Contribution of Self-help Groups to the pursuit of Women Empowerment : A Capability Approach

A District-level study in the state of West Bengal, India

Ph.D level Dissertation

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In Memory of

Begum Sufia Kamal

(*1911 – 1999*)

Khalamma, wish I could see you once…

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Chapter 1

Prologue

1.1. Motivation:

Rehana is a young woman living in a small village in the Hooghly district of West Bengal. All her lifetime, she is a housewife and depends on her other family members (senior male members, mainly) in every decisions in domestic or socio-economic sphere. She was able to go to the school but was dropped out from education, when her family arranged her marriage at the age of twelve. She has spent most of her life, burdened heavily by the work in domestic chores and she had to assist her husband in small-scale cultivation mainly during the harvesting seasons. She has one son and two children and two of them are attending the school. Some years before, Rehana's village was fortunate of having a primary school and her children used to get education at school, free of cost. But as the school administration had failed to submit evidence of regular attendance of the students, there was significant cut in government grants and further education of Rehana's children seems to be at stake. Although Rehana is really interested in investing in her children's education, she finds herself helpless as she does not have her own income and government-grants are drying up each year. Rehana some times thinks about her younger sister Sajeeda, who got married to other village, but has been benefited for being a self help group(SHG)- member, which operates in that village. Being a group-member Sajeeda enjoys a better space of respect, both from her own family and among the other women in the village. Sajeeda participates in the decision-making processes of almost all the types and believes that she enjoys several other benefits, that wouldn't have been possible, had she not been a group-member. But again, Sajeeda knows some other women, whom she met in local markets, and they feel even better improvement in their livelihood since their groups are more active and some of them acknowledge the contribution of engagement in socially concerted activities to this incremental gain.

This situation perfectly portrays the situation to open up an evaluative space of a well-manifested development initiative like promotion of women SHGs. Rehana obviously suffers from a limited

space, while achievements of her sister, Sajeeda are definitely higher. Sajeeda accepts the role of SHGs to bring about incremental change in her livelihood but she has a strong sense that the women, she met in the market enjoys better options just because of being members of 'good' groups. In Amartya Sen's terminology, Sajeeda achieves better *functioning* than Rehana, but the *capabilities* of those other women are better than that of Sajeeda.The success of group-approach in rural development for women has inspired promotion and formation of Self-help groups (SHGs) in all districts of West Bengal. But the existing literature on micro-finance self-help groups mainly focus on the institutional aspects of self-help groups. Excellent coverage can be found in Kumar and Corbridge (2002), Harper (2002), Mayoux (2002), Lahiri-Dutt and Samata (2006) and Hardy, Holden and Prokopenko (2002). But only a few studies effectively scrutinize the link between Micro-finance SHGS and women empowerment. It is here where this dissertation claims its main contributions by bridging the gap between Women SHGs and it's welfare-potential. This introductory chapter reviews the conceptual foundation of formation of Self-help groups and the present state of West Bengal in this regard and describes the structure of the dissertation.

1.2. Self-help Groups (SHGs)

A Self Help Group (SHG) is formed when members of a community, who have the same or similar problem, come together, meet, share experiences, have discussions, and thereby arrive at solutions. Self-help is seen as an inexpensive way of providing vital community services. As an ethos, a SHG symbolizes community initiatives to tide a problem over and achieve a level of self-sufficiency. It is a concept that has evolved over time all over the world and the journey has been at several levels- from labor/kind/premonitory currency to cash; from non-financial to financial groups; from rotating to non-rotating patterns; from short-lived to semi-permanent or supposedly permanent groups; and from savings-only to savings-driven credit groups.

Grain Banks have been in existence since many years in India, where in areas of frequent drought, the community pools grain when it is available, so that it can be accessed as a loan, in times of scarcity. These have also been actively promoted by non-governmental organizations (NGOs), community-based organizations (CBOs) and funding agencies (national and international), as systems that build food security. In India, one also finds SHGs around watershed management, forest management etc. However, largely, the SHG is the conduit through which micro finance is routed to the poor. These are small groups of 10-20 persons, who come together with the intention

of saving and rotating loans amongst the members. Once these groups stabilize, they are accorded formal support from the banking system so as to widen their lending capacities. An important dimension of SHGs is the peer pressure that members of a group exert amongst themselves, which acts as a substitute for formal collateral. The rationale of micro finance is based on findings, which have shown that the poor can save, and can be relied upon to return on time the money that they borrow. Micro finance supposedly circumvents the drawbacks of both the formal and informal systems of credit delivery and also fits within the larger principles of market liberalization since credit-to-the-poor and profits are not antithetical to each other. Among the real and potential clients of micro-finance, women are seen as the most reliable in terms of repayment and utilization of loans. The instrumentalist vision of micro-finance is based on the understanding that the entire household benefits when loans are given to women. Further, it is argued that micro-finance can empower women since it instills a perception of strength and confidence through augmentation of incomes and their participation within group activities. Hence, most of the groups formed are women-only SHGs.

Women Self-help group is an institution that work collectively to accomplish some defined activities, with a vision to develop empowered women who will (i) demand their rights from family, community and government, (ii) have increased access to and control over material, social and political resources, (iii) have enhanced awareness and improved skills, and (iv) be able to raise issues of common concern through mobilization and networking. With the long-term objective being the all-round empowerment of women, especially socially and economically, by ensuring their direct access to, and control over, resources through a sustained process of mobilization and convergence of all the on-going sectoral programmes, the immediate objective is to create confidence and awareness among members of SHGs regarding women's status, health, nutrition, education, sanitation and hygiene, legal rights, economic upliftment and other social, economic and political issues.

In India, SHGs represent a unique approach to financial intermediation. The approach combines access to low-cost financial services with a process of self-management and development of group-members.SHGs are formed and supported usually by NGOs and (increasingly) by government agencies. Linked not only to the banks but also to wider development programs, SHGs are seen to confer both economic and social benefits. SHGs became community platform for the rural women and an apparent synergy has been observed between SHGs and local politics, since through

membership village women gained experience of relevant processes (regular meetings, taking decisions, allocating money, etc).

The formal banking sector has played a significant role in microfinance self-help initiatives. There have been significant state initiatives in the institutional and policy spheres since the early 1990s to enable the group-members to access financial services. As a result, commercial banks (mainly in the public sector), regional rural banks (RRBs) and co-operative banks have emerged as important channels of micro-finance provision to SHGs. Up to 31st March, 2005, there are 16,18,458 SHGs in India of which 8,43,473 SHGs(52.12%) are finance by commercial banks, 5,63,846 SHGs(34.84%) are financed by RRBs, and the rest 2,11,137 SHGs(13.04%) are financed by co-operative banks (NABARD, 2005). In general co-operative banks are under-performer as they were introduced later in the SHG -Bank linkage program. The exceptional performance has been observed in those areas were there has been a strong history of cooperative movement.

Since National Agricultural Banking and Rural Development's (NABARD) debut in micro finance, it has been catalyzing the banking system in the country to join hands progressively with informal delivery channels to give SHG-Bank linkage the proper momentum. The active participation of women and timely loan repayment have been the prominent features of the program. NABARD has been instrumental in facilitating the formation and nurturing of SHGs, involving all possible partners in the arena .It also provides Revolving Fund Assistance to select NGOs and micro finance institutions for undertaking financial intermediation. According to the annual report of the Bank, NABARD succeeded to cover around 56 million poor people with 11.2 million poor families accessing bank credit including repeat finance in the year 2004-05. Credit flows increased over the previous year by 61% and over 95% SHGs have been reported for on-time repayment (NABARD, 2005).

SHG-Bank linkage program has been increasingly promoted for their positive economic impact and the belief that they empower women. However only a few studies effectively scrutinize the link between Micro-finance SHGS and women empowerment. Women empowerment takes place when women challenge the existing social norms to effectively expand the real freedoms that they enjoy. In our study we are primarily interested in evaluating the extra-economic dimensions that a typical SHG-participation may promote. That is why we are more concerned about the assessment of capability enhancement of rural women and this dissertation is mainly focused in establishing the

incremental contribution of SHG-participation in the light of the analytical foundation of the capability approach.

1.3. Structure of the Dissertation:

This dissertation aims to answer two main questions. First, we formally address the question of whether the capability approach can be an appropriate criterion to evaluate the empowerment-potential of Women Self-help groups and how it could be operationalised to address to derive a quantifiable account of empowerment. Second, we investigate how Sen's approach should be empirically implemented. When answering this second question, we address three points: (i) what are the main issues in women empowerment through capability enhancement, and how can they best be tackled, (ii) how can we quantify the latent capabilities and hence women empowerment, and (iii) how can this empowerment-achievement work as a outcome variable to evaluate the impact of SHG-program.

Each of the four remaining chapters in this dissertation deals with one of these questions.

- Chapter 2 explores the candidature of the capability approach for being an evaluative criterion to assess the empowering potential of women self-help groups. It keeps the strong analytical foundation of the capability approach in reviewing the scope of analysis of groups and social structure in the capability framework. Finally the chapter scrutinizes women empowerment through capability enhancement and emphasizes the potential of women self-help groups to advocate this process. The other part of this chapter reviews the operationalisation possibilities of the capability approach in order to find out an appropriate methodology to be used to assess women capabilities (and hence empowerment) to derive a judgmental basis for different categories of (group) participation.

  This chapter reviews several latent variable modeling and argues in favor of the Multiple-Indicator-Multiple-Cause (MIMIC) model, where it is not only believed that the observed variables (functionings) are manifestations of an underlying latent concept(capabilities) but also there are other exogenous variables that cause and influence the latent capabilities.
- Chapter 3 describes the survey design, offers a description of the questionnaire and gives a brief but comprehensive account of the data.
- Chapter 4 takes up the problem to arrive at a quantifiable measure of women capabilities and hence women empowerment. We apply a MIMIC-type of structural equation modelling to

arrive at a quantifiable measure of latent capabilities and hence empowerment. Once this has been achieved, the chapter explores further the effect of both membership and the duration of membership on the attainment of empowerment.

- Chapter 5 explores effectiveness of a non-parametric methodology to evaluate the incremental contribution of active SHG-participation to women empowerment. The possible biases have been taken into consideration so that an appropriate methodology can be applied to solve for an unbiased treatment effect of group-participation. The main contribution of this chapter is to use the matching methods and to apply a propensity score-matching-method to bring out precise estimate of incremental effect of active participation in self-help groups.
- Chapter 6 concludes with the direction of future research.

Chapter 2

Group-participation and Capability Approach: An Analytical Exploration

2.1 Introduction

The capability approach is a broad normative framework for the evaluation and assessment of individual well-being and social arrangements, the design of policies, and proposals about social changes in society. It is used in a wide range of fields, most prominently in development studies, welfare economics, social policy and political philosophy. It can be used to evaluate several aspects of people's well-being, such as inequality, poverty, the well-being of an individual or the average well-being of the members of a group. It can also be used as an alternative evaluative tool for social cost-benefit analysis, or as a framework within which to design and evaluate policies, ranging from welfare state design in affluent societies, to development policies by governments and non-governmental organizations in developing countries.

The core characteristic of the capability approach is its focus on what people are effectively able to do and to be; that is on their capabilities. This contrasts with philosophical approaches that concentrate on people's happiness or desire-fulfilment, or in income, expenditures, or consumption. Some aspects of the capability approach can be traced back to, among others, Aristototle, Adam Smith and Karl Marx (Nussbaum 1988; Sen 1993). The approach in its present form has been pioneered by the economist and philosopher Amartya Sen (1980, 1984, 1985, 1990, 1992, 1993, 1999) and has more recently been significantly further developed by the philosopher Martha Nassbaum (1988, 1992, 1995, 1998, 2000), and a growing number of other scholars.

A key analytical distinction in the capability approach is that between the means and the ends of well-being and development. Only the ends have intrinsic importance, whereas means are instrumental to reach the goal of increased well-being, justice and development. However, in concrete situations these distinctions often blur, since some ends are simultaneously also means to other ends (e.g. the capability of being in good health is an end in itself, but also a means to the capability to work).

According to the capability approach, the ends of well-being, justice and development should be conceptualized in terms of people's capabilities to function; that is, their effective opportunities to undertake the actions and activities that they want to engage in, and be whom they want to be. These beings and doings, which Sen calls functionings together constitute what makes a life valuable. The distinction between achieved functionings and capabilities is between the realized and the effectively possible; in other words, between achievements on the one hand, and freedoms or valuable options from which one can choose on the other (Robeyns, 2005). What is ultimately important is that people have the freedoms or valuable opportunities (capabilities) to lead the kind of lives they want to be. Once they effectively have these substantive opportunities, they can choose those options that they value most.

Thus the capability approach is clearly a theory within the liberal school of thought in political philosophy. Note that the word 'liberal' in political philosophy refers to a philosophical tradition that values individual freedom, and should not be confused with the word 'liberal' in an everyday political sense. 'Liberal' in everyday use also has different political meanings in different countries, and can cover both the political right and left. It is often used to refer to neo-liberal economic policies that prioritize free markets and privatization of public companies (Chomsky, 1999). In contrast, philosophical liberalism is neither necessarily left or right, nor does it *a priori* advocate any specific social or economic policies.

The capability approach evaluates policies according to their impact on people's capabilities. It asks whether people are being healthy, and whether the means or resources necessary for this capability are present, such as access and knowledge of health-care facilities. It asks whether people are well-nourished, and whether the conditions for this capability, such as having sufficient food supplies and food entitlements, are being met. It asks whether people have access to a high-quality educational system, to real political participation, to community activities that support them to cope with the struggles in daily life and that foster real friendships. For some of these capabilities, the main input will be financial resources and economic production, but for others it can also be political practices and institutions, such as the effective guaranteeing and protection of freedom of thought, political participation, social and cultural practices, social structures, social institutions, public goods, social norms, traditions and habits. The capability approach thus covers all dimensions of human well-being. Development, well-being and justice are regarded in a comprehensive and integrated manner,

and much attention is paid to the links between material, mental and social well-being, or to the economic, social, political and cultural dimensions of life.

This paper will analyze the potential of capability approach for being an appropriate criterion to evaluate the success of Women Self-help groups. The success of group-approach in rural development for women has inspired promotion and formation of Self-help groups (SHGs) in all districts of West Bengal in India. SHGs have been increasingly promoted for their positive economic impact and the belief that they empower women. However only a few studies effectively scrutinize the link between Micro-finance SHGs and women empowerment. Women empowerment takes place when women challenge the existing social norms to effectively expand real freedoms in terms of operational space that they enjoy. The enhanced empowerment would certainly contribute towards higher capabilities and so the ultimate success of a SHG-program will lie on the extent to which the capabilities of the social agents could be upgraded. The paper not only explores the analytical ability of the capability approach of being an evaluative criterion to justify such a group-approach, but it also focuses on its operational possibilities, i.e in deriving out an appropriate methodology for operationalizing the capability approach in assessing the success of women SHGs.

The paper is organised as follows. Part A focuses on the analytical rigor of the capability approach, while part B puts emphasis on the operational aspect. Section A.1 will present the Capability approach as an alternative framework for well-being and justice. Section A.2 will deal with the difference between means and functionings to bring out the crucial social agenda, forwarded by the Capability approach by differentiating further between achieved functionings and capabilities in section A.3. Section A.4. distinguishes well-being from agency to interrogate the relevance of both the aspects in the assessment of personal states and actions. The emphasis on human agency puts forward an important agenda 'empowerment' in Chapter A.5, which is mainly carried out by group-oriented development initiatives. Section A.6 deals with individuals and groups/ social structures in the capability approach, which in turns gives justification to use this approach in addressing the empowerment-enhancing potential of women SHGs in section A.7.

Part B explores the operational aspect. Two key issues in operationalizing the capability approach has been considered; section B.1 addresses multidimensionality and section B.2 focuses on the interdependent nature of capabilities. But the capabilities are essentially unobservable and this very nature of capabilities initiates a discussion on unobservable/latent variable modelling in section B.3.

Finally section B.4 explores the empirical approaches to measurement to arrive at an appropriate methodology to estimate capabilities, and hence empowerment. The last chapter concludes.

2. A.1. The Capability approach as an alternative framework for well-being and justice

The capability approach is primarily and mainly a framework of thought, a mode of thinking about normative issues; hence a paradigm[1] – loosely defined – that can be used for a wide range of evaluative purposes. The approach focuses on the information that we need in order to make judgements about individual well-being, social policies, and so forth, and consequently rejects alternative approaches that it considers normatively inadequate; for example, when an evaluation is done exclusively in monetary terms. The capability approach also identifies social constraints that influence and restrict both well-beings as well as the evaluative exercises. It can serve as an important constituent for a theory of justice but Sen argues (Sen, 1995) that the capability approach specifies an evaluative space and this does not amount to a theory of justice. Sen stresses that a theory of justice must include both aggregative considerations as well as distributive ones, whereas the capability approach does not specify an aggregative principle (Sen, 1999). Moreover, a theory of justice also requires procedural components, such as the principle of non-discrimination.

The capability approach entails a critique of other evaluative approaches, mainly of the welfarist approaches in welfare economics and on utilitarian and income-based or resource-based theories. Sen rejects welfarist theories because, whatever their further specifications, they rely exclusively on utility and thus exclude non-utility information from our moral judgements (Sen 1979). Sen is concerned not only with the information that is included in a normative evaluation, but also with the information that is excluded. The non-utility information that is excluded by utilitarianism could be a person's additional physical needs due to being physically disabled, but also social or moral issues, such as the principle that men and women should be paid the same wage for the same work. For a utilitarian, this principle has no intrinsic value, and men and women should not be paid the same wage as long as women are satisfied with lower wages. But it is counter-intuitive, Sen argues, that such principles would not be taken into account in our moral judgements. Thus the first strand of normative theories that Sen attacks are those that rely exclusively on mental states. This does not

[1] The term "paradigm" came to prominence when Thomas Kuhn wrote "The Structure of Scientific Revolutions" where he stressed on the conditions for a theory to be competent to ensure scientific revolutions. Khun emphasizes on e theory that seems "better than its competitors" and has the "promise of success". Sabina Alkire (2003) worked on the possibility to call the capability approach as a development paradigm. She pointed on the importance of accommodating the key insights of this approach more intensively in the imaginative exercise.

mean that Sen thinks that mental states, such as happiness, are unimportant and have no role to play; rather, it is the exclusive reliance on mental states that he rejects.

The capability approach also entails a critique of how economists have applied the utilitarian framework for empirical analysis in welfare economics. Economists use utility as the focal variable in theoretical work, but translate this into a focus on income in their applied work. While income generally is an important means to well-being and freedom, it can only serve as a rough proxy for what intrinsically matters, namely people's capabilities.

While Sen has often acknowledged his debt to the philosopher John Rawls (1971, 1982), he also criticizes Rawl's use of primary goods for interpersonal comparisons, because primary goods are means, and not intrinsic ends, and as a consequence would not be able to account for the full range of the diversity of human beings (Sen, 1980, 1992, pp. 81-87). If all persons were the same, then an index of primary goods would yield similar freedoms for all; but given human diversity, the comparisons in the space of social primary goods will fail to take note that different people need different amounts and different kinds of goods to reach the same levels of well-being or advantage. More recently, Martha Nussbaum has significantly extended the capability critique of Rawls by examining the implications of the fact that Rawl's theory of justice belongs to the social contract tradition, whereas the capability approach does not (Nussbaum, 2004). However, the debate between Rawlsians and capability theorists is certainly not settled. In a similar vein, Sen has criticized other resource-based normative theories, such as Ronald Dworkin's (1981, 2000) account of equality of resources, which has also generated a highly abstract philosophical debate on the precise differences between these two theories (Sen 1984). The presence of abstractness in this debate sometimes fails to capture the encompassing nature of the capability approach and leads some economists to misunderstand this approach as providing the foundations for a theory of equality or social justice only. Rather, as we will scrutinize in later sections, the capability approach is a framework for evaluating and assessing social arrangements, standards of living, poverty, justice, quality of life or well-being. The major contribution of capability approach is the distinction between the means, such as goods and services, on the one hand, and functionings and capabilities on the other hand. We will consider this in the following section.

2. A.2. Means versus Functionings

A crucial distinction in the capability approach is the distinction between the means, such as goods and services, on the one hand, and functionings and capabilities on the other hand.

Goods and services should not necessarily be thought of as exchangeable for income or money – as this would restrict the capability approach to analyses and measurement in market-based economies, which is not intended (Roybens, 2005). Sen's core argument is that goods are not important in themselves, but in what their characteristics enable people to do and to be, that is, in the capabilities that a people can generate from those goods and services. The extent to which a person can generate capabilities from goods and services depends on the factors that determine how smoothly this conversion can be made. Three types of conversion factors can be distinguished: social, environment and personal conversion factors (Robeyns, 2004).

1) the social conversion factors are determined by a number of social aspects, such as social institutions, social norms, traditions and behavior of others in society.

2) the environmental conversion factors are determined by the environment in which a person lives.

3) the personal conversion factors are determined by one's mental and physical aspects

Not all capabilities require some goods or services as inputs. The same category of social and individual factors and parameters, which influence the conversion factors, also impinge on those capabilities that do not necessitate commodities. Hence, knowing the goods a person owns or can use is not sufficient to know which functionings he/she can achieve; therefore we need to know much more about the person and the circumstances in which he/she is living. The capability approach thus takes account of human diversity in two ways: by its focus on the plurality of functionings and capabilities as the evaluative space, and by the explicit focus on personal and socio-environmental conversion factors of commodities into functionings, and on the social and institutional context that affects the conversion factors and also the capability set directly.

Moreover, goods and services are not only means to people's capabilities. There are other means that function as 'inputs' in the creation or expansion of capabilities, such as social institutions, broadly defined. The material and non-material circumstances that shape people's opportunity sets, and the circumstances that influence the choices that people make from the capability set, should

receive a central place in capability evaluations. For example, both Sen and Nussbaum have paid much attention to the social norms and traditions that form women's preferences, and that influence their aspirations and effective choices (Sen 1990; Nussbaum, 2000). The capability approach not only advocates an evaluation of people's capability sets, but insists also that we need to scrutinize the context in which economic production and social interactions take place, and whether the circumstances in which people choose from their opportunity sets are enabling and just.

Note that a focus on functionings and capabilities does not have to imply that a capability analysis would not pay any attention to resources, or the evaluation of social institutions, economic growth, technical advancement, and so forth. While functionings and capabilities are of ultimate normative concern, other dimensions can be important as well. Indeed, in their evaluation of development in India, Jean Dreze and Amartya Sen have stressed that working within the capability approach in no way excludes the integration of an analysis of resources or other means (Sen 2002).

In summary, all the means of well-being, like the availability of commodities, social institutions, and so forth, are important, but the capability approach presses the point that they are not the ultimate ends of well-being. In fact, the capability approach assesses people's welfare in terms of their *functionings* and *capabilities*, which are defined as an individual's actual and potential activities and states of being respectively. The next section captures that in more details.

2. A.3. Achieved Functioning and Capabilities

If we look in more detail at the distinction between achieved functionings and capabilities, the first feature concerns the conceptualization of the term 'capability' is in Sen's earliest work, where each capability referred to one person, and vice versa. In this terminology a capability is synonymous with a capability set, which consists of a combination of potential functionings. Functionings could therefore be either potential or achieved. This kind of language is most familiar to social choice theorists, where the focus of much analysis is on the opportunity set. But many other scholars working within the capability paradigm, including Martha Nussbaum, have labeled these potential functionings 'capabilities'. In that terminology the capability set consists of a number of capabilities. In the same way as a person's overall freedom is made up by a number of more specific freedoms. One does not find this usage of capabilities (as being the individual elements of one person's capability set) in Sen's earlier writings, and in his later writings he applies both uses of the word 'capability' interchangeably. The use of capabilities as a plural is widespread in the work of Sen's

commentators and the scholars who apply the capability approach. Capability is a substantive freedom to achieve alternative functioning combinations – less formally the freedom to achieve various valuable beings and doings. While the combination of a person's functionings reflects their actual achievements, the capability set represents the freedom to achieve. In principle, the extent of each functionings enjoyed by a person may be represented by a real number and when this is done a person's actual achievement can be seen as a functioning vector. The strength of the capability approach lies not in the evaluative focus on the realized functionings only; rather on the capability set of alternatives they have (their real alternatives). The former only gives information about the things a person does, while the latter about the things a person is free to do.

Again, in real life two people with identical capability sets are likely to end up with different types and levels of achieved functionings, as they make different choices following their different ideas of the good life. As a liberal philosophical framework, the capability approach respects people's different ideas of the good life, and this is why in principle capability, and not achieved functioning, is the appropriate political goal. However, it is also clear that, in real life, a person's ideas of a good life are profoundly influenced by her family, tribe, religion, community or cultural ties and background. This does not mean that these constraints always have to be negative or unjust; on the contrary, some people might find them very enabling and supporting. There is very little about these constraints that one could say in general terms, as they are so closely interwoven with a person's own history and personality, values and preferences. It is, however, important to question to what extent people have genuinely access to all the capabilities in their capability set.

A person's achieved functionings at any given time are the particular beings and doings he or she enjoys. But one could enjoy a nice basket of functionings in situations where she might still feel that something significant was missing. Sen introduced the concept of capability in order to attend to the foundational importance of freedom. "The 'good life' is partly a life of genuine choice, and not one in which the person is forced into a particular life – however rich it might be in other respects (Sen 1996)". The intrinsic value of freedom is popularly recognized with emphasis on such as empowering people to help themselves, or focusing on people as the 'actors' and the creative 'agents' of their own development. The capability approach have articulated the importance of human agency, and identified the need for information on agency freedom to enrich the evaluation of social arrangements. The next section analyzes agency to bring out empowerment as an indispensible agenda for participatory development initiatives.

2. A.4. Distinguishing well-being from agency

Another aspect of Sen's capability approach is the distinction between well-being and agency goals, and the possibility of narrowing down the concept of well-being to the standard of living. The main differences between these concepts can be summarized as follows. The standard of living is 'personal well-being related to one's own life'. If well-being is supplemented with commitments (i.e. an action that is not beneficial only to the agent herself), then we are focusing on overall agency (Sen, 1987). Moreover, all of these concepts can be further specified as being either achieved outcomes, or the freedom people have to achieve these outcomes, independent of whether they opt to achieve them or not. The distinction between achievements and freedoms is important for well-being and agency, but the discussions on standard of living focus primarily on achievement levels.

This distinction is important because in evaluative exercise one has to ask whether the relevant dimension of advantage is the achieved well-being or well-being freedom. The central claim of the capability approach is that whatever concept of advantage one wants to consider, the informational base of this judgment must relate to the space of functionings and/or capabilities, depending on the issue at hand. Sen's claim is that well-being achievements should be measured in functionings, whereas well-being freedom is reflected by a person's capability set. A focus on agency will always transcend an analysis in terms of functionings and capabilities, and will take agency goals into account.

Sen's writings have articulated the importance of human agency and identified the need for information on agency freedom to inform our evaluation of social arrangements. Quite a few studies indicate that durable poverty reduction or enduring social change occurs when poor persons participate actively in development process (World Bank, 2001). Such is the strength of this finding that it has become a truism to advocate the 'participation' in many dimensions where marginalized groups are able to articulate their legitimate demands and make their voices heard. In Sen's work, the term 'human agency' represents people's ability to act on behalf of goals that matter to them, and this aspect of freedom, he argues, is a core ingredient of positive social change. "The people have to be seen…as being actively involved – given the opportunity – in shaping their own destiny, and not just as passive recipients of the fruits of cunning development programs" (Sen, 1999).

Sen's well-known Dewey lectures, "Well-being, Agency and Freedom" articulate "a moral approach" that sees persons from two different perspectives: well-being and agency. Both the "well-being

aspect" and the "agency aspect" of persons have their own relevance in the assessments of states and actions. Each also yields a corresponding notion of freedom[2]. Sen defines agency freedom as "what a person is free to do and achieve in pursuit of whatever goals or values he or she regards as important" (Sen 1985). The agency aspect is important in assessing what a person can do in line with his or her conception of the good. Unlike well-being, which refers to the person's own state, agency is more general; it is "not tied to any one type of aim. Agency freedom is freedom to achieve whatever the person, as a responsible agent, decides he or she should achieve" (Sen 1985). Sen argues that "persons should enter the moral accounting by others not only as people whose well-being demands concern, but also as people whose responsible agency must be recognized" (Sen 1985).

Agency may be exercised at the individual level, or in groups, or through democratic participation. For example, Dreze and Sen (2002) directly identify participation as an expression of agency, and argue that it can have an intrinsic value. In addition to intrinsic importance and instrumental value Sen argues that joint forms of agency also have constructive importance because the information and perspectives people exchange can change their values and preferences. Sen cites the example of declining fertility rates in India, which have been "much influenced by public discussions of the bad effects of high fertility rates on the community at large and especially on the lives of young women" (Sen 1999).

An 'informational analysis' of Sen's own work would lead to the conclusion that information on human agency – whether agency is exercised individually or together with others – is indeed required for an adequate assessment of social arrangements. Again, an extensive emphasis on the enhancement of human agency necessitates introduction of a related concept "*empowerment*", which has become an universally acceptable agenda for participatory development interventions. We pause briefly here to acknowledge empowerment as a related concept to human agency.

2. A.5. Empowerment

The term 'empowerment' is not one that Sen's capability approach always employs. But it is related to, although not synonymous with, an increase in human agency. The World Development Report 2000/01 draws attention to the "sense of voiceless and powerlessness", poor persons highlighted

[2] Sen's Arrow lectures use instead the terminology of process and opportunity freedoms, with personal process freedoms relating most closely to empowerment. (Sen 2002; Chapter 19-21).

when they discussed social and public institutions. "Those materially deprived feel acutely their lack of voice, power and independence" (World Bank, 2001). The words 'sense of' and 'feel' suggest that empowerment refers to person's own judgments and recurrent emotional states. Such an improvement would have an intrinsic value and would also enable communities to advance their own concerns effectively. This aspect of empowerment could similarly be analyzed using the spirit of human agency.

Empowerment is never defined conceptually or directly in the World Development Report 2000/01 (but rather operationally). "Empowerment means enhancing the capacity of the poor people to influence the state institutions that affect their lives, by strengthening their participation in political processes and local decision-making. And it means removing the barriers – political, legal and social – that work against particular groups and building the assets of poor people to enable them to engage effectively in markets"(World Bank, 2001). This definition suggests that a considerable part of empowerment measurement and evaluation will be associated with the discrete elements of political processes, awareness-raising, decentralization, legal structures, democracy, and so forth that are instrumentally effective in a particular situation. Thus measures of empowerment could reflect the instrumental strength of agency in the relevant spheres. Given the diverse conceptions of empowerment, no attempt was made to choose one. However in many definitions, empowerment is an increase in certain kinds of agency that are deemed particularly instrumental to the situation at hand. One may choose to assume that empowerment is a subset of agency (Alkire, 2005) and that increases in empowerment would be reflected in increased agency (but not necessarily vice versa).

Empowerment cannot be understood separately from an understanding of power. Power, in fact, can be perceived in four forms (World Bank 2001). *power over*- this power involves either/or a relationship of domination/subordination. It is based ultimately on socially sanctioned threats of violence and intimidation and requires a constant vigilance to maintain. It also invites active or passive resistance. The second is *power to*- this power relates to having decision making authority, power to solve problems and can be creative and enabling. The third is *power with*- this power involves people organizing with a common purpose or common understanding to achieve collective goals. The fourth is *power within*- this power refers to self-confidence, self-awareness, and assertiveness. Through this power individuals can recognize by analyzing their experience of how power operates in their lives and gain the confidence to act to influence and change this. To begin with the first interpretation of power as *power over,* a person has to be empowered because that

person is at the wrong end of a power inequality. Hence, the first interpretation gives the rationale to begin a process of empowerment. The second interpretation of *power to* talks of the ultimate stage of empowerment when a person has achieved the capacity to take action. The third interpretation of *power with* reflects on the methods that such a process can be initiated and set into motion, i.e. through purposive collectives. The fourth interpretation of power as *power within* can be interpreted as the sustenance of the process whereby empowerment does not remain limited in intermittent actions and instead can be conceived as the building of capacities to carry out future action in a sustained manner.

In the context of development, empowerment cannot be given to anyone, nor is it a goal that can be reached by an organization or state. It is a process that takes place wherein an inequality moves towards becoming equality. The inequality that has to alter into equality is the inequality in participation in the various processes of development. These can range from education, health services, housing, livelihoods, employment, remuneration; etc. Empowerment is a process whereby constraints that impede equal participation are reduced so that the inequality starts moving towards becoming equality. The next question that comes to mind is, 'what are these constraints which impede equal participation in development processes?' These constraints are most often structural and connected to both the larger environment that the woman finds herself in. Since it is connected to structural constraints, empowerment and the conditions that have to be generated for it are contextual and specific to the location and situation, in all its dimensions- geographical, socio-cultural, and political. That is primarily the reason for the myriad understandings of the term and the fuzziness that affords activists the freedom to interpret and act according to the situation they face in their respective fields.

Empowerment can be advocated through participation in group-activities. Interventions/initiatives through the formation of self-sustaining groups succeed in impacting upon the macro and domestic environments, particularly on the economic and political (both public and private) dimensions. The individual physical space also increases due to her participation in the initiative. However, the socio-cultural environment is the most stubborn and difficult to alter and as a consequence, the socio-cultural space is difficult to negotiate. The cost of an expansion in this space is often high for an individual. That is the reason why collectives and collective action is a more effective vehicle to set a process of empowerment into motion. In recent years, a growing body of literature adopted the capability approach and sought to analyze its links to collective action, empowerment and

community mobilization. In the next sections, we will try to figure out the possible avenues, through which the capability approach can be initiated as an evaluative criterion for collective action. And finally we will introduce a particular form of collective action, Women Self-help group and will analyze the potential of capability framework in evaluating the contribution of such a group-approach.

2. A.6. Groups and Social structures in the capability approach

A major area of dispute among capability theorists relates to issues of individualism, groups and social structures. While some of these debates are publicly available (Gore, 1997, Deneulin and Stewart 2002, Stewart 2004), most of these discussions take place in academic seminars. From these written and oral debates, three claims can be distilled (Robeyns 2005).

1. The capability approach is too individualistic. It does not consider individuals as part of their social environment, as socially embedded and connected to others. Instead, the capability approach works with a notion of atomized individuals.
2. The capability approach does not pay sufficient attention to groups.
3. The capability approach does not pay sufficient attention to social structures.

In what follows, we will analyze each of these claims. We will argue that these claims are questionable, as they are evaluative judgments, not factual judgments and groups and social structures can easily be accounted for in the capability approach, but scholars disagree whether that is sufficiently done.

To scrutinize the critique that the capability approach is too individualistic, we need to distinguish between ethical individualism on the one hand, and methodological and ontological individualism on the other. Ethical individualism makes a claim about who or what should count in our evaluative exercises and decisions. It postulates that individuals, and only individuals, are the units of moral concern. In other words, when evaluating different states of social affairs, we are only interested in the (direct and indirect) effects of those states on individuals. Methodological individualism is often the term used for what is actually explanatory individualism, the view that everything can be explained with reference to individuals and their properties only. In contrast, ontological individualism states that individuals and their properties exist, and all social entities and properties exist, and that all social entities and properties can be identified by reducing them to individuals and

their properties. Ontological individualism hence makes a claim about the nature of human beings, about the way they live their lives and about their relation to the society. In this view, society is built up from individuals only, and hence is nothing more than the sum of individuals and their properties. Similarly, explanatory individualism is the doctrine that all social phenomena can in principle be explained in terms of individuals and their properties.

A commitment to ethical individualism is not incompatible with an ontology that recognizes the connections between people, their social relations, and their social embedment. Similarly, a social policy focusing and targeting certain groups or communities can be perfectly compatible with ethical individualism. The capability approach embraces ethical individualism, but does not rely on ontological individualism (Robeyns 2005). On the theoretical level, the capability approach does account for social relations and the constraints and opportunities of societal structures and institutions on individuals in at least two ways. First, by recognizing the social and environmental factors that influence the conversions of commodities into functionings. The second way in which the capability approach accounts for the societal structures and constraints is by theoretically distinguishing functionings from capabilities. More precisely, choosing functionings from one's capability set requires an act of choice. The capability approach takes into account the influence of societal structures and constraints on those choices. Again, it is difficult to see how the capability approach can be understood to be methodologically or ontologically individualistic, especially since Sen himself has analyzed some processes that are profoundly collective, such as his analysis of households as sites of cooperative conflict (Sen 1990).

The second claim that the capability approach does not pay sufficient attention to groups fails against the obvious existence of a volume of research that looks at the average capabilities of one group compared with another; for example women and men (Kynch and Sen, 1983; Nussbaum 2000). Capability theorists have also written on the importance of groups for people's well-being, like Nussbaum's (1998, 2000) discussion of women's collective in India. Several lists of capabilities that have been proposed in the literature include capabilities related to community membership: Nussbaum (2000) stresses affiliation as an architectonic capability, Alkire (2002) discusses relationships and participation, and Robeyns (2003) includes social relationships. While some capability theorists, like Sen (1999, 2002) have a great belief in people's abilities to be rational and to resist social and moral pressures stemming from groups, other writers on the capability approach pay much more attention to the influence of social norms and other group-based processes on their

own choices and, ultimately, on well-being Alkire, 2002; Iversen, 2003; Robeyns, 2003). There is thus no reason why the capability approach would not be able to take the normative and constitutive importance of groups fully into account. To fully understand the importance of groups, the capability approach should engage more intensively in an interdisciplinary dialogue. Sometimes disciplinary structures make this kind of dialogue difficult, but there is no inherent reason why this could not be done.

There is no reasonable ground to accept the third claim that the capability approach does not pay sufficient attention to social structures since the social structures and institutions can (and generally do) have an important effect on people's capability sets. In addition, the parameters that policy or social change can influence are the means of the capabilities, and hardly ever the capabilities directly. So, for political and social purposes it is crucially important to know the social determinants of the relevant capabilities, as only those determinants (including social structures and institutions) can be changed (Robeyns, 2005). Thus, the capability approach includes these structures in its conceptual framework, although with the clear recognition that these are the means and not the ends of well-being. There is a potential to use the capability approach more in relation with an analysis of institutions, which again would require the approach to reach out into disciplinary terrains that are so far under-explored.

The capability approach considers that the individual has moral rights that cannot be denied without depriving him/her of something of value (Sen 1984). But these individuals, characterized by their set of freedoms, are not really free in the social context, in which they live. This argument refers us to the phenomenological approach, where the subject is viewed as being embedded in social interactions that involve intentionality and obligation towards the others. This opens the way to 'enriching' or 'thickening' the subject in order to reach his/her real and intrinsic 'richness'.

Nussbaum (2006, p.158) goes much deeper into the capability approach. She acknowledges that persons are social animals that are able to share complex ends with others. She writes: "The good of others is not just a constraint on this person's pursuit of her own good; it is a part of her good"; and also "living with and toward others, with both benevolence and justice, is part of the shared public conception of the person that all affirm for political purposes".

Sen (1987a) refers to the concept of agency in order to describe the individual's capability to act. This concept makes it possible to distinguish between the achievement of wellbeing, based on the

capability of improving the individual's wellbeing, and achievement of agency, through the capability to undertake action as a result of commitment. It makes it possible to go further in measuring wellbeing, by introducing the evaluation of moral decisions (Sen 1987b). Agency is thus closely related to the idea of 'commitment'[3]: "Respecting the agency aspect points to the appropriateness of going beyond a person's well-being into his or her valuations, commitments, etc., but the necessity of assessing these valuations, commitments, etc. is not eliminated by the mere acceptance of that appropriateness" (Sen 1987a, p.42). In this way, Sen's vision is similar to that of Giddens (1987), for whom agency indicates the individual's capacity for action. Giddens insists not only on the subject's capacity to act, but also on his or her capacity to project him/herself into this action. Ricoeur (2004) says something similar when speaking of the 'power to act' of the person.

Once Agency has been related to the capability approach, it extends the framework used for the analysis of well-being. Sen acknowledges the issue that arises from the interdependence between the capacity for action and the wellbeing aspect, but prefers to develop the justification for the distinction between the two aspects. In doing this, he integrates agency into his usual approach to capability as freedom, without considering the consequences that interdependence may have for the concept of capability itself. We think that this interdependence does make it necessary to review the subject's freedoms, in terms of internal and external freedoms, and to question the capacity for being responsible, through social networks.

Social networks depend to some extent on the local availability of network contacts, but more on the position of the individual within the local context. Much depends, of course, on what types of contacts one is interested in identifying in a person's networks. If those contacts are relatively rare or not widely dispersed across society, local context may play a larger role in determining whose networks include those contacts. But if, as usually the case, one wants to assess the efficacy of individual's networks, one needs look for the local contexts along with the individual's position within the local community.

Self-help is seen as an inexpensive network for providing vital community services. As an ethos, a Self-help Group (SHG) symbolizes community initiatives to tide a problem over and achieve a level of self-sufficiency. It is a concept that has evolved over time all over the world and the journey has

[3] By refering Edgeworth's work, Sen makes a distinction between commitment and compassion (Sen 1977). See also Collard (1975).

been at several levels- from labor/kind/premonitory currency to cash; from non-financial to financial groups; from rotating to non-rotating patterns; from short-lived to semi-permanent or supposedly permanent groups; and from savings-only to savings-driven credit groups. SHGs have been increasingly promoted for their positive economic impact and the belief that they empower women. Women empowerment takes place when women challenge the existing social norms to effectively expand real freedoms in terms of operational space that they enjoy. The enhanced empowerment would certainly contribute towards higher capabilities and so the ultimate success of a SHG-program will lie on the extent to which the achievements of the social agents could be upgraded. The Capability approach by focusing on what people actually can do makes visible the inequalities women suffer in the family and outside environment and the complex connections between the two and a poor woman's own sense of worth. The next section will analyze the causal connection between women empowerment and capability-enhancement to bring out the central capabilities into consideration.

2. A.7. Women Empowerment and Capability Enhancement:

Empowerment is the most frequently used term in development dialogue today. It is also the most nebulous and widely interpreted of concepts. Advocates of group-approach claim that the very process of forming self-help groups is empowering and a critical mass is formed which can be harnessed to pull households out of poverty traps. The corresponding side of the debate around this issue is that, the same critical mass can be usurped by larger political and economic interests to promote their own mandates, by which women become instruments and are further disempowered. Further empowerment cannot be achieved just through handling of money since credit itself does not bond women together enough to unleash the process of empowerment. Other social and development concerns are required to cement groups so that they can metamorphose into vehicles of empowerment.

Empowerment leads to enhancement of social space of the individual in different forms (World Bank, 2001) by encouraging her to attain *power within* through social networking (*power with*) and enhancement of her quality of life (*power to* perform certain acts). But it is not necessary that when spaces expand, it will always contribute favorably in the process of empowerment, at least in the immediate run. When group participation is evaluated for its impact upon women empowerment then one has to pay attention to whether it is instrumental in expanding spaces in women's lives and how much does that expansion lead to a reduction in the inequalities that impede equal participation

of women. While a constriction of spaces implies a lack of power in all the dimensions, an expansion of space alone does not necessarily imply empowerment. The expansion of space is necessary but not sufficient for the enhancement of empowerment(Deshmukh-Ranadive, 2002). For example an intervention like micro-finance, which has given a wider economic space to a woman, does not necessarily empower her, since she may not have any control over that income. It may even lead to an increase in domestic violence as has been found in some case studies in Bangladesh (Goetz and Gupta, 1996).However if the intervention could have increased her levels of confidence and self-esteem, then a process of empowerment would have been unleashed. Sometimes before an action is taken, the very mental decision on the part of the person to act instills a feeling of confidence. What actually has to expand first is one's mental space.

The most important condition for women empowerment to take place is an expansion of her mental space. Expansion of mental space of women necessitates an enhancement women's autonomy. The centrality of *Autonomy* as a basic human capability lies in choice and responsibility. Understanding a woman's choice and her responsibility for the outcomes of the choice she makes are crucial for conceptualizing women autonomy. But to execute autonomy, information works as an important source of power as well as instrument. Most often in developing countries, women are oppressed because they are illiterate and do not have access to *Knowledge* capability. Attainment of *Knowledge* capability plays an important role to unleash the process of empowerment through a proper understanding of both the structures of power within which a life is placed and rights and duties as citizens of a civil society and also as members within families.

Finally the status of physical health has an important role in shaping the process of empowerment and it is a well-know fact that South Asian women do not have the same life advantages as their Western counterparts. Individual and societal beliefs about and attitudes towards appropriate gender specific roles, and the choices of individuals and households on the basis of these factors, mean that women are disadvantaged with regard to *Health* capability. Gender inequalities have led to a systematic devaluing and neglect of women's health. Early marriage and pregnancy, anaemia, sexual violence and poor educational opportunities all contribute to ill health among women. As more women survive into old age, the role of gender differences among older adults will become more important. Women experience greater ill health and a loss of activities of daily life as they age. The combination of ill health and lack of support mechanisms contribute to a poor quality of life. So, the capabilities most relevant in the context of enhancement of empowerment are *Health, Knowledge*

and *Autonomy*.[4] Once the capability approach has been identified as a promising criterion for assessing the empowerment-potential of Women SHGs and the basic capabilities, under interrogation, have been identified, our task remains in *operationalizing* this approach in an appropriate way. Part B explores the operational aspect. Two key issues in operationalizing the capability approach has been considered; section B.1 addresses multidimensionality and section B.2 focuses on the interdependent nature of capabilities. But the capabilities are essentially unobservable and this very nature of capabilities initiates a discussion on unobservable/latent variable modelling in section B.3. Finally section B.4 explores the empirical approaches to measurement to arrive at an appropriate model. The last chapter concludes.

2. B.1. Approaching the Multiple Dimensions

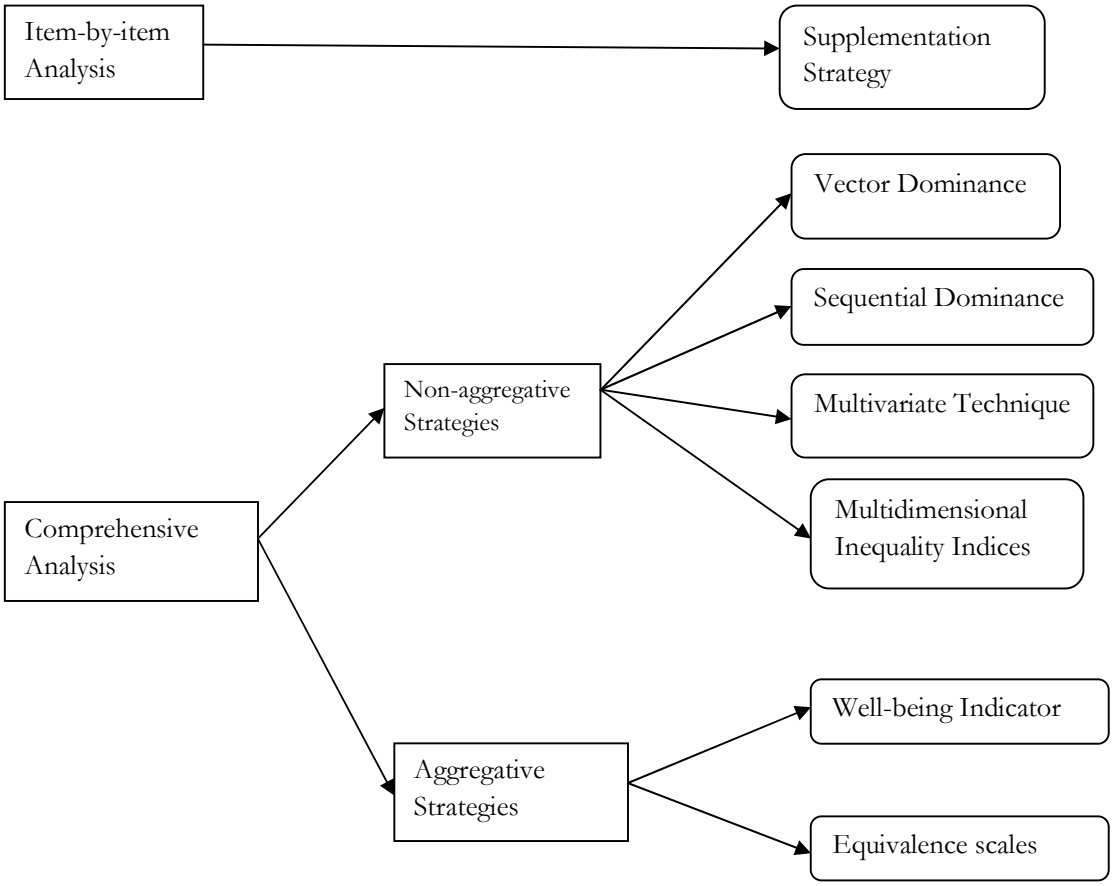
In any empirical application of the capability approach, a fundamental decision concerns the way to deal with the multiple dimensions of well-being Strategies vary according to the purpose of the analysis and the main distinctions between the possible strategies relate to whether the functionings are investigated singly or comprehensively and whether multidimensionality is retained or collapsed into synthetic indicators. Figure 2.1 tries to portray a broad classification of possible strategies.

In Sen's *supplementary* strategy indicators of standard of living are considered in conjunction with the information on the distribution of incomes (or other indicators of monetary resources)[5] and no attempt was made to reduce complexity, and functionings are examined one by one. The attention is directed not only at their univariate features, but also at the pattern of cross-correlation (the latter may be quite important in revealing whether income poverty compounds with other deprivations, or it is instead associated with better achievements in other relevant dimensions). The advantage of this strategy rests on its simplicity: it imposes little structure on the phenomena under examination and has measurement requirements less demanding. The disadvantage, especially in the presence of a rich information set about people's standard of living, is the lack of synthesis and the difficulty of drawing a well-defined unitary portrayal.

[4] This is essentially my own pick from the Nassbaum's list of cenral human capabilities, with some aggregation to bring out three central capabilities.

[5] Sen's own studies of the gender discrimination in the allocation of food within Indian families (1985) and of the mortality figures as indicators of social inequality and racial disparity (1998).

Figure 2.1: Strategies for the application of the capability approach



The task of the alternative comprehensive non-aggregative strategies is to make comparisons on the basis of the entire vector of functionings. There are different ways of approaching the problem. Examining some basic average functionings for about 130 countries, Gaertner (1993) reported that vector dominance held in at most a quarter of the comparisons between any two countries chosen from politically or economically homogenous groups, though it held in roughly 90 per cent of the of the comparisons between a country in the richest group and one in the poorest group. The sequential dominance analysis has been used by Atkinson and Bourguignon (1987), Atkinson (1992) and Jenkins and Lambert (1993) to address the issue of comparing income distributions when family needs differ, while relaxing the distributional judgements implicit in the standard solution of using

an equivalence scale. In one of the few empirical applications of the capability approach, Scokkaert and Van Ootegem (1990) employed factor analysis to identify the functionings of a group of unemployed Belgian. But it did not guarantee that the list of functionings was complete and it did not provide any information about the relative valuation of the functionings. Tsui (1995) proposed the inequality indices and Bourguignon and Chakravarty (1997) developed multidimensional povert indices but these are observationally equivalent to a fully aggregative strategy.

A major alternative in applying the capability approach is to pursue a fully aggregative strategy, i.e. to construct one or more summary indicators of well-being. This strategy is more structured and requires a proper weighting structure in the measurement of functionings and capabilities. The main strength of this strategy rests on its being operational and rather effective in summarizing complex problems in a simple and comprehensive way. This communicational advantage is well represented by the popularity of the Human Development Index (HDI; UNDP, 1995). But Sen himself resisted aggregation as to much get lost in the process of aggregation. "The passion for aggregation makes good sense in many contexts, but it can be futile or pointless in others…When we hear of variety, we need not invariably reach for our aggregator" (Sen, 1987:33) Again a strong resistance to the construction of a "simple ordered indicator of level of living" was expressed in the Scandinavian approach (Erikson, 1993:75).

The choice among these different ways of dealing with the multidimensionality of the capability approach depends on both the purpose of the study and the nature of the data. Again the capability approach not only emphasizes multidimensionality, the incidence simultaneity and interdependence between capabilities has always been a key feature to be considered in operationalizing this approach. The next section puts forward this issue.

2. B.2. The Simultaneous Nature of Capabilities

Capabilities are the feasible choices that one faces in life and functionings are the outcomes. Therefore it is not difficult to imagine that there could be more than one achievement level for the same capability level. Take education for instance. The capability in this field is given by the freedom to increase one's analytical ability through acquisition of knowledge that may in turn be facilitated by access to a good school. One person may exercise the freedom by actually going to school and getting educated whereas another may use the same choice in not going to school due to various reasons. Thus, we need a framework in which the same level of capability can give rise to different

outcomes depending on external factors (individual, social and environmental) influencing the decision-making process. Formally, this would mean that some exogenous variables need to be added in the system of equations linking the observed response (functioning) to the latent capability.

The same example may be extended further to get an idea about the nature of these exogenous factors. Considering the ***education*** in a developing country (especially in rural areas), the opportunity cost calculation in terms of participation at household chores or in the field could play a role in deciding whether to send the child to school or not, independent of the availability of a school in the village.[6] Here we take the view that there is a choice but it is restricted by family compulsions. Another crucial element which comes into play in most developing countries is the gender of the child. Unfortunately it is still not uncommon that only boys are given proper education in certain traditions and girls are excluded from the process as boys are seen as decision-makers who participate in broader social platform (Datta 2009). On the other hand, the family can also give importance to the non-monetary benefits of education (of its children) which will lift its status in the society as learned persons always command more respect.

Next, let us take health. None can deny the significance of good health as an important constituent of one's well-being. Being healthy is not only an integral part of welfare but also acts as an instrument in enhancing one's capacity to work and earn a living. However all individuals may not react the same way when faced with a health issue. Even assuming that adequate means and infrastructure exists and are equally accessible, people may choose different options depending on circumstances. Some may go to a public health centre, some to a private one. Some may not avail these professional services but instead may follow a more traditional route of consulting a family/social guide in this matter, a custom still prevalent in many places, more so in rural areas. In such situations, there is bound to be a difference in the result given the same choice depending on one's own convictions, social traditions, and family practices.

Taking a different angle, one can argue that education brings about a better awareness of health issues and enables one to think of options that may not have even been part of the choice set otherwise. This is actually equivalent to saying that it increases the range of choice, i.e. the capability set itself. For instance, it is well-known that educating a mother has a direct impact on her own and

[6] Though there is a subtle point that the child may not have the choice here, it is beyond the scope of the present analysis.

her children's health and well-being (Murthi, Guio and Dreze(1997)) meaning that there is clear interaction between education and health. Thus improving one capability can affect another in a favourable manner implying that capabilities are interdependent and this property should be included in the analytical frame, we are trying to develop.

One can go on and on with many other arguments to support the case for the interdependent nature of capabilities but we believe there is no further need to elaborate on this. Not only do capabilities interact among themselves but also with other elements representing the socio-political setup. For some elements belonging to latter group, there are feedback effects (thus making them jointly dependent) whereas for others the causal link operates in one direction (making them purely exogenous).

But capabilities by definition cannot be directly measured. What can be measured, however, are the functionings namely the achievements in each dimension. These achievements are generally identified by proper indicators reflecting the performance in the associated dimension. There could either be one indicator or as is more often the case a whole range of indicators available for each capability dimension. In other words, one normally has a vector of functionings rather than a scalar indicator corresponding to each domain.Besides these each capability gets affected by a bunch of socio-economic factors like age, marital status, caste, religion and relationship with the household head. Having established the interdependent nature of the underlying latent capabilities and the observed nature of the outcomes or functionings, it is fundamental that we maintain both sets of variables in our model and link the two through a set of relationships. These will complete our analytical setting while paying heed to our concern for differentiating between capabilities and functionings. The following chapter briefly reviews the latent variable modelling to derive the appropriate prerequisites to model capabilities as latent variables along with the observed functiongs.

2. B.3. Latent Variable Modelling

Latent random variables represent unidimensional concepts in their purest form. Other terms for these are unobserved or unmeasured variables and factors. The observed variables or indicators of a latent variable contain random or systematic measurement errors, but the latent variable is free of these. Since all latent variables correspond to concepts, they are hypothetical variables. Concepts and latent variables, however, vary in their degree of abstractness. Some latent variables are highly abstract and are capable of being only indirectly measured while some less abstract latent variables

are directly measurable. An example containing both types of latent variables is Emile Durkheim's hypothesis of the inverse relationship between social cohesion and suicide. Social cohesion refers to group solidarity, a fairly abstract latent variable. Suicide is directly observable. But this direct-indirect demarcation becomes blurred when one considers that some suicides are disguised or misclassified as some other form of death. Thus the measurement of suicide may not be as direct as it initially appears.

Measurement is the process by which a concept is linked to one or more latent variables, and these are linked to observed variables. Latent variables are the representations of concepts in measurement models. Once a concept is selected or devised, the four steps in the measurement process are (1) give the meaning of the concept, (2) identify the dimensions and latent variables to represent it, (3) form measures, and (4) specify the relation between the measures and the latent variables (Bollen, 1989).

The first step is accomplished by developing a theoretical definition. A theoretical definition explains in as simple and precise terms as possible the meaning of a concept. It performs several useful functions. One is that a theoretical definition couples a term and a concept by detailing the specific denotation assigned to a term. Second, it clarifies the dimensions of a concept. Dimensions are the distinct aspects of a concept. They are components that cannot easily be subdivided in to additional components. Since many concepts have numerous possible dimensions, a definition is critical to set the limit on the dimensions a researcher selects. Third, a theoretical definition provides guidance in the selection of measures. Thus a theoretical definition provides the meaning of the concept, links a term to a specific concept, identifies its dimensions and the number of latent variables, and sets a standard by which to select measures.

The next step in measurement, to form measures, depends on the theoretical definition. This is sometimes referred to as the operational definition. The operational definition describes the procedures to follow to form measures of the latent variables that represent a concept. This operational definition or measure is appropriate to the extent that it leads to an observed variable that corresponds to the meaning assigned to a concept. But often the information is not complete and a considerable element of judgement must enter classification decisions. These and other factors lead to random and non-random errors in measures. Virtually all measures contain such errors and

to formalise these types of errors a model is formed to capture the relation between the measure and latent variables.

But the historical emphasis in the discipline of econometrics is placed on models without measurement error in the variables and instead with stochastic "shocks" in the equations (Wansbeek, 1984). For a classical single-equation regression model, measurement error in the dependent variable causes no particular problem because it can be subsumed within the equation's disturbance term. The presence of measurement error in the dependent variable does not alter the properties of least squares estimates of regression coefficients. But the variance of the measurement error remains hopelessly entangled with that of the disturbance term. The measurement error in the dependent variable remain unaddressed since "the reader will usually be convinced of the futility of consistent parameter estimation in such instances unless repeated observations on dependent variables are available at each data point or strong a priori information can be employed" (Wansbeek, 1984).

Structural equation modelling can deal with measurement error in both endogenous and exogenous variables. A part of the endogenous variables is in itself unobservable (latent), but can be imperfectly measured by a range of indicator variables. The full model corresponds to a regression model where both dependent and independent variables may be measured with error. We consider a particular form of structural equation modelling, called Multiple Indicator Multiple Cause(MIMIC) model which is useful in addressing all the three measurement issues : 1) it works within the multidimensional framework and considers a mixture of both aggregative and non-aggregative strategies ;even if achieved functionings have been considered in a non-aggregative fashion, their contribution in constituting the latent capability leaves room for aggregation in the space of capabilities, 2) it maintains the simultaneous and interdependent structure by its very nature: and 3) considering capability as a latent variable, manifested through a set of observed achieved functioning and the influence of several exogenous causes affecting capabilities pays proper attention to the analytical structure of the capability approach. The next section will briefly review the various empirical approaches in operationalizing the capability approach. Most of them approached to the measurement of functioning but the gradual development of this literature ended up at a typical MIMIC-model where the latent capabilities are constituted by several achieved functionings (reflected through measurable indicators) and the effect of several socio-economic causes (conversion factors) are taken into account.

2. B.4. Empirical Approaches to the Measurement

Linear measurement models decomposing manifest variables into hypothesized unmeasured variables have been well-studied in econometrics (Lawley and Maxwell, 1971). When the unmeasured variables are linear combinations of manifest variables, such as principal components, they are measurable, but when the unmeasured variables span a space of greater dimensionality than the space of manifest variables, as in factor analysis, they are not measurable or determinate (Williams, 1978). In that case, they are appropriately called latent variables (Bentler, 1980). Models that combine simultaneous equations and measurement models into interdependent multivariate linear relations have only recently been proposed and applied, but their impact on psychology and other social sciences promises to be substantial (Aigner and Goldberger, 1977; Bentler, 1980; Bieby and Hauser, 1977; Joreskog, 1978). In these developments, no consideration has been given to measurement models that are more complex than the simple factor analytic model, yet it is easy to consider combining higher-order measurement models, such as Joreskog's (1973) second-order model relating manifest variables to two levels of common factors, with a latent variable simultaneous equation system. Furthermore, although several models and estimation methods have been discussed (Hausman, 1977; Hsiao, 1976; Geraci, 1977; Robinson, 1977), only Joreskog-Keesling-Wiley model (1977) and Weeks' (1978) model and estimation methods seem to have been developed to the process of applying to data. The partial least squares or soft modelling approach with unmeasured variables is also available for application (Wold, 1979), but in this approach the unmeasured variables are actually derived compounds of manifest variables.

The MIMIC model (Joreskog and Goldberger, 1975) represents a step further in the explanation of the phenomenon under investigation as it is not only believed that the observed variables are manifestations of an underlying unobserved latent concept but also that there are other exogenous variables that *cause* and influence the latent factor(s). In the MIMIC approach each of the indicators is assumed to be a component of functioning and capabilities, as latent variables, are linked to the observed indicators. In separating causes from indicators, the MIMIC approach brings more structure to bear on the problem than do the comparatively unstructured principal components and simple factor-analytic models. The MIMIC approach allows us to think of this model as comprising two parts: a structural equation shows how the latent variable is estimated through the observed

indicators and a measurement equation that takes into account the causal link among the latent variables and the observed causes.

In this dissertation, for studying empowerment-enhancing potential of Women SHGs in a capability space, we consider both latent capabilities and their observed manifestation in achieved functionings. Therefore, we employ a MIMIC-type structural equation model, which is more capable in capturing the analytical structure of the capability approach in a comprehensive way than other methods like scaling and factor analysis and principal components etc.

The method of scaling, as exemplified in the construction of HDI, represents an individual's functioning as a proportion of the maximum achievable functioning level. It is obtained by deducting the minimum possible score from the individual's achieved score and by dividing the difference by the range of the score. However, the method of scaling suffers from two main limitations. First, scaling can address functionings and not capabilities. Second, in scaling, the problem of measurement error is treated in an ad hoc way. If the analyst believes that a certain indicator does not appropriately represent a functioning, several indicators are combined to represent a functioning under the assumption that the measurement errors in the single indicators cancel each other out. For example, in the calculation of the Human Development Index (HDI), the functioning of being well-educated is represented by the arithmetic average of the adult literacy rate and the school enrolment rate. Usually, the weights are chosen in accordance to the analysts' values and do not use any statistical information contained in the data. In scaling, the problem of aggregating several functionings of individual to a composite welfare measure is solved by combining the different functionings in an ad hoc way by deriving a weighted average of individual functionings. Again, the weights are chosen in accordance to the analyst's values. In case of the HDI each of the functionings receives the same weight of $1/3$[7].

[7] The method of scaling assumes perfect substitutability between the functionings: an individual can trade off her welfare in terms of health and education with an infinite elasticity of substitution. Fuzzy sets theory as applied in the empirical capability literature is an extension of the method of scaling. It was pioneered in this area by Chiappero Martinetti (2000) and has been applied by Lelli(2001) and Qizilbash (2002). It extends the method of scaling in two respects. First, it introduces flexibility in projecting the indicator variable into a 0-1 interval by allowing for nonlinear projection functions such as a sigmoid function. By allowing for different weighting schemes, the use of fuzzy sets provides more flexible substitution patterns between functionings. For example the arithmetic average is sometimes replaced by a Liontief Function (Kuklys 2005) and in this case as the assumed elasticity of substitution between the functionings is zero, no trade-off takes place between functionings.

Principal component and factor analysis also avoid the above-mentioned problems of scaling[8]. In both methods, capabilities, understood as latent variables, are estimated as linear combinations of observed indicators. Second, the problem of measurement error is treated explicitly in principal components and factor analysis. Instead of assigning arbitrary weights to indicators as in the scaling method, in principal component and factor analysis, the weights are derived from the variance of the indicators themselves. If the variance of each variable is interpreted as an indicator as to how informative it is with respect to the latent variable, the combination based on weights derived from this variance may be interpreted as statistically optimal. Factor analysis or principal component analysis can also be applied to aggregate several functionings to a composite welfare index. In this case, the aggregation weights are based on the covariance or correlation matrix of the functionings. The weights are not arbitrarily chosen by the analyst, but determined by the data[9].

Structural equation models are preferred to both scaling and principal component and factor analysis for the following reasons. First, like principal components and factor analysis, structural equation models allow us to measure latent capabilities using observed indicators. Second, in structural equation models, as in principal components and factor analysis, the weights are derived from the system by considering the entire variance-covariance matrix of measurement errors, unlike scaling which takes into account only variance. Finally, a MIMIC-type structural equation model can incorporate exogenous causes that influence latent variables in addition to explaining observed indicators in terms of latent variables.

But our final aim is to arrive at the empowerment-enhancing potential of Women SHGs in a capability space. For that we propose a structural equation (measurement) model to estimate the

[8] Principal component and factor analysis have a long tradition in multidimensional welfare measurement (Kukleys, 2005) In the capability literature confirmatory factor analysis has been first used by Schokkaert and Van Ootegem (1990) and has been applied by many researchers like Balestrino and Sciclone (2000) and Lelli (2001); principal components analysis has been used by Klasen (2000) and Maasoumi and Nickelsburg (1988). These methods are particularly well suited to deal with measurement error.

[9] Buiding on contributions by McGee and Carlton (1970), Piccolo (1970) and Hobijin and Franses (2000), Hirschberg, Massoumi and Slottje (2001) developed time series clustering as a method for measuring and aggregating functionings. This method may be interpreted as a generalisation of exploratory factor analyses. As with the exploratory factor analyses, the aim is to explore the data to find clusters of functionings indicators which represent the same functionings: it extends exploratory factor analyses in the sense that it uses the statistical information contained in the entire distribution, not only the covariance or correlation matrices of the data. The focal point of their analysis is the identification of functionings in the data set that have statistically similar distributions.

Empowerment Index, an unobserved phenomena in terms of estimated capability scores, obtained from the MIMIC model, mentioned above. The regression coefficients of the measurement part of the MIMIC model work as weights in constructing the estimated capability scores as weighted averages of indicators. The constituents of latent empowerment index are the estimated capability score of each category, Health, Knowledge and Autonomy and we will consider a structural equation (measurement) model to bring out the influence of each capability score in constructing the latent empowerment index. The regression coefficients, derived from this model will provide the extent of influence of each capability-score in generating a quantifiable measure of empowerment, namely the Empowerment Index. The contribution of SHGs to the pursuit of women empowerment will then be assessed by comparing the (average) empowerment index, so obtained, of different categories of participation. Chapter 4 gives details of this exercise.

Concluding Remarks:

This chapter explores the candidature of the capability approach for being an evaluative criterion to assess the empowering potential of women self-help groups. It keeps the strong analytical foundation of the capability approach in reviewing the scope of analysis of groups and social structure in the capability framework. Finally the chapter scrutinizes women empowerment through capability enhancement and emphasizes the potential of women self-help groups to advocate this process.

The second part of this chapter reviews the operationalisation possibilities of the capability approach in order to find out an appropriate methodology to be used to assess women capabilities(and hence empowerment) to derive a judgmental basis for different categories of (group)participation. Along with multidimensionality and interdependence, the unobservable nature of capabilities necessitates a unique form of modeling which will be capable of accommodating the latent nature of capabilities and estimate them. This chapter reviews several latent variable modeling and argues in favor of the Multiple-Indicator-Multiple-Cause (MIMIC) model, where it is not only believed that the observed variables (functionings) are manifestations of an underlying latent concept(capabilities) but also there are other exogenous variables that cause and influence the latent capabilities. MIMIC-estimates enables us to arrive at some quantifiable measure of capabilities which in turn are used to derive a measure for empowerment so that empowering-potential of women SHGs can be assessed by comparing empowerment-achievements of different forms of participation.

But the difficulty lies in the fact that the capability approach as such contains no normative theory of choice. But it is quite possible to use functionings (and capabilities) as the evaluative space in combination with many different normative accounts of choice. For example, despite Sen's repeated criticism on choice as revealed preference, one could in principle make interpersonal comparisons of functionings assuming revealed preference theory. An evaluative exercise in the space of functionings and capabilities will lead to different results depending on whether it embraces these constraints on choice or not. Again the capability approach shows to be a mode of thinking instead of a fixed formula: for example, the normative analysis could be conducted under different assumptions about the constraints of choice and the normative results could be compared to see how sensitive they are with regard to the underlying assumptions. By giving choice such a central position and making its place in well-being and social justice evaluations more explicit, the capability approach opens up a space for discussions on how certain choices are constrained by societal mechanisms and expectations. So quite naturally any application of the capability approach will inevitably be confronted with difficult questions on the nature of choice. This makes the capability approach considerably more complex if one wants to acknowledge these tensions. The existing methodologies have been inadequate in formalizing these tensions and so is the MIMIC model. Nevertheless it tries to accommodate the essence of social choice by considering the role of socially structured causes in influencing capabilities.

Chapter 3

Field Investigation: Primary Survey

3.1 Selection of Sample Blocks:

West Bengal is a particularly compelling place to study the empowerment-enhancing role of women SHGs. Sharing both a border and language with Bangladesh, the state is influenced by the long history of microfinance programs. At the same time the government and the non-governmental organizations of West Bengal have developed a unique format for a women-focused microfinance SHG movement. SHGs have proliferated in recent years and the government is relying on grass-root development through decentralized planning. For social capacity-building in decentralized planning process, this SHG program is an inexpensive development strategy.

West Bengal has achieved considerable success among the states of the eastern region in India in terms of the number of SHGs provided with bank loan, the amount of bank loan disbursed during the year 2004-05 and the number of partner agencies associated in the Bank-SHG linkage program (NABARD, 2005). Again given the under-performance of co-operative banks in the Bank-SHG linkage program all over India, in West-Bengal the picture has been quite different. Almost half of the SHGs (46.68 %) have been promoted and financed by co-operative banks. To study the influence of SHG-participation in enhancing the overall capability of recipient women we have selected two districts of West Bengal: Hooghly and South 24-Parganas. In Hooghly cooperative culture is strongly grounded through the active existence of Primary Agricultural Credit (PACS) Societies at the block level and all kinds of cooperative societies, viz., Central Bank, Primary Land Mortgage Banks, Agricultural Credit Societies and Non-agricultural Credit societies have expanded exponentially in terms of their number of members and working capital over the period 2004-2005. All credit and non-credit societies have been reported to achieve a 12 % increase in the working capital in the year 2004-05 compared to the previous year. The other district selected is South 24-Parganas, which is specifically characterized by the absence of co-operative movement and all credit and non-credit societies have been reported to suffer from a 11% decline in working capital during 2004-05.

The sample strategy was to choose respondents at the block level. The members of the control group were chosen to reflect a comparable socio-economic group as the SHG-member respondents. They share the same economic and infra-structural facilities, but did not join the SHGs. Again the duration of membership is expected to have an impact on the realization of benefits from group activity. Keeping that in mind the treatment group has also been divided into two subgroups: group-members for more than five years (Old Group-members) and those who have been participating in SHG activities for less than two years (New Group-members). The total number of response collected is 1500. Out of them 1200 are self-help group members (Treatment group, 600 from each district) and 300 respondents are non-members (Control group, 150 from each district). Within the treatment group 600 respondents are Old group-members and the rest 600 are New Group-members.

The SHG-based micro-credit programs are mostly designed to help the under-privileged people in rural West Bengal to manage their situation better through enhancement of social support and mutual cooperation. Hence, within each district, blocks are ranked according to the percentage of small and marginal farmers in total population to reflect their economic condition and the percentage of population involved in cooperative societies to indicate the extent of group culture. The ranks so obtained are combined with 2/3rds and 1/3rd weights to generate the final rank. According to the final rank, all the blocks in each district are classified in to three groups: precondition of SHG intervention prevails with high intensity, moderate intensity and low intensity and from each group one block is selected at random to collect field-level information. From each block a sample of 250 adult women are selected with 40% old-member, 40% new-member and 20% non-member, respectively. The selected blocks in the district Hooghly are Pandua (high), Tarakeswar (moderate) and Chanditala-I(low); similarly in South 24-Parganas the corresponding blocks are Baruipur, Canning-I and Sonarpur respectively.

3.2. Questionnaire

The questionnaire in this context has been designed to capture information related to socio-cultural factors like marital status, caste, religion, relationship with head of the household, living condition, occupation of the respondent along with her status with respect to SHG-participation. The influence of all these factors were studied on functionings related to capabilities like health, knowledge and

autonomy. In most of the cases the variables are categorical in nature and defined as qualitative attributes on an ordered scale.

Health:

- To ascertain the health status, information is collected on both general health and reproductive health. In case of general health emphasis was laid on overall health perception, manifestation of physical disorder like pain and discomfort, deficiency of vision, etc., mental disorder like anxiety, depression, insomnia, etc. and finally the quality of functional health assessed in terms of mobility and self-care.
- Since all these attributes are subjective in nature as a basis of objective evaluation, information is collected on food and nutritional intake in terms of consumption of cereal, pulses, fruits and vegetables, animal and milk protein, and so on.
- Information of reproductive health was collected from three different angles: (a) number of live birth and abortion along with availability and quality of institutional facilities, (b) awareness regarding possibility and types of contraception and finally, (c) extent of participation in conjugal decisions. While the first aspect was incorporated in assessing health status, the second one was used to evaluate knowledge capability and the third one was utilized in verifying autonomy-status along with information on decision-making in other spheres of life

Knowledge:

- On education, information was collected on both achieved literacy and functional literacy. If the education is terminated, the causes of termination have been interrogated. Information is collected on the family-tradition in respect of guardian's educational status, where the guardian may be father, mother, husband or head of the household. However, the quality of life depends not on the acquired knowledge but on applied knowledge. Hence, a number of questions were asked on functional literacy in terms of ability and frequency of reading and writing in day-to-day life.

Autonomy:

- To assess autonomy a distinction is made between actual participation in decision making and a sense of participation in decision making. It is interesting to observe that the rank-order of these two dimensions may not always tally.
- Information is collected on (1) decisions taken on one's own self, like obtaining healthcare, spacing between two children, place of delivery of children, etc., (2) decisions related to day-to-day running of the household like items to cook, items to purchase, etc.,(3) those related to the purchase of durable goods like livestock, jewellery, etc., (4)decisions involving relationship of the head of the household with greater society like purchasing gifts for others, visiting and staying with parents or siblings, etc. and finally (5) for the working women, an additional question was asked related to the autonomy enjoyed over their own earning.

SHG-participation:

- In case of involvement with SHGs, information was collected on both members as well as non-members. For members questions were asked regarding the length of membership, quality of participation and intensity of involvement, types of projects undertaken, status with respect to loan repayment and the possibility of group-switching.
- On non-members the main focus was placed to locate the root causes of non-participation. Their perception about ideal group and its functioning was also noted.[10]

The questionnaire was translated into Bengali by a professional translator. The draft was pre-tested in the field and repetitive questions were dropped to optimize on the length of the questionnaire. Substantive revisions were made in the design and flow of questions based on pre-testing exercise. Minor changes were also made in the translations to ensure that the questions reflected the intended meanings. It must however be noted that with the binding time constraints for the field work, the questionnaire was pre-tested on only hundred women.

[10] The entire questionnaire is appended in Appendix.

3.3. The Sample Characteristics

Table 3.1 below represents sample responses on the extent of deprivation in terms of lack of capabilities.

Table 3.1: Sample Response on lack of Capabilities

		District: Hooghly			District: South 24-Parganas		
Capabilities	**Dimensions**	**Pandua**	**Tarakeswar**	**Chanditala-I**	**Baruipur**	**Canning-I**	**Sonarpur**
Health	Overall Health	40	61	34	47	64	48
	Mobility	34	40	20	39	17	19
	Eye Sight	26	21	8	29	20	20
	Anxiety/Stess	37	34	30	38	31	27
Knowledge	School attendance	39	28	16	44	29	23
	Education termination	50	38	44	54	52	45
	Mother illiterate	78	74	43	60	67	65
	Father illiterate	52	44	30	34	30	29
Autonomy Achievement	Cooking decisions	25	18	11	16	11	16
	Healthcare decisions	38	20	20	41	36	19
	Decision related to purchase of durables	40	54	23	40	42	20
	Decision related to construction and maintenance of house	54	40	23	52	42	33
Autonomy Perception	Cooking decisions	43	57	45	38	21	54
	Healthcare decisions	40	54	41	32	28	56
	Decision related to purchase of durables	44	53	43	52	44	37
	Decision related to construction and maintenance of house	46	51	39	51	44	32

Source: Primary survey data

In all sample blocks the average age of respondent varies between 30 to 34. In the district of Hooghly, in terms of self-assessment of overall health-status Chanditala-I is faring much better than Tarakeswar and Pandua. In these latter two blocks respondents have severe undiagnosed eye-problem (may be due to lack of adequate availability of diagnostic facilities) and their functional health in terms of fitness and mobility is also not that good. The situation is distinctly better for Chanditala-I. However, the percentage of affected respondent in terms of mental stress, anxiety and insomnia is almost same everywhere (between 30 to 35%).

In South 24-Paraganas, all the sample blocks exhibit severe deprivation in terms of overall health-status and the situation seems to be worse in Canning-I, whereas functional health-status in terms of fitness and mobility has been reported to be worse in Baruipur compared to the other two blocks. Again, in all the sample-blocks of this district, respondents have undiagnosed eye-problem and overall deprivation contributes to problems of mental stress, anxiety and insomnia in severe magnitude, leading to a considerable percentage of affected respondents in all the blocks.

Chanditala-I being closest to Dankuni, a developed township of Hooghly, is relatively advanced one with school attendance rate as high as 83.6 % as opposed to Pandua, a remote rural block with 61.2% school attendance among the respondents. Tarakeswar is more rural than Chanditala-I and more urban than Pandua with school attendance rate of 71.6%, almost the mid-way in between the other two extremes. However, quite surprisingly the "education termination" rate[11] in all these three blocks is generally 40% and above. Parents' literacy rate is the highest in Chanditala-I and lowest in Pandua.

Baruipur, being the most rural block in South 24-Parganas, is the worst performer in school-attendance rate among the three sample-blocks of this district. The district of South 24-Parganas exhibits a bleak picture as the 'education termination rate' is more than 45% in all three sample-blocks. Parent's literacy rate is almost equal in all three blocks and the phenomena of 'mother's illiteracy' seem to be severe in this district (over 60% in each block).

Autonomy combines response to a number of different questions related to both actual participation in decision-making and sense of participation in decision making. In Hooghly, in terms of the former situation in Pandua is the worst whereas in terms of the latter both Tarakeswar and

[11] Each respondent was asked the cause of dropping out of school and in most cases it turned out to be involuntary termination due to marriage or need for care services within the household.

Chanditala-I are revealing a deeper sense of non-participation. Though only 18% respondents of Tarakeswar and 11% of Chanditala-I reported an external intervention in respect of day to day cooking decision, nearly 57% of them in Tarakeswar and 45% in Chanditala-I feel that some undefined pressure always influences their actual decision. So, even after carrying out their own decision in their own kitchen most of them are not enjoying the true feel of autonomy. The same pattern is observed in case of decisions related to personal health care, purchase of durables in the household, repair and maintenance of housing property and so on.

The difference between actual achievement and perceived sense of autonomy is more visible in the sample-blocks of South 24-Parganas, but actual achievement is comparatively lower in all three blocks of this district. In fact, the district of South 24-Parganas is characterized by huge migration, mainly from the neighboring country Bangladesh, making the familial composition of households more unstable. This instability reflects itself in the decision-making processes on household chores and some members suffer from sever deprivation in terms of participation to those processes. Low participation in the decisions related to purchase of durables or in the decisions related to maintenance of household clearly indicates the existence of a section of women, who are not entitled to take part in domestic decisions, whereas a considerable percentage of them has reported the presence of some 'external pressures' influencing their actual decision of (non)participation.

Our sample contains a whole lot of variations in the socio-economic factors, viz., age, marital status, religion, caste, relationship with the head of the household, housing condition and occupation. Table 3.2 below presents the distribution of some of the factors across different categories for the both the districts.

Table3.2: Characteristics of Sample Respondents

	Marital Status	%	Religion	%	Caste	%	Housing Condition	%	Occupation	%
Hoogly	Married	82	Hindu	78.5	General	63.0	Toilet	86	Work-participation Rate	28
	Widow	10	Muslim	21.5	S.C.	30.5	Electricity	77	Primary	23
	Single	8	Other	0.0	S.T.	6.5	Bio-mass	97	Secondary	18
									Tertiary	59
South 24-Pgs	Married	89	Hindu	80.8	General	33.7	Toilet	81	Work-participation Rate	31
	Widow	5	Muslim	19.2	S.C.	62.5	Electricity	68	Primary	18
	Single	6	Other	0.0	S.T.	3.8	Bio-mass	98	Secondary	15
									Tertiary	67

Chapter 4

Enhancement of Women Empowerment: A Quantitative Assessment

4.1. Introduction

Any approach to operationalise the capability approach in any specific context tries to elaborate the theoretical concepts with potential empirical significance and transforms these theoretical concepts into empirical variables through measurement. These variables are used in quantitative empirical analysis to derive some sort of quantitative representation of capabilities. Sen always attached a strong practical meaning to his work related to the Capability approach. For instance, when discussing the conditions for an 'appropriate' approach to the evaluation of the standard of living he (1987) remarked that "the approach must nevertheless be practical in the sense of being usable for actual assessments of the living standard". Similarly, when examining the relation between his substantive claims on in equality and the capability approach, he stressed that (1992) their implications "are not only of theoretical interest, they also have some practical importance". In fact, Sen himself (1985, 1998) and in association, especially with Dreze (1989, 1997), carried out extensive empirical work from a capability perspective.

Econometric analysis to capability approach consists of both regression-based approach and the structural equation modelling. The regression-based approach basically tries to derive a production function for functioning as simple statistical representation of the conversion functions. The numerical values of the functioning of different dimensions are regressed on a range of sociodemographic conversion characteristics. This presentation of a functioning production function gives an idea how functionings achievement is related to conversion factors and it indicates in which way the functioning measure is correlated with one conversion factor, when controlling for other conversion factors and this is often used to prove the complementary value of welfare analysis in the functionings space.[12]

[12] Conversion factors are in fact the catalysts that determine the degree of conversion of resources into capabilities. Their converting role entails that individual cannot be considered only in terms of the resources they have. They have to be weighted also in terms of their ability and opportunity to convert these resources into valuable doings and beings

But a regression-based approach can only address observed functionings. A complete methodological support to the analytical foundation of the capability approach requires a model which assumes that capabilities are unobservable latent variables observed through a set of functionings (indicators). Principal components, factor analysis and MIMIC (multiple indicators and multiple causes) all fall into this line of reasoning (Krishnakumar, 2004). The principal components estimate the latent variables as linear combinations of the observed indicators chosen in such a way as to reproduce the data as closely as possible. But this method lacks an underlying theoretical model which the factor analysis offers. In factor analysis the observed values are postulated to be (linear) functions of a certain number of unobserved latent variables (called factors). However the factor analysis does not say what causes these capabilities to change. The MIMIC model offers a step further in the explanation of the phenomena under investigation as it is not only believed that the observed variables are manifestations of an underlying latent concept (Di Tommaso , 2007) but also there are other exogenous variables that cause and influence the latent factors. This structure is highly relevant in the present context since not only latent capabilities are manifested through observed functionings but there are other socio-economic factors that definitely influence capabilities and need to be taken into account.

Our final aim is to arrive at the empowerment-enhancing potential of Women SHGs in a capability space. For that we propose a structural equation (measurement) model to estimate the Empowerment Index, an unobserved phenomena in terms of estimated capability scores, obtained from the MIMIC model. Section 4.2.explains both the methodologies; 4.3.explains the MIMIC model to estimate latent capabilities and 4.4 explains the structural equation model to estimate empowerment. Section 4.5.contains the data analysis and the last section concludes.

4.2. Methodology: MIMIC and SEM

A research methodology needs to be designed to address three major objectives (a) measuring latent capabilities through observed functionings, (2) assessing the contribution of different socio-economic factors in influencing capabilities and (3) deriving measure for empowerment determined by different levels of capability. We will formulate a Multiple-Indicator-Multiple-Cause (MIMIC) model to address the first two objectives and this will generate some quantifiable measures of 'latent' capabilities. To address the third objective, we will formulate a structural equation (measurement)

model to estimate Empowerment Index, an unobserved phenomena in terms of estimated capability scores, obtained from the MIMIC model.

4.3. The MIMIC Model to estimate Capabilities

The theoretical framework requires a model which assumes that the capabilities are unobservable latent variables observed through a set of indicators. Principal components, factor analysis and MIMIC (multiple indicators and multiple causes) models all fall into this line of reasoning. Latent variable models are common in psychology and one can find an excellent coverage of most of these models with applications in Bartholomew and Knott (1999) and Skrondal and Rabe-Hesketh (2004). The principal components estimate the latent variables as linear combinations of the observed indicators chosen in such a way as to reproduce the original data as closely as possible. But this method lacks an underlying theoretical model which the factor analysis offers. In the latter model the observed values are postulated to be (linear) functions of a certain number (fewer) of unobserved latent variables (called factors). Thus it provides a framework for going beyond functionings to reach the capabilities represented by the latent factors. However this model does not have the analytical extension to explain the causes that bring about changes to these capabilities. That analysis is essential for successful designing of policies. It is not enough to be able to measure how much is achieved but it is also important to be able to say how things can be improved.

The MIMIC model (Joreskog and Goldberger, 1975) provides a finer explanation of the phenomenon under investigation as it is not only believed that the observed variables are manifestations of an underlying unobserved latent concept but also that there are other exogenous variables that *cause* and influence the latent factor(s).This model displays a mixture of econometrics and psychometric themes; it is a restriction of the general model of LISREL (Linear Interdependent Structural Relationship).[13]

MIMIC tries to give an answer to two kinds of questions:

(a) Measuring latent variables that are either unobservable or not properly measured.
(b) Estimating a causal link based on maintained hypothesis.

[13] LISREL started as software and became a method which was used to estimate the structural coefficient of factorial analysis using the maximum likelihood. However the application of this model has become a general procedure to estimate the statistical relationships among latent, unobservable variables and observable ones: the structural equation model (SEM).

To do this, the MIMIC model consists of two parts:

I. The measurement model shows how the latent variables are estimated through the observed variables, the so-called *indicators* ;
II. The structural model displays the causal link among the latent variables and the observed *causes*.

In this case the specification of MIMIC model considers three latent capabilities, viz., Health(η_1) ,Knowledge(η_2)and Autonomy(η_3) where η_i is reflected through three observed indicators like *Food Intake*(INTAKE[Y_1]), *Perceived Health status*(HSTAT[Y_2]) and the *Status of Reproductive Health* (REPROST[Y_3]), η_2 is reflected through *Educational attainment*(EDU[Y_4]), *Functional literacy*(FLIT[Y_5]) and the application of awareness/knowledge in the context of *Family planning* (CONTRA[Y_6]) and η_3 is reflected through extent of participation in *Actual decision making* (ACTUAL[Y_7]), *Perceived freedom*(PRCVD[Y_8]) and the extent one is allowed to enjoy an extended space in terms of *Permission regarding mobility*[14] (PERMISS[Y_9]).

As has already been mentioned that besides the set of indicators (Y's) there is some intrinsic interdependence among latent capabilities (ηs). Thus $Y_p=Y_p$ (η_i, η^{-i}), where η^{-i} represent all η's except η_i.

Thus y_p, the p-th indicator variable associated with η_i is influence by both η_i and η^{-i} and confirms the interdependent nature of capabilities in an ideal set-up. However, MIMIC model, while successful in relating the observed functionings (Y_p's) with unobserved capabilities (η_i), fails to capture the inter-capability interdependence. Here $Y_p=Y_p$ (η_i).The combined effect of all unobservable η_i's would be culminated into another unobservable target of SHG-policy, viz., Women empowerment (EMPI).

The influence of each η_i on the final outcome, viz., Empowerment Index (EMPI) is likely to be contingent on different Socio-economic and cultural factors. Hence, to posit the social agenda related to the enhancement of *women's empowerment* in an appropriate policy context, one needs to study the influence of such factors(X_j's) on the η_i's and the analytical frame has to be extended beyond measurement model accordingly. This will take us to the estimation of structural part where seven common causes have been identified as *marital status* of the respondent (MSTAT[X_1]),

[14] PERMISS is contributing negatively towards the attainment of autonomy.

religion(RELGN[X_2]), *caste*(CASTE[X_3]), *relationship with the household head*(RELNHH[X_4]), *housing condition*(HSC[X_5]), *occupation*(OCCUP[X_6]) and *age* of the respondent(AGE[X_7]), which are expected to influence the capabilities.

We can now write down the model in formal terms as follows

In the structural model, each of the three latent variables is linearly determined, subject to a disturbance, by a set of seven observable exogenous causes

$$\eta_1 = \gamma_{11} X_{11} + \gamma_{21} X_{21} + \ldots + \gamma_{71} X_{71} + \varepsilon_1$$

$$\eta_2 = \gamma_{12} X_{12} + \gamma_{22} X_{22} + \ldots + \gamma_{72} X_{72} + \varepsilon_2$$

$$\eta_3 = \gamma_{13} X_{13} + \gamma_{23} X_{23} + \ldots + \gamma_{73} X_{71} + \varepsilon_3$$

So, the latent variable η_i is linearly determined, subject to a disturbance ε, by a set of seven observable exogenous causes X_j,

$$\text{i.e., } \eta_{ik} = \Sigma\, \gamma_{ji} X_{jik} + \varepsilon_{ik} \quad i=1\ldots3, \quad j=1\ldots7, \quad k=1\ldots n \text{ (no. of observations)}$$

Each latent variable η_i manifests itself through three observable indicators. In our framework three latent variables determine, linearly, nine indicators Y_{pk} subject to a disturbance u_{pk}

$$Y_{pk} = \lambda_p \eta_{ik} + u_{pk} \qquad p=1,\ldots9 \qquad i=1,\ldots3 \quad k=1\ldots n$$

So we can write $Y = \lambda \eta + u$ (1)

$$\eta = \gamma' X + \varepsilon \qquad (2)$$

$$E(\varepsilon u') = 0, \qquad E(\varepsilon^2) = \sigma^2, \qquad E(u u') = \Theta^2 \qquad (3)$$

As we stated before this model is divided into two parts: (1) is the measurement equation of the latent variable and (2) is the structural equation that specifies the causal relationship between the observed exogenous causes and the latent variable,. As we know, η is unobserved; we need to combine (1) and (2) to estimate the coefficient of the model. The reduced-form representation is

$$Y = \lambda (\gamma' X + \varepsilon) + u = \prod' X + v \qquad (4)$$

where the reduced-form coefficient matrix is $\prod = \gamma \lambda'$ (5)

and the reduced-form disturbance vectors $v = \lambda \varepsilon + u$ (6)

has covariance matrix $\Omega = E(vv') = E[(\lambda\varepsilon + u)(\lambda\varepsilon + u)] = \sigma^2 \lambda \lambda' + \Theta^2$ (7)

As this model characterizes a causal relationship between a latent variable and a set of exogenous factors we can also have a graphical form representation of the model, using the path analysis.

Path Analysis:

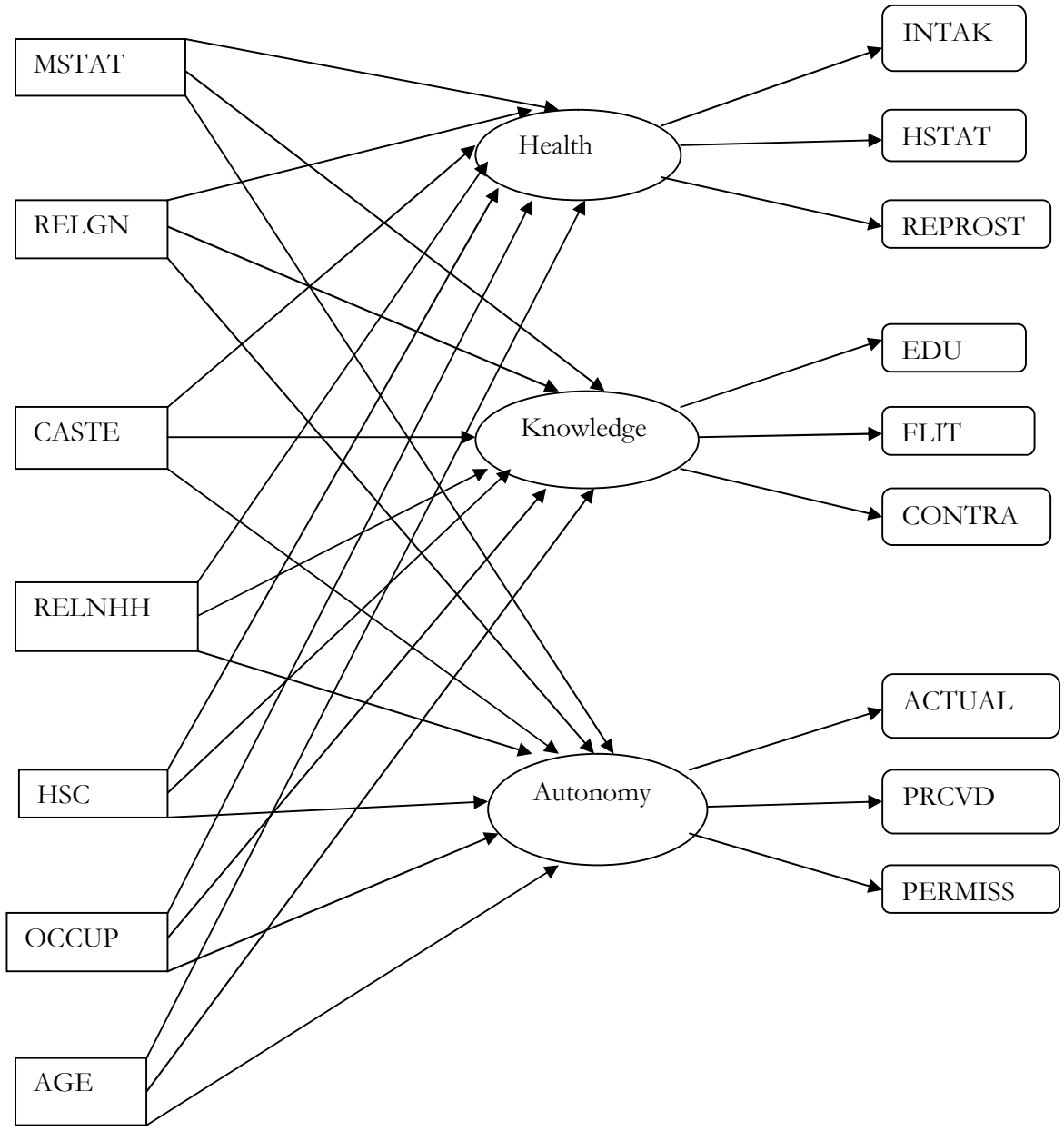
The path analysis is a methodology for analyzing systems of structural equations (Wright 1918, 1921). A path diagram is a pictorial representation of a system of simultaneous equations. One of the main advantages of a path diagram is that it presents a picture of relationships that are assumed to hold. To understand path diagrams, it is necessary to define the symbols involved.

1. The representation of the variable:
   - the unobserved endogenous latent variable, η, is in a circle or an ellipse form;
   - the observed variables (either causal variable x, or exogenous indicator y) are in a square box.
2. The representation of the causal link:
   the causal link among variables are represented by unidirectional arrows, their direction imply the causality of relationship (from the independent to the dependent variable), the strength of these links is shown by the regression coefficient.[15]

[15] The simple association (without any causal link) is represented by a two-way arrow; the strength of these links is shown by the correlation coefficient. This has not been used in this paper.

Path Diagram of our proposed model is presented in Figure-4.1.

Figure 4.1: Path Diagram of MIMIC Model

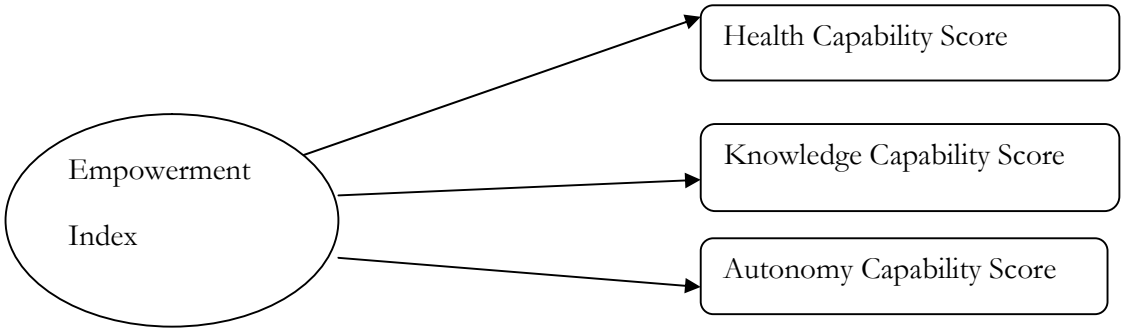


4.4. The Structural Equation (Measurement) Model to estimate Empowerment

We propose a structural equation (measurement) model to estimate the Empowerment Index, an unobserved phenomena in terms of estimated capability scores, obtained from the MIMIC model,

mentioned above. The regression coefficients of the measurement part of the MIMIC model work as weights in constructing the estimated capability scores as weighted averages of indicators. The constituents of latent empowerment index are the estimated capability score of each category, Health, Knowledge and Autonomy and we consider the following path diagram of a structural equation (measurement) model to bring out the influence of each capability score in constructing the latent empowerment index.

Figure 4.2: Path Diagram to estimate Empowerment



The regression coefficients, derived from this model will provide the extent of influence of each capability-score in generating a quantifiable measure of empowerment, namely the Empowerment Index. The contribution of SHGs to the pursuit of women empowerment will then be assessed by comparing the (average) empowerment index, so obtained, of different categories of participation.

4.5. Data Analysis:

The analysis is reported in three parts: (a) the measurement part and (b) the structural part of the MIMIC model and finally (c) an estimation of the unobserved empowerment index in terms of estimated capability scores, so obtained, by utilizing the technique to map unobservable into observables. At the next step, the respondents are divided into different groups according to their participatory status in SHG programs and the average empowerment achieved by each group is compared to assess the success of the targeted civic-economic nexus.

4.5.(a)The Measurement part of the MIMIC Model:

The regression results are presented in the table 4.1.

Table 4.1: Coefficients of the Measurement equation

Capability: Health								
	District: Hooghly				**District: South 24-Paraganas**			
	District	Pandua	Tarakeswar	Chanditala-I	District	Baruipur	Canning-I	Sonarpur
INTAKE	0.76	0.79	0.48	1.05	0.43	0.41	0.45	0.47
	(2.10)	(2.40)	(1.71)	(2.05)	(1.90)	(1.53)	(2.10)	(1.70)
HSTAT	1.22	1.37	1.03	1.01	0.92	1.10	1.07	0.79
	(2.94)	(8.48)	(5.46)	(2.87)	(1.89)	(1.45)	(1.99)	(2.30)
REPROSTAT	0.60	0.62	0.73	0.41	0.54	0.62	0.64	0.35
	(3.22)	(7.83)	(5.45)	(3.44)	(2.22)	(1.70)	(3.84)	(2.44)
Capability: Knowledge								
EDU	0.74	1.09	1.00	0.18	0.90	0.87	0.95	0.91
	(1.92)	(2.40)	(1.71)	(1.63)	(1.88)	(1.63)	(1.70)	(2.10)
FLIT	0.72	1.04	0.80	0.22	0.76	0.73	0.72	0.81
	(2.56)	(9.80)	(3.75)	(3.66)	(3.56)	(9.90)	(8.50)	(2.47)
CONTRA	0.46	0.49	0.68	0.15	0.20	0.22	0.10	0.11
	(1.92)	(1.97)	(1.91)	(2.10)	(2.22)	(3.43)	(2.41)	(2.10)
Capability: Autonomy								
ACTUAL	0.68	1.16	0.73	0.33	0.72	0.87	0.58	0.47
	(1.82)	(3.38)	(1.70)	(1.53)	(2.00)	(1.71)	(1.65)	(1.90)
PRCVD	0.66	0.60	0.76	0.70	0.55	0.50	0.59	0.45
	(2.10)	(2.25)	(6.16)	(2.45)	(3.10)	(4.53)	(3.77)	(2.84)
PERMISS	0.81	0.91	0.74	0.83	0.92	0.91	0.99	0.90
	(2.44)	(3.47)	(8.25)	(4.22)	(4.85)	(6.19)	(5.40)	(5.20)

Note: t-values are in brackets

The regression coefficients portray the manifestation of latent, unobservable capabilities through observed indicators. It is interesting to note that demographic characteristics play an important role in the process of translation of latent capabilities into observed functionings. The perceived health-status has been observed to be more influential on latent health capability than intake in both the districts with specific differences between rural blocks and the blocks with relatively more urban proximity. In the rural blocks of both the districts (Pandua, Tarakeswar in Hooghly and Baruipur, Canning-I in South 24-Paraganas) perceived health-status indicator have a much more influence on latent health capability than the intake indicator. This is with the idea that, in rural areas, because of undiagnosed health problems, perception (usually) over-reports health status whereas in the urban blocks like Chanditala-I and Sonarpur both intake and perception contribute almost equally in constituting latent health capability. This rural-urban difference is more pronounced in determining the influence of Reproductive Health Status Indicator. Because of urban proximity, women in

Chanditala-I and Sonarpur enjoy better reproductive health and reproductive health status seems to contribute less to Health Capability in these areas.

Educational achievement and Functional literacy are the main constituents of the latent Knowledge capability. Awareness of contraceptive measures depends much on the relative popularity of family planning programs at the district-level and the local characteristics of the sample districts. In our sample the district of Hooghly performs better than South 24-Parganas and the individual blocks of the respective districts follow the same pattern also.

Actual autonomy achievement and perceived autonomy achievement contribute positively in constructing the latent autonomy capability, but their relative strength does not exhibit any uniform pattern, either in the intra-district or inter-district level. However, it is interesting to note that permission-requirement from husband or other members of the family for women to move out for economic and social activities plays a crucial role in determining latent autonomy capability. This has been observed uniformly in all the blocks. The need to ask for permission makes one's relative position in familial hierarchy more visible and influences in shaping her own sense of autonomy than participation in decision-making processes.

4.5.(b)The Structural part of the MIMIC Model

The main regression results are presented in table 4.2.

Table4.2. MIMIC Model for latent capabilities, Regression coefficients of the structural equation

Capability								
	District: Hooghly				District: South 24-Parganas			
	District	Pandua	Tarakeswar	Chanditala-I	District	Baruipur	Canning-I	Sonarpur
Marital Status	-0.20 (-2.05)	-0.31 (-2.10)	-0.05 (-1.71)	-0.27 (-1.63)	-0.25 (-2.10)	-0.40 (-2.67)	-0.25 (-2.33)	-0.04 (-2.05)
Religion	-0.05 (-1.90)	-0.09 (-1.81)	-	-	-0.44 (-2.10)	-0.58 (-2.43)	-0.21 (-2.12)	-
Caste	-0.25 (-2.10)	-0.15 (-2.54)	-0.43 (-2.13)	-0.21 (-1.90)	-0.29 (-1.70)	-0.59 (-1.73)	-0.20 (-1.67)	-0.31 (-1.90)
Relationship with the Household Head	-0.007 (-1.60)	0.03 (1.94)	-0.04 (-2.05)	-0.01 (-1.65)	0.06 (1.66)	0.05 (1.81)	0.25 (1.76)	-0.16 (-1.41)
Housing Condition	0.29 (2.10)	0.27 (2.41)	0.18 (1.84)	0.41 (2.42)	0.22 (2.00)	0.26 (1.85)	0.11 (2.11)	0.25 (1.92)
Occupational Status	-0.16 (-2.15)	-0.18 (-1.86)	0.21 (2.63)	-0.22 (-2.15)	-0.10 (-2.10)	-0.32 (-1.94)	-0.24 (-2.15)	0.28 (2.27)
Age	-0.37 (-2.00)	-0.48 (-2.10)	-0.35 (-2.24)	-0.36 (-2.15)	-0.29 (-2.50)	-0.35 (-3.21)	-0.23 (-2.66)	-0.33 (-2.87)
Capability: Knowledge								
Marital Status	-0.09 (-2.00)	-0.14 (-1.85)	-0.06 (-1.94)	0.11 (2.16)	0.09 (2.14)	0.13 (2.54)	0.11 (3.12)	-0.01 (-2.44)
Religion	-0.25 (-2.10)	-0.40 (-2.16)	-	-	-0.33 (-2.20)	-0.25 (-1.97)	-0.48 (-2.89)	-
Caste	-0.07 (-2.10)	-0.09 (-1.89)	-0.08 (-2.11)	-0.01 (-2.34))	-0.10 (-2.61)	-0.05 (-3.67)	-0.09 (-2.81)	-0.13 (-1.90)
Relationship with the Household Head	0.30 (1.88)	0.29 (2.29)	0.13 (1.91)	0.44 (1.70)	0.17 (2.44)	0.20 (2.37)	0.11 (2.85)	0.05 (3.10)
Housing Condition	0.23 (2.10)	0.25 (1.76)	0.21 (2.18)	0.22 (2.44)	0.27 (1.90)	0.21 (1.98)	0.33 (2.10)	0.29 (1.94)
Occupational Status	-0.12 (-1.80)	-0.5 (-2.10)	0.07 (1.96)	0.10 (1.78)	0.04 (2.22)	0.01 (2.10)	0.05 (3.42)	0.06 (2.77)
Age	-0.20 (-1.90)	-0.01 (-1.76)	-0.29 (-1.85)	-0.05 (-1.90)	-0.11 (-2.00)	-0.03 (-2.02)	-0.15 (-2.17)	-0.18 (-1.84)
Capability: Autonomy								
Marital Status	-0.15 (-2.10)	0.03 (2.15)	-0.23 (-2.19)	-0.24 (-3.10)	0.22 (1.88)	0.10 (1.90)	0.25 (2.44)	0.25 (1.90)
Religion	0.11 (1.90)	0.27 (2.67)	-	-	-0.09 (-2.11)	-0.26 (-2.54)	-0.01 (-3.46)	-
Caste	0.07 (1.70)	0.18 (2.92)	-0.23 (-1.87)	0.23 (1.93)	-0.05 (-2.10)	-0.05 (-2.42)	-0.05 (-2.84)	-0.02 (-1.94)
Relationship with the Household Head	-0.30 (-2.00)	-0.48 (-1.77)	-0.26 (-2.43)	-0.27 (-2.14)	-0.30 (-1.77)	-0.32 (-1.90)	-0.24 (-1.63)	-0.32 (-2.03)
Housing Condition	-0.10 (-1.90)	-0.13 (-1.94)	-0.07 (-2.10)	-0.11 (-2.04)	0.09 (2.22)	0.18 (3.12)	-0.12 (-1.90)	0.05 (1.87)
Occupational Status	0.10 (2.22)	0.01 (2.16)	0.29 (2.24)	0.05 (1.90)	0.20 (1.90)	0.18 (2.10)	0.14 (2.34)	0.26 (1.84)
Age	0.30 (2.00)	0.26 (2.08)	0.16 (2.18)	0.41 (1.96)	0.36 (2.11)	0.41 (2.44)	0.32 (2.18)	0.34 (1.96)
RMSEA	0.08	0.07	0.05	0.08	0.07	0.08	0.07	0.06

Note: t-values are in brackets

It is typical of SEM models to produce large values of chi-square and thus Root Mean Square Error of Approximation (RMSEA) may be a more meaningful measure of goodness of fit. The RMSEA values of our results indicate that the fit of the model is reasonable.

Most of the coefficients are significant; the regression coefficients are the relative strength of the link among the observed causes and the latent variables. In the all the three blocks of Hooghly, married women enjoys an enhanced capability set compared widow, separated and unmarried women: married women are better off in case of all the three capabilities considered. The only exception has been observed in the Chanditala-I block where married women are under-performer in attaining Knowledge capability. The urban proximity of this block seems to have an influence on this result where the drive of 'education for all' has come to the benefit of the younger, unmarried women more often that for the married ones.

In the South 24-Parganas district, the same effect of marital status has been observed in terms of Health Capability, where married women enjoy an enhanced set uniformly in all the blocks, but in terms of Knowledge and Autonomy, we observe a reverse pattern and married women are under-performers. Exception has been observed in Sonarpur, where Knowledge capability is lower for the married women. Actually the district of South 24-Paraganas for sharing the border with the neighbouring country Bangladesh, is distinguishably characterised by migration and this has a significant impact in determining the relative positions in familial hierarchy. This character will again reflect itself in analysing the influence of relationship with the household head later.

In Hooghly, variation in religion is observed in Pandua-sample alone, and, Muslim women are enjoying lesser Health and Knowledge Capabilities, but autonomy is higher for them. Apparently it seems surprising as Muslim religious norms generally do not allow much freedom for the omen but here poverty seems to play the role of the curtain-raiser and the male members cannot afford to restrict the women-members of the family much and they enjoys an enhanced space specially in economic sphere. Variation in religion has not been observed in Sonarpur block of South 24-Paraganas but in the other two blocks impact of religion exhibits a strong result, where Muslim women's capability set is severely downsized

Caste has a significant impact in all the three blocks of Hooghly and women from the upper castes enjoy better health capability compared to their lower-caste counterparts. Knowledge capability is also significantly lower for the backward-caste women. But caste couldn't leave any negative impact

on autonomy in two blocks, namely Pandua and Chanditala-I. This confirms the historical fact that in the backward-caste families in rural India, patriarchy doesn't pay the role as it plays in upper-caste families, and in some cases, backward-caste women enjoy better autonomy than their higher-caste counterparts. The exception has been observed in Tarakeswar alone, where prevalent religious conservatism seems contributing to change the result in the opposite direction.

The district of South 24-Parganas exhibits the adverse effects of an extremely caste-divided society. In all the three blocks of this district, women from the lower-caste families are under-performers in terms all the three capabilities, Health, Knowledge and Autonomy.

Impact of the relationship with the head of the household provides an interesting observation. Even if the relationship with the head of the household does not have a negative impact on Health Capability (exception has been observed in Pandua) it leaves a positive impact on Knowledge Capability, the impact is uniformly negative in case of Autonomy capability, where autonomy is severely downsized for the members who are not either the head or the spouse of the head of the household. This is in conformity with the standard Indian "joint" families where female members suffer from severe contraction of autonomy if she is not either the head or the spouse whereas her relation with the head of the household does not affect her other achievements, namely Health or Knowledge. The same pattern has been observed in all two blocks of South 24-Paraganas and the combined sample with only one exception in Sonarpur, where women who are not either the head of the household or spouse, suffer from poor health.

Housing condition influences both the Health capability and Knowledge capability positively in all the three blocks of Hooghly, whereas the effect turns out to be negative in case of Autonomy. The result is in tandem with the idea that autonomy depends much on the relative position in familial hierarchy and it may not have any link to the housing condition. South 24-Paraganas exhibits a different pattern where housing condition influences the entire capability set positively in all the three blocks with only one exception in Canning-I, where the effect turns out to be negative in case of Autonomy like all the blocks in Hooghly.

Occupational status have an uniform positive effect on autonomy in all the three blocks of Hooghly but it's impact on other two capabilities seems to depend much on local conditions. Occupational choice deteriorates health of the rural women in Pandua and Chanditala-I but whereas in Tarakeswar, working women enjoys a better Health capability. The positive effect of occupational

choice on autonomy seems uniform as this has been observed in all the three blocks of South 24-Paraganas, but the effect turns out to be negative in case of Health and Knowledge. In fact working women need to negotiate their personal time-allocation between domestic chores and outside and this leaves an adverse effect on their health capability.

Impact of age is uniform in both the districts. Age affects adversely both Health and Knowledge in all the six blocks. And autonomy improves with age as the older women enjoy better social status in the decision-making process.

The results clearly demonstrates the role of truly local block-level characteristics, like demographic features, urban proximity and the extent of prevalent conservatism in shaping the capability set of its inhabitants. This has a particular gender dimension as these local conditions significantly influence the intra-familial relative positions of women and contribute accordingly to produce different levels of capabilities.

4.5(c) The SEM to estimate Empowerment:

We will use the regression coefficients of the measurement part of the MIMIC model as weights to derive capability scores of each category, viz. Health, Knowledge and Autonomy and the capability scores will turn out to be weighted averages of the respective indicators. Women empowerment depends on (the enhancement of) these capability-scores and in what follows we will consider the regression coefficients of the structural-equation (measurement) model of latent Empowerment index. These coefficients provide us relative weights of each capability score in constituting the latent Empowerment index as a weighted average of capability scores. The regression coefficients of the measurement model of latent empowerment index are presented in Table 4.3.

Table4.3: Regression coefficients of each Capability score in constituting latent Empowerment

District: Hooghly			
	Health Capability	Knowledge Capability	Autonomy Capability
DISTRICT	0.37	0.44	0.29
PANDUA	0.45	0.31	0.49
TARAKESWAR	0.33	0.59	0.12
CHANDITALA-I	0.29	0.51	0.36
District: 24-Paraganas(South)			
DISTRICT	0.39	0.42	0.30
BARUIPUR	0.53	0.32	0.28
CANNING-I	0.42	0.68	0.25
SONARPUR	0.26	0.40	0.46

In the combined sample of both the districts, knowledge capability score contributes more to the attainment of empowerment but the influence of local characteristics again become visible in analysing the coefficients. In rural blocks like Pandua and Baruipur, Health Capability-score contributes more to the attainment of empowerment, whereas Knowledge Capability-score contributes more in urban blocks like Chanditala-I and Sonarpur. Autonomy plays an important role in determining empowerment but in areas with prevalent religious and caste-based conservatism, this influence is less pronounced. This factor justifies the low influence of autonomy in Tarakeswar or in Canning-I.

The final task remains is to compare the average empowerment index between old group-members, new-members and non-members. This is presented in Table 4.4.

Table 4.4: Average Empowerment Index

	District: Hooghly				District: South 24-Parganas			
	District	**Pandua**	**Tarakeswar**	**Chanditala-I**	**District**	**Baruipur**	**Canning-I**	**Sonarpur**
Old group-members	3.54	3.89	3.12	3.88	2.89	3.11	2.62	3.24
New group-members	3.45	3.43	2.94	3.86	3.10	3.15	3.04	3.26
Non-members	3.31	3.18	2.81	3.82	2.85	3.09	2.45	2.86

Group-participation definitely contributes to women empowerment in a positive way and this has been uniform over all the blocks: members score always higher than non-members. But the duration of group-membership does not leave any uniform impact in influencing the extent of empowerment. Old-members are not necessarily better-off than New-members and this has been observed clearly in the sample-blocks of South 24-Parganas, where old-members paid the social cost of forming the groups and New-members enjoyed the late-starter's advantage. This phenomenon draws our attention to the quality of performance of the groups. Mere registration to a group does not contribute significantly in empowering the members. What comes out to be more important in deriving the benefits of group-participation is the quality of participation.

Concluding Observations:

Within the emerging debate on the role of group-approach to rural development, it appears imperative that the issue of overall socio-economic development of women is given critical

attention. Evidences indicate that this is likely to have positive effects on women's empowerment. And while all channels for women empowerment including various self-employment enterprises (like SHGs) need pursuing, the current chapter has explored that the latter channel alone may not realistically help more than a small percentage of women, especially in countries such as India, where a set of other socio-economic factors influences the process of actual realization of existing opportunities. More specifically, this chapter demonstrates the role of truly local characteristics, like demographic features and the extent of prevalent conservatism in shaping the capability set of its inhabitant women and hence in unleashing the process of women empowerment.

This chapter demonstrates the impact of several demographic characteristics in deriving the incremental effect on women capabilities through group-participation, the most important one being the difference in terms of urban proximity. Gender disparity and discrimination are essential characteristics in rural societies of India. Group formation and networking, following the examples of poorer communities elsewhere in Bangladesh or in Africa have become the hallmarks of development amongst the rural women in India. This excessive emphasis on group-formation and networking fails to recognize the various constrains on poor rural women in specific contexts and cannot necessarily ensure success in every rural context.

Prevalence of co-operative culture came out as an important factor in creating a favourable context for development-intervention through group participation. In fact the concept of cooperativisation, the basic building block of Gandhian philosophy has been reinforced in recent years by the group-approach in rural development. Contribution of SHGs to the pursuit of gender justice is more visible in one of the sample blocks, Hooghly, which is particularly characterised by a strong cooperative history. Whilst the broader contexts of cooperative continue to remain enigmatic, group-participation for relatively longer duration cannot necessarily ensure enhanced empowerment of the participants. Rather the chapter explores the difference in levels of empowerment between old and new-members and makes a clear departure from the existing discussions by focusing on the difference between active participation and mere registration.

The fact that quality of participation matters more than duration, in driving the effective results out of group formation draws our attention to the possibility of self-selection bias in treatment effects of SHG-participation. Since the individual participation is (usually) voluntary, the comparison between participants and an arbitrary group of non-participants can lead to heavily biased results. The

possibility that participants would have higher outcomes without the program than non-participants reinforces the presence of selection bias and a simple difference of outcomes between participants and non-participants typically overstates the impact of the program. Considering the low feasibility of a random experiment in this context, this chapter advocates for some sort of quasi-experimental design to evaluate the impact of group-participation.

Chapter 5

SHG-Participation and Empowerment: An Impact Evaluation

5.1. Introduction

Advocates of group-approach claim that the very process of forming self-help groups is empowering and a critical mass is formed which can be harnessed to pull the households out of poverty traps. The enhanced empowerment is expected to contribute towards higher capabilities and so the ultimate success of a self-help program would lie on the extent to which the achievements of the social agents could be upgraded. The success of group approach in rural development for women has inspired promotion and formation of Women Self-help groups in all the districts of West Bengal. In the previous chapter we focused on the evaluation of empowerment-enhancing potential of women self-help groups and in that analysis adequate emphasis was on the duration of group-membership. Duration of membership is expected to have an impact on the realization of benefits from group activities. Keeping that in mind, empowerment-attainment was not only compared between the group-members and non-members, but again the group-members were divided into two sub-groups: old members and new members.

Women empowerment necessitates capability enhancement. We derived the quantifiable scores of latent capabilities through a multiple-indicator-multiple-cause (MIMIC) model and by using those estimated capability scores; we could derive an Empowerment index for each individual woman in the sample. The contribution of SHGs to the pursuit of women empowerment has been assessed by comparing the (average) empowerment index of different categories of participation. The results demonstrated that group-participation contributed to women empowerment in a positive way and this had been uniform over all the blocks: members scored always higher than non-members. But the duration of group-membership seems not to leave any uniform impact in influencing the extent of empowerment. Old-members are not necessarily better-off than New-members and this has been observed clearly in the sample-blocks of South 24-Parganas, where old-members might have paid the social cost of forming the groups and New-members enjoyed the late-starter's advantage. This phenomenon draws our attention to the quality of performance of the groups. Mere registration to a group does not contribute significantly in empowering the members. Whilst the broader contexts of cooperation continue to remain enigmatic, group-participation for relatively longer duration does

not necessarily ensure enhanced empowerment of the participants. What comes out to be more important in deriving the benefits of group-participation is the quality of participation.

The fact that quality of participation matters more than duration, in deriving the effective results out of group formation necessitates a change in the treatment/control group-classification of the analysis to produce a more comprehensive portrayal of the empowerment-enhancing potential of women self-help groups. This could address the selection bias problem associated with this issue more meaningfully. The "selection bias problem" refers to the difficulty in establishing unequivocally that the observed changes in the socio-economic status of the SHG-members are induced by the formation of SHGs and not as a consequence of other possible causes due to economic, political, cultural or policy environment. But as we observed, duration of membership could not leave any significant impact and this necessitates us to consider active participants as a proper treatment group, with the control group which contains information of all others with similar characteristics. The difference in the results for these groups would therefore reflect the real impact of self-help programs.

Again this type of analysis is affected by the problem of ***counterfactual*** by its very nature. An ideal evaluation of the impact of a program requires a comparison of the outcome of an individual who participated actively in the SHG-program with the (hypothetical) outcome of the same individual when she does not participate. This comparison is expected to ensure that the difference is solely caused by the implementation of the program and not by the other characteristics of active participants and others. But we never observe a same individual woman, actively participating and not participating at the same point of time and this problem is usually solved through both random experiments and non-experimental techniques. Again with the implementation of the program the program areas and the participants and non-participants will be different in observable and unobservable ways and we need to ensure that comparison group for the treatment group is not receiving any spillover benefit of program-implementation. Considering the low feasibility of random experiment in this particular context, the problem actually advocates for non-experimental techniques to evaluate the impact of group-participation. This paper makes use a particular type of non-experimental technique where each active participant is matched with one or more inactive or non-participants that are similar based on observable characteristics. Since the set of variables to match is considerably large, matching is done on the basis of the probability of participation as a

function of observables (*propensity scores*). This paper makes use of this non-experimental technique to derive the incremental benefit of active participation in self-help groups.

The paper is structured in the following way. Section 5.2 explores the efficacy of considering active participants as a proper treatment group in this particular context. Section 5.3 deals with the problem of counterfactual in a rigorous way and advocates for a proper evaluation design to solve this problem. Section 5.4 reviews several evaluation techniques to justify propensity-score matching as the most relevant one in this particular context. Section 5.5 describes the data and explores the possible biases and the design; implemented to solve for the biases. The analysis has been carried out in section 5.6. The last section concludes the paper with an overall assessment.

5.2. Active participation and its relevance

The success of group approach in rural development among women has inspired in looking this type of networking as essentially good and desirable in rural community development, sometimes without acknowledging the importance of the pattern of participation in deriving the desirable effect. Government schemes designed for poverty alleviation among rural women through self-help groups tend to be influenced by concepts and models that have been successful elsewhere, but do not take into account the diversities of situations where quality of participation differ across regions (sometimes because of the influence of truly local factors) and this difference turns out to be most influential, not only for the success of the groups but also for the very sustenance of the groups.

Our primary survey was carried out after a series of repeated meetings of very small focused discussion groups organised in villages where we discussed with individual women from both successful and failed groups. These interviews mostly took place through open-ended discussions with no fixed set of questions which made this conversation much more free-flowing. In some cases these discussions indicate that volunteering in groups appears to be far less attractive to women than was anticipated by the administrators. That should not be the case in a poor rural society which seems to be eager for civic engagement and this leads our attention to be judgmental on the "quality" of the groups by looking at the pattern of participation.

Again irregularities of the existing groups have been reported to produce huge disincentive for the individual woman to become active in group-related activities. Some of the existing groups have failed largely to ensure equality even within the groups; social, economic, political and cultural

inequalities continue to persist in a group. Again in some cases, the leader couldn't ensure transparency to retain group member's trust. These discussions lead us to acknowledge the entrenched caste, class, ethnic and religious hierarchies that lead to diversities among women. The hierarchy of caste location often leads to increasing levels of intra-group discordance. This was exemplified by a member who said, 'we were never a group in the true sense. It was not surprising that we could not work together'. We then explored further the reasons of failure amongst her colleagues; again we came across remarks on the difficulties of interaction between members across their caste and class divides. Such ruptures are not uncommon; in several cases members spoke about missing a 'real' cohesiveness in the group leading to its fracture. Differences in political allegiance at the local level also caused rifts, causing a lack of integration. The local political leaders often tried to 'choose' the group leader and in one such case, she had no time to create a dialogue among the members to facilitate networking. Some other groups collapsed due to the lack of trust; as the leader did not reveal the details of the account book to other members, making others feel that the leader was trying to cheat. In yet another case, the leader keeping the records of income and expenditure behaved in such secretive ways that misunderstanding with regard to loan repayments eventually splintered the group. In many cases, the team leader has received little more education than other group members, creating problems for the group in turn. Sometimes the husband of the team leader became the virtual leader of the group. Thus, we noted the range of problems included first the additional burden of keeping accounts, a task which the team leader may be ill-equipped to perform; and second, the subtler question of the leader being among equals, which goes entirely against the very concept of 'the group' as the recipient of the official support. The group leader often furthered her contacts with local political leaders and explored avenues for additional cash incomes.

Again the lack of information and communication among group-members contribute negatively in the process of building up an active citizenry. Lack of communication can operate at two levels; in first case even if some members are actively engaged, irregularities in the working of their groups can not produce enough incentive for them to bind themselves together and in the second case, some women are group-members only by mere registration, whereas they do not feel the urge properly and as a result they do not participate actively. Both regularity of group-meetings and regular attendance of members are important in categorising the pattern of participation. A member who is serious in attending the group-meetings regularly may loose interest in continuing group-

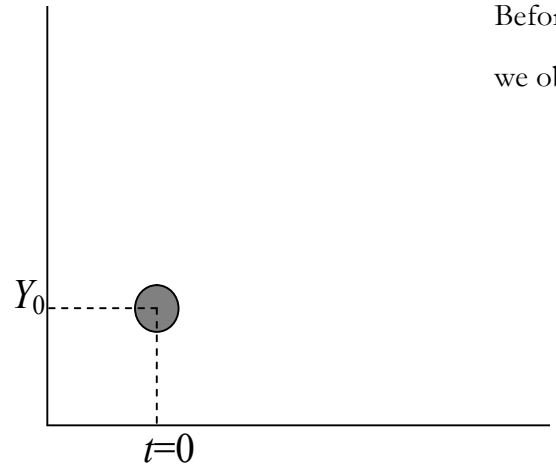
activities if her group is not working efficiently or other members of the group are less serious in carrying out joint liabilities. Altogether this necessitates consideration of regularity both at the individual and collective level. Keeping these issues into consideration, active participants turned out to be the relevant treatment group to evaluate the incremental impact of joining the self-help groups, with all others being the control.

5.3. The problem with Counterfactual

A *counterfactual* is a conditional sentence in the subjective mood. The term "counterfactual" or "contrary-to-fact" conditional carries the suggestion that the antecedent of such a conditional is false. The philosophical significance of counterfactuals is apparent from the way in which they have figured so prominently in recent discussions of many other philosophically important concepts: knowledge, perception, and freedom of the will to name just a few. An attractive thought is that this conceptual connection is best understood as being mediated by the concept of *cause*. Thus, for example, counterfactuals are relevant to discussions of evaluation problem because the most important aspect of any evaluation is causality and counterfactuals are fundamental to any philosophical understanding of causation.

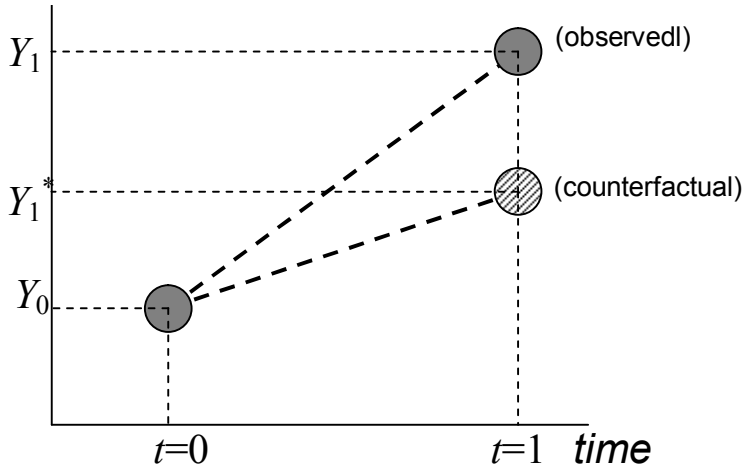
In any evaluation problem, we compare outcomes for an individual who participated in the program to the (hypothetical) outcome of the same individual when she does not participate. Let Y_{it}^{*} be the outcome of individual i at time t, if she did not participate, where Y_{it}^{**} be that of the same individual i at time t if she participates the program. So the difference $\Delta = Y_{it}^{**} - Y_{it}^{*}$ is the effect of the program. But an ideal estimate of Δ must ensure that it measures just the difference in outcomes caused by the program and not by the differences in the characteristics of the participants and non-participants. However, we never observe an individual, participating and non-participating at the same point of time, i.e. we never observe both Y_{it}^{*} and Y_{it}^{**} and we need to measure a counterfactual, i.e. what would the outcome be without the program at the same point of time. So we need a comparison group that will allow us to attribute any change in the treatment group to the program to reflect causality properly. But since the program is targeted, the program area will differ in observable and unobservable ways precisely because the program intended this and also the participants will differ from non-participants in observable and unobservable ways. Since a simple comparison of participants and an arbitrary group of non-participants can lead to heavily biased

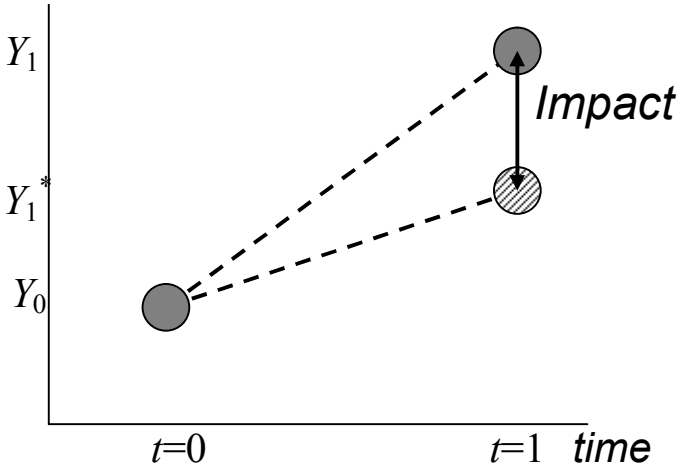
results, we need a comparison group, as identical as possible in observables and unobservables, to those receiving the benefits of the program, and not spillover benefits.



Before the implementation of the program, we observe an outcome indicator at t=0.

However, we need to identify the counterfactual, since only then we can determine the impact of the intervention.





The object of interest is a comparison of the two outcomes for the same unit when exposed, and when not exposed, to the treatment. The problem is that we can at most observe one of these outcomes because the unit can be exposed to only one level of treatment. Our objective in evaluating the benefits of joining self-help groups has a problem of similar sort: An ideal evaluation of the impact of a program requires a comparison of the outcome of an individual who participated actively in the SHG-program with the (hypothetical) outcome of the same individual when she does not participate. This difference is expected to ensure that the difference is solely caused by the implementation of the program and not by the other characteristics of active participants and others. But we never observe a same individual woman, actively participating and not participating at the same point of time.

The problem of evaluating the effect of a binary treatment or program is a well studied problem with a long history in both econometrics and statistics. This is true both in the theoretical literature as well as in the more applied literature. The econometric literature goes back to early work by Ashenfelter (1978) and subsequent work by Ashenfelter and Card (1985), Heckman and Robb (1985), Lalonde (1986), Fraker and Maynard (1987), Card and Sullivian (1988), and Manski (1990). Motivated primarily by applications to the evaluation of labor market programs in observational settings, the focus in the econometric literature is traditionally on endogeneity, or self-selection issues. Individuals who choose to enrol in a training program are by definition different from those who choose not to enrol. These differences, if they influence the response, may invalidate causal comparisons of outcomes by treatment status, possibly even after adjusting for observed covariates. Consequently, many of the initial theoretical studies focused on the use of traditional methods for dealing with endogeneity. The statistics literature starts from a different perspective. This literature originates in the analysis of randomized experiments by Fisher (1925) and Neyman (1923). From the early seventies, Robin (1973, 1974, 1977, 1978), in a series of papers, formulated the now dominant approach to the analysis of causal effects in observational studies. Robin proposed the interpretation of causal statements as comparisons of so-called potential outcomes: pairs of outcomes defined for the same unit given different levels of exposure to the treatment. Models are developed to match the pair of potential outcomes rather than solely for the observed outcomes. One of the attractions of the potential outcomes-matching setup is that from the outset it allows for general heterogeneity in the effects of the treatment. Such heterogeneity is important in practice, and it is important theoretically as it is often the motivation for the endogeneity problems that concern economists.

The next section reviews some crucial development to approach this evaluation problem and eventually will bring out a particular matching method (propensity score matching) as a relevant methodology to evaluate the impact of the SHG-program.

5.4. Alternative Approaches to Evaluation

The literature on evaluation methods in economics is vast and continues to grow. There are also many references in the literature which document the development of the analysis of the evaluation problem in economics. In this section we consider four distinct but closely related approaches to the evaluation problem in empirical microeconomics: (i) social experiments, (ii) natural experiments, (iii) instrumental methods, and (iv) matching methods.

In many ways the *social experiment* method is the most convincing method of evaluation since it directly constructs a control (or comparison) group which is randomised subset of the eligible population. The advantages of experimental data are discussed in papers by Bassi (1984, 1984) and Hausman and Wise (1985) and were based on earlier statistical experimental developments (Cochrane and Rubin, 1973, Fisher, 1951). A properly defined social experiment can overcome the missing data problem. For example, in the design of the impressive study of the Canadian Self Sufficiency Project reported in Card and Robbins (1998), the labor supply responses of approximately 6000 single mothers in British Columbia to an in-work benefit program, in which half those eligible were randomly excluded from the program, were recorded. This study has produced invaluable evidence on the effectiveness of financial incentives in inducing welfare recipients into work.

Of course, social experiments have their own drawbacks. They are rare in economics and typically expensive to implement. They are not amenable to extrapolation. That is, they cannot easily be used in the ex-ante analysis of policy reform proposals. They also require the control group to be completely unaffected by the reform, typically ruling out spilover, substitution and displacement effects. None-the-less, they have much to offer in enhancing our knowledge of the possible impact of policy reforms. Indeed, a comparison of results from non-experimental data to those obtained from experimental data can help assess appropriate methods where experimental data is not available. For example, the important studies by Lalonde (1986), Heckman, Ichimura and Todd (1997) and Heckman, Smith and Clements (1997) use experimental data to assess the reliability of comparison groups used in the evaluation of training programs.

The *natural experiment* approach considers the policy reform itself as an experiment and tries to find a naturally occurring comparison group that can mimic the properties of the control group in the properly designed experimental context. This method is also often labelled "difference-in-differences" since it is usually implemented by comparing the difference in average behaviour before and after the reform for the eligible group with the before and after contrast for the comparison group. In the absence of a randomised experiment and under certain very strong conditions, this approach can be used to recover the average effect of the program on those individuals entered into program – or those individuals "treated" by the program, thus measuring the average effect of the treatment on the treated. It does this by removing unobservable individual effects and common macro effects. However, it relies on the two critically important assumptions of (i) common time effects across groups, and (ii) no systematic composition changes within each group. These two assumptions make choosing a comparison group extremely difficult. For example, in their heavily cited evaluation study of the impact of Earned Income Tax Credit (EITC) reforms on the employment of single mothers in the US, Eissa and Liebman (1996) use single women without children as one possible control group. However, this comparison can be criticized for not satisfying the common macro effects assumption (i). In particular, the control group is already working to a very high level of participation in the US labor market (around 95%) and therefore cannot be expected to increase its level of participation in response to the economy coming out of a recession. In this case all the expansion in the labor market participation in the group of single women with children will be attributed to the reform itself. In the light of this criticism the authors also use low education childless single women as a control group for which nonparticipation is much more common and who have other similar characteristics to those single parents eligible to EITC.

The *instrumental variable* method is the standard econometric approach to endogeneity. It relies on finding a variable excluded from the outcome equation but which is also a determinant of program participation. In the simple linear model the IV estimator identifies the treatment effect removed of all the biases which emanate from a non-randomised control. Angrist and Imbens (1994) and Heckman and Vytlacil (1999) has provided an ingenious interpretation of the IV estimatot in terms of local treatment effect parameters. However, in heterogeneous models, in which the impact of the program can differ in unobservable ways across participants, the IV estimator will only identify the average treatment effect under strong assumptions and ones that are unlikely to hold in practise.

The *matching* method has a long history in non-experimental statistical evaluation (Heckman, Ichimura and Todd, 1997, Rosenbaum and Rubin, 1985 and Rubin, 1979). The aim of the matching is simple. It is to select sufficient observable factors that any two individuals with the same value of these factors will display no systematic differences in their reaction to the policy reform. Consequently, if each individual undergoing the reform can be matched with an individual with the same matching variables that has not undergone the reform; the impact of the individual of that type can be measured. It is a matter of prior assumption as to whether the appropriate matching variables have been chosen. If not the counterfactual effect will not be correctly measured. Again experimental data can help here in evaluating the choice of matching variables and this is precisely the motivation for the Heckman, Ichimura and Todd (1997) study. Matching variables have been extensively refined in the recent evaluation literature and now a valuable part of the evaluation toolbox. When the set of variables to match is considerably large, matching is done on the basis of the probability of participation as a function of observables (*propensity scores*). The motivation for focusing on propensity score-matching methods is that, in many applications of interest, the dimensionality of the observable characteristics is high. Matching involves pairing treatment and comparison units that are similar in terms of their observable characteristics. With a small number of characteristics, matching is straightforward. However, when there are many variables, it is difficult to determine along which dimensions to match units or which weighting scheme to adopt. Propensity score-matching methods are especially useful under such circumstances because they provide a natural weighting scheme that yields unbiased estimates of the treatment impact. The next section will provide a detail account of propensity score-matching method.

5.5. Propensity Score-Matching

Since in observational studies assignment of subjects to the treatment and control groups is not random, the estimation of the effect of treatment may be biased by the existence of confounding factors. Propensity score matching is a way to "correct" the estimation of treatment effects controlling for the existence of these confounding factors based on the idea that the bias is reduced when the comparison of outcomes is performed using treated and control subjects who are similar as possible. Since matching subjects on an n-dimensional vector of characteristics is typically unfeasible for large n, this method proposes to summarize pre-treatment characteristics of each subject into a single-index variable (the propensity score) which makes the matching feasible.

The propensity score is defined by Rosenbaum and Rubin (1983) as the conditional probability of receiving a treatment given pre-treatment characteristics:

$$p(X) \equiv \Pr \{ D=1|X \} = E \{D|X\} \qquad (1)$$

where D={O,1} is the indicator of exposure to treatment and X is the multidimensional vector of pre-treatment characteristics, Rossenbaum and Rubin (1983) show that if the exposure to treatment is random within cells defined by X, it is also random within cells defined by the values of the mono-dimensional variable p(X). As a result, given a population of units denoted by I, if the propensity score $p(X_i)$ is known the Average effect of Treatment (ATT) can be estimated as follows

$$\tau \equiv E \{Y_{1i} - Y_{0i} | D_i=1\}$$

$$= E \{E \{Y_{1i} - Y_{0i} | D_i=1, p(X_i)\}\}$$
$$= E \{E \{Y_{1i} | D_i=1, p(X_i)\}\} - E \{E \{Y_{oi} | D_i=0, p(X_i)\} | D_i =1\} \qquad (2)$$

Where the outer expectation is over the distribution of $(p(X_i)\} | D_i =1)$ and Y_{1i} and Y_{oi} are the potential outcomes in the two counterfactual situations (respectively) treatment and no treatment.

Formally, the following two hypotheses are needed to derive (2) from (!).[16]

Lemma 1. Balancing of pre-treatment variables given the propensity score.

If p(X) is the propensity score, then

$$D \perp X \mid p(X). \qquad (3)$$

The empirical literature on propensity score matching puts a lot of emphasis on balancedness. We first divide the data into blocks having a similar estimated propensity scores. Then within each of these blocks we check whether the X variables of treated and untreated are broadly similar. In practice this means estimating a t-test of equality of means for each of the X repressors within each block. If equality of means is not rejected for any X in any block, the data is said to be balanced. If the balancedness test id rejected, it is recommended to take a less parsimonious model (i.e. to add more functions of X as regressors) until balancedness.

Lemaa 2. Unconfoundedness given the propensity score.

[16] Rossenbaum and Rubin (1983) or Imbens (2000) for a proof.

Suppose that assignment to treatment is unconfounded, i.e.

$$Y_1 , Y_0 \perp D \mid X$$

Then assignment to treatment is unconfounded given the propensity score, i.e.

$$Y_1, Y_0 \perp D \mid p(X) \qquad (4)$$

If the Balancing Hypothesis of Lemma1 is satisfied, observations with the same propensity score must have the same distribution of observable (and unobservable) characteristics independently of treatment status. In other words, for a given propensity score, exposure to treatment is random and therefore treated and control units should be on average observationally identical. Any standard probability model can be used to estimate the propensity score. For example, $\Pr \{D_i =1 \mid X_i\} = F(h(X_i))$, where F(.) is the normal or the logistic cumulative distribution and $h(X_i)$ is a function of covariates with linear and higher order terms. The choice of which higher order terms to include is determined solely by the need to obtain an estimate of the propensity score that satisfies the Balancing Hypothesis. Inasmuch as the specification of $h(X_i)$ which satisfies the Balancing Hypothesis is more parsimonious than the full set of interactions needed to match cases and controls on the basis of observables, the propensity score reduces the dimensionality problem of matching treated and control units on the basis of the multidimensional vector X.[17]

The propensity score-matching methodology works by estimating a logit (or probit) model:

$$\Pr \{D_i =1 \mid X_i \} = \Phi (h(X_i)) \qquad (5)$$

But the propensity score methods only work over the region of common support: we can identify the effect of a treatment if we can match treated observations with untreated observations with similar characteristics. In some cases this is not possible. In that case we do not observe a counterfactual and hence cannot assess the effect of the treatment.[18] Even if the propensity score regressors do not perfectly predict treatment, we may loose some observations because they fall outside the region of common support. For instance, some individuals may have characteristics that

[17] It is important to note that the outcome plays no role in the algorithm for the estimation of the propensity score. This is equivalent, in this context, to what happens in controlled experiments in which the design of experiment has to be specified independently of the outcome.

[18] We may be able to use a discontinuity design, though, either by comparing treated individuals before and after, or by comparing individuals immediately above and below the eligibility criterion – assuming this criterion is continuous.

make treatment very unlikely: they have a very low p(X). Depending on the data, it is possible that none of the treated individuals has such a low p(X). In that case all individuals with a low p(X) have no match among the treated. One way is to drop treatment observations whose propensity score is higher than the maximum or less than the minimum of the controls. ATT has then be redefined as the mean treatment effect for those treated failing within the common support. This may play in favour of the matching technique. The overlap requirement across treated and non-treated units, in a sense, avoids making questionable extrapolations outside common support, as all parametric methods do. However, enforcement of the common support can result in the loss of a sizeable proportion of the treated population. For these discarded individuals, the treatment effect cannot be estimated. Consequently they drop out of the estimation of the treatment effects altogether and the interpretation of the propensity score matching estimator is thus always limited to the common support region.

The implication is that we must have regressors that predict p(X) well enough to eliminate any selection bias – but not so well as to eliminate common support. Policy interventions often target individuals most likely to benefit from the intervention. The better targeting is, the more difficult it is to estimate the effect of the policy.

There are many possible ways of implementing this method. This is because; in practice getting exactly identical propensity scores is unlikely. One possible method is, for each treatment, to take as control the observation with the closest propensity score (***nearest neighbour***). In this case, each treatment is matched with a single control. Heckman, Ichimura and Todd (1997) and Heckman, Smith and Todd (1996,1998) have shown that it is possible to improve efficiency by using multiple controls for each treatment. The methods they have proposed have in common that the counterfactual E[Y |D=0, p(X)] is estimated using a weighted average of the matched controls j for treatment I, where the weight W(i,j) falls with the distance between the propensity score of the treatment p_i and the propensity scores of the nearest neighbours p_j.

Formally:
$$\hat{\tau} = \frac{1}{n_T} \sum_{i \in I_T} \left\{ Y_{1i} - \hat{E}[Y_{0i} | D = 1, p_i] \right\}$$
$$\text{with} \quad \hat{E}[Y_{0i} | D = 1, p_i] = \sum_{j \in I_C} W(i,j)\, Y_{0j} \qquad (6)$$

Where τ denotes the propensity score matching estimator, n_T is the number of treated observations, I_T denotes the set of treated observations, I_C is the set of untreated observations, and W(i,j) is the weighting function.

In what follows, we review different matching methods with their weighting scheme.

1. *Nearest neighbour*: a single control is used for each treatment and W (i,j)=1 for the nearest neighbour, and 0 for all others.
2. *Caliper matching* : a single control is used for each treatment and W(i,j) =1 for the nearest neighbour, provided $| p_i - p_j | \leq \varepsilon$. This rules out matching with distant nearest neighbours. In that case, some treatment observations have no matches. Inference is then restricted to those treatment observations for which a valid match could be found.
3. *Radius matching*: multiple controls are used for each treatment, namely all controls such that $| p_i - p_j | \leq r$ where r denotes the radius of comparison. Here $W(i,j)=1/N_i$ where N_i is the number of controls for treatment i that are within the defined radius. In radius matching, all observations within a given distance r of the treatment are used as controls. The purpose is to improve efficiency by reducing noise among the controls.
4. *Stratification (or interval) matching*: the common support of p_i is divided into intervals or strata. Comparison of treatment and controls is done for each stratum. The ATT is the average over the different strata. Here the weighting is 1 if the controls are in the same strata.
5. *Kernel matching*: multiple controls are used for each treatment, with a weight that declines with distance. Formally, we have

$$\widehat{\tau} = \frac{1}{n_T} \sum_{i \in I_T} \left\{ Y_{1i} - \sum_{j \in I_C} Y_{0i} \frac{G\left(\frac{p_j - p_i}{a_n}\right)}{\sum_{j \in I_C} G\left(\frac{p_k - p_i}{a_n}\right)} \right\}$$

where G(.) a kernel function and a_n a bandwidth parameter. Here the weighting function is

$$W(i,j) = \frac{G\left(\frac{p_j - p_i}{a_n}\right)}{\sum_{j \in I_C} G\left(\frac{p_k - p_i}{a_n}\right)}$$

where the denominator ensures that the weights sum to one.

5.6. Data and Bias-corrections

The empirical analysis in this study draws on the primary data for this study collected in the winter of 2007-2008 in two districts of West Bengal: Hooghly and South 24-Parganas. In Hooghly cooperative culture is strongly grounded through the active existence of Primary Agricultural Credit (PACS) Societies at the block level and all kinds of cooperative societies, viz., Central Bank, Primary Land Mortgage Banks, Agricultural Credit Societies, Non-agricultural Credit societies have expanded exponentially in terms of their number of members and working capital over the period 2004-2005. All credit and non-credit societies have been reported to achieve a 12 % increase in the working capital in the year 2004-05 compared to the previous year. The other district selected is South 24-Parganas, which is specifically characterized by the absence of co-operative movement and all credit and non-credit societies have been reported to suffer from a substantial decline in working capital during 2004-05.

Primary data was collected from 750 individual women of each of the two districts. The sample has then been divided into treatment and control groups. As discussed in the earlier section, active participants have been considered to be the treatment group with all others being the control. In the context of our study, there are three potential sources of selection biases in measuring program impact: firstly, active participants are likely to be different from their control comparators in terms of their distribution of observed covariates, which is known in the literature as "selection on observables". Such a bias is likely to arise because of any changes in the screening criteria used by the group-promoting agencies (both government and non-governmental organizations) over the years. We control for this selection on observable in two ways. First, in the sample design, we included the group of women who share more or less similar experiences in terms of socio-economic characters. In doing so, we compare the treatment group of active participants with a comparison group of incoming active participants, who are suitable but not yet been active enough to be treated. The prior selection process means that the active participants will tend to have similar observed characteristics whether or not they have actually received the treatment. Moreover, both the treatment and the control groups were purposively drawn from the same geographical area so that they do not differ much in terms of the socioeconomic and demographic characteristics. Secondly, as discussed in the next section we use the propensity score matching to control for observed differences between program participants in the control and treatment groups. This approach provides an unbiased measure of program impact under the assumption of "ignorability of

treatment", whereby the preprogram outcomes are assumed to be independent of treatment, conditional on the controls used in matching.

The second source of bias is that the treatment group might differ from the control group in the distribution of unobserved characteristics. In the context of this study the person-specific unobserved determinants of empowerment might give rise to such a bias. Invoking a political economy argument, it is perfectly plausible that the institutions aspiring to show empowerment potentials of their programs to attract subsidies from the donors were initially targeting relatively poor women with a lesser degree of autonomy. This emphasis of targeting less empowered women might have changed over time as institutions became more self-reliant and less dependent on donor subsidies. If this is the case, then selection into the program is determined by the pre-existing level of women empowerment, which cannot be controlled for with the observed data. Other factors contributing to unobserved heterogeneity might include unobserved attitudes, and characteristics of husbands and in-laws. Again, we try to control for selection on unobservables. The pipeline comparison method to some extent addresses the problem of latent heterogeneity (Ravallion, 2006). Since, both groups are self-selecting themselves into the program; it is argued that they might have similar distribution in terms of unobserved characteristics as well.[19]

A final source of bias can arise if participation in the program has positive externalities on those who joined the program at a later date. Such a bias is likely to be inconsequential if the control group is located at a fair distance from the treated locations. We could not ensure such a difference in terms of distance always at each administrative block, but given the poor (average) awareness level of the sample respondents, we just assume that such bias, if it exists is negligible.

5.7. Data Analysis

To illustrate the application of propensity score analysis, we start by identifying the criterion variable (outcome variable) as the Empowerment Index, a quantitative variable (continuous) derived for each individual woman in the sample. We separately estimate the propensity score for each district to capture the local effects more meaningfully. Once the criterion variable was identified, the propensity analysis proceeds by identifying nine covariates, which are basically pre-participation

[19] However, this argument ignores the time variant latent heterogeneity stemming from the timing of the decision to join the program. There may be unobservable reasons why potential active participants may differ from those who started participating actively at an earlier date. It could be argued that women who were more autonomous and empowered might have been the ones that joined the program earlier.

observable characteristics. Two of the covariates are continuous in nature, while the rest are dummy variables. In what follows, we present a detail description of covariates.

1. *Age* : age of the individual women (continuous variable),
2. *Marital status* : marital status of the individual woman (dummy variable, 1= married, 0= other),
3. *Caste* : Caste of the individual woman (dummy variable, 1= higher caste, 0= lower caste),
4. *Religion* : Religion of the individual woman (dummy variable, 1= Hindu, 0=other),
5. *Relationship with the household head* : Individual woman's relationship with the household head (dummy variable, 1=self or spouse, 0= others),
6. *Number of family members* : Number of family-members of individual woman (continuous variable),
7. *Housing Condition* : Housing condition of the individual woman (categorical variable, 1=very bad condition, 2=bad condition, 3=moderate condition, 4=good condition, 5=very good condition),
8. *Occupational Character*: Duration of being occupied of the individual member (categorical variable, 1=not working, 2=once in a while, 3=seasonally, 4=throughout the year),
9. *Mother's Education* :Mother's education of the individual member (dummy variable, 1=educated, 0=non-educated)[20]

In addition to these covariates, a dichotomised independent variable has been considered to identify the treatment effect of active group-participation. For this independent variable, which is labelled as *group-treatment*, the values of zero (control group) and one (treatment group) were assigned indicating the pattern of participation (and non-participation). More precisely this turns out to be a dummy variable; 1=active participants and 0= all others.

In matching, we try to pair a woman who actively participates in self-help groups with a woman or a group of women who do not but are observationally similar. Using this intuition statistically, we should compare the active participants with an individual woman who does not participate actively but had the same probability of doing so. So what turns out to be important is the similarity of

[20] We tried to include Father's education as a possible covariate but later it has been removed as removing it was necessary in order to satisfy the balancing property (to be discussed later). Own education has already been included in the construction of empowerment index (the outcome variable).

matched pair in terms of pre-participation characteristics (covariates). Table 5.1 gives the descriptive statistics of reach of the pre-participation characteristics in the treated and the control groups

Table 5.1: Descriptive Statistics of pre-participation characteristics (covariates)

	Hooghly				24-Parganas (South)			
	Treatment group		Control Group		Treatment Group		Control Group	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Age	32.43	9.34	31.80	10.04	32.38	9.43	32.15	9.56
Marital Status (1=married, 0=other)	0.85	0.35	0.82	0.38	0.90	0.29	0.87	0.32
Caste (1=higher caste, 0=lower caste)	0.53	0.49	0.54	0.49	0.37	0.48	0.40	0.49
Religion (1=Hindu, 0=other)	0.85	0.35	0.91	0.28	0.90	0.29	0.89	0.31
Relations with the Head (1=self or spouse, 0=others)	0.83	0.37	0.79	0.40	0.83	0.37	0.81	0.38
Number of family members	5.0	2.3	5.06	2.35	4.88	2.24	4.89	2.27
Housing condition (1=very bad, 2=bad, 3=moderate, 4=good, 5=very bad)	2.55	1.13	2.63	1.18	2.71	1.13	2.67	1.09
Occupational Characteristic (1=not working, 2=once in a while, 3=Seasonally, 4='Throughout the year)	1.63	1.12	1.67	1.16	2.11	1.34	2.12	1.37
Mother's Education (1=educated, 0=non-educated)	0.42	0.49	0.34	0.47	0.41	0.49	0.39	0.48
Group Size	405		345		441		309	

Source: Primary survey data

A logistic regression model was constructed for the purpose of estimating the propensity score for each individual woman. The group-treatment variable served as the criterion variable for the model and the covariates were considered as possible predictor variables. The result of the logistic regression model is represented in Table 5.2. The logistic regression model developed was used to estimate a probability of each 750 individual woman of the two survey districts. Each probability value represented the probability that the corresponding individual would be a member of the

treatment group (i.e. active participants, who is assigned a value of one in the treatment variable). But the propensity score methods only work over the region of common support. This restriction implies that the test of balancing property is performed only on the observations whose propensity score belongs to the intersection of the supports of the propensity score of treated and controls.[21] So even if the propensity score regressors do not perfectly predict treatment, we may loose some observations because they fall outside the region of common support.

Table 5.2: Results for the Logistic Regression

	Hooghly		South 24-Parganas	
	Coefficient (Standard error)	t-value	Coefficient (Standard error)	t-value
Age	0.008 (0.007)	1.78	0.01 (0.01)	1.27
Marital Status (1=married, 0=other)	0.24 (0.24)	1.96	0.56 (0.28)	2.00
Caste (1=higher caste, 0=lower caste)	-0.82 (0.17)	-4.82	-0.05 (0.16)	-2.34
Religion (1=Hindu, 0=other)	-0.78 (0.20)	-3.84	0.55 (0.19)	2.85
Relations with the Head (1=self or spouse, 0=others)	0.35 (0.26)	1.34	0.25 (0.24)	1.54
Number of family members	-0.009 (0.035)	-0.28	-0.03 (0.03)	-0.87
Housing condition (1=very bad, 2=bad, 3=moderate, 4=good, 5=very bad)	-0.07 (0.066)	-1.13	0.10 (0.073)	1.39
Occupational Characteristic (1=not working, 2=once in a while, 3=Seasonally, 4=Throughout the year)	0.32 (0.077)	4.24	0.11 (0.057)	2.01
Mother's Education (1=educated, 0=non-educated)	0.34 (0.172)	2.02	0.57 (0.165)	3.46

Source: Primary survey data

The region of common support for this study has been derived to be [0.23, 0. 86] for the district of Hooghly and [0.22, 0.83] for the district of South 24-Parganas.Four individual women in Hooghly and two in South 24-Parganas have been identified to have a propensity score outside the region of

[21] Imposing the common support condition in the estimation of the propensity score may improve the quality of the matches used in the estimation of ATT. Note, however, that in this way high quality matches may be lost at the boundaries of the common support and the sample may be considerably reduced. So imposing the common support is not necessarily better (Lechner, 2001).

common support. Hence the matching had been operated on 746 women in Hooghly and 748 women in South 24-Parganas.

The propensity scores are stratified in to five blocks in each district. Note that we effectively deal with only four blocks in both the districts, since the first block does not have any observation. Table 5.3 represents the distribution of treated and controls across blocks in two districts. A two-sample t-test with equal variance has been carried out in each block to ensure that the mean propensity score is not different for treated and controls in each group. Table 5.4 represents the results of the two-sample t-test for each block. Balancing property has been tested for each block for all the covariates by conducting a two-sample t-test with equal variances for each covariate in each block. This has been carried out for each of the two districts and the mean and the standard error of each covariate in each block is presented in table 5.5.Balancing is a necessary precondition in carrying out the propensity score-matching methodology to derive the treatment effect.

Table 5.3: Description of treated and controls across blocks

Blocks of propensity score	Hooghly			South 24-Parganas		
	Control group	Treatment Group	Total	Control Group	Treatment Group	Total
1	-	-	-	-	-	-
2	80	45	125	33	21	54
3	183	173	356	162	165	327
4	73	169	242	107	247	354
5	5	18	23	5	8	13
Total	341	405	746	307	441	748

Source: Primary Survey data.

Table 5.4: Test that the mean propensity score is not different for treated and controls

	Hooghly				South 24-Parganas			
	Control		Treatment		Control		Treatment	
Block	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
1	-	-	-	-	-	-	-	-
2	0.32	0.03	0.32	0.04	0.38	0.02	0.34	0.04
3	0.46	0.03	0.47	0.04	0.50	0.04	0.51	0.04
4	0.64	0.01	0.64	0.01	0.64	0.02	0.64	0.02
5	0.68	0.05	0.68	0.05	0.73	0.02	0.74	0.02

Source: Primary Survey data.

Table 5.5.(a) : Balancing of Covariates in each block(Block 2, Block 3, Block 4)

	Covariates	Hooghly				South 24-Parganas			
		Control Group		Treatment Group		Control Group		Treatment Group	
		Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
BLOCK 2	Age	29.29	12.67	27.57	8.37	23.50	6.41	24.66	8.54
	Marital status	0.29	0.46	0.42	0.50	0.50	0.51	0.25	0.45
	Caste	1	0	1	0	0.70	0.47	0.50	0.52
	Religion	1	0	1	0	0.40	0.50	0.16	0.38
	Relation with Head	0.05	0.22	0	0	0	0	0.16	0.38
	Number of Family members	5.13	1.82	5.52	1.21	7.00	2.27	5.00	1.90
	Housing Condition	3.12	1.12	3.08	1.22	2.27	1.20	2.23	0.94
	Occupational Characteristic	1.01	0.11	1.04	0.20	1.57	0.90	1.76	1.22
	Mother's Education	0.22	0.42	0.22	0.42	0.09	0.29	0.04	0.21
BLOCK 3	Age	32.11	10.85	31.97	9.65	31.64	10.35	31.39	9.89
	Marital status	0.78	0.41	0.77	0.41	0.74	0.43	0.80	0.39
	Caste	0.86	0.34	0.85	0.34	0.43	0.49	0.36	0.48
	Religion	0.89	0.31	0.83	0.37	0.47	0.50	0.54	0.49
	Relation with Head	0.76	0.42	0.75	0.43	0.60	0.49	0.56	0.49
	Number of Family members	4.91	2.28	4.96	2.47	5.19	2.72	5.38	2.93
	Housing Condition	2.57	1.21	2.57	1.31	2.38	1.01	2.40	0.99
	Occupational Characteristic	1.02	0.20	1.11	0.38	1.67	1.10	1.73	1.15
	Mother's Education	0.41	0.49	0.47	0.50	0.16	0.36	0.12	0.33
BLOCK 4	Age	33.04	8.95	34.51	9.01	32.77	9.12	33.93	8.71
	Marital status	0.94	0.23	0.94	0.23	1	0	0.99	0.05
	Caste	0.35	0.48	0.31	0.46	0.25	0.43	0.29	0.45
	Religion	0.64	0.48	0.68	0.46	1	0	1	0
	Relation with Head	1	0	1	0	0.98	0.13	1	0
	Number of Family members	5.08	2.07	5.03	2.24	4.34	1.45	4.31	1.43
	Housing Condition	2.69	1.18	2.57	1.12	2.74	0.90	2.85	1.04
	Occupational Characteristic	1.02	0.20	1.11	0.38	1.67	1.10	1.73	1.15
	Mother's Education	0.41	0.49	0.47	0.50	0.16	0.36	0.12	0.33

Note : There does not exist any observation in Block 1 in both the districts

Table 5.5.(b) : Balancing of Covariates in each block(Block 5)

	Covariates	Hooghly				South 24-Parganas			
		Control Group		Treatment Group		Control Group		Treatment Group	
		Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
BLOCK 5	**Age**	34.47	9.54	35.17	9.58	33.95	8.92	34.05	8.42
	Marital status	0.91	0.27	0.85	0.35	0.95	0.21	0.96	0.18
	Caste	0.35	0.48	0.40	0.49	0.45	0.50	0.26	0.44
	Religion	0.71	0.45	0.69	0.46	1	0	0.98	0.13
	Relation with Head	0.97	0.16	0.92	0.26	0.90	0.29	0.99	0.09
	Number of Family members	5.16	2.12	4.89	2.30	3.63	1.09	4.05	1.26
	Housing Condition	2.41	1.22	2.51	1.04	3.50	1.01	3.15	1.16
	Occupational Characteristic	2.42	1.29	2.62	1.37	2.72	1.57	2.83	1.36
	Mother's Education	0.38	0.48	0.43	0.49	0.95	0.21	0.88	0.32

Source: Primary Survey data

Note that the blocks within a district, that we had mentioned throughout the study are administrative blocks. The blocks through which propensity scores are stratified are different. These are sample blocks actually.

Matching involves pairing together treated and control units that are similar in terms of observable characteristics. The criterion (outcome) variable has been the empowerment index and the difference in outcomes of a matched pair is interpreted as the treatment effect. When relevant differences between two units in a pair are captured by observable covariates, matching method gives an unbiased estimate of the treatment effect. Various matching methods have been used to estimate ATT to capture the treatment effect of active-participation in self-help groups. Table 5.6 presents the result.

Table 5.6: Treatment Effect of Active Participation

District		Nearest Neighbor Matching	Radius Matching	Kernel Matching	Stratification Matching
Hooghly			**Radius: 0.0001**		
	Number of matched Treated	405	65	404	405
	Number of matched Controls	235	64	341	341
	ATT	0.198	0.220	0.096	0.067
	t-value	2.107	1.25	1.36	0.91
South 24-Parganas	Number of matched Treated	441	72	441	441
	Number of matched Controls	183	72	307	307
	ATT	0.054	0.080	0.037	0.052
	t-value	0.896	0.845	0.836	1.09

Source: Primary survey data

One way to match treated and control units consists of taking each treated unit and searching for the control unit with the closest propensity score, i.e. the Nearest Neighbour. Although, it is not necessary, the method is usually applied with replacement, in the sense that a control unit can be a best match for more than one treated unit. However, it is obvious that some of these matches are supposed to be fairly poor because for some treated units the nearest neighbour may have a very different propensity score and nevertheless he would contribute to the estimation of the treatment effect independently of this difference. The Radius Matching offers a solution to this problem. With Radius matching each treated unit is matched only with the control units whose propensity score falls in a predefined neighbourhood of the propensity score of the treated unit. If the radius is set to be very small it is possible that some treated units are not matched because the neighbourhood does not contain control units. In the present context even if the results of the Radius matching has been reported only for the radius 0.0001, but the estimation has been carried out for larger radius also in order to check the robustness of the estimation. This has been considered keeping the fact in mind that even if small radius can improve the quality of matching, it can reduce the number of matched

treated and controls. Kernel matching also offers a solution to the problem of Nearest Neighbourhood matching. With Kernel matching all treated are matched with a weighted average of all controls with weights that are inversely proportional to the distance between the propensity scores of treated and controls.

Treatment effect turned out to be positive in both the districts for all type of matching. But the treatment effect is significantly positive for the district of Hooghly (significance level is high for Nearest Neighbourhood matching). But the treatment effect of active participation in South 24-Parganas was not statistically significant. This draws our attention to an important fact that apart from similarity in terms of proximity to the state capital Kolkata, the districts of Hooghly and South 24-Parganas are characteristically different especially in terms of prevalence of cooperative culture. Hooghly is a district, which has a strong history of cooperation (all cooperative credit and non-credit societies increased exponentially both in terms of number of members and working capital) and as a result SHG-promotion became very popular in this district. On the contrary, despite of huge effort from both government and non-governmental agencies, SHGs have been reported to fail to produce the desirable outcome in South 24-Parganas; all credit and non-credit societies have been reported to suffer from a decline in working capital in this district. This has been reflected also in the ATT-based results. The positive ATTs derived in both the districts confirm the empowerment-enhancing potential of Self-help groups. But apart from active participation, what matters is the district-level local conditions, mainly the extent of cooperative culture. The difference in statistical significance (for Hooghly significant and for South 24-Parganas insignificant) between two districts reflects that. Again in each district sample has been collected from three different administrative blocks. These blocks are different in terms of (1) demographic characteristics (one rural, one semi-rural and one semi-urban) and (2) degree of prevalence of precondition of SHG-intervention (one with low intensity, one with medium intensity and one with high intensity). In what follows we will consider local dummies along with the other covariates to look for a more comprehensive result, by considering the "local" pre-participation characteristics properly. And we will study the interaction of this local dummy with other dummy-covariates to check whether interaction can contribute some other dimensions to the result. Table 5.7 represents the results when the administrative block has been taken as covariates. This consideration definitely increased the significance level of ATT in the district of Hooghly for all types of matching. Along with nearest neighbour, ATTs turned out to be positive for Kernel matching, Stratification matching and Radius matching. The significance level of

ATTs in the district of South 24-Parganas also increased considerably, but the difference with the district of Hooghly remains unchanged: Active participation in self-help groups in the district of Hooghly contributes significant treatment effect in the district of Hooghly than in South 24-Parganas.

Considering administrative blocks as covariates definitely improves the statistical significance of the results. In one way, this consideration helps us to capture the influence the purely local-level location-specific characteristics in deriving the treatment effect of a development initiative like promotion of women SHGs.

Table 5.7: Treatment Effect of Active Participation
(with location-specific characteristics as separate Covariates)

District		Nearest Neighbor Matching	Radius Matching	Kernel Matching	Stratification Matching
Hooghly			Radius: 0.0001		
	Number of matched Treated	405	61	405	404
	Number of matched Controls	212	60	341	344
	ATT	0.302	0.328	0.178	0.168
	t-value	3.04	2.06	3.68	2.00
South 24-Parganas	Number of matched Treated	441	156	441	441
	Number of matched Controls	200	123	307	307
	ATT	0.057	0.012	0.036	0.046
	t-value	1.40	0.105	0.915	1.06

Source: Primary survey data

The role of location-specific characteristics in influencing the treatment effect of SHG-participation prompts us to check for interactions of local-level characteristics with other socio-economic characters. Specifically local-level prevalent conservatism gets reflected through the empowerment-dynamism of different categories of marital status and prevalence of local-level cast-based hierarchies contributes significantly in the process of attainment of empowerment of inhabitant women. To capture these phenomena, we have used marital status-administrative block interaction

dummy and caste-administrative block interaction dummy as possible covariates and the results are shown in Table 5.8. With the incorporation of interaction dummies as covariates the results maintained its previous pattern for the district of Hooghly: ATTs turned out to be significantly positive for all four types of matching, viz. nearest neighbour, radius, kernel and stratification matching. The results change in South 24-Parganas- ATTs for Nearest Neighbour matching and Kernel matching turned out to be significant whereas ATTs for Radius matching and Stratification matching not significant as before.

Table 5.8: Treatment Effect of Active Participation
(With interaction dummies as separate Covariates)

District		Nearest Neighbor Matching	Radius Matching	Kernel Matching	Stratification Matching
Hooghly			**Radius: 0.0001**		
	Number of matched Treated	405	61	405	405
	Number of matched Controls	212	60	341	343
	ATT	0.302	0.328	0.178	0.185
	t-value	3.04	2.06	3.46	2.52
South 24-Parganas	Number of matched Treated	441	156	441	441
	Number of matched Controls	212	123	304	304
	ATT	0.302	0.012	0.029	0.030
	t-value	3.04	0.158	2.03	0.650

Source: Primary survey data

Incorporation of interaction dummies as separate covariates changed some of the results of matching and it provides some important dimensions to the context under study. The administrative blocks have been chosen in such a way to reflect the distinction of demographic characters within the district. One of rural, semi-urban and urban blocks has been chosen of each category in each district. And consequently it has its own impact on the determination of the empowerment index. The empowerment index has been higher in urban blocks than the rural blocks (with an exception in South 24-Paraganas, where an urban block like Sonarpur scores less than a rural block like Baruipur).

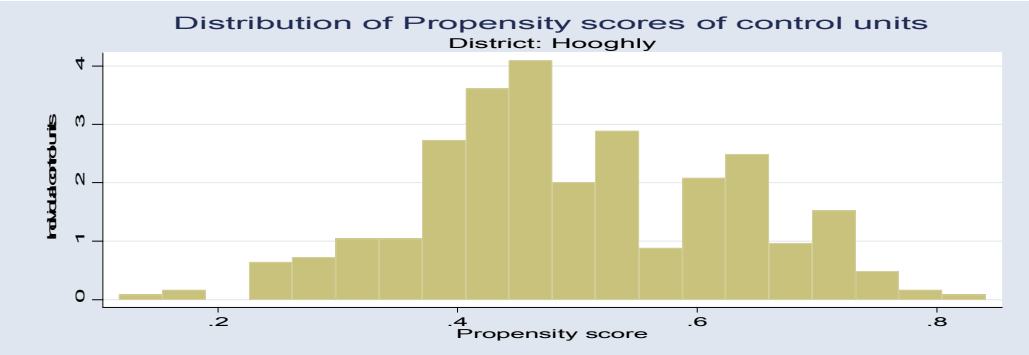
This rural-urban distinction has been very sharp in the district of Hooghly, where Pandua represents a truly rural block whereas Chanditala-I represents an urban block due to the proximity of this block to the industrial centre, Dankuni. Local-level characteristics get reflected through the empowerment-dynamism of different categories of marital status and prevalence of local-level cast-based hierarchies contributes significantly in the process of attainment of empowerment of inhabitant women. And once we incorporate this interaction dummies in this matching estimation, in Hooghly, ATTs has been positive and statistically significant for all four types of matching. This reinstates the robustness of the positive treatment effect of active group-participation in the district of Hooghly. This robustness has not been confirmed uniformly in the district of South 24-Parganas, where ATTs have been positive for all four types of matching but significant only for two types of matching, namely Nearest Neighbour and Kernel matching. Incorporation of interaction effects brings out some crucial dimensions to study the impact of active SHG-participation on empowerment and that leads to the attainment of significant results even in South 24-Parganas (which was insignificant before). These interaction effects capture the impact of several demographic characteristics in deriving the incremental effect on women empowerment through active group-participation, the most important one being the difference in terms of urban proximity.

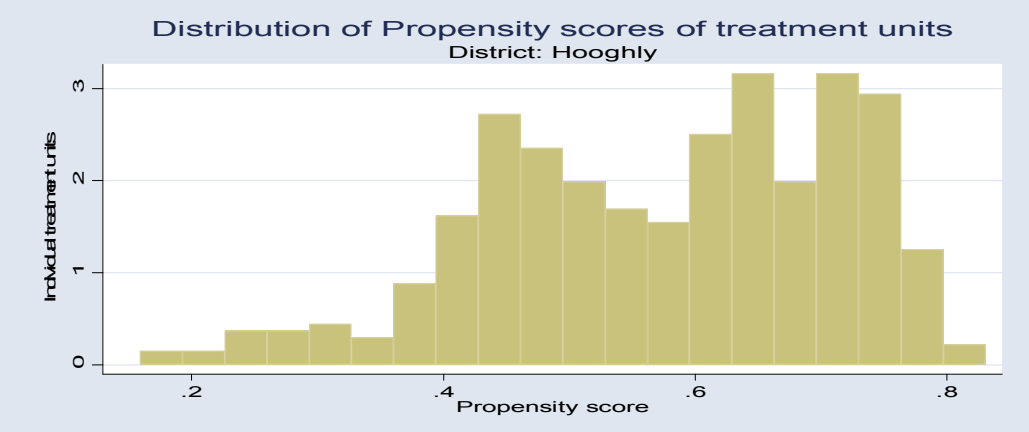
But the difference between two districts, under study, remains unchanged. The impact of active group-participation on empowerment seems to be more prominent in Hooghly. With the interaction dummies as covariates, ATTs turned out to be significant for all four types of matching in Hooghly and the same pattern of statistical significance has been observed when only local-level characteristics were incorporated as covariates. Even without incorporating local-level characteristics and/or interaction dummies, ATT has been significant in Hooghly for nearest neighbourhood matching. But in South 24-Parganas, ATTs turned out to be positive uniformly but statistical significance has been observed only after the inclusion of interaction dummies as separate covariates.

We considered three specifications in terms of pre-participation characteristics. Firstly we had nine covariates, viz. age, marital status, caste, religion, relationship with the household head, number of family members, housing condition, occupational character and mother's education. Secondly, we tried to capture the influence of location-specific characteristics and administrative block-dummies had been incorporated along with the previous nine covariates in the second specification. Finally, interactions of local-level characteristics with other socio-economic characters was considered and

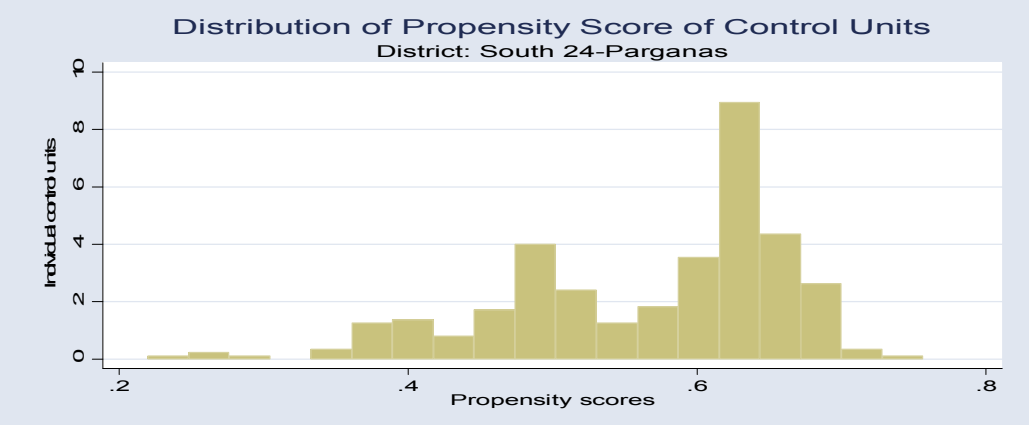
we used marital status-administrative block interaction dummy and caste-administrative block interaction dummy as covariates along with the other covariates in the third specification. The results demonstrated that the third specification derived the maximum significant ATTs in both the districts: in Hooghly ATTs had been significant for all four types of matching and in South 24-Parganas, ATTs turned out to be significant at least for two types of matching, viz. nearest neighbour matching and Kernel matching. So, bringing interaction dummies along with the other covariates turned out to be really advantageous. This third specification not only captures the impact of several demographic characteristics in deriving the incremental effect on women empowerment through active group-participation but it also increases the statistical significance of the treatment effect of participation. Significance level also increased with the incorporation of location-specific characteristics (second specification) but the increase has been more when interactions had been taken into account. Matching involves pairing treatment and control units that are similar in terms of their observable characteristics. In the third specification when we brought interaction dummies along with the other covariates, we tried to incorporate the maximum number of pre-participation observations under study, and this turned out to be beneficial in order to bring out the significance level of the incremental effect of group-participation more visibly.

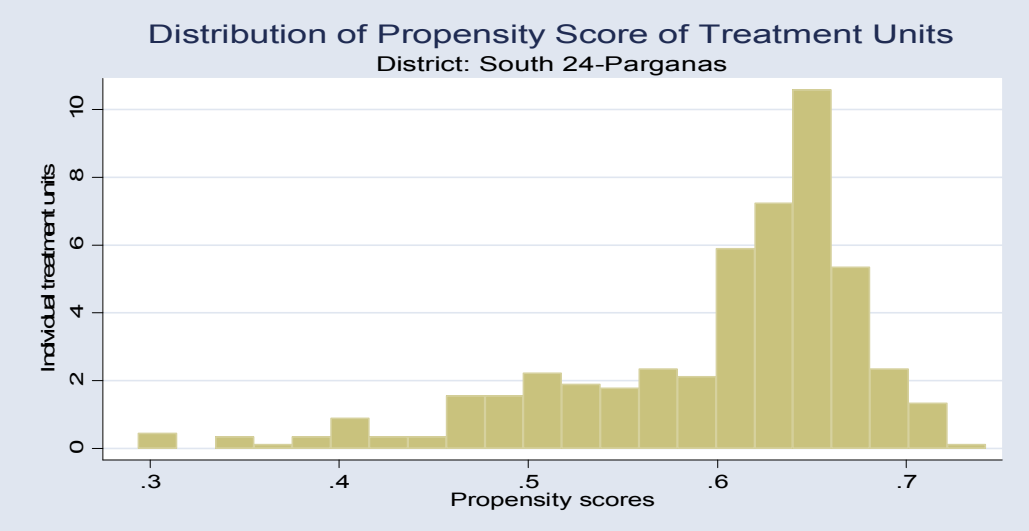
One important feature of the results is the reduction in the number of matched controls. While the analysis started with a fixed number of tread and control in each district, when the matching operated, we observe a reduction in the number of (matched) controls. This reduction is greater for nearest neighbour matching than for radius, Kernel or stratification matching. This implies some control units have been matched with more than one treated unit and for some control units no match could be found in the treated units. Firstly, we should take care of the fact that during the process of formation of self-help groups, in most of the cases the time-gap between loan-repayment and disbursement remains short. And this leads to an excessive emphasis on rapid growth of groups, mainly following the quantitative criterion. As a result, propensity of becoming an active member does not always remain as the principal determinant in choosing the members and some with low propensity are taken to be treated while, some remain as control even with high propensity. To interrogate this issue more precisely, we need to consider the distribution of propensity scores among treated units and control units to derive a justification of the reduction of matched control. We observe the distribution of propensity scores by looking at the histogram representation for both the treatment and control groups.





The representation of the distribution of propensity scores among the treated and the control units in the district of Hooghly clearly presents a sharp difference. Propensity scores of control units shows a clustering around the median-score, while the distribution for the treatment unit is more dispersed. Some treatment units have a very low propensity score, but got treated anyway and this creates problem to find suitable match for them among control units. Again a part of treated units have very high propensity score for obvious reasons and since control units do not have propensity scores of that extent, it became problematic to find suitable match for them. Some control units surprisingly having very high propensity score and could be matched. Altogether it leads to the phenomena of matching some control units with more than one treated unit. In what follows we will consider the distribution of propensity scores among the treated and control units in the district of South 24-Parganas.





The distribution of propensity scores among the treated and the control units in the district of South 24-Parganas does not provide any significant difference. A part of the control units have a high propensity scores and the fact that despite of having high propensity scores, these units are not treated, reflects the failure in the implementation of Self-help groups in this districts. Again surprisingly some of the treated units have a low propensity score, which makes a problem in finding a suitable match for them among the control units. A clustering of control units around the median-score has been observed but that kind of clustering is not so pronounced for treated units. Altogether these differences rationalize the phenomena of dropping of (matched) controls during the process of matching.

Concluding Observations

This chapter explores an effective evaluation non-parametric methodology to estimate the incremental contribution of active SHG-participation to women empowerment. The possible biases had been taken into consideration so that an appropriate methodology can be applied to solve for an unbiased treatment effect of group-participation. The main contribution of this chapter is to demonstrate the use of propensity score methods and to apply them in such a context that allows us to assess their efficacy. A propensity score-matching method has turned out to be able to yield estimates of the treatment effect, in nonexperimental settings, of active participation in self-help groups. The method has been used to pair the large comparison group down to the relevant comparisons without using information on outcomes. Of course, the quality of the estimate that emerges from the resulting comparison is limited by the overall quality of the comparison group that has been used.

The results demonstrated the role of truly local block-level characteristics, like demographic features, urban proximity and the extent of prevalent conservatism in shaping the capability set of its inhabitants. Evidences indicated that the SHG-participation is likely to have positive effects on women's empowerment. But while all channels for women empowerment including various self-employment enterprises (like SHGs) need pursuing, the study explored that the latter channel alone can not realistically help more than a small percentage of women, especially in countries such as India, where a bunch of other socio-economic factors influences the process of actual realization of existing opportunities. More specifically, the role of truly local characteristics, like caste-based hierarchy and the extent of prevalent conservatism had been observed in shaping the capability set of its inhabitant women and hence in unleashing the process of women empowerment. This study questions this perceived homogeneity of Indian women, even in rural societies and interrogates the role of caste/ethnicity-based characteristics in deriving dissimilar results from an apparently uniform program. The emphasis on caste 'culture' legitimizes the need to differentiate between ***Identity*** and ***Recognition*** in the evaluation of the success of Women SHGs. SHGs through unleashing the process of empowerment, can help group-members to supersede their identities to the pursuit of better social recognitions. While a uniform ***Structure*** can provide an ***identity***, community-based institutions like SHGs are more efficient in developing ***autonomy/agency*** to its members, thereby providing more valuable ***recognition*** in the social space. This again calls for a more comprehensive

analysis of the scope and limitations of the *State bodies* and its *Private* counterparts, i.e. Private not-for-profit *NGO*s in promoting SHGs.

Even though the results show incremental gains in empowerment through SHG-participation, there are indications that if development programs are not locally sensitised potential gains in empowerment may not be fully realised. This requires a further introspection of the assumption of homogeneity of target group of the program. Evidences indicate that this homogeneity breaks down due to the presence of a bunch of social characteristics, including prevalent caste-hierarchy, the origin of which can be traced back to the institutional structures. SHGs have been promoted both by the government and non-governmental organisations. While the government usually identifies the target group according to some kind of uniform characters, NGOs seem to have more diversified agendas. The complementarity between government and NGOs needs to be addressed to derive an efficient institutional setting for SHG-promotion, which will unleash the process of empowerment in a more comprehensive manner.

This chapter also highlights one of the major drawbacks of the implementing agencies in promoting self-help groups in a rapid manner. Excessive emphasis on rapid growth of SHGs only by quantitative criterion makes it possible that some individuals get left-out of the programs even if having huge potential to be accommodated, whereas a part of the members get involved even if having a low propensity to be involved. A purely bureaucratic management of "number-games" can upset incremental gains of a participatory development mechanism and that may count for the main source of reasoning out the limitation of such a potential development initiative to keep its own promises.

Chapter 6

Epilogue

We started with the stories of Rehana and Sajeeda. We wanted to see whether we could interpret the betterment of Sajeeda compared to the experiences faced by Rehana as an example of empowering-potential of Women Self-help Groups (remember, Sajeeda was a group-member, while Rehana was not). Self-help groups (SHGs) have emerged in order to help the rural poor, particularly women, in securing credit and other services. SHGs lay the foundation of self-reliance through the building up of an institution, which has the capacity to begin the development and empowerment process for women. Along with poverty eradication, empowerment of women has for a long time been a stated aim of many development programs. There has been a significant analysis of the need to reform the 'Women in Development'(WID) approach to development cooperation and many have chronicled the shift from WID to Gender Analysis in Development (GAD), arguing for approaches informed by a gender analyses of social relations. Given that the earlier WID movement had been premised on a notion that women were excluded from development and that there was a growing feminist analysis of the patriarchal nature of the state and the ways in which it ignored the interests of women, this new scenario opened spaces for organizations of women and for the participatory development practices. SHGs provide opportunities to women to interact among themselves and within the wider social context. In a special way, being a part of an SHG helps women to understand their status in the family and society, their access over resources, local governance and so on.

The state of West Bengal was a particularly compelling place for us to study the empowerment-enhancing role of women SHGs. Sharing both a border and language with Bangladesh, the state is influenced by the long history of microfinance programs. At the same time the government and the non-governmental organizations of West Bengal have developed a unique format for a women-focused microfinance SHG movement. Two districts were selected to study the influence of SHG-participation in enhancing the overall capability of recipient women :1) Hooghly, all kinds of

cooperative societies have expanded exponentially in terms of their number of members and working capital over the period 2004-2005 and 2) South 24-Parganas, which is specifically characterized by the failure of co-operative movement and all credit and non-credit societies have been reported to suffer from a decline in working capital during the same period.

Advocates of group-approach claim that the very process of forming self-help groups is empowering and a critical mass is formed which can be harnessed to pull households out of poverty traps. The enhanced empowerment is expected to contribute towards higher capabilities and so the ultimate success of a SHG-program would lie on the extent to which the achievements of the social agents could be upgraded. But the capabilities by definition cannot be directly measured. What can be measured, however, are the functionings namely the achievements in each dimension. These achievements are generally identified by proper indicators reflecting the performance in the associated dimension. There could either be one indicator or as is more often the case a whole range of indicators available for each capability dimension. Besides these each capability gets affected by a bunch of socio-economic factors like age, marital status, caste, religion and relationship with the household head.

A research methodology was designed to address three major objectives (a) measuring latent capabilities through observed functionings, (2) assessing the contribution of different socio-economic factors in influencing capabilities and (3) deriving measure for empowerment determined by different levels of capability. A Multiple-Indicator-Multiple-Cause (MIMIC) model was formulated to address the first two objectives and that generated some quantifiable measures of 'latent' capabilities. To address the third objective, a structural equation (measurement) model was developed to estimate Empowerment Index, an unobserved phenomena in terms of estimated capability scores, obtained from the MIMIC model.

The results demonstrated the role of truly local block-level characteristics, like demographic features, urban proximity and the extent of prevalent conservatism in shaping the capability set of its inhabitants. This has a particular gender dimension as these local conditions significantly influence the intra-familial relative positions of women and contributes accordingly to produce different levels of capabilities. While the target group was perceived to be uniform in terms of local characteristics, the impact of the program produced divergent results and the divergence amounts to the inherent dissimilarity in terms of local-level conditions. Specifically marital status and caste came out as two

important factors, contributing much to these dissimilar results. Again even if group-participation definitely contributes to women empowerment in a positive way and this has been uniform over all the blocks: members score always higher than non-members, the duration of group-membership does not leave any uniform impact in influencing the extent of empowerment. Old-members are not necessarily better-off than New-members and this has been observed clearly in the sample-blocks of South 24-Parganas, where old-members paid the social cost of forming the groups and New-members enjoyed the late-starter's advantage. This phenomenon drew our attention to the quality of performance of the groups. Mere registration to a group couldn't contribute significantly in empowering the members. What came out to be more important in deriving the benefits of group-participation is the quality of participation. Changing the treatment/control group by making active participants as treated and all others as control, SHG-program evaluation through a quasi-experimental technique demonstrated an interesting observation. While treatment effect came out to be statistically significant in the district of Hooghly, the same effect lacks statistical significant in the district of South 24-Parganas. This again questions the presumed homogeneity of the target group.

So even when the problem of unobservability of empowerment/capability, has been resolved, the fact that the empowering potential of Women SHGs couldn't be asserted concretely requires a further introspection of the assumption of homogeneity of target group of the program. Evidences indicate that this homogeneity breaks down due to the presence of a bunch of local features, the origin of which can be traced back to the institutional structures.

Over the past two decades, the changing status and roles of women combined with the rise of modern feminism have promoted a dramatic increase in concern with the meaning and explanation of gender. Several years of feminist scholarship and women-in-development (WID) research has led to the consensus that gender is a fundamental organizing principle in human societies. Gender is a primary way of signifying relations of power and of constructing privileges and hierarchies. Gender is not "only about women": it refers to a structural relationship between sex categories which is linked to the state, the economy and to other macro and micro level processes. Gender is not a homogenous category, it s internally differentiated and elaborated by class, race/ethnicity, age, region and education. The most striking inequalities in Indian society are those based on caste and gender. The caste system, a form of social inequality, was introduced in India several hundred years ago and its origins are a subject of debate. Nevertheless, it is important to note that, within Indian states, the caste system varies across regions but there is mobility within the system. The social

restrictions on the lifestyles of women tend to become more rigid as one moves up in the caste hierarchy. Generally, there is more seclusion of upper caste women than among lower caste women. For instance, within upper caste communities, women are denied the right to gainful employment outside their homes. By contrast, lower caste women appear to have greater freedom to take up gainful employment. This is not because their people are more liberal or permissive but because economic conditions do not allow them to remain indoors.

Recognizing the existence of gender and caste as referencing social relations will enable the incorporation of both dimensions into research, thereby avoiding analyses based on only one axis of stratification. Women at the lowest end of organized hierarchy, such as the caste system, are likely to be the most vulnerable. But, the fact that women from among the lowest level in the hierarchy have less power relative to men and women from other castes also does not imply that they cannot negotiate through and/or challenge these systems of oppression. The forms and extent of oppression faced by poor women may vary and depends on whom they are interacting with, men and/or women from the higher caste. Such processes within the larger hierarchical structure shape gender relations. The social relations of caste and gender are based on the exercise of power either through the use of force overtly or in a subtle manner. Such power could be exercised by simply not permitting the space for raising issues outside the parameters created and defined by the powerful. Unequal gender power relations deny women autonomy, decision-making power and control over resources. Empowerment of women is critical to initiating change and challenging power structures, such as that of gender and caste.

Participation in groups and the interaction among members facilitates bonding and creates consciousness to mobilize a constituency. Consciousness consists of the interpretive frameworks as analytical tools for understanding the construction of collective identity in social movements. Consciousness-raising is critical for women, who have accepted silence and repression as part of their lives, to gain courage before considering change through group/collective. Consciousness-raising provides a framework for criticizing existing reality and reinterpreting both one's past and all history. Development of a consciousness has consequences in terms of the meaning attributed to collective action. Consciousness not only provides socially and politically marginalized groups with an understanding of their structural position but establishes new expectations regarding treatment appropriate to their category. Interaction among people in a collective transform threads in people's cultures and traditions, weaving ideas into new sets of values, beliefs and interpretations, codes of

behavior, and visions of the future. Such processes assume significance for disadvantaged groups like the lower-caste women, as they create an organizational resource for the collective itself to become an agent of change. This directs attention to the very long-term dynamics of social change through collectives embedded within communities.

In sum, empowerment has to be understood as involving both the individual and the collective, and therefore the potential for both to be actors that challenge power structures. Women recognize their self-worth through association with similar others. To be seen as part of a collective group, women had to first develop a self-identity to even relate to the group and internalize that. It involves a process of transformation of consciousness. Reformulation of identity facilitates a woman seeing herself as a worthy entity and this translates into action challenging norms that reinforce women's subordination.

This research has future implications at two levels. First, at the level of the SHG-program it is important to continue to assess the impact of such organizing on poor women rather than switch to the conventional approach of viewing women as beneficiaries only. Second, this analysis has implications for examining movements, particularly in a non western context.

A systematic periodic study, not restricted only to evaluation, of the program would be useful to modify program norms, if necessary, and then utilize the lessons learned to other state-sponsored initiatives for women. While I recognize that change is slow and it may be several years before the long-term impacts of such a program can be realized, the activities being carried out now may require methodological clarity and specificity. Such clarity can facilitate identifying elements contributing to the success of the program, that is, collectives in which women are not only learning to read and write but also reassessing life experiences for seeking change. In addition, a comparison of the structure of the partnership and elements of success can facilitate analysis of the form of collaborative alliance between the state and the community in different contexts. Such studies and comparisons can be useful for developing other similar programs for women. In a developing country context, this has implications for formulating social policy that considers the social basis of inequality rather than equate gender and development programs to solely raise income levels and so promote income-generating activities. A specific emphasis on the social basis of change is necessary for addressing power, prejudice and discrimination.

This study has implications for future research in a non-western context as well. Research on women's movements across developing countries can vary based on the situated context; the social, historical, economic and political conditions. The macro-micro linkages can prove useful for situating movement dynamics. This would also imply that a recognition of circumstances not completely familiar to the western reader. Few scholars in the western world are aware of the history and the politics of a developing country (with probable exceptions). Providing the background or considering the micro-macro link then is in itself a challenge for those studying movements in a non-western context.

The context, no doubt, impacts the ways in which women organize. In a country as diverse as India, modes of organizing can also vary within a country. It is important to make these assertions because as scholars draw parallels in issues across developing countries, they tend to overlook the ways in which women organize or the processes that women experience to seek change. In fact, even within a country, organizing women's groups in semi-urban areas differs from organizing groups in rural areas. Thus, attention to nuances such as movement organization forms, the role of the state, or the experiences of specific groups of women has a bearing on understanding movement dynamics. For instance, there is no one overarching movement or movement organization for the women's movement. The multi-organizational model comprises a variety of organizations and groups. The state is an important actor but the processes of shaping and enforcing laws in the interests of women has been weak. Movement groups have targeted the state, utilized opportunities, and framed issues like violence to seek change. The experiences of women may vary based on caste, class and other factors. Such an experience has consequences in terms of women's responses to organizing efforts, and so their participation in these groups is not identical to voluntary participation in groups in the western context. The understanding of the silencing of the poor women in India would enable a researcher to better situate the significance of participation in groups. Recognizing the intersections of caste, class and gender do provide a theoretical basis for understanding construction of social relations in the particular context of the study. It is therefore imperative to understand movement dynamics within those unique circumstances rather than try to "fit" these cases into an existing model. Ultimately, the onus lies on scholars to recognize these variations without slipping into convenient interpretations of actions.

Appendix: Questionnaire

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Prepared for the study on
Contribution of Self-help Groups to the pursuit of Women Empowerment : A Capability Approach

A District-level study in the state of West Bengal, India

By
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District -		G.P. -
Village -	Block -	Questionnaire No. –
Name of the Interviewer –		
Date:	Type of Respondent : Old Group - 1 New Group -2 Non Group - 3	
Name of the Supervisor –		
Date :	Type of Cheque – A/C – 1 B/C – 2 S/C - 3	

1. Name of the respondent :----------

2 Address :----------

3. Age(in completed years) :----------

4.	Are you now married, separated, deserted, divorced, widowed or never married ?	Married :1 Separated :2 Deserted :3 Divorced :4	If the code is 6 Skip the reproductive Health section And go to the woman's

		Widowed :5 Never Married :6	work section.
5.	What is your religion?	Hinduism :1 Islam :2 Christianity :3 Sikh :4 Jain :5	
6.	What is your caste?	General :1 Scheduled Caste :2 Scheduled Tribe :3 Other Backward Caste :4 Other :5	
7	What is your relation with the head of the household?	Self :1 Wife :2 Daughter :3 Mother :4 Daughter-in-law :5 Relatives :6 Other :7	

Reproductive Health

Section 1: Reproduction

8. (A)	Now I would like to ask about all the Births you have had during your life. Have you ever given birth?	Yes : 1 No : 2	
If the respondent has never been conceived, then go directly to the Contraception section			
(B)	How many sons live with you? How many daughters live with you?	Sons : Daughters:	
(C)	How many boys have died? How many girls have died?	Boys dead : Daughters dead :	
(D)	How many number of times did you Have abortion (spontaneous or induced)?	Number :	

9. A) As from your previous statement, you have…no. of children alive and…no. of children dead. Now I like to know details of those children. This will continue for all the children

Serial No.	a) Male :1 Female :2	b) Date of Birth?	c) Alive:1 Dead : 2	d) How old is he (she)? / How old is he (she) at the time of death?	e) Where did you give birth ? (code)	f) who assisted you? (code)	g) {if the answer to (f) is 1/2/3/9 then ask to this question} Reason for this (code)
1							
2							
3							
4							
5							
6							
7							

Codes for(e) Own home : 1 Maternal home : 2 Other house : 3 Govt. hospital : 4 Govt. dispensary : 5 Sub-center : 6 Private hospital : 7 Private clinic : 8 Other place : 9
Codes for(f) Doctor : 1 Nurse/Other health-worker : 2 Daai : 3 Friend/Relative : 4
Codes for(g) Not necessary: 1 Not customary: 2 Cost too much: 3 Too far/Lack of transport: 4 No time to go: 5 Family did not allow: 6 Lack of knowledge : 7

Contraception

10.(I) Now I would like to talk about family planning- the various ways or methods that a couple can use to delay or avoid a pregnancy				
	Which ways or methods have you heard about?	Have you ever heard of?	Have you ever used?	
(A)	FEMALE STERILIZATION : Women can have an operation to avoid having any more children	Yes :1 No : 2	Yes :1 No: 2	If the code is 1 then go to 10 (II)
(B)	MALE STERILIZATION (VASECTOMY) : Men can have an operation to avoid having any more children	Yes :1 No : 2	Yes :1 No :2	
(C)	PILL :Women can take a pill every day	Yes : 1 No :2	Yes :1 No :2	
(D)	IUD : Women can have a loop or coil placed inside them by a doctor or a nurse	Yes :1 No :2	Yes :1 No :2	
(E)	INJECTIONS : Women can have an injection by a doctor or nurse which stops them from becoming pregnant for several months	Yes :1 No :2	Yes :1 No :2	
(F)	CONDOM : Men can put a rubber sheath on their penis before sexual intercourse	Yes :1 No :2	Yes :1 No :2	
(G)	SAFE PERIOD : Couples can avoid having sexual intercourse on certain days of the month when the woman is more likely to get pregnant	Yes ;1 No :2	Yes ;1 No :2	
(H)	WITHDRAWAL : Men can be careful and pull out before climax	Yes :1 No :2	Yes :1 No :2	
10 (II)	Where did the sterilization take place?	Public Sector Hospital/Medical College :1 Family Welfare Centre :2 Maternal and Child Welfare Centre :3 NGO Sector NGO Static Clinic :4 NGO Satellite Clinic :5 Private Medical Sector		

		Private Hospital/Clinic :6 Qualified Doctor :7	

Women's Work

11. **(A)**	Now I would like to ask you some questions about your work. As from your own housework, are you currently working?	Yes :1 No :2	
(B)	Where do you work?	Agriculture :1 Teaching :2 Service and Industries :3 Health professionals :4 Other (specify) :5	
(C)	What is the type of work?	Own business :1 Co-sharer in business :2 Working in a family business/farm :3 Employed by others :4 Other (specify):5	If the code is 1 or 2 then ask question no. 19
(D)	Do you usually work throughout the year, or do you work seasonally, or only once in a while?	Throughout the year :1 Seasonally/Part of the year :2 Once in a while :3	
(E)	Are you paid in cash or kind for this work or are you not paid?	Cash only :1 Kind only :2 Cash and kind :3 Not paid :4	
(F)	Do you have employees at your own business?	Yes :1 No :2	If the code is 1 then ask question no. 20
(G)	How many employees do you have?	Number :	

Food Intake

12. Now I like to have some information about your food intake		
A.	How many days do you take RICE in your lunch or diner ?	Daily :1 Thrice weekly :2 Once weekly :3 Rarely :4 Don't eat :5
B.	How many days do you take SOUPE in your lunch or diner ?	Daily :1 Thrice weekly :2 Once weekly :3 Rarely :4 Don't eat :5
C.	How many days do you take BREADS in your lunch or diner ?	Daily :1 Thrice weekly :2 Once weekly :3 Rarely :4 Don't eat :5
D.	How many days do you take VEGATABLES in your lunch or diner ?	Daily :1 Thrice weekly :2 Once weekly :3 Rarely :4 Don't eat :5
E.	How many days do you take MILK in your lunch or diner ?	Daily :1 Thrice weekly :2 Once weekly :3 Rarely :4 Don't eat :5
F.	How many days do you take FRUITS in your lunch or diner ?	Daily :1 Thrice weekly :2 Once weekly :3 Rarely :4 Don't eat :5
G.	How many days do you take EGG in your lunch or diner ?	Daily :1 Thrice weekly :2 Once weekly :3 Rarely :4 Don't eat :5
H.	How many days do you take MEAT/FISH in your lunch or diner ?	Daily :1 Thrice weekly :2 Once weekly :3 Rarely :4 Don't eat :5

Health

13 (A). Overall Health			
a.	In general, how much would you rate your health today?	Very good :1 Good :2 Moderate :3 Bad :4 Very Bad :5	
b.	Overall in the last 30 days, how much difficulty did you have with work or household activities?	None :1 Mild :2 Moderate :3 Severe :4 Extreme/Cannot do:5	
(B). Mobility			
a.	Overall in the last 30 days, how much difficulty did you have with moving around?	None :1 Mild :2 Moderate :3 Severe :4 Extreme/Cannot do:5	
b.	In the last 30 days, how much difficulty did you have in physically strenuous activities?	None :1 Mild :2 Moderate :3 Severe :4 Extreme/Cannot do:5	
(C) Self Care			
a.	Overall in the last 30 days, how much difficulty did you have with self-care, such as washing or dressing yourself?	None :1 Mild :2 Moderate :3 Severe :4 Extreme/Cannot do:5	
b.	In the last 30 days, how much difficulty did you have in taking care of and maintaining your general appearance (e.g. grooming, looking neat and tidy etc.)	None :1 Mild :2 Moderate :3 Severe :4 Extreme/Cannot do:5	
(D) Pain and Discomfort			
a.	Overall in the last 30 days, how much of bodily aches or pains or discomfort did you have?	None :1 Mild :2 Moderate :3 Severe :4	

		Extreme/Cannot do:5	
(E). Vision			
a.	Do you wear glasses or contact lenses?	Yes :1 No :2	
b.	In the last 30 days, how much difficulty did you have in seeing and recognizing a person you know across the road (i.e. from a distance of about 20 meters)?	None :1 Mild :2 Moderate :3 Severe :4 Extreme/Cannot do:5	
c.	In the last 30 days, how much difficulty did you have in seeing and recognizing an object at arm's length or in reading?	None :1 Mild :2 Moderate :3 Severe :4 Extreme/Cannot do:5	
(F). Sleep and Energy			
a.	Overall in the last 30 days, how much of a problem did you have for sleeping compared to your normal standard?	None :1 Mild :2 Moderate :3 Severe :4 Extreme/Cannot do:5	
(G) Affect			
a.	Overall in the last 30 days, how much of a problem did you have with feeling sad, low or depressed?	None :1 Mild :2 Moderate :3 Severe :4 Extreme/Cannot do:5	
b.	Overall in the last 30 days, how much of a problem did you have with worry or anxiety?	None :1 Mild :2 Moderate :3 Severe :4 Extreme/Cannot do:5	

Education

14. (A)	Have you ever attended school?	Yes : 1 No :2	**If Yes go to (B)** **If No go to (H)**
(B)	What level of education have you last attended?	Can sign only :1 Currently student : 2 Education completed :3	
(C)	What is the highest grade completed?	Upto 4^{th} :1 5^{th} to 10^{th} :2 Passed Secondary :3 11^{th} to Higher Secondary :4 Passed Higher Secondary :5 Graduate :6	
(D)	Would you have liked to continue your education further?	Yes :1 No :2	**If Yes go to (E)**
(E)	What could be the main force to terminate your education?	Distance of the school :1 Guardian's wish :2 Marriage :3 Financial constraint :4 Family obligations :5	
(F)	Do you like to start achieving education further?	Yes :1 No :2	**If Yes go to (G)**
(G)	Is there any scope for that?	Yes :1 No :2	
(H)	Can you read and write easily, with difficulty or not at all /	Easily :1 With Difficulty :2 Not at all :3	
(I)	Do you usually read a newspaper or magazine or book?	Yes : 1 No :2	
(J)	How often do you read newspaper or magazine or book?	Every day :1 At least once a week :2 Less than once a week :3	
(L)	What level of education has your mother last attended?	Illiterate :1 Educated :2	
(M)	What is the highest grade your mother completed?	Upto 4^{th} :1 5^{th} to 10^{th} :2 Passed Secondary :3 11^{th} to Higher Secondary :4	

		Passed Higher Secondary :5 Graduate :6	
(N)	What level of education has your father last attended?	Illiterate :1 Educated :2	
(O)	What is the highest grade your father completed?	Upto 4th :1 5th to 10th :2 Passed Secondary :3 11th to Higher Secondary :4 Passed Higher Secondary :5 Graduate :6	
(P)	Now I like to ask you about the education level of your husband. Do you have an idea of that?	Yes :1 No:2	
(Q)	What level of education has he last attended?	Illiterate :1 Educated :2	
(R)	What is the highest grade he completed?	Upto 4th :1 5th to 10th :2 Passed Secondary :3 11th to Higher Secondary :4 Passed Higher Secondary :5 Graduate :6	
(S)	Now I like to ask you about the education level of the head of household. Do you have an idea of that?	Yes :1 No:2	
(T)	What level of education has he/she last attended?	Illiterate :1 Educated :2	
(U)	What is the highest grade he/she completed?	Upto 4th :1 5th to 10th :2 Passed Secondary :3 11th to Higher Secondary :4 Passed Higher Secondary :5 Graduate :6	

Housing Condition

15. **(A)**	Now I would like to ask you some questions about your household where you usually live. What is the main source of drinking water for members of your household?	Piped Water Piped inside dwelling: 1 Piped outside dwelling: 2 Well Water Tube well : 3 Shallow Tube well : 4 Deep Tube well :5

		Surface well/other well :6 Surface water Pond/Tank/Lake :7 River/Stream :8 Rainwater :9
(B)	What is the main source of water your household uses for dishwashing	Piped Water Piped inside dwelling: 1 Piped outside dwelling: 2 Well Water Tube well : 3 Shallow Tube well : 4 Deep Tube well :5 Surface well/other well :6 Surface water Pond/Tank/Lake :7 River/Stream :8 Rainwater :9
(C)	What kind of toilet facility does your household have?	Flush toilet (Own) :1 Flush toilet (shared) :2 Pit toilet (own) :3 Pit toilet (shared) :4 No facility :5
(D)	What is the main source of lighting?	Electricity :1 Kerosine :2 Gas :3 Oil:4
(E)	What is the type of fuel used for cooking?	Wood :1 Crop residues :2 Dung cakes :3 Coal/Coke :4 Charcoal :5 Kerosine: 6 Electricity :7 Liquid Petroleum gas :8 Bio-gas :9
(F)	What is the main material of the roof of your house?	Natural Roof (Katcha) Bamboo/Thatch :1 Rudimentary Roof(Semi-Pukka) Tin :2

		Finished Roof(Pukka) Cement/Concrete/Tiled :3
(G)	What is the main material of the walls of your house?	Natural walls Jute/Bamboo/Mud :1 Rudimentary walls Wood :2 Finished walls Brick/Cement :3 Tin: 4
(H)	What is the main material of the floor of your house?	Natural Floor Earth/Bamboo :1 Rudimentary Floor Wood :2 Finished Floor Concrete/Cement :3
(I)	How many rooms do you have in your household?	NUMBER :
(J)	Is there any separate room for kitchen?	Yes : 1 No : 2

Autonomy

16. (A) Who decides upon the following matters?

Respondent :1	Husband :2	Jointly with Husband :3	Other members of the family :4	Jointly with family Members :5

Issues		A	B	**(B)** At each case please let us know the factor that influence much in taking decisions or giving consent to any decision :
(a)	Items to cook			External pressure (to get reward or to avoid guilt) :1
(b)	Obtaining health care			
(c)	Purchasing jwellary			To get approval from others :2
(d)	Purchasing major household items			
(e)	Purchasing gifts for others			Thoughtfully considered or fully chosen :3
(f)	Your going and staying with your parents or siblings			
(g)	Repairing the house			
(h)	Purchasing livestock			
(i)	Spacing between two children			
(j)	Place of delivery of children			
(k)	If the respondent earns Use of own earning			

17. Do you need permission to go to the market? Yes: 1 No: 2

18. Do you need permission to visit friends/relatives? Yes: 1 No: 2

19. Do you need permission to spend by yourself? Yes: 1 No: 2

Women Self-help Groups

20 (A)	Do you know about women Self-help groups?	Yes :1 No :2	
(B)	How do you know about it?	From family-members :1 From friends/neighbours :2 From Newspapers :3 From local organisations :4 From motivators :5 From NGO officials :6 From government officials :7 From Co-Operative Banks :8	
(C)	Are you a member of a self-help Group?	Yes :1 No :2	If the code is 1, go to the SHG-members section, otherwise Non-member section
Self-help Group members			
General Information			
(D)	When did you first become a member?	Year :	
(E)	How many groups did you join so far?	Number :	
(F)	What is the size of your group?		
(G)	What is the present practice of your group?	Save first, lend later :1 Lend first, repay later :2	
(H)	What is the minimum required monthly saving per member?	Amount :	
(I)	How much do you save per month?	Amount :	
Participation			
(J)	How frequently the group	Everyday :1	

	members meet?	Once a week :2 Once in a month :3 After every 3 months :4 Others (specify):5	
(K)	How frequently do you attend group meetings?	All the time :1 Occasionally :2 Rarely :3 Never :4	
(L)	How are the following decisions taken?		
I.	Inclusion of a new member	Individually :1 Collectively :2	
II.	Exclusion of an existing member	Individually :1 Collectively :2	
III.	Selection of project	Individually :1 Collectively :2	
IV.	Worth of a project	Individually :1 Collectively :2	
V.	Repayment-responsibility	Individually :1 Collectively :2	
VI.	Any other related matter (specify)	Individually :1 Collectively :2	
(M)	Do you have a say in these decisions?	All decisions:1 Some decisions :2 No decision :3	
Projects			
(N)	Is your group currently involved in any group project?	Yes :1 No :2	
(0)	What is the current project being carried out?	Horticulture (Banana cultivation; Pan (betelvine) cultivation: 1 Sericulture: 2 Bidi making: 3 Cooking mid-day meal for schools: 4 Livestock (dairy, piggery, poultry, goatery, duckery): 5 Achar-jelly-papad making: 6 Muri, snacks making: 7 Paddy pounding: 8 Tailoring: 9 Knitting: 10 Garment making: 11	

		Mat making: 12 Basket making: 13 Paddy pounding: 14 Fishery: 16 Minor irrigation; 17 Pisiculture: 18 Making transport equipment: 19 Other(specify): 20	
Loan Repayment			
(P)	Have you started repayment?	Yes :1 No :2	If the code is 1, then go to 17
(Q)	Do you follow your repayment-schedule?	Yes ;1 No :2	If the code is 2, Go to 18
(R)	What is the reason for defaulting?	Specify	
(S)	If you fail to repay, would the group pay it back?	Yes :1 No :2	
(T)	If you fail to repay, would you be expelled from the group?	Yes :1 No :2	
Group Switching			
(U)	Are you continuing with your first group?	Yes :1 No :2	If the code is 2, then go to 22
(V)	How many times did you switch?	Number :	
(X)	Why did you change in the first time?	Group didn't function :1 Group lending didn't work :2 Got married :3 Respondent shifted to other locality :4 Lack of time :5 Lack of minimum money to save :6	
(Y)	Why did you change in the last time?	Group didn't function :1 Group lending didn't work :2 Got married :3 Respondent shifted to other locality :4 Lack of time :5	

		Lack of minimum money to save :6	
21. Non Self-help Group Members			
(A)	Why are you not a member now?	Not a member ever :1 Was a member before :2	If the code is 1, then go to 26 and if the code is 2, go to 27
(B)	Have you ever thought of joining a group?	Yes :1 No :2	
(C)	Why did you stop group participation?	Lack of time to devote :1 Lack of money (for initial membership) :2 Family members did not allow :3 Didn't feel the need anymore :4	
(D)	If a scope of opening up a new group emerges, do you like to be a motivator?	Yes ;1 No :2	
(E)	If you could join a group, what could be the ideal activity of your group at your locality?	Horticulture (Banana cultivation; Pan (betelvine) cultivation: 1 Sericulture: 2 Bidi making: 3 Cooking mid-day meal for schools: 4 Livestock (dairy, piggery, poultry, goatery, duckery): 5 Achar-jelly-papad making: 6 Muri, snacks making: 7 Paddy pounding: 8 Tailoring: 9 Knitting: 10 Garment making: 11 Mat making: 12 Basket making: 13 Paddy pounding: 14 Fishery: 16 Minor irrigation; 17 Pisiculture: 18 Making transport equipment: 19	

		Other(specify): 20	
(F)	Do you think that joining a self-help group will enhance your present socio-economic status?	Yes :1 No :2 Don't know :3	

References

1. Aakvik, A. & Heckman, J.J. & Vytlacil, E.J., 1999. Training Effects on Employment when the Training Effects are Heterogenous : an Application to Norwegian Vocational Rehabilitation Programs, Norway; Department of Economics, University of Bergen 0599, Department of Economics, University of Bergen.

2. Abadie, Drukker, Herr and Imbens (2004), Implementing Matching Estimators for Average Treatment Effects in Stata, Stata Journal, 4(3): 290-311.

3. Aigner, D.J. and Goldberger, A. S .(1977), Latent variables in socio-economic models, Amsterdam: North-Holland.

4 .Alkire, Sabina (2002), Individual Motivation, its Nature, Determinants and Consequences for within Group Behaviour, Oxford University Press.

5. Alkire, Sabina (2005), "Valuing Freedom: Sen's Capability Approach and Poverty Reduction, Oxford University Press.

6. Anders Skrondal, S. Rabe-Hesketh(2004), Generalized Latent Variable Modelling: Multilevel, Longitudinal and Structural equation models, Chapman and Hall.

7. Ashenfelter, O (1978), Evaluating the Effects of the Employment Tax Credit of 1977, Working Papers 490, Princeton University, Department of Economics, Industrial Relations Section.

8. Ashenfelter, Orley & Card, David (1985) Using the Longitudinal Structure of Earnings to Estimate the Effect of Training Programs, The Review of Economics and Statistics, MIT Press, vol. 67(4), pages 648-60, November.

9. Atkinson.A.B. and Bourguign.F.(1987), Income Distribution and Differences in Needs in G.R.Feiwel eds. Arrow and the Foundations of the Theory of Economic Policy(Macmillan, New York).

10. Atkinson, A B (1992), Measuring Poverty and Differences in Family Composition, Economica, London School of Economics and Political Science, vol. 59(233), pages 1-16, February.

11. Bartholomew D.J. and M.Knott (1999), Latent Variable Models and Factor Analysis, Edward Arnold, U.K.

12. Bassi, Laurie (1984), Estimating the Effects of Training Programs with Nonrandom Selection , Review of Economics and Statistics 66(1):36–43.

13. Brandolini, Andrea, Luigi Cannari, Giovanni D'Alessio and Ivan Faiella (2004), Household Wealth Distribution in Italy in the 1990s,Temi di discussione (Economic working papers) 530, Bank of Italy, Economic Research Department

14. Bentler, P.M.(1980), Multivariate Analysis with Latent Variables: Causal Modeling, Annual Review of Psychology, Vol. 31: 419-456.

15. Bielby, W.T. and Hauser, R.M.(1977), Response error in Earning function for Non-Black males, Sociological Methods and Research.

16. Bollen, Kenneth A. (1989), Structural Equations with Latent Variables, Wiley-Interscience Publication, New York.

17. Bourguignon, François & Satya Chakravarty, (2003), The Measurement of Multidimensional Poverty, Journal of Economic Inequality, Springer, vol. 1(1), pages 25-49, April.

18. Card, David, and Daniel Sullivan (1988). "Measuring the Effect of Subsidized Training Programs on Movements in and out of Employment," Econometrica, 56, 497-530.

19. Chomsky, Noam (1999), Profit over People, Neoliberalisation and Global Order, Seven Stories Press, London.

20. Deshmukh-Ranadive,Joy (2002), Space for Power, Rainbow Publishers, New Delhi.

21. Di Tommaso, Maria Laura (2007), Children Cpabilities: A Structural Equations Model for India, The Journal of Socio-Economics 36(2007) 436-450

22. Drèze J. and Sen, A.K. (2002). India: Development and Participation. Oxford University Press.

23. Drèze J., M. Murthi and A-C. Guio. (1995), Mortality, Fertility and Gender Bias in India. Population and Development Review.

24. Dworkin, Ronal (1981), Sovereign Virtue, The Theory and Practice of Equality, Harvard University Press.

25. Erikson, R. (1993), Description of Inequality: The Swedish Approach to Welfare Research,In Nussbaum and Sen(eds.).

26. Fraker, *T.* and *R.* Maynard *(*1987*),* Evaluating Comparison Group Designs with Employment-related Programs, J. of Human Resources , 22: 194-227.

27. Fisher, R.A. (1925) Statistical Methods for Research Workers. (14th ed., 1973) New York:Hafner Press.

28. Giddens, Anthony (1987), Social Theory and Modern Sociology, Stanford University Press.

29. Goetz, A.M.(1996), Does micro-credit empower women : evidence from Bangladesh, Policy Research Working Paper Series 2998, The World Bank.

30. Harper, Malcolm (2000), Grameen Bank groups and Self-help groups: What are the differences, http://www.ruralfinance.org/servlet/BinaryDownloaderServlet?filename=1103279550671_shgvsgbg_harper.pdf

31. Hausman, Jerry A.and David A. Wise, (1985), Technical Problems in Social Experimentation: Cost versus Ease of Analysis, NBER Working Papers 1061, National Bureau of Economic Research, Inc.

32. Heckman, James J. and Richard Robb, Jr (1985), Alternative Methods for Evaluating the Impact of Interventions: An Overview, Journal of Econometrics, 1985, *30*(1-2), pp. 239-67.

33. Heckman, Ichimura and Todd (1998), Matching as an Econometric Evaluation Estimator, Review of Economic Studies, 65(2):261-94.

34. Iversen.V (2003), Intrahousehold inequality – A challenge for the capability approach?, Feminist Economics, 9 (2-3), pp. 93-115 (Special issue on the Work and Ideas of Amartya Sen). Reprinted in Agarwal, Bina, Jane Humphries and Ingrid Robeyns (eds): Amartya Sen's Work and Ideas: A Gender Perspective, Routledge, London and *Oxford University Press*, New Delhi, India, 2005.

35. Imbens, Guido W & Angrist, Joshua D, (1994), Identification and Estimation of Local Average Treatment Effects," Econometrica, Econometric Society, vol. 62(2), pages 467-75, March.

36. Jenkins, P.S. and Lambert, P.J. (1993), Ranking Income Distributions when Needs Differ, Review of Income and Wealth, Series 39, Number 4, December.

37. Joreskog, K. and A.Goldberger (1975), Estimation of a Model with Multiple Indicators and Multiple Causes of a Single Latent Variable, Journal of the American Statistical Association, Vol. 70, No. 351.

38. Krishnakumar, Jaya (2006), Going Beyond Functionings to Capabilities: an Econometric model to explain and estimate capabilities, http://econpapers.repec.org/paper/gengeneem/2004.12.htm.

39. Kuklys, Wiebke (2005) Amartya Sen's Capability Approach, Theoretical Insights and Empirical Applications, Springer.

40. Kumar, Sanjay and Corbridge, Stuart (2002), Programmed to fail? Development projects and the politics of participation, Journal of development studies, 39 (2). pp. 73-104. ISSN 0022-0388.

41. Lahiri-Dutta, Kuntala and G.Samanta (2002), Constructing social capital: Self-help groups and rural women's development in India, Geographical Research 44(3), 285-95,

42. LaLonde (1986), Evaluating the Econometric Evaluations of Training Programs with Experimental Data, American Economic Review, 76(4): 604-20.

43. Lawley, D.N. and A.E.Maxwell.(1971), Factor Analysis as a Statistical Method. Second ed. London:Butterworths.

44. Lechner, Michael (2000), A Note on the Common Support Problem in Applied Evaluation Studies, Univ. of St. Gallen Economics, Disc. Paper 2001-01.

45. Mayoux, Linda (2002), Gender Dimensions of Micro-Finance: Questioning the New Bootstraps, http://www.genfinance.info/Documents/Microinsurance.pdf .

46. Nada, Eissa and Liebman, Jeffrey B.(1996), Labor Supply Response to the Earned Income Tax Credit, The Quarterly Journal of Economics, MIT Press, vol. 111(2), pages 605-37, May.

47. Manski, C.F.(1990), The Selection Problem, Working papers 90-12, Wisconsin Madison - Social Systems.

48. Nassbaum, Martha (2000), Women and Human Development: The Capabilities Approach, Cambridge University Press, New York.

49. Neyman, Jerzy. (1923) , On the Application of Probability Theory to Agricultural Experiments. Essay on Principles, Section 9, Statistical Science 5 (4): 465–472.

50. Rawls, John (1971), Justice as Reciprocity, In Samuel Gorovitz, ed., Utilitarianism: John Stuart Mill: With Critical Essays, pp. 242–268. New York: Bobbs-Merrill.

51. Rawls, John (1982), The Basic Liberties and Their Priority, In Sterling M. McMurrin, ed., The Tanner Lectures on Human Values, III (1982), pp. 1–87. Salt Lake City: University of Utah Press; Cambridge: Cambridge University Press.

52. Riocoeur, Paul (2004), The Course of Recognition, trans. David Pellauer. Cambridge. Harvard University Press, 2005.

53. Robeyns, Ingrid (2004), The Capability Approach: A Theoretical Survey, http://www.ingridrobeyns.nl/Downloads/JHD.pdf

54. Robeyns, Ingrid (2005), The Capability Approach and Welfare Policies, Paper presented at the conference on gender auditing and Gender budgeting, Bologna, Italy, January.

55. Rossenbaum and Rubin (1983), The Central Role of the Propensity Score in Observational Studies for Causal Effect, Biometrika, 70(1): 41-55.

56. Rubin (1974), Estimating Causal Effects of Treatments in Randomized and Nonrandomized Studies, Journal of Educational Psychology, 66(5): 688-701.

57. Sen, Amartya K. (1970), Collective Choice and Social Welfare, Holden Day, San Francisco.

58. Sen, Amartya K. (1970), The Impossibility of a Paretian Liberal, Journal of Political Economy, 78: 152-157.

59. Sen, Amartya K (1973), On Economic Inequality, Cambridge University Press, Cambridge.

60. Sen, Amartya K. (1979), Personal Utilities and Public Judgements: or What's Wrong with Welfare Economics, Economic Journal, 89:537-558.

61. Sen, Amartya K. (1984), The Living Standard, Oxford Economic Papers, 36:74-90.

62. Sen, Amartya K. (1985), Commodities and Capabilities, North Holland, Amsterdam.

63. Sen, Amartya K. (1992), Inequality Reexamined, Clarendon Press, Oxford.

64. Sen, Amartya K. (1993), Capabilities and Well-Being, In Martha Nassbaum and Amartya K. Sen, eds, The Quality of Life, pages 30-53, Clarendon Press, Oxford.

65. Sen, Amartya K. (1996), On the Foundations of Welfare Economics: Utility, Capability and Practical Reason, In Francesco Farina and Stefano Vannucci, eds, Ethics, Rationality and Economic Behaviour, pages 50-65, Clarendon Press, Oxford.

66. Sen, Amartya K. (1997), Maximization and the Act of Choice, Econometrica, 65(4):745-779.

67. Sen, Amartya K. (1999), Development as Freedom, Oxford University Press, Oxford.

68. Sen, Amartya K. (2003), Development as Capability Expansion, In Sakiko Fakuda-Parr And A.K.Shiva Kumar, eds, Readings in Human Development, Conceptts, Measures and Policies for a Development Paradigm, pages 3-16, Oxford University Press.

69. Smith and Todd (2005), Does Matching Overcome LaLonde's Critique of Nonexperimental Estimators, Journal of Econometrics, 125: 305-353.

70. Tsui Kai-Yuen (1995), Multidimensional Generalizations of the Relative and Absolute Inequality Indices: The Atkinson-Kolm-Sen Approach, Journal of Economic Theory, Elsevier, vol. 67(1), pages 251-265, October.

71. Williams, James (1978), A definition for the common-factor analysis model and the elimination of problems of factor score indeterminacy, Psychometrika, Springer, vol. 43(3), pages 293-306, September

72. Wright, S. (1921) "Correlation and causation". J. Agricultural Research, 20, 557–585.

73. Wright, S. (1934) "The method of path coefficients," Annals of Mathematical Statistics, **5**, 161–215.

74. World Bank (2001), The World Bank Annual Report.