PDS where only poor households are eligible to participate making poor households less motivated to surrender the scheme as they move up the consumption ladder. PDS is also riddled with huge leakages in India, especially in poor states. Uttar Pradesh, Bihar, Madhya Pradesh, Maharashtra and West Bengal, which are home to close to 60% of India's poor accounted for approximately 50% of the total grain leakage in the country in the year 2011-12 (Gulati and Saini, 2015).This means that households in these states are not able to use the scheme at its best capacity. Similar results from Uttar Pradesh and Bihar are seen from the impact of participation in PDS on multidimensional poverty (table 7.4.10). PDS recipients in Uttar Pradesh are more likely to move out of multidimensional poverty and recipients in Bihar are more likely to be in multidimensional poverty. Although both Uttar Pradesh and Bihar are less developed states the contrasting results from the impact of PDS could be the result of corruption and leakages on PDS scheme in both the states.

Such inconsistent results across states from the impact of social protection schemes on poverty dynamics would mean that just providing social protection schemes and not concentrating on external factors that hinder movement out of poverty is not going to put India on a path of poverty eradication. While developed states like Punjab and Haryana show mostly insignificant results from schemes, they also show households taking advantage of these schemes and moving out of poverty. At the same time states with poor infrastructure such as Uttar Pradesh, Madhya Pradesh and Bihar show how these schemes do not help households move out of poverty and they remain chronic poor for a long time. It is important to structure

social protection policies in a way that households are able to reap maximum benefits from the schemes, and to develop a portfolio of social protection programs and complementary services that facilitate movement out of poverty. Although these interventions were indispensable, they need to be more transformative and address structural causes of poverty through integrating various social protection schemes with the structural changes in the system.

Extrapolation of multidimensional poverty indicators

To investigate the response of the indicators of multidimensional poverty Index to the participation in social protection schemes, a separate regression is run for some of the selected indicators. Using multinomial logit model for dynamics in the deprivation of these indicators I found that the results are consistent with the results on general Multidimensional poverty Index presented in table 7.4.1. 7.4.2 and 7.4.3. The indicators selected for this exercise are; deprivation in physical assets, deprivation in livestock, malnutrition, and deprivation of good quality housing.

The findings, reported in Tables 7.4.11, 7.4.12 and 7.4.13, for three schemes separately, show that households with higher number of members in the family are more likely to be non-deprived in physical assets and less likely to sell off physical assets and livestock. At the same time higher number of members in the family is associated with households being more likely to be chronically malnourished. This is mainly because a household is considered malnourished if at least one adult member of the family has less BMI. As the number of members increase the probability of having such member would increase. Education, as expected, reduces the chance of being persistently deprived in physical assets, better health, good housing quality and livestock. With higher education, comes more awareness about improved wellbeing and better livelihood opportunities leading to higher investments in human and physical capital. Crop failure is seen to make household more likely to be consistently deprived in physical assets and less likely to be deprived in livestock. This could be because households that faced crop failure moved towards livestock rearing and sold off their physical assets. Caste, as expected, is associated with high likelihood of chronic deprivations in all deprivations except better quality house. Inequalities in terms of social norms and culture present in India lead to higher deprivation in multiple dimensions of well-being for disadvantaged groups. Households that lack social network are more likely to be always deprived in physical asset. Association with any other indicator is not seen. Availability of social infrastructure such as bus service, number of

hours of electricity available and accessible village, wherever significant, are associated with reduced likelihood of deprivation in physical assets and ill health. The results suggest that studying MPI indicators separately may assist in monitoring the trends in deprivations in these indicators so that better policies are designed based on the factors that impact dynamics in these deprivations.

State level analysis for selected indicators in tables 7.4.11 through 7.4.13 show poor states such as Uttar Pradesh and Bihar are more likely to put their households in persistent deprivation of physical assets and good health but less likely to be deprived of livestock and concrete roof. Provision of housing schemes could lead to reduced deprivation good quality housing. States like Punjab and Haryana, that are classified as rich states, show lower likelihood of being persistently deprived of good health, physical asset endowment, better housing, and ownership of livestock. As subjects such as health, education, employment etc. are state subjects in India, state level discrepancy in various deprivations is the result of differences in the implementation and monitoring of the provision of such services by different states. States like Uttar Pradesh, Bihar, Madhya Pradesh are the states with lower public sector expenditure. The disparities across states reflect the priorities of the state government in making services and provisions available to its people. Mohan *et al.*, 2021, in their study created a measure to evaluate the state of inequality in terms of access to basic social and economic services comprising health, education, basic amenities, socio-economic security and justice. Based on this score they ranked states in three categories: 'Aspirants', 'Achievers' and 'Front Runners'. The study found that Bihar, Uttar Pradesh, Assam, Odisha and Madhya Pradesh fall under 'Aspirants' category, requiring substantial improvements in providing access to many social and economic services. States like Punjab, Haryana, Kerala, Himachal Pradesh, Tamil Nadu etc fall under 'Front Runners' category for providing better access to human development opportunities to its citizens (ibid).

Table 7.4.11: Determinants of Dynamics of Selected Multi-dimensional Indicators for Households Balanced for MNREGA Treatment

	Deprivation of physical assets			Deprivation of good health			Deprivation of quality roof			Deprivation of livestock		
	Always deprived	Non deprived now	Deprived Now	Always deprived	Non deprived now	Deprived Now	Always deprived	Non deprived now	Deprived Now	Always deprived	Non deprived now	Deprived Now
	Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio		
NREGA_2011	1.528***	1.663***	1.160	1.375***	1.005	1.146*	1.138	0.939	1.163	0.888*	1.243***	0.904
Age of head of the household	1.012***	1.003	0.998	0.957***	0.976***	0.978***	0.999	1.005	1.008*	0.994**	0.988***	1.005
Gender of head of the household-Female	1.050	1.164	1.059	0.348***	0.447***	0.672***	0.780*	0.893	1.157	1.053	0.907	0.847
Number of members in the family	0.869***	0.888***	1.185***	1.138***	1.135***	1.179***	1.062**	0.999	0.982	0.843***	0.878***	1.110***
Number of children (0-14) in the family	1.169***	1.151***	0.821***	1.234***	1.220***	0.906***	0.933	1.006	1.051	1.041	1.097**	0.843***
Highest adult education	0.846***	0.910***	0.894***	0.965***	0.996	0.997	1.029***	1.048***	1.001	0.992	0.986	0.995
Source of income-Labor work	1.572***	1.581***	1.027	1.160*	1.154*	1.038	0.965	0.920	0.987	1.845***	1.738***	1.380***
No livestock	1.255**	1.075	1.071	0.846**	0.813**	1.167*	1.502***	1.438***	1.191			
Not more than 2 acres of land	0.900	0.922	0.799*	1.421***	1.032	1.375***	1.411***	1.209**	0.819*	0.414***	0.654***	0.765***
Major illness	0.959	0.975	1.218*	1.096	1.238***	1.014	0.917	1.007	0.928	0.998	1.059	0.980
Death of main bread winner	1.131	1.084	0.942	1.023	1.097	0.788**	1.044	1.059	1.089	1.149*	1.125	0.927
Marriage expense	0.905	1.159*	0.799*	0.764***	0.728***	1.081	1.040	1.037	1.014	0.667***	0.847**	0.602***
Crop Failure	1.118	1.272***	0.879	1.162*	0.800***	1.085	1.430***	1.116	1.223	0.488***	1.083	0.590***
Caste-SC/ST	1.974***	1.570***	1.232*	1.673***	1.404***	1.554***	0.541***	0.591***	0.885	1.895***	1.614***	1.679***
No social network	1.809***	1.157*	1.726***	1.034	1.070	0.984	0.784**	0.775***	0.990	0.839**	0.956	0.963
Availability of Bus service	0.820**	1.246**	0.637***	0.766***	1.035	0.901	1.384***	1.210**	1.074	1.435***	1.203*	1.187*
Number of hours electricity available	0.867***	0.921***	0.959***	0.994	1.004	0.999	1.064***	1.056***	0.999	1.000	0.994	1.002
Post office in the village	0.722***	0.916	0.849	0.811**	0.877*	0.991	1.190**	1.282***	1.045	1.286***	1.078	0.951
Village accessible with paved road	0.632***	0.704***	1.138	1.176*	1.013	0.848*	0.748***	0.911	1.132	1.339***	1.147	1.090
Total Physical Assets				0.929***	0.944***	0.937***	0.598***	0.681***	0.897***	0.941***	0.972**	0.980*
Uttar Pradesh	1.834***	0.663**	2.098***	1.596***	0.986	1.815***	0.696***	0.740**	0.587***	0.196***	0.464***	0.513***
Bihar	7.505***	0.968	4.249***	1.811***	1.265	1.332	0.536***	0.356***	1.255	0.610***	0.967	0.629**
Punjab	0.032***	0.133***	0.366***	0.220***	0.390***	0.812	0.507**	1.941***	0.318***	0.258***	0.577	0.667
Haryana	0.211***	0.567***	1.626*	0.861	0.560***	2.509***	2.854***	3.139***	0.999	0.145***	0.384***	0.365***
Rajasthan	1.564***	1.004	1.409**	1.063	0.841*	1.589***	0.383***	0.932	0.552***	0.266***	0.424***	0.455***
Madhya Pradesh	2.452***	1.140	1.723***	1.523***	1.127	1.943***	2.517***	3.767***	1.951***	0.432***	0.819*	0.586***
Observations	28030			28030			28030			28030		
Pseudo R^2	0.192			0.081			0.131			0.106		
chi2	2272.5			1294.7			1613.7			1751.5		
Prob> Chi2	0.000			0.000			0.000			0.000		

*Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

Table 7.4.12: Determinants of Dynamics of Selected Multi-dimensional Indicators for Households Balanced for Pension Treatment

	Deprivation of physical assets			Deprivation of good health			Deprivation of quality roof			Deprivation of livestock		
	Always deprived	Non deprived now	Deprived Now	Always deprived	Non deprived now	Deprived Now	Always deprived	Non deprived now	Deprived Now	Always deprived	Non deprived now	Deprived Now
	Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio		
Pension_2011	1.724***	1.360***	1.559***	0.699***	0.872*	0.691***	1.060	1.116	1.163	1.052	1.077	0.964
Age of head of the household	1.021***	1.005	1.008**	0.963***	0.971***	0.982***	0.997	1.000	1.009**	1.002	0.994*	1.005
Gender of head of the household-Female	0.911	1.076	0.945	0.531***	0.567***	0.927	0.838	0.808*	0.820	1.187	0.902	0.752*
Number of members in the family	0.824***	0.870***	1.091***	1.247***	1.193***	1.217***	1.150***	1.043	1.034	0.832***	0.897***	1.053**
Number of children (0-14) in the family	1.245***	1.156***	0.905*	1.190***	1.192***	0.895***	0.890***	0.979	0.997	1.059	1.103**	0.899**
Highest adult education	0.815***	0.877***	0.887***	0.985	1.005	1.000	1.028***	1.046***	0.997	0.988	0.975**	0.998
Source of income-Labor work	1.774***	1.715***	1.206	1.313***	1.132	1.190*	0.764***	0.766***	0.897	1.582***	1.674***	1.258**
No livestock	1.125	0.857*	0.930	0.812**	0.764***	1.017	1.305***	1.314***	1.168			
Not more than 2 acres of land	0.814**	0.816**	0.938	1.280**	1.031	1.217**	1.367***	1.161	0.997	0.406***	0.632***	0.876
Major illness	0.865	0.812**	1.073	0.900	1.007	0.906	0.965	1.056	0.832	0.974	1.055	0.970
Death of main bread winner	1.025	1.004	0.884	0.936	1.150	0.886	0.949	0.946	0.803*	1.088	1.004	1.024
Marriage expense	0.824**	1.221**	0.775**	0.736***	0.753***	1.286***	1.144	1.253***	0.972	0.737***	0.771***	0.645***
Crop Failure	1.223*	1.440***	0.856	1.196*	0.980	1.194*	1.320***	1.050	0.834	0.449***	1.110	0.545***
Caste-SC/ST	2.101***	1.573***	1.509***	1.549***	1.177**	1.416***	0.793***	0.770***	1.151	1.722***	1.381***	1.439***
No social network	1.613***	1.090	1.323**	0.930	0.966	0.937	0.862*	0.820**	0.818*	0.967	1.079	1.030
Availability of Bus service	0.822*	1.014	0.777*	0.735***	1.195**	0.914	1.386***	1.315***	1.363**	1.156*	1.182	1.213**
Number of hours electricity available	0.873***	0.923***	0.973***	0.980***	0.988**	1.004	1.045***	1.039***	1.002	0.990*	0.984**	0.988*
Post office in the village	0.689***	0.924	0.791*	0.918	0.898	0.968	1.147*	1.192**	0.813	1.560***	1.142	1.111
Village accessible with paved road	0.731***	0.788**	1.159	0.982	0.960	0.891	0.748***	0.861	1.200	1.403***	0.985	1.163
Total Physical Assets				0.939***	0.971***	0.943***	0.641***	0.724***	0.891***	0.977**	0.977*	0.982
Uttar Pradesh	1.709***	0.668**	2.680***	1.089	0.933	1.266	0.452***	0.601***	0.441***	0.181***	0.415***	0.503***
Bihar	7.914***	1.714**	6.236***	1.124	0.961	1.156	0.417***	0.399***	1.103	0.602***	0.797	0.560***
Punjab	0.032***	0.120***	0.256***	0.327***	0.405***	0.772	0.505**	1.612***	0.253***	0.199***	0.463***	0.504***
Haryana	0.098***	0.280***	0.753	0.614**	0.605***	2.110***	3.468***	4.772***	0.757	0.139***	0.379***	0.311***
Rajasthan	2.045***	1.241	1.826**	0.825	0.811	0.917	0.268***	0.838	0.330***	0.333***	0.439***	0.449***
Madhya Pradesh	2.348***	1.057	1.876***	1.077	0.942	1.545***	1.555***	2.698***	1.498*	0.463***	0.684***	0.553***
Observations	28030			28030			28030			28030		
Pseudo R^2	0.235			0.097			0.135			0.110		
chi2	2115.5			1294.7			1410.7			1272.5		
Prob> Chi2	0.000			0.000			0.000			0.000		

*Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

Table 7.4.13: Determinants of Dynamics of Selected Multi-dimensional Indicators for Households Balanced for PDS Treatment

	Deprivation of physical assets			Deprivation of good health			Deprivation of quality roof			Deprivation of livestock		
	Always deprived	Non deprived now	Deprived Now	Always deprived	Non deprived now	Deprived Now	Always deprived	Non deprived now	Deprived Now	Always deprived	Non deprived now	Deprived Now
	Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio			Relative Risk Ratio		
PDS_2011	1.121	1.246**	0.778	1.143	1.138	0.681***	1.060	0.971	1.075	0.930	1.058	0.767**
Age of head of the household	1.013***	0.997	0.983**	0.962***	0.976***	0.981***	0.997	0.997	1.004	1.000	0.988***	1.006*
Gender of head of the household-Female	1.133	1.388	2.514***	0.373***	0.510***	1.249	0.829	1.391*	1.003	0.758	0.658	0.710
Number of members in the family	0.861***	0.937**	1.218***	1.146***	1.142***	1.219***	1.121***	1.039	1.004	0.811***	0.848***	1.062**
Number of children (0-14) in the family	1.210***	1.057	0.780**	1.275***	1.278***	0.875**	0.921*	0.972	1.030	1.090*	1.168***	0.877**
Highest adult education	0.807***	0.877***	0.867***	0.984	0.994	1.005	1.009	1.043***	0.998	0.967*	0.958**	0.980
Source of income-Labor work	1.549***	1.723***	0.846	1.160	1.086	1.460***	0.962	0.928	0.831*	1.612***	1.606***	1.330*
No livestock	1.197*	0.946	1.001	0.770***	0.888	0.772*	1.525***	1.368***	1.247**			
Not more than 2 acres of land	0.992	0.970	0.892	1.621***	1.135	1.239**	1.290***	1.052	1.022	0.390***	0.666***	0.751***
Major illness	0.864	0.893	1.206	0.935	0.926	0.964	1.010	1.113	1.044	0.944	1.119	1.090
Death of main bread winner	1.189	1.219*	1.050	1.071	1.163*	0.947	0.995	1.029	1.006	1.058	0.950	0.997
Marriage expense	0.780**	0.996	0.632***	0.803**	0.799**	1.063	1.041	1.042	1.059	0.701***	0.864	0.646***
Crop Failure	1.262*	1.236*	0.886	1.055	0.955	1.083	1.338***	1.022	0.916	0.416***	1.186	0.595***
Caste-SC/ST	1.723***	1.073	1.237	1.507***	1.434***	1.189	0.735***	0.637***	0.933	1.779***	1.561***	1.789***
No social network	1.529***	1.139	1.253	1.038	1.181	0.888	0.946	0.887	0.841	1.000	0.861	0.780*
Availability of Bus service	0.925	1.287*	0.754	0.784***	1.158*	1.006	1.601***	1.457***	1.240*	1.370***	1.385***	1.475***
Number of hours electricity available	0.856***	0.900***	0.944***	1.003	1.012*	0.994	1.039***	1.031***	0.993	0.999	1.001	1.021***
Post office in the village	0.608***	0.753***	0.900	0.837**	0.883	1.096	1.132	1.233**	0.854	1.395***	1.037	1.138
Village accessible with paved road	0.748**	0.867	0.938	1.298***	1.154	0.860	0.560***	0.675***	0.991	1.249**	0.758**	0.874
Total Physical Assets				0.901***	0.937***	0.924***	0.687***	0.743***	0.897***	1.013	1.000	0.978
Uttar Pradesh	1.669***	0.630**	1.994***	1.516***	1.146	1.159	0.581***	0.685***	0.438***	0.250***	0.533***	0.650**
Bihar	6.133***	1.058	2.633***	1.509***	1.220	0.767	0.591***	0.339***	0.782	0.677*	1.095	0.798
Punjab	0.041***	0.145***	0.289***	0.346***	0.398***	0.656*	0.372***	1.434**	0.303***	0.201***	0.671*	0.484***
Haryana	0.194***	0.389***	1.078	0.568***	0.577***	1.677***	1.983***	3.382***	0.895	0.149***	0.466***	0.292***
Rajasthan	1.502***	0.914	1.167	1.064	0.765**	1.100	0.350***	0.842	0.426***	0.297***	0.507***	0.477***
Madhya Pradesh	2.194***	0.949	1.343*	1.382***	1.028	1.287**	2.108***	3.022***	1.367*	0.519***	0.843	0.646***
Observations	28030			28030			28030			28030		
Pseudo R^2	0.235			0.095			0.126			0.102		
chi2	2833.9			1638.9			1609.5			2133.6		
Prob> Chi2	0.000			0.000			0.000			0.000		

*Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% le

From the aggregate results in table 7.4.1, 7.4.2 and 7.4.3 it was shown that participation in social protection schemes is associated with a relatively higher chances of a household being in chronic and transient multidimensional poverty. The results from extrapolation on individual indicators also show similar results. Participation in MNREGA makes a household more likely to be chronically deprived in physical assets, and good health. However, there is more likelihood of being less deprived in livestock if a household benefits from MNREGA. Since MNREGA is not available throughout the year it is possible that participants have invested in livestock as a second source of Income. The results are in accordance with the results presented earlier. At the same time participation in Pension scheme showed that households are more likely to be deprived in physical asset but less deprived in better health. This could be because the pension amount is used toward better nutrition and healthcare of the family members but not on physical assets. Implication of PDS on individual indicators of multidimensional poverty is particularly coming from the impact PDS has on malnutrition. It is seen that by becoming a PDS beneficiary between 2004 and 2011 the household is less likely to be malnourished in 2011. PDS also shows to have a positive impact on asset creation in 2011. The impact of PDS on any other indicator of multidimensional poverty was not significant. This is a very strong result given PDS is introduced with the purpose of providing better nutrition to poor households. Overall mixed effects of social protection policies on multiple dimensions of well-being are seen. While health status is directly impacted by availability of PDS and pension, MNREGA is more likely to keep households deprived in selected indicators. Since there is higher likelihood of already poor households taking advantage of such schemes, it is difficult in the short run to change the status of deprivation in many indicators. Except for PDS where nutritious food is provided, other schemes would have an indirect effect on multidimensional indicators. Due to data limitations little can be assessed about the long run impact of these policies on such measures.

7.5 Social Protection Challenge in India

Inadequacy of social protection Programs in eradicating poverty in India is highly evident from my analysis. Social protection schemes in India like, MNREGA, PDS, Pension etc. come with 'targeting errors' comprising of two major problems—inclusion errors and exclusion errors. Inclusion errors mean the unintentional inclusion of the beneficiaries due to poor implementation and unreliable database. Here, for social protection programs, it would mean the participation of non-poor in the scheme when only poor were

supposed to be covered. On the other hand, exclusion errors, exclude poor deserving households from participating in the scheme due to operational failures and inefficiencies in the system. For instance, a widow would not receive her widow pension because she could not produce a death certificate, or a household may not be able to take benefit from PDS if it was not supported by a BPL card. With the limited availability of public resources, India has always resorted to targeted social protection policies. However, on account of high targeting errors the social protection programs have failed to deliver at their maximum capacity (Ramaswami and Jha, 2010; Kozicka, Weber and Kalkuhl, 2016; Asri, 2017). Economic Survey of India 2017–18 indicate that 40 percent of the poorest of the household could not access PDS in 2011, whereas 36 percent of the non-poor took benefit from the scheme. Similarly, only 37 percent of the poor households received benefit from MNREGA in 2011, while 43 percent of the benefits were realised by the non-poor (Economic Survey of India, 2017). A report on the state of India's pension reported that of the 80 million elderly eligible for pension in India, only 22.3 million received pension in 2011, leaving a large proportion of poor elderlies without any pension or social assistance (Jha and Nilachala, 2013). Strictly targeted social protection schemes with the aim of reducing inclusion errors rarely use the kind of evidence for it to be efficiently implemented. They are often based on an inadequate accounting of the errors made and costs incurred, and often unintentionally exclude many poor who are in real need (Ravallion, 2018).

Social protection policies have also faced criticism on account of their design that leads to very high operational and implementation costs (Pingali *et al.*, 2019). For example, MNREGA promises 100 days of guaranteed work to all job seekers but could not do so in many states. According to a report published by McKinsey the proportion of applicants getting 100 days of work through MNREGA in the least deprived and most deprived districts in India are 6 percent and 1 percent respectively (McKinsey Global Institute, 2014). Although, provision of Rs 200 per old age person is made by the Central government under the old age pension scheme with an understanding that state governments would top up on this amount, there is a significant difference in the amount of the top up—Rs 200 per month in some states and Rs 1800 or more in others (HelpAge India, 2018).

Along with the criticism that the social protection policies face, the very nature of these policies in India is also questionable. While promotive and protective policies are important for very poor households for their very existence, it is important to concentrate on preventive social protection policies in order to protect those who are just a shock away from falling into poverty again. High attention given by the

Government of India to social assistance through protective programs is evident in the budgetary allocations made in the Union Budget. Table 7.5.1 provides a comparison of budgetary allocations made for social protection schemes in 2019-20 with the revised estimates (RE) of 2018-19 and actual estimates (AE) of 2017-18. In comparison to social insurance, which is preventive in nature, more allocations and actual spending is made on protective programs. PDS and MNREGA, that are protective in nature, form the largest share of total expenditure on social protection. However, the expenditure made on these schemes hardly see any increase in expenditure in the latest budget. Moreover, actual expenditure made on a particular scheme could be different from what was originally budgeted for. For instance, pension scheme was allocated Rs 100 billion in 2018-19, the RE was lower at Rs 92 billion. On the other hand, actual spending of Rs 609 billion was made on MNREGA, as compared to the budget estimate of Rs 550 billion in 2018-19.

Table 7.5.1: Budgetary Allocations 2019 v/s RE 2018-19 and AE 2017-18 (figures in billion)

	Actual 2017-18	**Budget 2018-19**	**Revised 2018-19**	**Budget 2019-20**	**Change from RE 2018-19 (in %)**
Pradhan Mantri Jan Arogya Yojana (PMJAY)	...	...	24	64	166.67
Pradhan Mantri Awaas Yojana (PMAY)*- Rural	225.72	210	199	190	-4.52
National Social Assistance Program (Pension)	86.94	99.75	89	92	3.37
MNREGA	551.67	550	610.1	600	-1.77
PDS	1058.7	1741.6	1778.8	1922.4	8.08
Pradhan Mantri Fasal Bima -Crop Insurance	94.2	130.	129.76	140	7.89

*RSBY was merged with PM-JAY, hence no allocations can be seen for the same.

Source: Expenditure Profile: Union Budget 2019-2020

Recognising the need for health insurance for poor people, a phenomenal increase in the budget expenditure is seen in the new health insurance scheme called the Pradhan Mantri Jan Arogya Yojana (PM-JAY) launched in September 2018 with an aim of providing affordable and accessible healthcare to the targeted 500 million beneficiaries.[35] RSBY, the health insurance scheme launched in 2008, got merged into this new scheme. PM-JAY is a health insurance scheme providing yearly health insurance of Rs 5 lakhs per family and covers both secondary and tertiary care in-patient treatments. The scheme provides cashless access to health care services for the beneficiary at the hospital and there is no cap on the family size. The

[35] As explained in chapter 4.

scheme is fully funded by the Government, with the cost being shared between the centre and the state (pmjay.gov.in/about/pmjay).

The expansion of health insurance schemes will transform India's social protection framework in order to fulfil the needs of the rising numbers of its vulnerable population (Foley, 2019). However, there is still a long way to go for the Indian Social Protection system, as preventive measures are yet to prove their capability to work for the Indian economy. Along with the need of balancing the right mix of social protection programs that include both preventive and protective measures it is also important to provide a right platform for these to work at their best capacity. Providing households with food, employment, education, and housing would help households meet their immediate need but cannot provide a sustainable pathway out of poverty. Lack of good quality education institutes, good quality hospitals, financial institutes offering microfinance and good governance may hinder the movement out of poverty even with existing social protection policies in place. It has also been shown in this study, where even after receiving benefits from social protection schemes households were not able to move out of poverty.

The government has been unsuccessful in efficiently delivering public services to its people, particularly to those belonging to the bottom 40 percent of the population (Afridi, 2017). This is also evident from the poor performance of India on most of the dimensions of human development index (UNDP, 2019).[36] On account of high public spending on social protection schemes, expenditure on health and education, drinking water, safe sanitation & hygiene, banking services, social physical infrastructure, etc. has suffered (Kapur and Nangia, 2015). Expenditure on both, social protection schemes and social infrastructure and institutes, need strengthening in order to achieve the goal of keeping the movements into the poverty as low as possible and movements out of poverty as high as possible.

By focussing more on the provision of social protection programs than investing in creation of facilitating infrastructure and institutions, India has followed the route taken by many Latin American countries, wherein, they provided social protection to their citizens as a response to high poverty (Kapur and Nangia, 2015). For example, Brazil launched a government run program called Programa Bolsa Família (PBF) in 2003 wherein poor households receive conditional cash transfers provided that they send their children to school and ensure proper vaccination. By 2015, the proportion of people living below the international

[36] Human Development Indicators have been discussed in Chapter 3.

poverty line in Brazil, had dropped from 13 percentage points to three (Ćirković, 2019). Many other Latin American countries, Mexico, Peru, Chile follow the same path and launched social assistance cash transfer program as anti-poverty measures. East Asian countries on the other hand spurred economic growth and reduced poverty by spending more on the provisioning of better public infrastructure (Pingali et al., 2019). East Asian countries, such as China, Thailand and Viet Nam invest more than seven percent of their GDP each year in infrastructure (Japan Bank for International Cooperation, 2005). High focus on advanced infrastructure boosted industrial production, increased trade and investment, and offered improved access to infrastructure to the poor people (ibid). Comparative analysis suggests that although Latin American countries spent more on provision of social protection policies through redistribution, East Asian countries performed better in terms of welfare outcomes (Tsunekawa and Todo, 2019). Europe too was determined to work on its infrastructure rather than relying solely on social protection policies to tackle poverty. "The entitlement state in Europe occurred only when the state started to prioritize on the provision of public goods" (Rajaraman, 2014).

Graduation out of poverty would become much easier if along with social protection households are given access to quality social institutions and infrastructure that provide a household with enough opportunities that can set it on the path of self-sustainable growth. For example, under MNREGA, individuals demanding unskilled manual work are promised at least 100 days of guaranteed public work, the scheme, however, does not focus on sustainable livelihood for the remaining days of the year. Moreover, wages earned through the scheme are not sufficient to pull them out of poverty. There is no skill enhancement of the people working under MNREGA. Similarly, Pension although provides a household with supplementary income, it does not focus on insufficient income opportunities, increased risk of illness, and mental health of old people. Since PDS offers cereals at subsidized price most of the beneficiaries are encouraged to fulfil their calories requirements through cereals only thus reducing dietary diversity (Pingali, 2015). Therefore, the whole architecture around social protection needs a revamping. The root cause of poverty does not get cured or addressed by just providing meagre food subsidy or unskilled employment. Households are stuck in poverty because of lack of economic opportunities and inaccessible public services. If alterations are not made in the processes that define poverty and its dynamics, in the first place, it is uncertain that any social protection policy will, by itself, generate sustainable movement out of poverty.

7.6 Conclusion

The results presented in this chapter demonstrate that both consumption and multidimensional poverty measures need to be used to explore poverty dynamics. Underpinning multidimensional poverty that has longer lasting dimensions would clearly give us a better view of poverty dynamics. It was seen that households that invested more in human and physical capital over the two time periods under study are more likely to move out of both consumption and multidimensional poverty. Not surprisingly, it was also observed that the results for physical and human capital were more prominent for multidimensional poverty. Social norms such as lower caste has a higher impact on keeping a household in chronic consumption poverty than multidimensional poverty indicating less income earning opportunities for this group.

The results show that in general, social protection policies have similar effect on poverty dynamics for both consumption and multidimensional poverty, except for PDS where availability of nutritious food directly has an impact on household's nutrition level, which in turn leads to low likelihood of household's falling into multidimensional poverty. On the contrary, PDS recipients are more likely to be chronic poor and transient poor when consumption poverty is studied. As mentioned earlier the impact also differs across states. Pension, that directly increases household's income also increases the likelihood of being chronic and transient poor at an aggregate level but at state level it shows that states that adopted pension policy according to regional requirements show better results. Since better results are seen in more developed states where there are better opportunities for income generation and better social infrastructure is available, such as Punjab and Haryana, it is important for policy makers to prioritize provision of economic opportunities and quality social infrastructure along with provision of region-specific social protection policies. Although positive effect of selected social protection policies on consumption poverty, multidimensional poverty and individual dimensions of multidimensional poverty is not evident in this thesis, it is highly evident that dimensions such as education, physical asset endowment, social inclusion and good quality social infrastructure can address causes of poverty that impact various dimensions of multidimensional poverty. If alterations are not made in the processes that define poverty and its dynamics, in the first place, it is uncertain that any social protection policy will, by itself, generate sustainable movement out of poverty.

It is seen from this analysis that social protection policies need to work in cohesion. One policy does not suit all. At the same time, what works for Bihar may not work for Punjab. Pension, PDS and MNREGA may be more appropriate to help households smooth their consumption but to become more resilient to catastrophic events insurance and access to credit could play a major role. However, one form of social protection alone is not enough to make household move out of poverty. There needs to be an interplay between various forms of social protection as there are limitations to what a single social protection, on its own can achieve. Since in IHDS dataset I did not find many households getting benefits from two or more schemes at the same time it is unlikely that households are able to take benefit of complementarity between social protection schemes. It is important to structure social protection policies in a way that households are able to reap maximum benefits from the schemes and to develop a portfolio of social protection programmes and complementary services that facilitate movement out of poverty.

Chapter 8: 'Why' Poverty Persists?

"The longer I live the more convinced am I that—except in purely abstract problems—the statistical side must never be separated even for an instant from the non-statistical." ---- (Marshall, 1996)

"I want to understand the world from your point of view. I want to know what you know in the way you know it. I want to understand the meaning of your experience, to walk in your shoes, to feel things as you feel them, to explain things as you explain them. Will you become my teacher and help me understand?" --- (Spradley, 1979)

8.1 Introduction

The previous chapters on poverty dynamics discussed how poverty has changed from one time period (2004) to another (2011). It has helped us identify patterns and correlates of movements within and outside poverty. To some extent, it has also helped us understand how these patterns develop and what factors contribute to poverty dynamics. It has, however, failed to recognise the changes or sequence of events that a household would have experienced between the two time periods. To enrich our understanding of why these patterns develop, a qualitative research is conducted.

The purpose of this chapter is to collate the information collected through qualitative analysis on local people's perception on poverty dynamics and to identify the implication of social protection policies in shaping rural livelihood. For this purpose, two qualitative research methods have been adopted: Case studies through open ended questionnaire, and Focus group discussions (FGDs). Qualitative methods help in finding out people's own perception of poverty and their experience with social protection schemes. Using this methodology, it is also possible to identify if poverty is perceived as monetary or multidimensional, and if it is multidimensional what all dimensions of poverty are considered essential for movements in and out of poverty by local people.

This chapter complements Chapter 6 and 7 by providing excerpts from primary data collected on field in India. Section 8.2 analyses the data collected using case studies and focus group discussions. Section 8.3 presents the descriptive analysis of IHDS data for Uttar Pradesh and how it comprehends results from

qualitative data. Section 8.4 concludes this chapter.

8.2 Patterns of Poverty Dynamics and Social Protection

Detailed explanation of the process of collecting information through qualitative approach has already been discussed in chapter 5, section 5.4. Details about the instruments used and selection process of the state, districts, villages, and households have also been provided. Uttar Pradesh, which is home to the maximum number of poor people in India and rank low with respect to Human Development Index and provision of social infrastructure has been selected for my study. Using wealth ranking exercise, a total of 40 households in two villages of Uttar Pradesh were selected for case studies. Eight focus groups discussions, two in each village were conducted and through informal interaction information from the people of similar background is gathered.

Choosing Uttar Pradesh as an appropriate case study for my analysis has also been supported by the results of regression analysis run on selected states of India in chapter 7. The results, reported in tables 7.4.1 through 7.4.3 and 7.4.5 to 7.4.13 in chapter 7 showed inconsistent results across states. Higher deprivation in the indicators of multidimensional poverty is seen in Uttar Pradesh and Bihar, and states with better social infrastructure, such as Punjab and Haryana do not show much deprivation in terms of good health, physical asset endowment, better housing, and ownership of livestock. Provision and monitoring of good quality social infrastructure and services, and an efficient governing body result in high quality of multiple dimensions of wellbeing. The disparities across states reflect the differences in the capability of state governments in providing such services to its people. This disparity is also evident in the implication of social protection schemes across states. While developed states like Punjab and Haryana show mostly insignificant results from schemes, they also show households taking advantage of these schemes and moving out of poverty. States with poor infrastructure such as Uttar Pradesh and Bihar show inefficiency of social protection schemes in facilitating movement out of poverty. Conducting a qualitative study in Uttar Pradesh for the purpose of this thesis would bring an insight into the ground level realities of implementation and participation of social protection schemes to find out why social protection policies did not show positive effect on movements out of poverty in regression analysis reported in chapter 7.

In this section I present the results from the data collected on field through case studies and focus group

discussions in rural Uttar Pradesh. While the main aim of this chapter is to identify dynamics in poverty and the factors that affect poverty status and its relation to social protection schemes, poverty is not defined beforehand. It is completely left to the respondent on how they wanted to define poverty and its dynamics. However, drawing from poverty dynamics literature it was assumed beforehand that poor people are vulnerable and within this context their ability to generate a sustainable livelihood is affected not just by idiosyncratic shocks and events but also by prevailing local, social, institutional, and organizational environment (DfID, 1999).

The qualitative approach of identifying poverty asserts that monetary/consumption-based poverty does not completely represent aspects of welfare that are classified as significant by the poor themselves. Moreover, as mentioned in chapter 5, multidimensional poverty was only imperfectly correlated with consumption poverty. Using qualitative approach poverty is identified by gaining information on the interactions between households' social, cultural, institutional, and economic circumstances (Carvalh and White, 2013). As mentioned earlier poverty encompasses various manifestations including but not limited to vulnerability, resilience, social security, exclusion, ill health, poor education, violence, etc., therefore, at the time of interviews with the household effort was made to identify both consumption and multidimensional aspects of poverty. Apart from understanding their source of income and if they perceive that income to be enough to fulfil the needs of their family, links have been made between multidimensional and consumption poverty. The objective was to seek the response from rural households on their trajectories of poverty and how they manage to survive.

Since income of the households is mostly unknown, change in livelihood strategies, which is perceived as a household's way of living is something that makes a household's poverty dynamics visible (Long, 1997). It represents what people do for survival and how they meet their consumption and economic needs, cope with uncertainties, respond to opportunities and make choices between various value positions (ibid). Throughout the discussions with the villagers, it was found that economic stress due to shocks and deprivations in physical, human, social, and institutional capital were the most visible signs of poverty. Deprivations that are visible are the ones that define household' poverty status over time. Interviewers have to rely on the impression people would want to project of themselves and the value system informing this perceived identity (Odhiambo, Muthaka and Omiti, 2005). Throughout my discussions with the villagers, I tried to understand how according to them poverty dynamics worked for their household.

The data collected and information gathered is arranged and structured into different categories as guided by research questions 1.2, 2.1 and 2.2.

Research question 1.2: *What are the factors that affect poverty dynamics in India and are these dynamics different for different measures of poverty viz. consumption poverty and multidimensional poverty dynamics?*

As mentioned earlier, an analysis drawn using the case studies is a way to understand the poor households' perspective without exclusively relying on the yardstick of the poverty line. Attempt has been made, wherever possible, to explain poverty dynamics using both multidimensional and consumption measures.

Movements into Poverty

From the case studies I have seen that unless there is a major jump in somebody's income or living, the same set of people keep moving up and down the poverty line. Here I share the experiences of households that have moved into poverty. Lack of resilience to shocks is something that has been a major contributor to falling into poverty. A shock would put a household in a vulnerable position and the household with no coping mechanism would just float around from one position to another. There is no way that a sustained movement out of poverty is made. Series of shocks put them back into poverty and a positive shock would pull them out of it, although temporarily. However, this is something that has not come out clearly from my empirical analysis in chapter 7. This could be because shocks impact different people differently and it depends on the intensity of shock and resilience of the household. Hence, a one-to-one interview with the household helps to build analysis on the impact of shocks.

"*We were a family of 8 people, my mother-in-law and father-in-law, my sister-in-law, brother-in-law, husband, myself and two children. We had a decent living. My husband and my father-in-law would work on the field as agricultural labors. I would also go to fields sometimes and my mother-in-law would take care of the kids. To get my sister-in-law married, we had to sell the livestock that we had, and my father-in-law used up all the money that he had saved from this pension in the hope that he would keep getting pension and he would save more again. Soon after my sister-law-got married, my father-in-law passed away. He was the one who was getting the pension and was working as well. There was a sudden financial crisis, as we were not left with any livestock. We are trying to get the widows pension for my mother-in-law, but we are told that we have to wait. My husband wants to work but work is not available all year round. Kids are also small and*

there is hardly anything we can do. It's been months that we had bought milk or egg from the market. I borrow milk for kids from my neighbor who owns two cows. I am afraid if something happens to my husband where will we all go. I don't even have enough money to buy fresh vegetables from the market."

Respondent from Village 3, Kannauj District

In this case, the minimal assets that they had accumulated in their life span just enabled them to cope from one shock, but another shock came and the whole family was shattered. This family took benefit from the housing scheme to build their house, a toilet and used to get pension from the government. They get ration from PDS shop too but "that is not enough to maintain a healthy lifestyle and certainly not enough to move them out of poverty", said the GP of the village.

A similar example is where the death of a primary breadwinner and/or presence of a disabled child at home has put the family into distress. Death of the primary earning member of the family puts the family in a vulnerable position, the exit from which is very difficult, at least in the short run. Ratna[37], a 35-year-old woman, in Village 1, Kanpur Nagar District, has to live at the mercy of her relatives. She lost whatever assets she had and has no source of income making her and her children completely dependent on her brother.

"My husband used to work on fields, and I would make bidis (rolled handmade cigarette) while looking after my daughter. My daughter started going to school and I conceived again. I gave birth to a boy who was diagnosed with polio at the age of one. Somehow my husband and I managed to get bread at home. My daughter was 12 and my son was 7 when I lost my husband in an accident. I was devastated. I had to sell the house I was living in after I lost my husband. I am now staying in my brother's house, who himself is not doing well for himself. Although whatever money I got from selling the house, I gave that to my brother. Now I don't have anything of my own. We are living on the mercy of my brother and his wife. I am not sure how are we going to survive like this."

Respondent from Village 1, Kanpur Nagar District

Sharan, a 34-year-old man and his family fell deep into poverty because he had to fund healthcare and medical costs. Catastrophic healthcare expenditure left him with no savings and pushed him and his family

[37] Pseudonyms have been used throughout this dissertation to maintain the anonymity and confidentiality of participants.

into poverty. In this case along with healthcare expenditure lack of healthcare insurance, poor healthcare infrastructure and service also play a big role. Had proper treatment been provided at the government hospital he would not have gone to the private hospital, which would have saved him the money spent on healthcare at private hospital.

"We were very poor when I was small, and both my parents used to work as agriculture labor. My sister would go to school with me till I was 9. After my father started to take me to work with him both my sister and I would go to school only on days when no work was available. I think my father wanted some extra income for home. I could not finish my studies, but I was very hardworking. Because of this I was never short of work but how much can one earn in this kind of job? Still, we managed to have two meals a day for the whole family. 10 years back I got married and within a year we had twins also. There was a sudden financial pressure on me as the family was growing and parents were growing old too. I was the only earning member left in the house. My wife sold off her jewelry, which she had got from her parents, and we bought a buffalo. We started selling milk to get some extra income. Last year, one of my sons came back home with high fever. The fever wouldn't go even after giving him medicine. We made several trips to the government hospital, but he would just not get better. We took him to a private hospital. We got to know that it was tuberculosis meningitis. After 10 months of treatment, he passed away. To pay for his treatment we even had to sell off our buffalo and two goats that we had bought from our savings. We are back to square 1 now. Now I have no savings and the only income that I get is from working at the farm."

Respondent from Village 4, Kannauj District

From these examples and many more through case studies it is evident that poor households are always vulnerable to shocks. And it's not just one shock; they are prone to multiple shocks. From collecting case studies in the villages following factors are claimed to be responsible for movement into poverty:

Death of the Main Wage Earner: Death of the main wage earner, which in most cases is the male member of the family, puts a family into distress immediately. Women who lost their husband have to experience challenge of meeting the essential requirements of the family. This becomes more tragic when women lose their husband when kids are young. Unless a family has built enough assets and savings to cope with such loss, falling into poverty cannot be avoided. Moreover, the duration of widowhood leads to permanent loss of income and increased risk of poverty (Hungerford, 2001). A study conducted by Niswade, in 2015, in

rural India, showed that there is neglect of widows in living arrangements; 54 percent widows were staying with the in-laws before widowhood, but after widowhood there is a significant change as only 6.67 percent stayed with the in-laws, 21.67 percent widows had started to live alone, 16.33 percent lived with unmarried children, and 4.67 percent shifted their residence to parents (Niswade, 2015). The lack of social security and source of income makes moving into poverty more difficult.

Out of pocket Expenditure Related to Poor Health: Of 14 families that had fallen into poverty according to the wealth ranking exercise, 10 have become poor now because of poor health, accident, or disability. Out of pocket expenditure on health care can distort the economic well-being of the households especially those belonging to the less income groups (Basumatary, 2017). A study conducted by Public Health Foundation in India has estimated that around 55 million Indians were pushed into poverty because of spending on healthcare and 38 millions of them fell into poverty due to spending on medicines only (Selvaraj, Farooqui and Karan, 2018). Another study reveals that 30 percent in rural India could not go for treatment due to lack of finance in 2004 (Basumatary, 2017).

Social Obligations: Social events like funeral, childbirth, and marriage put tremendous pressure on a low-income family. These usually take priority over basic needs because of social pressure as households that do not follow these rituals are considered social outsiders, at least in rural India. Many times, these are funded by borrowing from friends and family, putting an already vulnerable household prone to falling in poverty. Many families are also forced to sell their valuable assets or take loans at high interest rates to fulfil these social obligations.

Local Infrastructure: Apart from idiosyncratic shocks mentioned above, lack of proper healthcare service, poor educational institutions, poor roads, and lack of transport facilities play a major role in shaping a household's livelihood. Physical infrastructure like proper roads and mode of transport provide geographic access, which increases labour mobility making it easier for people to look for work outside their village. A regional study conducted in India has found that there is a positive relation between expansion of infrastructural facilities and average consumption level of the household that results in reduction in the proportion of people living in poverty (Majumder, 2012). However, these impacts also led to increased inequality within the region (ibid). Availability of better health and education services, however, results in fall in poverty and interpersonal inequality.

Lack of Financial Services and Insurance: People in remote areas of India do not have access to financial services, forcing them to rely on riskier and expensive source of finance. This includes selling of productive assets and borrowing from local moneylenders at higher rates. Lack of health insurance and life insurance make health related shocks more daunting and put a household in vulnerable situation. There is a consensus in the development literature that access to finance is significant in describing a households' poverty status, as it prevents the households fall into poverty and facilitate their movement out of poverty (Adebowale and Lawson, 2016).

A range of factors contribute towards falling in poverty. From case studies it is found that many households have fallen into poverty because of shocks related to ill health, death, social obligations including but not limited to funeral, marriage, and childbirth. Such shocks are the major cause of depletion of family's assets. Along with financial loss, psychological impact of these shocks and losses can be very damaging (Narayan, Sen and Hull, 2010). These shocks when combined with lack of infrastructural and institutional arrangements limits a household's resilience to shocks. Access to good quality healthcare service, transport service, financial institution and local infrastructure can create self-sustaining resilience preventing households falling into poverty.

It is evident from the case studies that the immediate effect from any shock would be on the consumption expenditure of the family. As family starts to deplete their assets, or start borrowing, their consumption may smooth out, but it will come at the cost of deprivation in some of the dimensions of multidimensional poverty. This may lead to fall in consumption expenditure if borrowings and money received from the sale of assets is not put into productive use that generates income. Deprivations in multiple dimensions, such as better infrastructure, productive assets, livestock, ill health etc would put household in a poor state for a long time. It is evident that if a household is multidimensional poor there are high chances that the household would become consumption poor too.

Movement out of Poverty

Case studies reveal that there have been cases where people have made a considerable move out of poverty by investing in productive assets, staring new business, remittances and acquiring new skill. Those who have worked hard and diversified their income generating activities have been able to move out of poverty. However, it is important to understand how people are making changes in their income-earning activities

that provide graduation out of poverty. Resilience to shocks, risk taking capacity and risk mitigating activities are limited for people living around poverty line. Only those who have made considerable sustained investments were able to move out.

Sapna, 40 years old, takes pride in the fact that they have worked hard and earned their living. In this case, acquiring a different skill from agriculture provided her husband a platform to start his own business. Sapna and her family was fortunate as they did not face any shock when they had just started their business, making everything work in their favour. Had they experienced any shocks at that time their situation could also have been different.

"We had gone to bed without eating many times ten years ago. My husband worked as a casual labour, and we had no money. Since we had kids also it was getting very difficult to survive. My husband left home and went to Jaipur in search of work. Meanwhile, I went and stayed with my parents who live in another village, around 10 kms from here. My husband learnt embroidery in a factory in Jaipur. He worked there for a couple of months and then decided to come back. My husband would bring dupattas (stoles) from Jaipur, and we would do embroidery on it. Soon our business started to flourish. We started hiring girls from our own neighbourhood and trained them in this skill. In the last 7-8 years, we have hired many girls who learn this skill and now support their families. By God's grace things are doing fine. We hope to educate our kids so much that they can take this business to another scale."

Respondent from Village, Kanpur Nagar

Sakina, 28 also learnt a skill with financial support of her husband's employer. Social network played a major role in this case. It was because of this network, that she got this economic opportunity and acquired a new skill and supported her husband financially.

"We were very poor when I got married to this family. My husband was working as a helper in a shop in the town. He would travel 2-3 hours every day for work. A few years back I had gone to the town with my husband where I met the shop owner's wife. She advised me to learn stitching so that I could financially support my husband. My mother-in-law was not supportive of this, but the shop owner's wife lent me Rs 3000 to learn this skill. I soon started charging money for my service. I do not charge much because I know people in the village can't afford it. But it is enough to get a decent living. I could only do this because my mother-in-

law was taking care of the house and children while I was doing this course. We are really indebted to "Seth ji" (shop owner) and madam ji (shop owner's wife) for what they did for us. My husband still works for Seth ji and sometimes picks and delivers clothes for me."

Respondent from Village 3, Kannuaj District

Sukhi Lal, 48 sent both his kids to school while both, he and his wife were working on the fields. Illiterate themselves, they value the importance of education. Now when both the sons are in salaried employment, they send remittances to their parents. These remittances improved their economic situation and gave them social security as well.

"*I get teary-eyed when I talk about my life 15 years back. My wife and I worked as casual labour at a construction site in the district. I have two sons, and both were going to school while I was working. Both my sons went to school and were good at studies. I always wanted my kids to study as long as they could. My elder son is a constable in the UP police and sends money every month to us. I have stopped working now. Our sons keep visiting us, but they don't live here permanently. My younger son is taking training now after he cleared his exam. Education has played a very important role in my family. But not everyone is as lucky as I am. I know of families where even after studying so hard, there are no job opportunities for educated people. Both my sons have their own family now in town. But they do send us money, so that we can have a decent living standard."*

Respondent from Village 1, Kanpur Nagar

Examples like these make it very clear that families like these have moved out of poverty through diversifying income generating activities, acquiring new skill, investing in human capital, borrowing from friends and family to start new business, and self-determination. Here again, it is seen that households who were better off in multiple dimensions of poverty, such as in education, social network, access to income earning opportunities have higher chances of moving out of poverty. Moving out of multidimensional poverty over time leads to moving out of consumption poverty as well, as the return to investment in assets (human, physical, capital, financial, social) starts to pay off. Factors that lead to movements out of poverty are:

Education: The role of quality education in moving out of poverty is uncontroversial (McCulloch and

Calandrino, 2003; Bird, Higgins and McKay, 2010; DFID, 2015). Return to education is not immediate but it pays off in the long term. Educated children grow up as an asset for the family, provided the investment in human capital is accompanied by employment opportunities and skill development programmes.

Remittances: In my case studies many households reported that they could come out of poverty because their migrant family members sent remittances regularly. It is a main source of livelihood for the family that chose to stay back in village. Remittances makes a household resilient to shocks and also provide a platform for more income generating activities beyond farming (Tarefe, 2018). A study conducted by Delhi School of Economics, India reveals that migration and remittances play a major role in poverty reduction and also has changes the consumption pattern of the family (UNCTAD, 2015).

Social Network: Social network is one of the major reasons through which people have come out of poverty. People with better social network are in a better position to borrow money and have access to opportunities. (Mango *et al.*, 2004) using qualitative methods explained the role of social networks as one of the main factors responsible for movement out of poverty. A household that is well connected will be more informed about the policies that are of its benefit, will be more updated on latest technology, will be aware of job opportunities and will have better access to credit through informal resources.

Income Diversification: Working as an agriculture labour does not guarantee any regular source of income. To cope with this uncertainty many households have started diversifying their income generating activities that, many times, provide a sustainable movement out of poverty. Participation in non-farm activities can offer a pathway out of poverty, provided there are sufficiently productive income earning opportunities (UNCTAD, 2015).

Chronic Poverty

During my visit to these villages, I came across many families who have stayed poor for as long as they could remember. There is no opportunity for them to move out of poverty. They are often illiterate, lack basic education, and there is no aspiration and hope of moving out of poverty. Kids drop out of schools early because of family responsibilities. They have poor dwelling conditions, earn their livelihood by working as casual labour, often indebted, lack nutritious food, social network is also in poor shape as people don't trust them when it comes to lending money. Milk and other high nutrient content food are not bought

ever. These households cannot accumulate assets because of lack of sufficient resources. The results are consistent with my empirical analysis in chapter 6 and 7, and theories of poverty dynamics explained in chapter 2 wherein lack of multiple deprivations deter a household's movement out of poverty.

Chronic poverty is persistent because of multiple factors, some of those are explained below in detail with examples from the field study:

Lack of basic education: In two households, I came across disabled children, who because of their disability cannot go to school. In one of the families the elder sister has to leave her studies as there was no one to be at home to look after the little brother who had polio. Both parents work as agriculture labour. Moreover, for kids who go to school the quality of education is not good.

"Sukhdev, 55, and his wife have one daughter and two sons. The elder son got married a few years back, but his wife left him for a reason that they did not want to share. The daughter is married and lives in village close by. Sukhdev lives with his wife and two sons, 21 and 13 years old. Both Sukhdev and his wife are illiterate. The older son has studied till class 8 only and the younger one is still in school. The wife says that public schools are not good, but they don't have a choice but to send their son there."

Respondent from Village 2, Kannauj District

Insufficient Dwellings and Assets: Even households who have always remained poor have a couple of goats, which they raise on half sharing[38] basis. Having goats on a half sharing basis means that the official owner of the goat is someone else, but the poor person is taking care of the animal and when the goat is sold both owner and the care-taker divide the profit equally.

Poor households do possess some utensils in which they cook and eat. Houses are generally made of mud, and they do not have a separate kitchen. Women cook on clay stove with firewood. These households do not have fridge, TV or motorcycles. There are toilets in most of the households that were made using money received through sanitation scheme of the government, but lack of water poses a lot of problem. Moreover, there are no toilets near the agriculture land where they work, so open defecation is prevalent.

[38] In the half-raising system, a household adopts an animal from the owner immediately after the animal stops breastfeeding. Once the animal matures it can either be sold in the market with proceeds shared jointly between the owner and care-taker, or the care-taker can purchase the animal by paying half of the prevailing market price to the owner.

Most of the households in this category are landless or possess a very small portion of land. And the little land that they possess is not adequate enough to pursue any commercial activity. Most of the land is wasteland.

Shashi, 25 along with her in-laws and husband lives in a kuccha house. She says,

"I have lived in poverty throughout my life. My husband works as agricultural labour and he could not accumulate any asset in our lives. We have some utensils and a bed that my parents gave as dowry. The bed is used by my in-laws and we both sleep on the floor. We do not have any children yet. We have some land as well, but my husband says that nothing can be grown there. We used to have two goats on sharing basis that we sold off last year."

Respondent from Village 4, Kannauj District

Unsustainable Livelihood Strategies: Households in chronic poor category are engaged in agriculture labour and do petty jobs like making bidis when work is not available. Those who have grown up boys, send their children to nearby cities in search of work. But its only casual work that is available, which is not permanent, and insecurity is a major concern. In times of need people take loans from friends and family or sell their livestock off to get some money. Affording private medical facilities is not possible and children have to drop off from school after primary education as there is no resource with the family to send them to secondary school.

"Bhumi's elder son is a seasonal migrant and goes to Kanpur in search of work during off-season. She and her husband make bidis during off-season for which they get Rs 65 for making 100 bidis. They also work as agricultural labours. More work is available during peak season when landowners need labour to sow, transplant and harvest their crops."

Respondent from Village 2, Kanpur Nagar district

"Shanta, 68-years old, is a widow and lives with her son, 45-years old, in a mudded house in the village. Shanta and her son work as agricultural labour and earn their livelihood through labour only. Shanta is illiterate while her son has studied till class 5. He used to go to farm with his father when he was alive. According to Shanta her husband was the only working member then."

Respondent from Village 3, Kannauj district

Lack of Nutritious Food: The households that have stayed in poverty do not suffer from hunger as these households are eligible for PDS scheme and meet their basic requirement of food through PDS. Households also claim that potato is cheap. Milk and high protein food are never purchased. This kind of diet does not provide enough nutrition making households vulnerable in health.

Mamta has a BPL ration card which entitles her to buy food grains through the PDS shops at a subsidized rate. She says,

"Most of the time we have chapatis (flatbreads) with potato curry as potato is very cheap. There have been many instances when we did not have anything to serve with chapattis and had it only with salt. We skip tea also sometimes. We have even had leftovers from others in the village"

Respondent from Village 3, Kannauj district

Insufficient Funds for Consumption and Other Requirements: Households in dire poverty never buy new clothes for themselves or their kids. They have other requirements that are high on priority than buying clothes. Buying books for school is out of question. Money is rather spent, when possible, on other necessary household items like soap, salt, sugar, electricity etc.

Nihal, 28 years old works as unskilled labour and does petty jobs. He has a 6-year-old daughter who does not go to school yet. He says,

"I feel terribly bad that I am not able to provide good education and better livelihood to my wife and daughter. I want to work more but what can one do when work is not available"

Respondent from Village 3, Kannauj district

Limited Access to Financial Services: Most of the households fulfil their financial needs by working as casual labour or by taking loans from friends and family. Households need money to meet their day-to-day consumption needs. It is also required to deal with shocks and contingencies, specifically related to health and demise of an earning member of the family, and social obligation such as marriage and funeral of deceased member of the household.

Almost everyone surveyed in the village has a bank account, but they barely use their account. Bank account

is only used to withdraw money that they get as government benefits. Many people seem unhappy with this arrangement as they said that they have to make multiple visits to the bank.

Belong to Schedule Caste and Schedule Tribe Category: Households belonging to the SC, ST categories are at a higher risk of staying in poverty forever. Lack of access to basic services, employment opportunities and social engagement make them vulnerable to chronic poverty. Therefore, poverty incidence among SCs and STs has always been high as compared to the other groups.

"We are always looked down upon. Since we are already disadvantaged, we do not have enough economic opportunities. That's what our kids will also inherent."

Respondent from Village 3, Kannauj district

Evidence from the case studies of the households that are in chronic poverty indicates that these households are both multidimensional and consumption poor. Deprivations in various dimensions at a time, limit their income earning opportunities, leaving them in the clutches of poverty forever. Because the return to education is also limited, parents are demotivated to send their kids to school. There is lack of enabling infrastructure that promotes movement out of poverty. Social norms and culture also hamper a household's movement out of poverty. Drawing from the case studies conducted, it is not difficult to say that poverty persists mainly because deprivation in multiple dimensions of well-being interact with each other to create an environment that doesn't let households raise its standard of living. For example, a household may have low level of education, which along with lack of economic opportunities and poor quality of social infrastructure hinders movement out of poverty.

From the field study it is clear that daily needs of poor people cannot be met just by agriculture labour work. People in villages are making a shift towards non-farm activities. In Kanpur Nagar district, this has been made possible as more supportive environment is facilitated as compared to the villages in Kannauj. Better roads are built in Kanpur Nagar villages and bus service is also available, making it easier for the households to look for work outside the village. This also facilitates starting or expanding businesses. Examples from the villages showed how people in Kanpur Nagar District could start a new business, would go to work outside the village, and have better education level as compared to Kannauj. It was also observed from the field study that even though there were more SC households in the villages in Kanpur Nagar

District, the SC households in Kannauj District were poorer. This could be because of the prevalence of social exclusion in the villages of Kannauj.

It is also observed that SHGs do not play any important role in these villages. SHG in Village 1 in Kanpur Nagar was shut down after a few months of operation because it could not sustain itself after donor funding was withdrawn. However, the willingness of the GP to work for the betterment of the village and general cohesion among villagers kept the village in good state. SHG in Village 3 in Kannauj reflected the power structure prevalent in the village. The existing power structures were strengthened by the presence of SHG and there was strong evidence of the poorest of the poor being discriminated by more influential people.

The concept of micro insurance is almost non-existent in studied villages. There is neither an awareness nor availability of such insurance schemes. According to the GP in Village 1, few of the households did acquire life insurance but unable to meet the regular payments over a period of time, invariably leading to the lapse of the policies. Moreover, very poor households, who are in utmost need of insurance, are never able to fetch out money to participate in insurance programs.

Research question 2.1*: Can we establish a link between poverty entry and exit and social protection programs in India?*

Results from my case studies are consistent with empirical analysis in Chapter 7. Moreover, the inefficiency of social protection schemes in helping poor move out of poverty is reaffirmed in case studies.

Public Distribution System (PDS)

Most of the families have ration cards that they use to purchase monthly food needs. There are three types of ration cards; Antodaya (poorest of the poor), BPL (below poverty line) and APL (above poverty line). Antodaya cardholders in Uttar Pradesh can get 15 kg of wheat in a month at Rs 2 per kg and 20 kg of rice at Rs 3 per kg. BPL cardholders have to pay Rs 6.50 and Rs 5 per kg for the same quantity of rice and wheat, respectively.

Villagers in my case study recognised the significance of ration received through PDS. It is believed among villagers that poor households would have starved if the required food needs were not met by PDS. However, the scheme does not come without any flaws. Many households in the village report that they

have to borrow money when food becomes available for disbursal. Moreover, since there are many poor families that need food at the day of disbursal, the entire entitlements cannot be claimed.

"There is food deficiency even with PDS. My husband had to borrow money from his sister and other relatives when food grains become available at the ration shop. The only time when we do not need to borrow is when my husband gets some work to do. We have to forego our monthly entitlement if we could not arrange for money to buy our ration, making us buy at a higher price from market when we have some money in our hands"

Respondent from Village 4, Kannauj district

"We would have starved had PDS not been there. It is true that we do not get what we are entitled to, but at least we do not have to see our children starving."

Respondent from Village 3, Kannauj district

Through my case studies in the villages, I felt that PDS plays an important role for those who are very poor and have no source of income even to get two meals a day. The expenditure incurred on food grains by these households is less than what they would have incurred had the scheme not been there. As far as the role PDS plays in movement out of poverty is concerned, it is indirect. PDS ensures that there are no food insecurities but only to those who have got ration cards. Having a Below Poverty Line (BPL) ration card is a pre-requisite, and many poor households have to struggle to get one for them. Getting a BPL card comes with many difficulties, as households have to provide proof of residence to obtain one. This is particularly a problem with migrating households. Moreover, obtaining a BPL card is a bureaucratic process that involves a lot of running around between government offices.

Some people have to forego their entitlement when they could not arrange for money to buy food from PDS shops. Households would be much better off if they could receive small loans at frequent intervals to cope with such small contingencies. Unavailability of such financial services and mechanisms also works as a hindrance to the implementation and operation of schemes.

Prime Minister Awaas Yojana (PMAY) and Total Sanitation campaign (TSC):

Few of the households in my case studies have taken benefit of PMAY, wherein they get financial help from

the government to construct/renovate their house. Many households have also benefitted from TSC (total sanitation scheme), wherein financial help is provided to construct a toilet in the house. Earlier most of the households did not have toilets but now many of them either have already built one or are in the process of constructing it with the help of PMAY and TSC.

Through the case studies it was found that the amount required to build a one room house with kitchen and toilet in rural India is much higher than what the PMAY was providing for construction of houses in the villages. In order to cover the additional cost of constructing the house the households have to resort to other means of finance. As discussed earlier, financial markets imperfections, especially in the rural areas prevented households from taking the complete benefit of the scheme. This, coupled with inefficiencies and corruption in the system leave rural poor in a helpless state.

"We started to build this house hoping that we will be able to complete it with the government's help. However, the amount that was provided was not enough to construct the whole house. We have no choice but to live in this half-built house. Moreover, we had to forego a lot of man-hours to the construction of this house that could have been utilized somewhere else to earn income."

Respondent from Village 1, Kanpur Nagar district

The subsidy provided through this scheme does not serve its purpose if house is not fully constructed and people have to live in incomplete houses. The subsidy can only be fruitful if access to reasonable financial services is provided to poor households from where they arrange for additional finance required.

Focus Group Discussions revealed that in spite of operational issues with the scheme, the PMAY has made a considerable contribution in providing shelter to many rural poor households. It was reported that many households would have remained without adequate housing in the absence of the scheme. It is also evident that PMAY and TSC provide shelter and clean environment to live, making people less prone to illness and, therefore, less lost days at work. Women in the households that have built toilets in their home feel safer as they do not have to go to the fields to defecate.

Unavailability of cheap credit facilities forced some of the households to live in incomplete houses. Widespread corruption in Village 4 made it even worse for the poor households to seek financial help. Village 1 on the other hand had a few households where people came together to help each other and

completed most of the households. Therefore, most of the houses observed in Village 1 were complete.[39] Efficient and effective delivery of PMAY along with a mechanism to provide affordable financial service crucially depends on appropriate institutional environments and infrastructure available at village level.

National Old Age and Widow's Pension Scheme

While programs like PMAY, TSC and PDS improve household's quality of life, old age pension and widows pension improve the cash inflow. In Uttar Pradesh, all individuals, above the age of 60 and belonging to poor households are eligible to get Rs 400 per month if they apply for this pension scheme. Widows in the age group of 40-59 and belonging to BPL are eligible to receive widows' pension of Rs 200 per month and thereafter they become eligible for old age pension.

The case study indicates mixed feelings on the capacity of pensions to take them out of poverty. The results show that people were convinced that pension had an impact on consumption as presented them with the means to access a better standard of living. Whether pension can make households move out of poverty is quite subjective. Poor households that are not so poor would be able to save their pension amount to invest in productive assets. But households that lack sufficient resources for living will just get a boost in their consumption and will not be able to move out of poverty. In both the cases unless supporting mechanism in the form of integrated social protection policies is provided the movement out of poverty will be hindered.

"I have been getting my pension since the last 5 years and this has been my only source of income. Both my sons have migrated and hardly send any money back home. They have their own hardships, what can they do? I have to somehow take care of my daughter and myself. My daughter also works as agriculture labour and we also receive benefit from PDS. However, all the money received from pension goes towards food. Whatever my daughter earns is used for our other requirement. Although we receive little it is still better than getting nothing."

Respondent from Village 2; Kanpur Nagar district

"After my husband was gone, I had no source of income. Widow pension, although small, has given me my

[39] Houses had proper walls and toilet. They were not aesthetically laid out but were good enough for inhabitants.

due share. I can now look after my kids and live my life with dignity. I do not have to beg in front of others for money and food. However, pension alone would not be enough."

Respondent from Village 3; Kannauj district

Although old age and widow pension are giving recipients some sense of security, the amount they receive is too low to take them out of poverty unless other facilitation mechanism or earning opportunities are created through which they can plan to earn more. There is a greater need for income generating activities for poor households and their dependents in order to minimize the burden on the pension income. Pension undoubtedly increases a household's cash flow, however unavailability of insurance mechanism that can serve as a coping mechanism puts a household in a situation where the small amount received from pension does not fulfill the needs of the family.

Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA)

Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) is one of the flagship programs initiated to address the issues of poverty and livelihood at a larger level. By providing employment for work, the objective of this scheme is to provide livelihood support to the rural poor. MNREGA is expected to increase wages and thereby increase consumption of the poor households along with potentially increasing household's resilience to seasonal shocks.

Although MNREGA claims to provide 100 days of employment per year to rural poor, none of the beneficiaries were provided employment for 100 days in my case study villages at the rate of Rs 120 per day. On an average, the number of days worked through MNREGA is 40 and payments are not delayed much. Most of the times payments are received within two months of completing the task. The situation seemed to be better in two villages out of four, where the Gram Pradhan (head of the village) works for the benefit of the entire village. The condition of the household after getting MNREGA work have started to improve but there does not seem to be a real difference in their lifestyle apart from supporting their families with whatever little income they get. Since MNREGA is a self-targeted scheme, only very poor category of households are enrolled in it, as they are the ones who do not have any regular source of income or savings.

Sumitra is a widow and has a son and a daughter. She also gets widows pension of Rs 300 per month. She

is completely dependent on casual agricultural labour and the pension she gets to keep her family going.

"Agricultural work is available only for about 6 months in a year and that too not continuously. I am however able to work under MNREGA. I worked for 25 days last year and have used the income earned to support my family. There was delay in wages of two months but thankfully my pension comes every month in my bank account."

Respondent from Village 1; Kanpur Nagar district

"We applied for job cads last year and received it early this year. Since then, no work has been allotted to our village. No unemployment allowance was given to us. In absence of MNREGA work we look for other jobs in the village. We work as agricultural labours on private fields. It is through earnings from this only we are surviving."

Respondent from Village 2; Kanpur Nagar district

There has been a vast difference between how MNREGA is implemented in different districts. Village 1 and 2 in Kanpur Nagar district have reported that job cards have been issued to whoever asked for it. Although work has not been available much but whenever it was available people were made aware of it. On the other hand, MNREGA implementation was not taken seriously by the GPs in Kannauj district. Not many households have job cards, and no public work has ever been conducted. The case studies and focus group discussions revealed that the MNREGA has the capacity to impact a households' livelihood, but to a limited extent.

Janani Suraksha Yojana (JSY):

The objective of JSY is to provide access to safe pregnancy and delivery services, with the aim of reducing maternal and neonatal mortality and morbidity (Carvalho and Rokicki, 2019). All expectant women belonging to BPL families and, those who are a minimum of 19 years old can apply for the benefits. In case of low performing states like Uttar Pradesh, Bihar, Haryana and others, any woman, poor or non-poor, giving birth in a government facility is eligible to get incentives for up to first two live births.

Through the case studies collected it is evident that not all eligible women use the available services under India's JSY. However, wherever it is used the satisfaction with the scheme is significantly high. Out of 40

families studied 15 families were eligible to get benefits from JSY. However, 6 families chose not to go through JSY route. Instead, they had the deliveries done at home through midwives. The main reason for not taking the benefits of JSY is lack of awareness and low trust in government facility. In two villages the women reported to have had institutional deliveries, but the other two villages reported that it was very difficult to reach to the health care centre and that there was no transport. They didn't know that it was possible to give a call to the health centre and get an ambulance.

There is no direct way in which JSY could impact movement out of consumption poverty but through better health of both the mother and child, JSY is encouraging a healthier future population and is also reducing the chances of getting into the risk of paying higher health related expenses in future. It is true that there is one - time cash receipt but the way this money is utilized depends on the financial condition of the household.

"We did not have any idea about the scheme until I got pregnant and ASHA worker (JSY employee) came to our house to explain me the benefits of JSY. My child was delivered in the hospital in 2009. The money was spent mainly on general household expenditure only. There is always dearth of money so this help from the government is highly appreciated."

Respondent from Village 3, Kannauj district

"My husband had taken Rs 5000 from someone (Baburam) in the village. As soon as we got the money, we gave it to Baburam. The less loan we have better we are."

Respondent from Village 1, Kanpur Nagar district

JSY has proved to be an important scheme providing better healthcare and safe motherhood to women. There is no direct way through which the impact on consumption poverty can be assessed but families that have got benefit from JSY would have the potential to address future poverty as it promotes human capital accumulation.

Research question 2.2: *Do social protection programs bring social structural transformation in rural India?*

The key objective of any social protection program is to reduce vulnerability of the poor and disadvantaged households. Through empirical observations it is possible to establish a link between observable indicators like poverty status, heath indicators, education indicators etc. However, there are some impacts of social protection policies that are transformative in nature that sometimes go unnoticed. As mentioned in the previous section a focus group discussion (FGD) was conducted as part of this study to understand the impact of social protection on a community as a whole.

Participants were asked to discuss different social protection policies implemented in their village, how these had affected their lives and what changes came in their livelihoods because of these policies. Major factors that had dragged households into poverty or the resources available that would help them move out of poverty were also discussed.

Social Pensions

There is a consensus among the elderly in the FGD that the old age pension scheme provides a sense of security to aging men and women who would otherwise be treated as a liability to the family. The bargaining power and participation in household matters is definitely better for those elderlies who receive old age pension. In the focus group discussions, it was revealed that many old age people spent the amount received as pension for their personal need and some provided financial support to their family. Many beneficiaries felt that the scheme has given them financial independence and empowered them with self-esteem and confidence. One of the participants said,

"If you are earning, either through work or pension, you get respect. You can't lead your life with dignity if you are old and financially dependent on your family. Pension gives us oldies our share of respect."

Respondent from Village 2, Kanpur Nagar District

However, they also feel that the process of getting pension is difficult and many times they have to wait for months, and sometimes years to get their pension. There is also a general dissatisfaction regarding the meagre amount received as pension, indicating a need to raise the pension amount. Older people who get pension are not treated as liability if they receive old age pension. Those who did not receive pension even after applying shared their dissatisfaction with the scheme. Similar observation is made from the FGD among women in the villages.

Providing social pension to both men and women in old age and to widows, has a potential to reduce the exclusion of widows and old people in the society. Though there are gaps, social pensions can improve the lives of widows and elderlies by radically transforming their status in the society and making them socially inclusive.

MNREGA

Focus group discussion with women brought out a very important aspect of MNREGA that it has reduced gender wage gap in the village. Women were thrilled to inform us that since wages in MNREGA are equal for both men and women agricultural wages in the village have also become gender neutral. Positive association is seen between women labor force participation and the scheme. We were told that in the villages as there is less demand of work for women in the village MNREGA has provided them with extra source of income that can provide further economic support to the family.

"There is already less work available in the village. Men in the village can take up that work and there is hardly any demand for our work. Moreover, we do not possess any skill. We also cannot do intensive work on the farm. No skill is required at MNREGA site making us perfect fit for the job"

Respondent from Village 1, Kanpur Nagar district

The lack of availability of work at MNREGA, delayed payment and the GP's discretion in allocating job cards are some of the limitations discussed in the focus group discussion. Poor people often are not in position to alter these. They are happy with whatever little benefit they are getting from MNREGA.

"We cannot create work. We are asked to come when work is available. We can't do much about it. At least there is some work, and we get paid for that. It is better than sitting idle at home and struggle."

Respondent from Village 3, Kannauj district

When asked about the status of women in the family, we were told that it cannot be changed. Male member in the family is always given priority over females.

"MNREGA or any other scheme can just give us another source of income. It cannot change the mindset of our people. Our husbands will always be superior to us, and we have to listen to them. That is what we have

been taught and this is what we teach our daughters too."

Respondent from Village 2, Kanpur Nagar district

Janani Suraksha Yojana (JSY)

In terms of provision of healthcare for women, most of the women in the villages in Kanpur Nagar were informed about JSY. However, there was limited information available to women in the villages in Kannauj. Among the women who have experienced JSY themselves or have experienced through a family member have shown their satisfaction with the scheme.

"We do not have to endure the trauma of giving birth at home. There is so much that we did not know and now through ASHA worker and staff at the hospital we are getting information on childbirth. We are also getting information on the importance of breastfeeding and immunization."

Respondent from Village 2, Kanpur Nagar district

Maternal and neonatal healthcare is one of the primary objectives of JSY. As far as these are concerned people in the village are satisfied. However, there is dissatisfaction around the implementation of the program. Awareness is very low and service delivery is just satisfactory. Many women did not know that ambulance could be called to go to the hospital and, during the monsoon it is gets difficult to go to the hospital as the infrastructure is poor.

"It was the rainy season when I gave birth to my first child. It wasn't raining but the roads were flooded. We had called for an ambulance, but it could not reach us in time as it got stuck in the muddy road on the way. I had to deliver at home only."

Respondent from Village 3, Kannauj district

JSY is a part of gender transformative maternal health program. To an extent it has helped some women from traditional families become aware of various neo-natal and post-natal practices. It has also improved institutional deliveries but for this scheme to be truly transformational infrastructural (physical and social) enhancement is important. Discrimination against women and preference for son in rural villages is highly prevalent. Educating men and women both is required to make women empowered. JSY alone, as cash transfer program, cannot have a transformational impact.

Prime Minister Awaas Yojana (PMAY)

PMAY provided shelter to many households in Uttar Pradesh. Households that received support from the government to construct their house showed their satisfaction with the scheme. The findings from focus group discussions showed that the awareness of the scheme was widespread among the villagers. It was also observed that the scheme, over the years, has benefited many poor households who had poor living conditions.

"Many households in our village were living in huts made of mud. After the launch of PMAY most of us got our houses constructed. However, the cost of building the house was more than what we got from the government. Because of this, some of us had to leave our home incomplete only. But now at least we have shelter on our heads."

Respondent from Village4, Kannauj district

Prime Minister Awaas Yojana, along with providing houses to homeless people also generated employment in the village. As many houses were being built a lot of unskilled labour was required to construct houses.

People also have complaints about non-eligible household getting benefits from PMAY. This does not come out in focus group discussions, as no one wanted to speak about this in public. A few households that approached us later told us that some households have bogus BPL cards. And, since the amount provided in PMAY is big, they have also used their cards to construct their houses. Despite having various administrative issues, this scheme has changed the rural landscape and has brought a social transformation in rural villages, as 60 percent quota was allotted to SC/ ST households, 15 percent to minorities and 3 percent to people with disabilities.

"We belong to the SC category. We lived in a house made of mud with straws on the roof. During the rainy season we would have to put a plastic sheet on the roof to protect ourselves from rain. 3 years back we got our house made through PMAY and some funds collected from the people in the village."

Respondent from Village 2; Kanpur Nagar district

Case studies and focus group discussion points towards an eminent role of social protection policies for survival, however, it alone cannot provide a sustainable escape out of poverty. A transformative approach

to social protection and well-functioning social infrastructure and institutions have to work in cohesion in order to reduce chronic and transient poverty. Social protection policies[40] do provide protection from starving but are not sufficient to motivate households to move further and create a livelihood of their own that can keep them away from poverty. For social protection policies to play a transformative role it needs to tackle multiple deprivations households are deprived in and facilitate a continuous income stream for households, which thereby leads to a process of graduation out of poverty. There is a need for social protection to move from a dependency stage into an enabling factor for a transition into productive livelihoods, decent work and security of productive assets (Koehler, 2011).

8.3 Uttar Pradesh: Analysis using IHDS data

It has been reconfirmed from my field study that Uttar Pradesh ranks very low in terms of human development. The slow economic growth is reflected in high rate of illiteracy, high rate of child mortality, much less asset accumulation, lack of employment opportunities, seasonal occupational pattern, unhealthy fuel used for cooking purposes, unhealthy sanitation facilities, lack of proper nutritional intake, low level of education, and lack of awareness of social protection programs among others (Unjum and Mishra, 2017). Lack of awareness of social protection programs along with rampant corruption in targeting and implementation at the bureaucratic level disrupts the success of poverty eradication programs. All this not just makes the process of consumption poverty eradication slow but also stimulates the presence of multidimensional poverty in the State.

The data from IHDS corroborates with the findings of field study in Uttar Pradesh. As per IHDS data, and as has been reported in table 7.4.4 in Chapter 7, consumption poverty rate for rural UP fell from 49 percent in 2004-05 to 30.4 percent in 2011-12. At the same time multidimensional poverty fell from 63 percent in 2004-05 to 55.5 percent in 2011-12 indicating that even though households are moving out of consumption poverty there are still a huge number of households that lack basic amenities and access to resources. This, however, does not consider movements in and out of poverty. Table 8.3.1 displays poverty dynamics in Uttar Pradesh using IHDS dataset. Both consumption poverty and multidimensional poverty along with

[40] When I talk of social protection here, I am not focusing on a particular social protection program. It's a combination of all the programs that a family gets benefit from.

some of its indicators are indicated in the table.

Table 8.3.1: Deprivations in Multidimensional Indicators, by Poverty Dynamics Status in Uttar Pradesh (2004-2011)

	Consumption Poverty Dynamics (In %)			
	Never Poor (42.24)	**Chronic Poor** (14.38)	**Moved out of poverty** (35.6)	**Moved in poverty** (7.79)
Deprivation in Child Education	3.75	12.38	5.54	7.16
Lack of Physical Assets	52.21	88.71	70.92	73.25
Lack of Productive Livestock	40.99	45.76	50.63	45.84
Poor Health	22.29	49.9	35.07	39.17
Lack of Better Hygiene	81.36	97.6	92.42	95.88
Lack of Concrete Roof	26.58	54.65	37.45	47.35
	Multidimensional Poverty Dynamics (In %)			
	Never Poor (25.53)	**Chronic Poor** (45.4)	**Moved out of poverty** (19.14)	**Moved in poverty** (9.93)
Deprivation in Child Education	1.26	11.03	1.13	3.48
Lack of Physical Assets	24.94	94.02	47.56	78.99
Lack of Productive Livestock	20.13	62.45	26.53	69.69
Poor Health	12.58	47.39	16.25	43.16
Lack of Better Hygiene	75.29	96.88	84.77	95.09
Lack of Concrete Roof	16.47	49.78	26.84	43

Source: Author's calculation using IHDS dataset

Data shows that a large proportion (45.4 percent) of households were chronically multidimensional poor as against only 14.38 percent of households that were in chronic consumption poverty. At the same time 35.6 percent households moved out of consumption poverty between 2004 and 2011 as against only 19 percent moving out of multidimensional poverty indicating a rather stubborn nature of multidimensional indicators. For the same reason the proportion of households that are never poor in terms of consumption measures of poverty (42.24 percent) is more than households who are never multidimensionally poor (25.53 percent). A large proportion of households moved out of consumption poverty but were still deprived in basic amenities. 70.9 percent households that moved out of consumption poverty did not own physical assets, 50.63 percent did not possess livestock, 35 percent were in poor health, 92.42 percent lacked safe sanitation and hygiene and 37.5 percent did not have concrete roof on the house. At the same time those who moved in consumption poverty also show deprivations in better housing quality, health, hygiene and sanitation, physical assets, and livestock. Overall deprivation in child education is less but maximum deprivation is seen for those who are chronically poor. Not surprisingly, as each of these deprivations together form multidimensional poverty their correlation with multidimensional poverty is clearly visible in the numbers. Thus, it can be claimed that the problem of poverty in Uttar Pradesh is

predominantly a multidimensional one. This does not mean that focus should be taken away from means of increasing income. What is emphasised here is that it is important that both consumption and other dimensions of poverty are studied together so that holistic development is achieved in the state.

Data also revealed that except livestock, deprivations in all other dimensions were higher for those who entered poverty in 2011 than those who moved out of consumption poverty. As discussed in chapter 7 and 8 and has also been observed at the time of fieldwork, livestock is generally sold off to start a new business, to finance large events like marriage or death in the family or to smooth out consumption at the time of financial shocks. This could be one of the reasons why households who move out of consumption poverty show more deprivation in livestock then those who move in.

Face to face interviews with household heads in Uttar Pradesh revealed that distress sale of assets due to financial contingencies and social pressure lead to households fall into poverty overtime. It is also found that death of the earning member of the family made household transition into poor state. Large out of pocket expenditure arising due to lack of health insurance and social obligation such as funeral, childbirth and marriage lead to fall in households' economic status over time. Case studies also showed that households that received remittances from working children have moved out of poverty; starting up a new business and diversifying source of income and better social network also make household move out of poverty. At the same time households that lack asset ownership and do not have a regular stream of income are stuck in poverty forever. IHDS dataset for Uttar Pradesh showed that of all the households that received remittances 36.8 percent households moved out of consumption poverty in 2011. At the same time data confirms that 35 percent of those who had better social network could move out of consumption poverty. According to data large expenditure made for medical purposes and social obligations like marriage and funeral do not push households in poverty. This could be due to the fact that a household that spends large amount of money on illness or social obligations would, in the first place, had had that much money to spend and hence was not considered poor.

Caution must be taken while interpreting the data at state level as sample size per state is small in IHDS. Table 7.4.4 in section 7.4, chapter 7, reported that only 2758 households were surveyed in rural Uttar Pradesh in IHDS. This number is not too small for statistical inference but given inter district and inter village variations in any state in India and the size of the population of Uttar Pradesh full representation of

households in Uttar Pradesh cannot be made by this sample size. Case studies therefore offered a meaningful way of gaining insight into the ground level factors behind poverty dynamics. Case studies revealed it is not just one shock or one large expenditure that would make a household poor, it is a series of shocks over a period of time that would eventually lead to a fall of households' status.

Similar to what was found in case studies, PDS and MNREGA form a large component of rural households' livelihood. Although, IHDS data from Uttar Pradesh show that only 29.69 percent households use ration card to purchase food items through PDS, which is approximately half of all India number (57 percent), it is worth mentioning that 86 percent of those who owned BPL (Below Poverty Line) ration card purchased food grains through PDS shops. Table 8.3.2 shows the proportion of poor and non-poor households taking advantage of social protection schemes. The low overall utilization of PDS in Uttar Pradesh, despite being one of the poorest states of the country, is explained by the fact that only 28.5 percent of the households had BPL ration card as against 45 percent all over India. It is also observed that close to 40 percent of the households that were poor in 2011 owned above poverty line (APL) ration card and 18.5 percent did not possess any card. The numbers are 26 percent and 14 percent respectively for India. It is also observed that 20 percent of the sampled non-poor households in Uttar Pradesh owned BPL ration cards. The error of including non-eligible households for PDS benefits is more than double for rest of the country. Although proportion of households taking benefits from these programs is smaller in UP as compared to rest of India, proportion of poor households taking advantage of all these schemes except PDS is more in UP; 35 percent of the poor households took benefit from MNREGA, and 10.5 percent were maternity scheme beneficiaries as against 30.3 percent and 6.4 percent respectively for India. At the same time proportion of non-poor households taking advantage from these schemes in Uttar Pradesh ranges from 6 percent for maternity benefits to 17 percent for MNREGA to as high as 25.3 percent for PDS. In India, for most of the schemes the criteria of holding a BPL card is required as eligibility for social protection schemes. Corrupt system and weak implementation of targeting the poor has resulted in both poor and non-poor to access benefits from these schemes.

Table 8.3.2: Beneficiaries of Social Protection Schemes in Uttar Pradesh, 2011.

Schemes	Beneficiaries (in %)		Proportion of poor households taking benefit*		Proportion of non-poor households taking benefits**	
	UP	India	UP	India	UP	India
PDS	29.69	57	45	66.67	25.27	54.6
Pension	14.74	16.53	21	20.8	13.4	15.6
MNREGA	21	24	35	30.3	17	22.4
Housing benefits (PMAY)	10.7	8.4	13.5	11.4	9.8	7.6
Maternity benefits (JSY)	7.4	3.8	10.5	6.4	6.05	3.28

Source: Author's calculation using IHDS II

* Households that were below the consumption poverty line at the time of survey in 2011. Ration cards are allotted based on consumption poverty

** Households that were non-poor at the time of survey

Table 8.3.3: Poverty Dynamics and Social Protection among Rural Households in Uttar Pradesh, 2004-2011

		MNREGA		PDS		Pension		Maternity (JSY)		Housing (PMAY)	
Poverty Category	Total	Non-participant	Participant	Non-participant	Participant	Non-participant	Participant	Non-participant	Participant	Non-participant	Participant
		Multidimensional Poverty Dynamics (in %)									
Never poor	26.87	31.74	8.53	33.07	12.2	28.21	19.17	27.63	16.94	28.94	9.65
Chronic poor	45.4	40.93	62.26	40.31	57.44	44.54	50.37	44.52	57.06	43.37	62.36
Non poor now	17.6	17.31	18.69	15.19	23.32	17.41	18.72	17.73	15.83	16.98	22.79
Poor now	10.12	10.02	10.52	11.43	7.04	9.85	11.74	10.12	10.18	10.71	5.2
		Consumption Poverty Dynamics (in %)									
Never poor	42.24	46.96	24.45	48.71	26.92	44.25	30.63	42.56	37.97	44.65	22.1
Chronic poor	14.38	10.44	29.21	10.08	24.54	13.65	18.59	13.72	22.99	13.46	22.05
Non poor now	35.6	34.86	38.36	34.02	39.33	34.76	40.46	36.1	28.9	33.9	49.79
Poor now	7.79	7.73	7.98	7.19	9.21	7.35	10.32	7.61	10.13	7.99	6.07

Source: Author's calculation using IHDS I and IHDS II

My fieldwork in the villages of Uttar Pradesh also confirmed that households faced problems in obtaining BPL ration card that serves as an ID for eligibility for the schemes. The exclusion of eligible households from the list of beneficiaries is mainly due to targeting errors[41] that stops entitlements to reach the households that deserved benefits.

Case studies and focus group discussions from the villages of Uttar Pradesh demonstrated how social protection policies are an inevitable part of rural livelihood but they do not facilitate movement out of poverty. These policies, although do not provide a large mean of income but do provide social and financial security. IHDS data also confirm that although not much correlation is seen between household's poverty dynamics and participation in social protection programs, they form a vital part of those who are chronic poor.

Table 8.3.3 presents the trend of consumption and multidimensional poverty dynamics in Uttar Pradesh by participation status in social protection programs. Although I see participation of all four categories[42] of households in social protection schemes, chronically poor households are the largest beneficiaries. Table 8.3.3 indicates that while the proportion of chronic poor households is already high for multidimensional poverty, the proportion is much higher for program participants as compared to non-participants. Over 50 percent of the households receiving benefits from these schemes are chronic multidimensional poor, which corroborates well with the fieldwork. Similar trend is seen for consumption poor households. Proportion of those who are chronic poor is almost double for participating households than non-participating one. Not surprisingly, households that were never poor had low share in participation as compared to non-participation. MNREGA, Pension, and maternity benefits do not show stark difference in the proportion of those who became multidimensionally non-poor in 2011, however PDS and housing show greater number of participants in this category. This is mainly because PDS and housing directly relate to multidimensional poverty status through better nutrition and housing quality respectively. It is also seen that more non-participants of housing and PDS schemes have become multidimensionally poor now as compared to participants indicating the importance of housing scheme and PDS for rural households. It is seen that except for participants of maternity benefits, all other participants show a higher proportion of households moving out of consumption and multidimensional poverty as compared to non-participants. This could

[41] Explained in detail in chapter 7.
[42] Chronic poor, Never-poor, Poor Now, and Non-poor now

mean that some of the households do get to move out of poverty because of social protection policies but as has been seen from regression analysis in chapter 7 a careful investigation into other factors causing this movement also needs to be taken into consideration. Participants in maternity scheme show less proportion of households becoming non poor and more proportion of households becoming poor in 2011 for both multidimensional and consumption measures. This could be due to the added burden of an extra member in the family.

Case studies and IHDS dataset both confirm that for Uttar Pradesh the functioning of the social protection programs is way below expectations and households do not seem to be moving out of poverty because of participation in these programs. As expected, each program suffers from an array of shortcomings, such as non-adaptability to local settings, targeting issues, late disbursements of funds, corruption, rent-seeking practices, no accountability of the local administration etc. The results also show that even if these schemes do not facilitate movements out of poverty, they are required to self-sustain a family. For example, PDS is necessary for a poor household to save themselves from starving. MNREGA, does provide seasonal labour work to unemployed and unskilled poor households, pension is a mean of added income and life of dignity for elderlies and widows, maternity scheme does provide medical support and housing scheme provides liveable houses.

8.4 Conclusion

Deprivation in multiple dimensions determining a household's poverty status is quite evident from my analysis. Households that overcome deprivations over the two time periods under study are more likely to move out of multidimensional poverty. And those who could move out multidimensionally could also increase their consumption expenditure over time. This indicates that to reduce poverty more effectively we need to concentrate not only on the static measure of income poverty but also on the multidimensional measures. Policies made keeping this in mind may also directly serve the purpose of monitoring and evaluating the progress made by social protection programs in eradicating poverty.

Although data shows that there is a decline in poverty, ironically, the proportion of the households receiving benefits from social protection schemes has risen sharply. Households in poverty fell from 37.2 percent to 22 percent between 2004 and 2011, but the proportion of households receiving benefits from

one or more social protection schemes, such as old age and widow pension, maternity scheme, and other benefits, grew from 13 percent in 2004 to 33 percent in 2011 (Desai and Thorat, 2016). The proportion of households taking benefits from the PDS increased from 27 to 52 percent. 17 percent of the households getting employment through MNREGA shows a substantial increase from the former public works programmes. Overall, the proportion of households receiving benefits from all these schemes increased from 35 percent to 68 percent of the total population between 2004 and 2011 (ibid). The case studies collected on field corroborates this paradox as people are often receiving social protection policies that is just enough to smooth their consumption but would keep them vulnerable to shocks and risks and hence making them unable to surrender their benefits.

Although through my study adequate evidence is not available to determine the effect of different social protection schemes on poverty dynamics, they have the capacity to facilitate poor households to take advantage of available opportunities. This can only be achieved if the inefficiencies in the system that are responsible to implement these schemes are worked upon. The poor, using the already available social protection schemes, will then be able to take advantage of the opportunities provided. Income diversification through participating in MNREGA, empowerment of women and the older people through JSY and pension scheme, protection of the vulnerable homeless people through PMAY can all lead to structural transformation in the rural sector. Social protection has the capacity to bring rural transformation but it is largely contingent on the specific context and the combination of programs and their its designs, features and targeting rules (Trivelli, Vargas and Clausen, 2017).

Chapter 9: Conclusion and Discussion

"We need to rethink social safety nets in India's growing economy so that they can also focus on the accidents of life rather than solely on the accidents of birth. (Desai and Thorat, 2016)

9.1 Introduction

Drawing from Amartya Sen's capability approach where he advocated analyzing poverty beyond monetary measures, this thesis presented an interpretation of poverty by investigating into consumption and multidimensional poverty dynamics. To get a deeper understanding of the dynamic nature of poverty I tried to understand the factors behind the occurrence of these dynamics in India. Given the vast history of social protection policies in India to eradicate poverty, linking these policies with poverty dynamics was equally important. As a first step of investigating into poverty dynamics it was important to construct evidence at the household level to better understand as to why some people remain poor, and some move into it, and how some move out of poverty over time. The research questions were assessed quantitatively using the India Human Development Survey (IHDS) data for the years 2004 and 2011, and qualitatively by conducting face to face interviews and focus group discussions in four villages of one of the poorest states in India to get people's perspective on social protection and the processes underlying poverty transitions.

Monetary dimension of poverty has often been considered for research on poverty dynamics. However, it is evident that poverty is far from being just unidimensional as poverty is more penetrated in multiple dimensions of well-being. There are multiple factors that constraint movement out of poverty making it necessary to make efforts towards measuring poverty in not just monetary but multidimensional space. Of late advances in measuring multidimensional poverty and its decomposition offered the possibility of understanding the interrelation between various dimensions of well-being and how they affect poverty. With this understanding, the analysis conducted in this thesis focused on multidimensional poverty dynamics and its determinants. It is also seen that multidimensional poverty rates are quite different from consumption/monetary poverty and the two do not show any strong correlation, at least in the short run.

It was empirically shown that dynamics in poverty was driven by various structural mechanisms that exist at macro, meso and micro level of analysis or a combination of three. At the macro level lack of institutional

and infrastructure facilities hindered the movements out of poverty for the poor and vulnerable households and put the non-poor in the risk of falling into poverty. At the meso level I saw how social exclusion in the form of discrimination based on caste put a large proportion of households in chronic poverty and less capable of moving out of poverty. And at the micro level human and physical capital along with idiosyncratic shocks impact household's poverty status. From the empirical analysis it was found that social protection policies despite being an integral part of a household's livelihood do not provide sufficient and necessary platform to graduate out of poverty. Based on the case study conducted in the four villages of Uttar Pradesh, it has been shown that although social protection policies have a huge role to play in the households' subsistence it does not facilitate their movement out of poverty or make them resilient and prevent their movement into poverty.

Chapter 9 is divided into four segments. Following the introduction in 9.1, section 9.2 summaries the key findings and conclusions drawn from the qualitative and quantitative evidence gained to explore the research questions presented in Chapter 1. Section 9.3 discusses policy implications of the main findings of this thesis. Section 9.4 identifies and presents an outlook for future research.

9.2 Answering the Research Questions and Key Findings

The purpose of the research method adopted in this study was to evaluate the research objective by combining qualitative and quantitative research data. This section addresses the research questions by integrating the findings from decomposition analysis (Chapter 6), econometric analysis (Chapter 7), and qualitative analysis (Chapter 8).

Research Question 1.1: *What are the interlinkages between various dimensions of well-being and their relationship with poverty entry and exits in India?*

In the last decade poverty dynamics have gained a lot of attraction globally, as policy research focuses on designing the policies keeping chronic and transient poverty in mind. As discussed in chapter 2, officially policy makers and academics have not yet come to an agreement on how to define, measure and estimate poverty to evaluate poverty dynamics. Chapter 2 and 3 also showed how discussions around poverty evolved from a unidimensional monetary measure to a multidimensional measure, pondering on capabilities and deprivation. This study has chosen both monetary/consumption and multidimensional

poverty measures to evaluate poverty dynamics and factors contributing to it. In this thesis the international measure of calculating multidimensional poverty developed by Oxford Poverty and Human Development Initiative has been used.

It was found that although multidimensional poverty headcount in rural India has fallen from 62.6 percent in 2004 to 48.4 in 2011, the intensity of multidimensional poverty does not show significant fall. The intensity of poverty fell from 52.6 percent to 49.2 percent indicating that those who stayed multidimensional poor continued to be deprived in almost half of the selected indicators. This indicates that incidence of poverty is more volatile as compared to intensity, as some dimensions such as quality of housing, education, and healthcare are very hard to change without any external support and would require government intervention and quality infrastructure. The decomposition analysis conducted in Chapter 6 provided the mathematical explanation of changes in deprivation faced by people over time and investigated how multiple dimensions of poverty integrated to explain poverty exit and entry. In-depth analysis of poverty exits and entries revealed at which stage a particular deprivation occur or disappear and how persistent certain deprivations could be (Suppa, 2017). It is seen that deprivation in physical assets, health and education form a very important component of multidimensional poverty. That is, households that exit poverty have come out of deprivation in health, physical assets and education and those who have fallen in poverty have entered poverty because they became deprived in these indicators. Deprivations in mainly health, education, and assets manifest in the life of poor people and make it difficult for them to escape poverty. These deprivations are self-reinforcing and lead to chronic and transient poverty due to the behaviour that perpetuate low standard of living (chapter 2).

The results also indicate that although concentrating on individual indicators of well-being for policy making is necessary as they contribute to multidimensional poverty, studying the inter-relationship between various indicators is equally important. Changes in deprivation status of one indicator may not lead to movement out of poverty and transitions would take place within poverty only. For example, 68.5 percent poor households became non-deprived in schooling but remained in poverty indicating that they have deprivations in other indicators that do not allow them to leave poverty. Similarly, there are many households that left deprivation in secured roof but did not leave poverty. These findings suggest that just concentrating on single dimension of wellbeing, be it income or any other dimension of poverty, will not be enough to have an impact on poverty unless it is coupled with other measures that ensure that multiple

deprivations are being taken care of and households are able to increase their standard of living. Policies that focus on multiple dimensions of well-being along with individual dimensions may prove to be more effective in poverty eradication.

Research Question 1.2: *What are the factors that affect poverty dynamics in India and are these dynamics different for different measures of poverty viz. consumption/monetary poverty and multidimensional poverty dynamics?*

To answer this question, chapter 7 examines the factors affecting poverty dynamics for both multidimensional and consumption poverty quantitatively whereas Chapter 8 uses perception driven poverty analysis with case studies where wealth ranking exercise, face to face interviews, and focus group discussions were undertaken to understand the factors affecting poverty dynamics.

One thing that has clearly come out from both quantitative and qualitative analysis is that health and education play a significant role in poverty dynamics. Households that invested more in these dimensions over the two time periods under study are more likely to move out of both consumption and multidimensional poverty. Not surprisingly, as multidimensional poverty is directly impacted by accumulation of physical and human capital, it was also observed that the results were more prominent for multidimensional poverty dynamics as compared to consumption poverty dynamics. Caste, on the other hand, has shown a very strong positive likelihood of being in chronic poverty and transient consumption poverty. The likelihood of a SC/ST category household to be in multidimensional chronic poverty is also positive but has a smaller magnitude than the likelihood of being in chronic consumption poverty. This would mean that income earning opportunities for socially excluded households are less as is indicated by their hindered movement out of consumption poverty.

It is apparent form our regression analysis that quantitative analysis conducted in chapter 7 was only successful in identifying a few factors that are significantly associated with chronic and transient poverty. Quantitative analysis is restricted to the information that was collected in accordance with the designed questionnaire and tend to omit the underlying processes that could have resulted in poverty dynamics between the two time periods. Moreover, the information collected is also based on survey conducted for two years only, 2004 and 2011. In contrast, qualitative analysis conducted using face to face interviews addressed these issues and provided additional insights into the lives of poor people. For example, shocks

were not seen as a significant factor determining households' poverty dynamics in my regression analysis, but shock and its resilience were shown to be an important factor determining a household's poverty status in case studies. Of all the shocks discussed, medical shocks; death of the main bread winner and chronic illness were the ones that had a prolonged impact on poverty. Analyses in chapter 8 showed how shocks impacted a household's ability to move out of poverty. This is also clearly visible in the analysis that households that were deprived in multiple dimensions were less resilient to shocks. For example, households that were socially excluded, had low endowment of physical assets, were dealing with a member with poor health, had no livestock etc. were more affected by shocks than those non-deprived. The poverty status of the household would also depend on the intensity of the shock, which is difficult to capture from quantitative study. High intensity shocks, for example death of the main earning member of the family, can put the family into distress leading to poverty persistence.

The role of social infrastructure in terms of number of schools in the village, distance to the nearest railway station, availability of a bank and post office in the village also impact poverty dynamics. It is shown in chapter 7 and 8 that availability of social infrastructure makes a household more likely to move out of poverty. In my case studies also, villages where social infrastructure was lacking, chronic poverty persists and movement out of poverty is hindered. As discussed in Chapter 2, poverty dynamics arise because of various structural mechanisms that exist at macro, meso and micro level or a combination of all three. In my analysis, at macro level I see institutional and geographic challenges wherein large-scale poverty dynamics and extreme poverty is seen in Uttar Pradesh and Bihar. At meso level, as also explained in Chapter 7 and 8, I saw how social norms and culture put a large proportion of households belonging to the SC/ST category in chronic poverty and less capable of moving out of poverty. And at the micro level human and physical capital along with idiosyncratic shocks impact the household's poverty status.

The results indicate that accumulation of physical and human capital and transiting out of various deprivations lead to a fall in multidimensional poverty. Multidimensional poverty is directly impacted by structural changes, unlike consumption poverty, where the impact is not immediate, as the return to investment will only be achieved in the next period. As people become multidimensional non-poor, their capability of taking advantage of the available income earning opportunities will improve. Although the comparative analysis between multidimensional poverty and income poverty do not show much association between the two, from my qualitative analysis, it is also observed that the households'

movement out of multidimensional poverty will eventually lead to movement out of consumption poverty. Households that had made investments in health and education and adopted better technologies, even though they started poor, eventually moved out of consumption poverty too. Accumulation of physical, human, social, infrastructural, and financial capital and overcoming deprivations that make accumulation possible is therefore a starting point towards eradication of long-term poverty, consumption and multidimensional, both.

Research Question 2.1: *Can we establish a link between poverty entry and exit, and social protection programs in India?*

Although social protection policies studied in this thesis form a major component of livelihood for those who are receiving these, my study doesn't show that these policies help a household recover from a shock or push households out of poverty. The social protection programs under study in this thesis, namely; PDS (Food distribution scheme), National old age and widow Pension, MNREGA (employment generation), JSY (institutional deliveries), and Prime Minister Awaas Yojana (Housing scheme) do provide households with livelihood support through employment generation, provision of houses and food and regular income flow from pension, but do not prevent households from falling into the poverty spiral due to shocks and contingencies. Moreover, these schemes do not provide a household a platform through which a household could generate income-earning prospects. Quantitative study in chapter 7 and qualitative study in chapter 8 verify this. It will not be unreasonable to say that these schemes do, in fact, help some households move out of poverty but it depends on the intensity of poverty the household is exposed to. Those at the very bottom of the pyramid are moving up a step but given the small size of benefits and inefficiencies in the system there is unlikely going to be a change in poverty status. It can be said that when social protection policies exist and households take benefit from these, chronic poverty prevails among those who were very poor to begin with. And those who were not so poor might find it easier to move out of poverty with the help of social protection schemes. In terms of multidimensional poverty, those who have a higher deprivation score will not see an immediate change in their poverty status when social protection brings a change in one of the dimensions. Of course, there will be a fall in the intensity of poverty, but incidence of poverty will not change.

Case studies showed how a household even after having access to available social protection policies is unable to move out of poverty because of lack of institutional and infrastructural support. Examples

showed how absence of insurance and credit facilities have made households dependent on informal credit. It is shown that in absence of any form of credit and insurance facilities, the families resorted to distress sale of assets, drew on their savings, or informally borrowed from friends and family at a very high interest rate putting them in a continuous spiral of poverty (chapter 8). Prime Minister Awaas Yojana (PMAY, Housing Scheme) helped households get shelter. However, unavailability of credit facilities to fulfil the gap between what government provides and the total cost of construction made households live in incomplete houses. While pension undoubtedly increases the households' cash flow, unavailability of insurance mechanism that can serve as a coping mechanism at the time of catastrophic shock puts a household in a situation where the small amount received from pension does not fulfil the needs of the family. Untimely payments and unavailability of work in MNREGA adds to the plight of already poor households.

Unfortunately, most of the social protection programs dedicated to the poor households in India, such as the PDS, Old Age and Widow Pension Scheme, Prime Minister Awaas Yojana (PMAY), MNREGA, are primarily 'promotive' and 'protective' in nature[43]. Promotive measures aim to increase households' income often by encouraging a particular behaviour or action. For example, MNREGA promotes employment generation that in turn increase the households' income. Protective measures provide social assistance to poor households in the form of food, housing and pension. In India, programs like PMAY, PDS, and Social Pension fall in this category. As discussed in chapter 7, preventive measures such as social insurance form a very small proportion of the total social protection in India. The same has also been shown from this study where none of the poor households in the case study villages has any kind of health insurance. According to IRDAI (Insurance Regulatory Authority of India), 75 percent Indians did not have any life insurance, and penetration of health insurance stood at just 35 percent in 2017 (Government of India, 2017). Another study by Selvaraj, Farooqui and Karan, (2018) found the lack of health insurance is an important factor causing people fall in poverty, as out of pocket payments alone induced 55 million households fall in poverty in 2011-12.

In the early years just after independence when most of the people in India faced multiple deprivations, social assistance in the form of protective and promotive measures were needed. The country was primarily underdeveloped, and adequate structural and infrastructural support was almost non-existent.

[43] Different categories of Social protection schemes have been discussed in length in chapter 4.

Policies focusing on providing people with decent standard of living in terms of food and nutrition, education and healthcare were at top priority. These policies along with various laws made to protect poor households have played an important role in India's development. However, over time with economic growth and development, India's demographics changed and so is the risk profile of poor and vulnerable households. It is clearly evident from my study that households are not starving because of the availability of schemes like PDS, pension and PMAY but their way out of poverty is not facilitated.

Faulty design, where more attention is given to promotive social protection measures rather than preventive, and poor targeting leading to exclusion and inclusion errors, are the reason for existing social protection measures not having visible effects on movements out of poverty. Along with these issues, less attention given to the creation of infrastructural and institutional support system, which has the potential to facilitate better performance of social protection programs, was also shown to make social protection schemes less successful.

The results also indicated that there are differences in the factors affecting poverty dynamics across states revealing disparities across Indian states. This also indicates towards the need for different solutions to poverty eradication based on requirements and characteristics of the poor in each state. Vulnerable population in different states have different challenges making it important to study state specific parameters so that policies are better designed, implemented, and targeted. Such policies would enable poor to take full advantage of available opportunities and become resilient against shocks. Effective poverty reducing policies demand shift from standardized nationwide policies towards region-focused policies, that consider local trends and parameters (Krishna and Shariff, 2005).

Research Question 2.2: *Do social protection programs bring social structural transformation in rural India?*

There are certain impacts of social protection policy that would have an indirect effect on the poverty dynamics but are not directly possible to be assessed using empirical methods. These impacts could be transformative in nature and sometimes go unnoticed. Focus group discussions in Chapter 8 examine these aspects. It was found that: 1) Along with men, women and lower caste individuals also had an increasing participation in MNREGA; 2) old age pension scheme provided a sense of security to aging men and women who would otherwise be treated as a liability to the family; 3) JSY has improved neonatal and maternal health by promoting institutional deliveries; 4) provision of houses through PMAY has provided shelter to

many families. At the same time, dissatisfaction was shown towards; i) delays in MNREGA payments; ii) meagre amount provided in pension; iii) insufficient funds to build the house in PMAY; and iv) lack of proper infrastructure to support institutional deliveries in JSY.

One of the major factors responsible for a household to be stuck in chronic poverty and not be able to move out of poverty in rural India is caste. A large proportion of SC/ST households (20 percent as against 8 percent of non-SC/ST households), as shown in chapter 7 and 8, are stuck in chronic poverty. However, the proportion of households belonging to SC/ST category that were able to move out of poverty was 30.4 percent as compared to 24 percent in the general category. This could be mainly because there were a large proportion (51 percent) of poor SC/ST households in 2004 to begin with. At the same time, it is seen that 10 percent of SC/ST households fell into poverty as against 7.6 percent of non-SC/ST households, indicating a higher poverty dynamics among these households. Barrett, Garg and Linden in their paper on poverty traps showed how social exclusion induced poverty traps (Barrett, Garg and Linden, 2016). Mogues and Carter, 2005, also demonstrated that social exclusion could aggravate income and wealth inequalities and that such exclusion can deepen chronic poverty.

Social Protection policies in principle do not discriminate between people based on their caste, therefore giving equal opportunity to a lower caste household to move out of poverty. However, as has been presented in my analysis, although these policies are inclusive in nature, these do not provide a platform to the households to graduate out of poverty. In this analysis, for example, households belonging to the SC/ST category have reported that they have got 60 percent quota in the Prime Minister Awaas Yojana (PMAY) and have also started getting jobs in MNREGA projects. IHDS data also shows that 36 percent of the households to SC category and 28 percent of ST categories took benefit from MNREGA in 2011.

These policies have also seen to reduce gender gap in terms of daily wages and have increased women empowerment (Chapter 8). MNREGA has provided women with equal opportunities of employment. Since the launch of the scheme, the women's participation has been close to 50 percent of the total person days generated, which is way above the stipulated minimum level of 33 percent (Bárcia de Mattos and Dasgupta, 2017). MNREGA has provided them with an alternate source of income that can provide further economic support to the family. The IHDS data also shows that 50 percent of the women who participated in MNREGA in 2011 did not work at all in 2004, and 34 percent worked on their own farms in 2004. Moreover, since

India has historically faced gender disparity in terms of wages, MNREGA has helped bring gender equality with equal wages for men and women, while significantly reducing gender based social exclusion (ibid). Women in my focus group discussions validated this fact.

Along with women and low caste households, old age people bear the brunt of social exclusion. Old age pension policies, as has been reported in Chapter 8, have been successful in providing a life of dignity to rural poor aged population. It was reported that pension beneficiaries hold better bargaining power and participation in household matters. There is a consensus among the elderly that the old age pension scheme provides a sense of security to aging men and women who would otherwise be treated as a liability to the family. Many beneficiaries felt that the scheme has given them financial independence and empowered them with self-esteem and confidence.

Yet, exclusion in terms of access to resources and participation at village level events and lack of social networks make households belonging to marginal category more vulnerable to shocks and less aware of their rights. Qualitative analysis presented in Chapter 8 indicated towards the role GP makes in transforming rural economy. In one of the villages, in spite of having all social protection schemes, I saw that the GP discriminate against the poor and SC/ST households. A woman had to wait many years before she could start getting her widow pension because the GP was not supportive. As MNREGA job cards are distributed at the discretion of the GP, some households will not be able to take advantage if the GP discriminates between people. A GP is the main point of contact for villagers for all their queries. If the GP of the village is corrupt, regardless of efficient and effective social protection policies, it will be difficult to transform the lives of the poor. Making the GPs more transparent and accountable through constant reporting and auditing would be necessary for rural transformation.

To an extent, social protection policies have made disadvantaged group become aware of their rights and made them empowered. But for any scheme to be truly transformational, rural infrastructural enhancement, both physical and social, is important. Discrimination against women and preference for son in rural villages is highly prevalent. Educating men and women both is required to make women empowered. At the same time dealing with social predicaments such as untouchability, looking down upon lower caste households, dowry etc is highly important. Social protection schemes without having a change in the local environment cannot have a transformational impact to its fullest capacity.

9.3 Policy Implications

Recent developments in studying poverty dynamics in multidimensional space offers an opportunity to analyse determinants that effect multiple dimensions of poverty. The MPI methodology adopted in this thesis to measure poverty showed various deprivations and their inter-linkages. As the approach of calculating MPI is flexible and can be adapted using region specific dimensions and weights to address the priorities of a country, its regions, districts and villages, it may enable policy makers to effectively channel resources and adapt policy measures that can reflect local circumstances. Such measures may also directly facilitate the monitoring and evaluation of the progress made by social protection programs in eradicating poverty. Moreover, decomposing the changes in poverty by indicators provides a rather clear picture of the factors that are hard to change in the lives of poor and factors that impact movements in and out of poverty. Such array of information is of particular importance to policy makers since fighting poverty involves policy making at various departments such as department of health, department of education, department of women welfare, etc. Each department would want to know how their policies fared in terms of targeted indicators. However, a strong indicator specific perspective on policy ignores the inter-dependencies between dimensions. One may only look at the results from a scheme targeted towards providing employment, but without proper decomposition of uncensored headcount ratio it become difficult to understand if the scheme has reached the poor at all. It is agreed that various dimensions of well-being are indeed an important element of the poverty alleviation strategy, however there is a great need of an integrated approach where opportunities are created for the poor to consolidate multiple dimensions and use them interactively to earn high returns on them. It is also important to consider that impact on one dimension on poverty may have indirect effect on another. For example, social protection policies aiming at education enhancement may have a spill-over impact on health indicators as educated people are more capable of taking better decisions in terms of health. Therefore, designing policies focusing on multiple dimensions of well-being provides an efficient way of tackling poverty and vulnerability.

That said, I do not support completely abandoning the monetary poverty line as income and consumption measures are equally important to understand how well investments has paid off. One cannot just concentrate on standard of living without studying the relationship between income and other measures as they go hand in hand. Alternate measures of poverty should complement official monetary poverty

measures instead of acting as a substitute. With good social protection policies in place, as household income increases, both monetary and non-monetary dimensions of wellbeing should improve. To a large extent improvement in non-monetary indicators is affected by market failures and is thus dependent on government provision of social goods and services such as health and education (Wang *et al.*, 2016). Therefore, measuring poverty, both using monetary and non-monetary indicators to understand economic and social aspects of poverty will help develop a comprehensive anti-poverty strategy and social protection policies (ibid).

Results from my study show that poverty dynamics is a growing concern as static poverty does not give a true picture of movements into and out of poverty. My study showed that the main factors that make a household poor include unanticipated shocks, namely ill-health, the death of the breadwinner coupled with unavailability of supporting mechanism that can help deal with such shocks. And those who remained chronic poor, remained so because they could not come out of deprivations over time that could speed-up their movement out of poverty. Therefore, social protection policies that would not only provide assistance to chronically poor households to accelerate their movement out of poverty but would also provide preventive measures with the objective of preventing vulnerable households from falling into poverty are required.

It is imperative to emphasize here again that Indian policy makers have often overlooked the establishment of high-quality infrastructure and institutes that are essential for successful social protection. Provision of public goods and services, especially in the rural areas, have been neglected as priority has mostly been on spending on social protection. As is evident from the study, social protection cannot alone be held responsible for providing a sustainable movement out of poverty or protection from falling into poverty. Social protection policies should work in cohesion with public expenditure on creating high quality social and economic infrastructure. Further, the achievement of East-Asian countries in reducing poverty shows that long term poverty eradication depends not only on provision of social protection policies but also on the quality of publicly provided social infrastructure.

Regardless of the challenges social protection has in India, it has been instrumental in improving lives of people. However, as explained before, given the current form of social protection, it looks rather difficult for households who are left out or are too far deep into poverty to move out of poverty. It has been often argued that social protection scheme should be replaced by cash transfers, particularly in the case of PDS

where no cash payment is involved unlike pensions and MNREGA. Many studies found that cash transfer is an alternative to costly and ineffective PDS and would give a household an option to choose from the consumption basket (Pingali *et al.*, 2019). In focus group discussions, the preference to cash transfers over PDS has been recorded (Chapter 8). However, in a country like India where there is a huge variation across states in terms of infrastructure and institutional capacity of a state in terms of credit and resource markets, putting everyone under the same scheme is not desirable. Implementation of cash transfers would require investment in other supporting rural infrastructure, especially financial institutions like banks, without which a move towards cash transfer would be a cause for concern.

As mentioned in chapter 7 implementation of social protection schemes in India is riddled with various glitches including targeting issues leading to inclusion and exclusion errors, leakages, and inconsistent implementation of schemes across states. Given the challenges and drawbacks of the current social protection system in India, replacing the existing schemes with a universal basic income (UBI) have gained rapid attention among policy makers (Economic Survey of India, 2017). It is claimed that plight of vulnerable population and other disadvantageous group can be tackled efficiently by directly providing them with minimum basic income. The Economic Survey of India, 2016-17, has presented UBI as a scheme that could replace many social protection schemes with a single UBI transfer to every citizen. However, given the current fiscal space, political agendas and substandard public facilities in India it is too far in time before India could have a full-fledged UBI. In the meantime, Quasi Universal Basic Income, where only poor households get basic income irrespective of their occupation, caste, gender, and geography can be thought of (ibid).

Furthermore, it must be noted that all social protection schemes are not directly aimed at reducing poverty. MNREGA, for example, provides employment and creates public assets too; JSY provides institutional deliveries, PM-JAY provides health insurance to poor. In my case studies I also found some transformative impacts of these schemes empowering women, lower caste households and elderlies. PDS along with providing food also ensure that households get nutritious food. If the existing schemes are to be replaced with direct income transfer, it is the responsibility of the government to make sure that the provision of good quality public good and services is made to its citizens.

As discussed earlier, with higher preference given to protective social protection schemes, the addition of PM-JAY looks promising as health shocks are one of the main reasons of households moving into poverty

(Chapter 6,7 and 8). With 86 percent of rural and 82 percent of urban households still not covered under any health insurance, PM-JAY can be an instrument to transform healthcare infrastructure and health insurance in India (Government of India, 2017). Along with providing health insurance to vulnerable households this scheme pertains to creation of 1,50,000 Health and Wellness Centres that will bring healthcare in close proximity of the people (pmjay.gov.in/about). These centres also provide primary health care for both maternal and child health services including free medicines and diagnostic services (ibid). This scheme is seen as a significant step towards achieving Universal Health Coverage.

In the Covid-19 crisis, as almost 90 percent of the workforce holds informal jobs in India the maximum loss of livelihood in the lockdown has occurred to them. Although the focus of the government after the outset of this pandemic has been precisely to strengthen social protection in India, it is very likely that given the scale, many would have fallen back in poverty. Stoppage of regular income after the lockdown led to an economic shock making it extremely difficult for the vulnerable households to survive. Loss of work and high cost of living in urban areas made migrant workers desperate to trudge back to their home. The sudden halt of transport services added to the plight of migrants and forced some of them to walk back home. According to the World Bank, 10-12 million migrants seeking their way back to their homes will be a part of 'new poor' - those who were either never poor or those who somehow managed to move out of poverty (World Bank, 2020) The estimated addition in the new poor because of COVID and the resulting lockdown in India points towards an often-overlooked aspect of poverty alleviation- Poverty Dynamics. As discussed earlier, most social protection policies are designed to help the poor escape poverty and not prevent them from falling into it. Case studies discussed in chapter 8 also showed how just one shock can put a family deep into poverty forever. This stresses the need for policy makers to focus also on preventing vulnerable population from falling deep into poverty.

Apart from the economic impact of COVID on India's poor the incapability of India's healthcare system to tackle the growing number of COVID cases in India is a serious concern. The situation is worse in rural India where the quality of healthcare infrastructure is not adequate. While major Indian cities remain the main hotspot for coronavirus, the inflow of an estimated 40 million migrant workers from cities into villages has triggered infections in areas that had previously been protected from the virus, adding extreme pressure on an already over-burdened healthcare system (World Bank, 2020). Once the COVID crisis subsides India needs to upgrade the current healthcare system by increasing more public expenditure on healthcare

infrastructure, at the same time designing a holistic social protection policy that provide minimum income support to the weak and vulnerable population, as well as prevent people from falling into poverty.

The social protection policies in India, as discussed above, are laddered with administrative and operational issues leading to leakages. If these schemes are to continue, they need to be redesigned keeping in mind the effect these schemes have had and the profile of the households in poverty. Concentration of poverty in different geographies and in marginalized groups also need special attention. The move to Direct Benefit Transfer scheme where money is sent directly to the beneficiaries' account, to an extent, has a potential to deal with these inefficiencies. This, along with the provision of better-quality public services, good quality physical infrastructure and risk mitigating strategies (health insurance, crop insurance, life insurance etc) can put India on sustainable path of poverty eradication.

9.4 Directions for Future Research

In view of the deliberations and evidence discussed in this thesis, three areas of future research are identified.

Firstly, it is desirable to extend my empirical analysis by incorporating data from the IHDS III. The India Human Development Survey III, conducted in 2018-19 traced and re-interviewed the same households that participated in round 1 and 2 of the survey conducted in 2004-05 and 2011-12, respectively. Over the past 20 years India has undergone significant transformation including, decline in poverty, increase in education levels, announcements of large-scale social protection schemes, to name a few. Currently with two data points it becomes difficult to establish the sequence of events that would have occurred between the two time periods. When combined with a third round of the survey, this data will create the most comprehensive structure for apprehending how economic and social transformations shape poverty over the course of three time periods. It will be very interesting to see the interrelationship between multidimensional poverty and monetary poverty using the data in three points in time. The role of social protection policies would also be more effectively studied given a long span of data points.

Secondly, my study has focussed on rural poor only. It will be interesting to see how social protection schemes designed for urban poor help them move out of poverty. A large number of migrants from rural areas working in informal sector in urban areas has led to the occurrence of 'Urbanisation of Poverty'. Unlike rural poverty, urban poverty encompasses significant negative externalities on the poor. Urban poor

have to deal with the problems of housing and shelter, drinking water, sanitation, health and education, social security and livelihoods (Vettriselvi and Dr.R.Karthikeyan, 2018). Living in overcrowded slums lacking basic amenities such as proper shelter, clean drinking water, sanitation and healthcare services, along with the special needs of vulnerable groups like women, children and aged people has made them worse than the rural poor (ibid). Using data from the IHDS and conducting a qualitative study on the urban poor to understand their struggle with poverty and its dynamics will be something that will have huge policy implications. At the same time, using dimensions and indicators that are relevant for urban sector a multidimensional index specific to the requirements of urban poor should be created and interactions between them using a decomposition analysis can be studied. The outbreak of COVID had made it all the more important to look at the urban poverty dynamics and the impact of the existing policies for the urban poor, and how it has helped them sustain in the times of pandemic.

Third, studies on poverty dynamics should also consider estimating movements in and out of poverty using different poverty measures. As explained in the thesis, as the measure of estimating poverty changes, the dynamics of poverty also change. Another poverty measures could lead to higher or lower poverty depending on how it is defined. Instead of categorizing households into poor and non-poor, it will be very interesting to analyse poverty using poverty gap index as embedded in the FGT (Foster-Greer-Thorbecke) class of poverty indices (Foster, Greer and Thorbecke, 1984). Poverty gap index estimates the intensity of poverty by examining how far the households are from the defined threshold of poverty. For monetary poverty it will be the monetary poverty line and for multidimensional poverty it will be the deprivation cut-off. Integrating this with qualitative data can then provide an extension to the results demonstrated in this thesis, and at the same time bring additional insights into poverty dynamics.

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Appendix

A5 Fieldwork Checklist

Interview guide for Case Studies:

The list of questions presented below should not be read through. They need to be seen as checklist and possible questions that may guide interviewer for probing questions. These are open-ended questions that would help steer the discussion and collect information in larger depth.

Interview begins with making an introduction and asking for a brief introduction from the respondent.

1. How long have you been living in this village?
2. Since when have you been living in this house? Is this own or rented?
3. How many people are there in your household? -- Ask about demographics of the members: See if all necessary information is collected*

    Age

    Status: Head, Wife, children etc.

    Gender

    Marital Status

    Education Status

    Disability

    *Ask for more details on intriguing responses.
4. Please tell us about the employment status of the members of your household.
5. What social protection schemes do you use/get??

Name of Scheme*	Who is the beneficiary?	Cash/bank/Kind	How much in cash or bank
PDS			
MNREGA			
JSY			
PMAY			
Insurance			
Others, specify pls			

*Discuss each scheme in length.

6. Reason for not receiving any social protection benefit. Discuss in length.

Causes of poverty dynamics as experienced by poor people, from their perspective.

1.	What does it mean to be in poverty? Do you think you are trapped in poverty and not able to move out? What is it that non-poor people have that you don't have?
2.	Do you think your households has enough money to get: a. Adequate food b. Adequate clothing c. Schooling d. Healthcare
3.	Is there anything that you are expecting to happen that may impact your standard of living or Income? Elaborate!!
4.	Is there anything that has happened in your life that has affected your standard of living positively? E.g., started a new or expanded an existing economic activity, Children started earning etc
5.	How did you finance new business?
6.	Is there anything unfortunate happened in your life that has affected your standard of living negatively? E.g., death of the main earning member of the family, crop failure, marriage expense, healthcare expense etc.
7.	How do you cope with such circumstance (e.g. sale of assets, borrowing, school dropout, consumption reduction, draw from savings etc.)?
8.	Do you think there is a lack of access to suitable credit /saving instruments?
9.	Education level of kids, if they do not go to school then why? Is it because there are no schools, quality is bad, no future etc…
10.	How important caste is in your village? Are you treated differently… explain!!! Do you think you are treated different because you are poor or your caste?

Main source of Income and of Role Social Protection Schemes

1.	What is the main source of income?
2.	Any other sources of Income?
3.	Does income from social protection form a major part of your livelihood? Income earning activities changed after you started receiving benefits?

	Elaborate
4.	Can you explain how your life would be if there were no benefits.
5.	In your views how important the following schemes in your house with regard to income? PDS MNREGA PENSION Janani Suraksha Yojana IAY
6.	Do Social protection schemes impact your health and education status, how?
7.	Has the allocation of labour changed since you start getting benefits? Please explain the process. Eg women started to work more/less… Children stopped working and started going to school Investments made for more income Hired more labour for work Spend less time on work now
8.	Do you think that having participated in social protection schemes changed your ability to participate in social activities? If yes, what are the reasons and what schemes lead this to happen?
9.	Has there been times when you wanted to work but there was no work available, talk about as well??
10.	Are new productive investments made after you started receiving benefits? Elaborate
11.	Could you save any of the money that you get from SP? What do you do with the money?
12.	Is there anything that you could afford earlier but can't afford now? Is there anything that you could not afford earlier but can afford now? Elaborate
13.	Do you think the benefits are able to make you move out of poverty? Elaborate

Interview guide / checklist for Focus Group Discussions (FGD)

1. FDG for elderlies

1.	Pros and cons of social protection schemes, particularly: PDS Pension IAY JSY MNREGA Health Insurance Make sure that the following points are well discussed. • Access to these schemes • Awareness about schemes • Transparency • Participation • Benefits • Ease of enrolling • Timely payments
2.	Which social protection scheme is most effective? Elaborate
3.	Do you think existing schemes need to be modified, how?
4.	If elderlies get old age pension generally who keeps that pension?
5.	Where is the pension used?
6.	Has it happened in the past that the old person was not shown to the doctor because of financial problems? Elaborate
7.	Has any old person in the village passed away because the family could not afford treatment? Elaborate
8.	Do old age people participate in social organisations? Do they visit their friends and family often?
9.	What household responsibilities do old age people share?
10.	In your opinion, what are the main obstacles to a better quality of life in your village/neighbourhood?
11.	Do you think that having participated in social protection program changed people's ability to participate in social activities? If yes, what are the reasons for that?
12.	Do elderlies take part in any community or public event where decisions are made about the community?

13.	How important caste is in your village? Does SP change the way low caste people are treated?
14.	Do SP schemes strengthen participation in the community and social relations for the socially excluded?
15.	Does being a beneficiary affect beneficiaries relationships within the household? Are they treated differently now compared to before? If so, why?

16. FDG for women

1.	Pros and cons of social protection schemes, particularly: PDS Pension IAY JSY MNREGA Health Insurance Make sure that the following points are well discussed. • Access to these schemes • Awareness about schemes • Transparency • Participation • Benefits • Ease of enrolling • Timely payment
2.	Which social protection scheme is most effective? Elaborate
3.	Do you think existing schemes need to be modified, how?
4.	Who takes most of the household decision?
5.	If there are any challenges in SP schemes, are they differ for men/women beneficiaries? How and why?
6.	Are women aware about the social protection schemes available to them and their benefits?
7.	Are women in the society face any discrimination on account of access to work, education, and healthcare?
8.	Do government provide quality healthcare and is it easy to access healthcare services?
9.	In your opinion, what are the main obstacles to a better quality of life in your village/neighbourhood?
10.	Do you think that having participated in social protection program changed people's ability to participate in social activities?

	If yes, what are the reasons for that?
11.	Do women take part in any community or public event where decisions are made about the community?
12.	How important caste is in your village? Does SP change the way low caste people are treated?
13.	Does being a beneficiary affect women's relationships within the household? Are they treated differently now compared to before? If so, why?

A6.1 Properties of Multidimensional Index

Properties satisfied by Multidimensional poverty Index (Alkire *et al.*, 2015):

1. **Symmetry/Anonymity**: Symmetry requires that everyone is treated anonymously so that only dimensions matter and not the identity of the person.
2. **Scale Invariance**: Scales invariance requires that scale transformation does not change the overall poverty.
3. **Poverty Focus**: The poverty focus principle requires that poverty should not change if there is an improvement in any dimension of a non-poor person.
4. **Deprivation Focus**: This focus principle requires that overall poverty is independent of the levels of achievement in a non-deprived dimension, regardless of poverty status.
5. **Monotonicity**: If there is an improvement of a poor person in an achievement, while other achievements remain unchanged, then poverty should not increase.
6. **Principle of Population**: Replication of population requires that if the population of the society is replicated with the same deprivation matrix n number of times, then poverty should not change.
7. **Sub-group Decomposability**: This property requires overall poverty to be equal to the weighted average of sub-group population poverty levels.
8. **Dimensional monotonicity**: Dimensional monotonicity is specific to the multidimensional context, introduced by Alkire and Foster. Dimensional monotonicity requires that if a poor person, who is not deprived in all dimensions, becomes deprived in an additional dimension then intensity of poverty should increase resulting in overall increase in poverty.

A6.2 Sensitivity Analysis for different values of poverty cut-offs

Table A6.2.1: MPI Ranking for Different Values of Poverty Cut-offs (k)

k	25	33	50	25	33	50
	H			M0		
Christian, Sikh, Jain	0.257	0.069	0.022	0.082	0.03	0.012
Brahmin	0.474	0.236	0.064	0.169	0.104	0.036
Forward caste	0.553	0.288	0.116	0.205	0.132	0.063
Backward Castes (OBC)	0.714	0.45	0.216	0.291	0.217	0.122
Muslim	0.804	0.573	0.32	0.356	0.291	0.176
Dalit	0.842	0.59	0.31	0.361	0.291	0.178
Adivasi	0.886	0.704	0.445	0.419	0.368	0.261
Total	0.732	0.485	0.249	0.307	0.238	0.143

A6.3 Testing Multidimensional Poverty Index in India

Comprehensiveness

Comprehensiveness means that MPI should include the deprivations that are broadly recognized as essential components of poverty in a specific region. It, however, will always be constrained by the kind of information available in the household level data. While it is not possible to capture all the relevant deprivations while creating MPI, I included relevant variables from what was available. The dimensions and the corresponding indicators used for constructing MPI for India have been justified as relevant from the literature on poverty and for their significance for the region.

In order to justify the normative argument and to verify the relevance of the variables used to construct MPI, exploratory factor analysis is performed. Assuming all our variables are dichotomous and follow a bivariate normal distribution, table A6.3.1 displays a summary of the correlation matrix resulting from the exploratory factor analysis. The correlation matrix displays an average across observations of the factor loadings of each variable over the two main factors (Santos *et al.*, 2015).

Table A6.3.1: Explanatory Factor Analysis Results

	2004		**2011**	
Variable	**Factor1**	**Factor2**	**Factor 1**	**Factor 2**
Schooling	0.55	0.12	0.56	-0.18
Adult Education	0.73	-0.31	0.69	0.38
Nutrition	0.34	0.62	0.40	-0.60
Child Mortality	0.35	0.55	0.30	-0.56
Sanitation	0.77	0.12	0.78	0.00
Cooking fuel	0.43	0.13	0.70	-0.11
Drinking water	0.14	-0.23	0.08	0.13
Housing	0.57	-0.20	0.48	0.20
Livestock	0.21	-0.58	0.07	0.60
Assets	0.82	-0.16	0.82	0.21

Source: Calculated using IHDS dataset

The standardized factor loadings of eight variables is 0.3 or more at the 1st factor. These data comply with the rule of thumb that if the absolute value of the average factor loading is greater than 0.3, the variable is desirable and form an important factor for the analysis (Santos *et al.*, 2015). This would mean that 8 out of 10 variables selected from the data are relevant for constructing the MPI. Two variables namely, livestock

and drinking water have low average loading yet we consider the normative arguments strong enough so as to retain them (Alkire, Foster et al., 2015).

Redundancy/Parsimony

Two measures of redundancy have been proposed by Alkire, James E. Foster, *et al.*, (2015) to identify the possible redundancies between the indicators. One is the Cramer's V correlation coefficient that is calculated by cross tabulating a pair of deprivations indicators, such that, given two deprivation indicators, j and j'

Let pjj' be the percentage of the population experiencing both deprivations

Let $pjj0'$be the percentage of the population deprived in j but not j'

Let $pj0j'$ be the percentage of the population deprived in j' but not j

Let $pj0j'0$be the percentage of the population deprived in neither

Further the percentages of the population that are deprived or not in individual indicators can be written as,

Let pj' +1 be the percentage of the population deprived in j'

Let pj' +0 be the percentage of the population not deprived in j'

Let pj 1+ be the percentage of the population deprived in j

Let pj 0+ be the percentage of the population not deprived in j

Cramer's V can then be written as

$$Cramer's\ V = \frac{(\mathbb{p}_{11}^{jj'} \times \mathbb{p}_{00}^{jj'}) - (\mathbb{p}_{10}^{jj'} \times \mathbb{p}_{00}^{jj'})}{\sqrt{\mathbb{p}_{+1}^{j'} \times \mathbb{p}_{+0}^{j'} \times \mathbb{p}_{1+}^{j} \times \mathbb{p}_{0+}^{j}}}$$

Cramer's V is thus a measure of the correlation between two variables built upon crosstabs of those variables. Tables below show various cross tab between indicators for 2004 and 2011.

Table A6.3.2a: Cramer's V Association Between Various Indicators (2004)

	Schooling	Adult Education	Nutrition	Child Mortality	Sanitation	Cooking fuel	Drinking water	Housing	Livestock	Assets
Schooling	.	0.20	0.10	0.04	0.10	-0.03	0.01	0.09	0.01	0.16
Adult Education	0.20	.	0.02	0.03	0.22	0.05	0.00	0.17	0.14	0.35
Nutrition	0.10	0.02	.	0.09	0.12	0.02	0.00	0.05	-0.04	0.09
Child Mortality	0.04	0.03	0.09	.	0.05	0.03	-0.01	0.03	-0.02	0.07
Sanitation	0.10	0.22	0.12	0.05	.	0.12	0.01	0.22	0.01	0.32
Cooking fuel	-0.03	0.05	0.02	0.03	0.12	.	0.02	0.02	-0.01	0.09
Drinking water	0.01	0.00	0.00	-0.01	0.01	0.02	.	0.04	0.00	0.03
Housing	0.09	0.17	0.05	0.03	0.22	0.02	0.04	.	0.09	0.26
Livestock	0.01	0.14	-0.04	-0.02	0.01	-0.01	0.00	0.09	.	0.11
Assets	0.16	0.35	0.09	0.07	0.32	0.09	0.03	0.26	0.11	.

Table A6.3.2b: Cramer's V Association Between Various Indicators (2011)

	Schooling	Adult Education	Nutrition	Child Mortality	Sanitation	Cooking fuel	Drinking water	Housing	Livestock	Assets
Schooling	.	0.12	0.09	0.06	0.07	0.05	0.00	0.05	0.00	0.11
Adult Education	0.12	.	-0.01	0.01	0.22	0.19	-0.01	0.16	0.11	0.35
Nutrition	0.09	-0.01	.	0.08	0.13	0.12	0.00	0.07	-0.04	0.10
Child Mortality	0.06	0.01	0.08	.	0.03	0.03	-0.01	0.02	-0.03	0.05
Sanitation	0.07	0.22	0.13	0.03	.	0.30	-0.01	0.19	-0.03	0.33
Cooking fuel	0.05	0.19	0.12	0.03	0.30	.	0.03	0.13	-0.06	0.30
Drinking water	0.00	-0.01	0.00	-0.01	-0.01	0.03	.	0.01	0.01	-0.01
Housing	0.05	0.16	0.07	0.02	0.19	0.13	0.01	.	0.06	0.23
Livestock	0.00	0.11	-0.04	-0.03	-0.03	-0.06	0.01	0.06	.	0.07
Assets	0.11	0.35	0.10	0.05	0.33	0.30	-0.01	0.23	0.07	.

The other measure of association that shows matches between deprivations as a proportion of the minimum of the marginal deprivations rates, i.e., it displays the number of observations having the same deprivation status in both indicators, reflecting the joint distribution, as a proportion of the minimum of the uncensored or censored headcount ratios (Alkire, James E. Foster, *et al.*, 2015a). This measure is defined as:

$$R0 = pjj'/\min(pj', pj), \quad 0 \leq R0 \leq 1$$

Tables A6.3.3a and A6.3.3b present the results of this measure on both 2004 and 2011 datasets. Results from both Cramer's V and R0 indicate that, on average, both the correlation and the redundancy measures are low between indicators within each dimension and across dimensions.

Table A6.3.3a: Redundancy Measure for 2004

	Schooling	Adult Education	Malnutrition	Mortality	Sanitation	Water	Cooking fuel	Secured roof	Livestock	Assets
Schooling	.									
Adult Education	0.647	.								
Malnutrition	0.449	0.384	.							
Mortality	0.166	0.431	0.512	.						
Sanitation	0.95	0.946	0.906	0.929	.					
Water	0.195	0.371	0.321	0.173	0.847	.				
Cooking fuel	0.945	0.972	0.966	0.987	0.97	0.968	.			
Secured Roof	0.74	0.722	0.653	0.693	0.905	0.659	0.963	.		
Livestock	0.582	0.66	0.538	0.52	0.843	0.565	0.958	0.655	.	
Assets	0.834	0.827	0.67	0.753	0.935	0.639	0.973	0.721	0.651	.
MPI	**0.105**	**0.371**	**0.32**	**0.044**	**0.841**	**0.185**	**0.959**	**0.618**	**0.56**	**0.6**

Table A6.3.3b: Redundancy Measure for 2011

	Schooling	Adult Education	Malnutrition	Mortality	Sanitation	Water	Cooking fuel	Secured roof	Livestock	Assets
Schooling	**.**									
Adult Education	0.611	.								
Malnutrition	0.481	0.307	.							
Mortality	0.104	0.34	0.518	.						
Sanitation	0.921	0.901	0.854	0.839	.					
Water	0.136	0.303	0.264	0.104	0.753	.				
Cooking Fuel	0.856	0.875	0.838	0.843	0.835	0.782	.			
Secured Roof	0.565	0.539	0.482	0.49	0.853	0.438	0.819	.		
Livestock	0.6	0.68	0.574	0.513	0.75	0.62	0.732	0.64	.	
Assets	0.766	0.725	0.546	0.651	0.911	0.459	0.891	0.597	0.643	.
MPI	**0.034**	**0.314**	**0.261**	**0.02**	**0.76**	**0.138**	**0.751**	**0.424**	**0.605**	**0.464**

A7 Results from Sequential Probit Regressions

Table A7.1: Odds Ratios for Dynamics in Consumption and Multidimensional Poverty for Households Balanced for MNREGA-Probit Regression Model

	Consumption Poverty Dynamics		Multidimensional Poverty Dynamics	
	Poor/Non-poor in 2011 **Conditional upon being non-poor in 2004**	**Poor/Non-poor in 2011** **Conditional upon being poor in 2004**	**Poor/Non-poor in 2011** **Conditional upon being non-poor in 2004**	**Poor/Non-poor in 2011** **Conditional upon being poor in 2004**
	Odds Ratio	**Odds Ratio**	**Odds Ratio**	**Odds Ratio**
Worked_NREGA_2011	1.074	1.179***	0.992	0.969
Age of head of the household	1.004**	1.001	1.007***	0.999
Gender of head of the household-Female	0.978	0.882	0.839*	0.884*
Number of members in the family	1.154***	1.165***	0.916***	0.935***
Highest adult education	0.981***	0.991*	0.964***	0.946***
Source of income-Labor work	1.078	1.047	1.157**	1.089**
Total physical assets	0.927***	0.924***	0.906***	0.903***
No livestock	1.119**	1.093*		
Not more than 2 acres of land	1.022	1.019	1.064	1.008
Major illness	0.720***	0.665***	1.058	0.985
Death of main bread winner	1.051	1.067	0.901*	1.015
Marriage expense	0.850***	0.872***	0.864***	0.822***
Crop Failure	0.848***	0.909*	0.866**	0.935*
caste	1.336***	1.328***	1.331***	1.282***
No social network	0.920*	1.053	1.013	1.114***
Availability of Bus service	1.020	1.080	1.012	0.974
Number of hours electricity available	1.006*	1.003	0.990***	0.991***
Post office in the village	0.974	1.011	1.047	0.935*
Village accessible with paved road	0.907*	0.850***	0.970	1.011
UP	0.843*	0.719***	1.276***	1.187**
Bihar	1.105	1.023	1.300*	1.791***
Punjab	0.842	0.860	0.795*	0.624***
Haryana	1.284**	1.275*	0.962	0.944
Rajasthan	0.923	0.806*	1.293**	1.068
Madhya Pradesh	0.889	0.975	1.206**	1.310***
Observations	12602	7318	8758	11174
Pseudo R2	0.2462	0.2193	0.2734	0.2683
chi2	1055.0	831.1	1051.1	1968.7
Prob>Chi-Squared	0.000	0.000	0.000	0.000

*Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

Table A7.2: Odds Ratios for Dynamics in Consumption and Multidimensional Poverty for Households Balanced for Pension-Probit Regression Model

	Consumption Poverty Dynamics		Multidimensional Poverty Dynamics	
	Poor/Non-poor in 2011 Conditional upon being non-poor in 2004	Poor/Non-poor in 2011 Conditional upon being poor in 2004	Poor/Non-poor in 2011 Conditional upon being non-poor in 2004	Poor/Non-poor in 2011 Conditional upon being poor in 2004
	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Pension_2011	1.231***	1.128*	1.189*	1.101*
Age of head of the household	1.004**	1.002	1.006***	1.001
Gender of head of the household-	0.930	0.987	0.787**	0.831***
Number of members in the family	1.148***	1.156***	0.911***	0.930***
Highest adult education	0.979***	0.990*	0.961***	0.947***
Source of income-Labor work	1.105*	1.014	1.150**	1.099**
Total physical assets	0.928***	0.928***	0.907***	0.905***
No livestock	1.098*	1.147***		
Not more than 2 acres of land	0.999	0.964	1.023	0.977
Major illness	0.733***	0.690***	1.040	1.018
Death of main bread winner	1.057	1.074	0.956	1.002
Marriage expense	0.872***	0.870***	0.838***	0.815***
Crop Failure	0.836***	0.873**	0.878**	0.946
caste	1.356***	1.286***	1.303***	1.271***
No social network	0.933	1.022	0.992	1.086**
Availability of Bus service	1.056	1.101*	1.023	0.993
Number of hours electricity available	1.003	1.004	0.989***	0.990***
Post office in the village	0.980	1.027	1.023	0.968
Village accessible with paved road	0.896**	0.861***	0.979	1.031
UP	0.828**	0.740***	1.285***	1.196***
Bihar	1.068	1.010	1.294*	1.751***
Punjab	0.823	0.838	0.788*	0.615***
Haryana	1.255**	1.247*	0.954	0.938
Rajasthan	0.901	0.834	1.290**	1.078
Madhya Pradesh	0.869	1.026	1.212**	1.330***
Observations	12662	6524	8931	10266
Pseudo R2	0.2559	0.2120	0.2752	0.2749
chi2	1131.2	701.8	1087.4	1864.7
Prob>Chi-Squared	0.000	0.000	0.000	0.000

*Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level

Table A7.3: Odds Ratios for Dynamics in Consumption and Multidimensional Poverty for Households Balanced for PDS-Probit Regression Model

	Consumption Poverty Dynamics		Multidimensional Poverty Dynamics	
	Poor/Non-poor in 2011 **Conditional upon being non-poor in 2004**	**Poor/Non-poor in 2011** **Conditional upon being poor in 2004**	**Poor/Non-poor in 2011** **Conditional upon being non-poor in 2004**	**Poor/Non-poor in 2011** **Conditional upon being poor in 2004**
	Odds Ratio	**Odds Ratio**	**Odds Ratio**	**Odds Ratio**
PDS_2011	1.118*	1.239***	0.793***	0.844***
Age of head of the household	1.004**	1.002	1.007***	1.000
Gender of head of the household-	0.939	0.921	0.794**	0.886*
Number of members in the family	1.151***	1.161***	0.921***	0.940***
Highest adult education	0.976***	0.991	0.961***	0.945***
Source of income-Labor work	1.077	1.020	1.208***	1.104**
Total physical assets	0.930***	0.925***	0.906***	0.904***
No livestock	1.091*	1.131**		
Not more than 2 acres of land	1.065	1.022	1.032	0.985
Major illness	0.713***	0.657***	1.054	0.997
Death of main bread winner	1.053	1.093	0.910	1.021
Marriage expense	0.856***	0.848***	0.843***	0.815***
Crop Failure	0.840***	0.881**	0.865**	0.962
caste	1.370***	1.269***	1.284***	1.283***
No social network	0.903*	1.034	0.969	1.105**
Availability of Bus service	1.032	1.096*	1.045	0.990
Number of hours electricity available	1.005	1.004	0.991**	0.992***
Post office in the village	0.966	1.053	1.022	0.955
Village accessible with paved road	0.915*	0.861**	0.961	1.024
UP	0.887	0.816*	1.139	1.087
Bihar	1.019	0.900	0.993	1.485***
Punjab	0.724*	0.721	0.724**	0.511***
Haryana	1.342**	1.363*	0.800*	0.775*
Rajasthan	0.859	0.879	1.145	0.891
Madhya Pradesh	0.892	1.041	1.061	1.123
Observations	10741	5391	7704	8437
Pseudo R2	0.2561	0.2235	0.2740	0.2728
chi2	915.9	607.9	903.9	1512.3
Prob>Chi-Squared	0.000	0.000	0.000	0.000

*Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level