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SOCIAL CAPITAL IN THE CONTEXT OF DEVELOPMENT: WHICH MEASURE AND WHICH IMPACT ON WOMEN EMPOWERMENT IN INDONESIA?

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Résumé

Au cours des dernières décennies, le concept de capital social est devenu de plus en plus populaire. Cette nouvelle approche s'est notamment opposée à la définition traditionnelle du "capital" en étudiant le rôle joué par les normes et les réseaux sociaux au sein, d'une part, du développement économique et, d'autre part, du bien-être individuel. Cependant, que ce soit à un niveau théorique ou empirique, des ambiguïtés persistent quant à la manière de saisir l'aspect "social" de la vie humaine ainsi que l'interprétation à donner au terme "capital". Le nombre important de contributions sur le capital social a surtout généré de fortes critiques et polarisé les chercheurs entre détracteurs et défenseurs du concept. Tout en reconnaissant l'impact que les relations interpersonnelles et les normes sociales ont sur le développement et le bien-être, les détracteurs demandent néanmoins l'abandon de la métaphore du "capital" (Arrow 2000). Certains accusent plus radicalement l'économie de coloniser les sciences sociales en réduisant le "social" à une réponse, hors marché, d'une imperfection de celui-ci (Fine 2001). Plus précisément, les études sur le capital social en économie du développement ont étés critiquées car, souvent, celles-ci limitent leur champ d'investigation aux effets économiques positifs provenant de la mise en réseaux et de la coopération. De plus, les programmes de développement mobilisant du capital social ont étés accusés de renforcer les discriminations existantes, dont notamment les inégalités de genre (Molyneux 2002). Ces critiques soulèvent des questions centrales concernant d'une part les fondements théoriques à la base de l'approche du capital social et, d'autre, part, son investigation en économie appliquée. Il apparait donc essentiel, pour toute étude sur le sujet, de surmonter les ambigüités liées à la définition du concept *per se* et d'aller au-delà de l'interprétation du capital social lorsque celui-ci est défini comme une ressource fonctionnelle liée uniquement au bien-être et au développement économique. Cette thèse s'engage dans cette direction en proposant un nouveau cadre conceptuel opérationnalisé grâce à une étude sur l'empowerment des femmes en Indonésie. Ce cadre propose une définition du capital social et identifie également les conditions de son accumulation ainsi que la fonction qu'il réalise. Ce cadre théorique est, par la suite, opérationnalisé à l'aide d'une mesure d'un index multidimensionnel au niveau individuel en Indonésie. Ce terrain apparaît comme pleinement adapté et cohérent par rapport au sujet étudié, de par sa richesse en termes d'ethnies, de religions

et de cadre institutionnel. Un lien avec l'approche des capabilités est établi avec pour objectif de mieux identifier les canaux à travers lesquels le capital social impacte le bien être d'individus. Au niveau empirique, une étude des déterminants de l'empowerment des femmes est proposée avec, comme principale variable explicative, le capital social. Cette thèse démontre que le capital social est, tout d'abord, un concept fondamental dans la compréhension de la capacité à agir et dans le bien-être d'individus et que, de plus, celui-ci peut générer des effets négatifs sur l'empowerment des femmes, simultanément à ses effets positifs et prépondérants.

Cette thèse est composée de quatre chapitres. Le Chapitre 1 développe un cadre conceptuel proposant une nouvelle définition de capital social ainsi qu'une identification des dimensions qui le constituent. L'analyse de différentes disciplines permet de constater la grande diversité des définitions de ce concept mais aussi de ses fonctions et ses effets. En dépit de leur différence, toutes ces définitions associent l'accumulation de capital social à l'engagement d'individus dans des relations interpersonnelles. Cette analyse nous permet de définir le capital social comme l'ensemble des attentes et des obligations établies lors d'interaction entre individus. Cette définition présente l'avantage de pouvoir s'appliquer aux différentes perspectives analysées et soutient l'idée que la coordination des échanges entre individus, à travers un mécanisme de réciprocité, est la fonction inhérente au capital social. L'hétérogénéité de cette littérature s'expliquerait donc par le fait que la coordination peut se traduire en un vaste éventail d'effets, comprenant des éléments aussi variés que la coopération et la solidarité ainsi que le contrôle social et la cooptation. Nous avançons l'hypothèse que cette diversité dépend de la manière dont les attentes et les obligations sont développées tout au long des interactions et que, pour investiguer cet éventail d'effets, il convient d'observer et d'analyser les caractéristiques des relations qui façonnent ces attentes et obligations entre individus. Nous identifions ces caractéristiques et proposons ainsi trois dimensions constituant le capital social : l'homogénéité entre individus, la fréquence des contacts et la hiérarchisation des relations. Ce nouveau cadre conceptuel constitue une contribution significative car celui-ci offre une définition du capital social et identifie les fondements micro de son accumulation en apportant un éclairage sur les raisons des différentes interprétations et effets attribués jusqu'à présent au concept.

Le Chapitre 2 opérationnalise ce cadre conceptuel et propose une mesure d'un indice multidimensionnel à un niveau individuel, en Indonésie. Afin d'évaluer l'intégration des individus dans la société, et les relations interpersonnelles qui en découlent, une liste de groupes

sociaux est identifiée: le ménage, la famille en dehors du ménage, l'environnement de travail, le groupe de microcrédit, le groupe religieux et le village. Dans chacun de ces groupes, les dimensions du capital social sont mesurées : homogénéité, fréquence et hiérarchisation. Ces dimensions sont agrégées à l'aide d'analyses en composantes principales. L'analyse descriptive met en évidence le profil d'un individu avec une importante dotation en capital social: une femme, instruite, avec des enfants, musulmane, qui vit dans un ménage aisé dans l'île de Java. Cependant, la dotation en capital social n'est pas homogène par rapport aux différents groupes sociaux. L'indice apparaît, par exemple, comme plus élevé pour les femmes que pour les hommes mais une telle moyenne cache néanmoins que les hommes dépassent largement les femmes dans l'indicateur lié à l'environnement de travail. Par rapport aux mesures existantes, l'indice proposé appréhende un grand nombre de groupes sociaux et représente donc la source d'informations mesurées à partir d'enquête la plus riche sur la vie relationnelle d'individus. De plus, la mesure des mêmes dimensions du capital social pour chaque groupe permet le maintien d'un lien, entre le cadre conceptuel et la partie empirique qui a souvent fait défaut dans la littérature existante. Cet indice et ses composantes améliorent notre compréhension de la manière par laquelle des individus accumulent différents types de capital social à partir de leurs conditions socio-économiques. De plus, de nouvelles questions sur la relation entre le capital social et le bien-être individuel émergent également de cet indice.

Ces questions sont abordées dans le chapitre 3, où nous présentons l'approche des capabilités au sein de l'économie du bien-être comme cadre d'étude du capital social. Cette approche propose un nouveau cadre normatif qui conçoit tant le bien-être des individus que le développement des pays en termes d'expansion de capabilités et de liberté, comme alternatives à la croissance économique (Sen 1999). Ce même cadre considère également la capacité à agir comme principal objet d'investigation et il analyse les conditions à travers lesquelles les individus peuvent profiter de réelles opportunités pour agir et donner du sens à leur vie. Dans cette perspective, le contexte social est inclus parmi les facteurs jouant un rôle dans la faculté à agir et il fut analysé spécifiquement dans le processus d'empowerment des femmes (Robeyns 2003; Sen 2000). Cette approche fournie donc un cadre théorique dans lequel le "capital" social est une ressource impactant la capacité des individus à accéder à d'autres ressources afin d'atteindre leurs objectifs. De plus, le capital social peut aussi agir en façonnant les préférences et les besoins individuels mais en limitant parfois leur liberté. Malgré le rôle central qu'elle occupe, la capacité

à agir est un concept qui reste relativement peut étudiée dans l'approche des capabilités au niveau empirique et nous suggérons donc que les recherches futures se concentrent sur le rôle du contexte social dans la capacité à agir des femmes.

Le chapitre 4 développe ainsi une analyse des déterminants de l'autonomie décisionnelle des femmes en Indonésie. Différentes caractéristiques individuelles, mais aussi liées au ménage et à l'environnement, sont prises en considération dans un modèle probit qui détermine si celles-ci augmentent la probabilité que les femmes soient autonomes dans un large éventail de décisions à l'intérieur du ménage. La dotation en capital social de la femme est intégrée dans le modèle en tant que variable explicative principale et une version alternative est proposée avec les composantes désagrégées de l'indice, c'est-à-dire les indices pour chacun des groupes sociaux considérés. Les résultats obtenus indiquent que le capital social augmente le contrôle décisionnel des femmes mais que ce contrôle n'a pas toujours d'effet positif sur leur propre bien-être. En effet, l'indice possède toujours un impact positif sur l'autonomie personnelle, économique et physique des femmes mais aussi sur des domaines qui peuvent constituer une charge, comme les dépenses journalières. De plus, l'indice désagrégé souligne que certains groupes sociaux jouent également un rôle négatif dans l'autonomie des femmes. L'impact positif du capital social est en effet principalement déterminé par la participation à la vie active, aux groupes de microcrédit et à la communauté du village. *A contrario*, le capital social lié à la famille hors ménage et au groupe religieux, possède un impact toujours négatif. Nous pouvons en conclure que le capital social est véritablement un concept multidimensionnel qui peut avoir aussi bien un rôle de levier, par rapport à d'autres aspects du bien-être, qu'un rôle de contrôle social. Compte tenu du fait que les déterminants de la prise de décision au sein du ménage a été étudiée sans prendre en considération la vie relationnelle des femmes, cette étude représente donc une contribution significative au sein de l'approche du capital social mais aussi des capabilités.

Cette thèse fournie des outils analytiques nouveaux pour identifier et mesurer la dotation en capital social à un niveau individuel. Dans une perspective théorique, ces outils illustrent la manière dont le capital social s'accumule et son rôle dans la coordination entre individus. Dans une perspective empirique, l'opérationnalisation du concept permet l'étude des relations entre différents facteurs socio-économiques à la base du bien-être des individus et de leur capacité à agir.

Outlines

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Introduction

In the last decades, the concept of social capital has gained increasing popularity in economics. This approach has challenged the traditional definition of "capital" by emphasizing the role that social networks and social norms play in economic development and well-being. The great variety of contributions proposed has generated strong criticism and polarized scholars into supporters and opponents of the concept. While acknowledging the fact that social relations and the related social norms have an impact on economic performance, opponents generally ask for the abandonment of the metaphor of capital (Arrow 2000). The toughest criticisms accuse economics of colonizing other social sciences by reducing "the social as non-market response to market imperfections" (Fine 2001, p.131). Besides that, the application of social capital in development economics has been criticised for emphasizing only the "positive" aspects of networks and additionally for limiting this positive outcomes to economic ones. Development programs that mobilize social capital have therefore been accused to reinforce existing patterns of discrimination and elite capture, and part of the attention has been drawn especially on the risk of reproduction of gender inequalities (Molyneux 2002). These criticisms raise central questions linked to the theoretical foundations of social capital and to its applications in economics. In particular, they teach us that it is essential to be clearer on the identification of the concept and go beyond the narrow interpretation of social capital as a resource useful for economic growth.

Working in this direction, in this thesis I develop an alternative conceptual framework to identify social capital and I make it operational for analysis and policy in the context of development by investigating issues of gender empowerment. This work shows that the concept of social capital is fundamental to explore individuals' agency and well-being and that it has both positive and negative effects on women empowerment.

To develop this alternative framework I start by recognizing that individuals are fundamentally embedded in the social structure (Granovetter 1985). Individuals' behaviours are therefore neither determined by nor independent from the social structure, but developed through a complex process of interactions, which comprises both strategic and adaptive practices (Bourdieu 1988). Considering embeddedness has a major consequence for economics. Because all forms of exchange are based on interactions, they represent a constitutive element of society and so they need to be investigated in addition to market exchange. The centrality of interactions

in society, in fact, leads to a change in the definition of well-being and development, no more limited to market phenomena but based on a wide range of activities that enrich human life in both material and non-material ways. In addition, it suggests the idea that different forms of exchange are interconnected and mutually influence one another. In this perspective, the concept of social capital, defined as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" (Bourdieu 1986, p.248), is thus necessary to analyse interactions, exchanges, and their outcomes. Its investigation goes beyond its impact on economic welfare to include a deeper understanding of its role in well-being.

To identify the channels through which social capital operates, in this thesis I refer to the capability approach to welfare economics. This approach develops a new normative framework to propose a vision of well-being and development based on capabilities expansion as an alternative to economic growth (Sen 1999). It considers agency as the central object of analysis and investigates the conditions under which individuals have real opportunities to choose a meaningful life. Moreover, it includes the social context among those factors that play a role in well-being and explores its impact in the process of women empowerment (Robeyns 2003; Sen 2000).

This thesis is composed by four chapters. Chapter 1 overviews contributions on the definition of social capital from different disciplines and develops a generally applicable conceptual framework. A new definition is proposed that describes social capital as the amount of expectations and obligations that are accumulated by individuals because they are embedded in the social structure. This definition helps to understand how social capital performs its fundamental function of coordination through the mechanism of reciprocity. Developing from these definition and function, I identify social capital constituting dimensions, namely the homogeneity among individuals, the frequency of contacts and the hierarchization of relationships. This conceptual framework has thus the merit of defining the concept of social capital while shading a light on the wide range of outcomes that may derive from its accumulation.

Chapter 2 operationalizes this conceptual framework and measures a multidimensional index of social capital at the individual level using as country field Indonesia and as database the Indonesia Family Life Survey. To assess the extent to which individuals are integrated into the

society, a list of groups individuals belong to is identified: the household, non co-resident family, job environment, rotating savings groups, religious community, and the village. For each group, social capital's dimensions are measured and then aggregated. This index improves upon existing indices of social capital in two respects. First, it takes into consideration a wide range of groups individuals belong to and thus provides, to the best of my knowledge, the most extensive information about the relational life of individuals using survey data. Second, by measuring the same dimensions of social capital for each group, it establishes a clear link, often missing in the existing literature, between the conceptual and the empirical frameworks. A description of the final index and its disaggregated components is then developed. Descriptive analysis shows different patterns of inequalities in the endowment of social capital based on socio-economic characteristics across the Indonesian population, thus suggesting further investigation about the relationship between social capital and other determinants of well-being.

Chapter 3 presents the capability approach to welfare economics in order to identify those channels through which social capital may affect individual well-being. I consider the capability approach as a suitable theoretical framework to understand both the intrinsic and instrumental value of social capital. For policy implications, I focus on its instrumental role. I develop the idea that social capital is a form of capital that enhances individuals' ability to achieve a set of functionings and that it acts in shaping individuals preferences and needs, sometimes even limiting individuals' freedom. In this perspective, social capital plays a fundamental role to understand situated agency, that is to say how the context may enlarge or restrain the set of capabilities available to individuals. Looking to empirical applications of the capability approach, I identify a gap in the way agency has been taken into account. I thus suggest that future research should address this question by better exploring situated agency with a special attention to the role of social environment.

Chapter 4 develops an empirical investigation on the role of social capital for women empowerment using as country field Indonesia. In particular, it investigates the relationship between the index of social capital and women's autonomy in decision making in the household. Considering that the determinants of decision making within the household has been investigated so far without taking into account the relational life of women, this study represents a significant contribution. Results show that social capital enhances women's control over decision making but that this gain in responsibilities is not always beneficial for their own well-being. In addition, an

alternative version of the model, run with disaggregated components of social capital, shows that social capital groups play both positive and negative roles for women's autonomy. I then conclude that social capital is a multidimensional concept and that some social capital groups may play a resource-enhancing role while others may be more a source of social pressure.

1 Literature on social capital: overview along different disciplines and proposition of a generally applicable conceptual framework[1]

1.1 Introduction

In the economic literature, the social capital approach focuses on the insight that social relations matter and proposes a remarkable variety of contributions ranging from micro to macro perspectives. Unfortunately, this great amount of studies did not converged towards a uniform conceptual framework. Quite the opposite, in the literature it is possible to find contrasting definitions of social capital and very different empirical applications. It is striking that even leading figures of social capital literature, Coleman (1990) Bourdieu (1986) and Putnam (1993), do not share a common view on what is social capital. Coleman (1990) develops the concept of social capital to explain why social relationships and networks facilitate the actions of individuals similarly to what happens for other forms of capital accumulation. Bourdieu (1986) focuses instead on the functioning of the whole social structure and argues that social capital accumulation serves to the reproduction of power relations that in turn reinforce the dominant cultural status quo. On the contrary, Putnam (1993) views social capital as a fundamental factor in society because it enhances civicness among the population and fosters efficiency of local institutions. The question remains: what is social capital? What does a social capital theory offer that is not found in other theories? The risk is that, if social capital means such different things, the concept itself has no reason to exist (Arrow 2000). Is it possible to find any common ground between these views or each of them describes a different social phenomenon that has been only accidentally labelled as "social capital"?

Any research on social capital needs first to answer this question. The aim of this chapter is to work in this direction by proposing a generally applicable conceptual framework. In

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[1] A preliminary version of this chapter has been presented at the 14th World Congress of Social Economics, *Towards an ethical economy and economics*, Glasgow, June 20th-22nd 2012; and at the Joint Conference AHE IIPPE FAPE, *Political economy and the outlook for capitalism*, Paris, July 5-7 2012.

particular, I argue that it is possible to reconcile contrasting perspectives through the recognition of social capital as a multidimensional concept and that it is thus necessary to identify its constituting dimensions. I proceed in three steps. First, I overview social capital's definitions proposed in the literature focusing on the multidisciplinarity of the issue, with its richness and ambiguities. Second, I analyse the main function performed by social capital, which is coordination, and I describe how this unique function may evolve towards different outcomes. Drawing from the description of social capital's function, I finally identify and illustrate social capital's constituting dimensions and I argue that they are responsible for the wide range of social phenomena described in the literature.

1.2   A light on the definition(s) of social capital: a reading grid to unify different approaches

Despite the fact that the concept of social capital has been increasingly invoked within social sciences, social capital theory has not attained a full theoretical status. The issue is in fact treated in different disciplines in social sciences but there is still not a consensus on what social capital is. In this section, I focus on the great variety of definitions that have been proposed so far in order to identify common points and main areas of disagreements. Table 1.1, here below, shows the evolution of social capital's definitions during the last century. Three elements are highlighted in the table to be further analysed throughout the chapter. The first element identified is the reference to what social phenomena constitute social capital (in the legend of the table this element is labelled "social capital components"). The second element is the link that definitions make between social capital and the belongingness of individuals to groups. Social capital is then a form of capital that is accumulated because individuals are inter-connected through networks (this element is labelled as "Social capital is linked to group membership"). The third element is the function that definitions identify as the one performed by social capital. Because social capital is a form of capital it is in fact supposed to perform a function, which is to say to enhance or limit the production of some other factor (this element is then labelled as "Functions linked to social capital").

Table 1.1   What is social capital? A Chronology

Legend:
Social capital components,
Social capital is linked to group membership,
Functions linked to social capital

AUTHOR	YEAR	DEFINITION OF SOCIAL CAPITAL
Hanifan, Lyda. J.	1916	"I (…) refer to (…) that in life that tends to make this tangible substances count for most in the daily lives of people: namely **good will, fellowship, sympathy,** and **social intercourse** among the individuals and families who make up a *social unit*."(Hanifan 1916, p.130)
Loury, Glenn C.	1977	"(…) to represent the consequences of *social position* in facilitating acquisition of the standard human capital characteristics."(Loury 1977, p.176)
Bourdieu, Pierre	1986	"(…) the aggregate of the **actual or potential resources** which are linked to *possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition* which provides each of its members with the backing of the collectively owned capital." (Bourdieu 1986, p.248)
Coleman, James S.	1988	"(…) is defined by its function. It is not a single entity but **a variety of different entities**, with two elements in common: *they all consist in some aspect of social structures*, and they facilitate certain actions of actors - whether persons or corporate actors- within the structure." (Coleman 1988, p.98)
Putnam, Robert D., Robert Leonardi and Raffaella Y. Nanetti	1993	"*Features of social organization*, such as **trust, norms,** and **networks**, that can improve the efficiency of society by facilitating coordinated action." (Putnam, Leonardi and Nanetti 1993, p.167)
Becker, Gary S.	1996	"(…) I incorporate the influences of others on a person's utility through the stock of social capital." (Becker 1996), p.12
Burt, Ronald S.	1997	"(…) social capital refers to opportunity." (Burt 1997, p.339) "*An individual position in the structure of these exchanges* can be **an asset** in its own right. That asset is social capital" "(…) in terms of the **information** and **control advantages** of being the broker in relations between people otherwise disconnected in social structure." (Burt 1997, p.340)
Knack, Stephen and Philip Keefer	1997	"**Trust**, **cooperative norms**, and **associations** *within groups* each falls within the elastic definitions that most scholars have applied to the term social capital." (Knack and Keefer 1997, p.1251)
Boix, Carles, and Daniel N. Posner	1998	"(…) a **set of institutionalized expectations** that *other social actors* will reciprocate co-operative overtures." (Boix and Posner 1998, p.686)

AUTHOR	YEAR	DEFINITION OF SOCIAL CAPITAL
Portes, Alejandro	1998	"(…) **involvement** and **participation** *in groups*." (Portes 1998, p.2) "According to Portes (1998, p.6) social capital represents the <u>ability of actors to secure benefits</u> by virtue of their *membership in social networks and other social structures*.'' (Okten and Osili 2004, p.1226)
Fukuyama, Francis	1999	"(…) instantiated **set of informal values** or **norms** *shared among members of a group* that permits them to cooperate with one another. If members of the group come to expect that others will behave reliably and honestly, then they will come to trust one another. Trust acts as a lubricant that makes any group or organization run more efficiently." (Fukuyama 1999, p.16)
Narayan, Deepa and Lant Pritchett	1999	"(…) the **quantity and quality of associational life** and the related **social norms**." (Narayan and Pritchett 1999, p.871)
Arrow, Kenneth.J.	2000	"I would urge abandonment of the metaphor of capital and the term, 'social capital'". (Arrow 2000, p.4)
Woolcock, Michael and Deepa Narayan	2000	"(…) the **norms** and **networks** <u>that enable people to act collectively</u>." (Woolcock and Narayan 2000, p.225) "(…) *a person's family, friends and associates* constitute an important asset." (Woolcock and Narayan 2000, p.226)
Burt, Ronald S.	2000	" (...) more <u>a function of brokerage across structural holes</u> than closure within a network " (Burt 2000, p.345)
Narayan, Deepa and Michael F. Cassidy	2001	"(…) *patterns of social interrelationships* that <u>enable people to coordinate action to achieve desired goals</u>." (Narayan and Cassidy 2001, p.59) "It is not simply an issue of the **extent to which people are connected to others**, but **the nature of those connections**." (Narayan and Cassidy 2001, p.60)
Ostrom, Elinor	2001	"Social capital is the **shared knowledge**, **understandings**, **norms**, **rules**, and **expectations** *about patterns of interactions that groups of individuals bring to a recurrent activity*." (Ostrom 2001, p.176)
Putnam, Robert D.	2001	"(…) **networks** and **the associated norms of reciprocity** have value. They <u>have value for the people who are in them</u>, and they <u>have, at least in some instances, demonstrable externalities,</u> so that there are both **public and private faces** of social capital." (Putnam 2001, p.41)
Bowles, Samuel, and Herbert Gintis	2002	"Social capital generally refers to **trust**, **concern** for *one's associates*, a **willingness** <u>to live by the norms</u> of *one's community* <u>and to punish those who do not</u>." (Bowles and Gintis 2002, p.F419)
Fukuyama, Francis	2002	""(…) is what permits individuals <u>to band together to defend their interests</u> and <u>organize to support collective needs</u>" (Fukuyama 2002, p.26)
Glaeser, Edward L., David Laibson, and Bruce Sacerdote	2002	"(…) **a person's social characteristics** which <u>enable him to reap market and non-market returns</u> *from interactions with others*." (Glaeser, Laibson and Sacerdote 2002, p.438)

AUTHOR	YEAR	DEFINITION OF SOCIAL CAPITAL
Sciarrone, Rocco	2002	"Social capital refers to the **supply of resources** in *relational networks*." (Sciarrone 2002, p.6) "(…) it refers to all of the **resources an individual has** based **on his position in networks** of *social relations*." (Sciarrone 2002, p.11)
Arrighetti, Alessandro, Andrea Lasagni and Gilberto Seravalli	2003	"(…) **system of rules** and **social behaviours** (**trust, reciprocity**, **civicness**, etc) that <u>enhances coordination of individual actions</u> (and therefore <u>overcome collective action dilemmas</u>)."[2] (Arrighetti, Lasagni and Seravalli 2003, p.50)
Bjørnskov, Christian	2003	"(…) generalized trust." "Generalized trust (…) it is believed to capture **a horizontal element** that Woolcock (1998) calls 'bridging social capital'" (Bjørnskov 2003, p.6)
Sen, Amartya	2003	"(…) **social solidarity**" (Sen 2003, p.6)
Grootaert, Christiaan, Deepa Narayan, Veronica N. Jones, and Micheal Woolcock	2004	"(…) the **groups**, **networks, norms** and **trust** that <u>people have available to them for productive purposes</u>." (Grootaert et al. 2004, p.3)
Okten, Cagla and Una Okonkwo Osili	2004	"(…) features of *social organization* such **as trust, norms,** and **networks** that <u>facilitate coordinated actions</u>." (Okten and Osili 2004, p.1226)
Antoci, Angelo, Pier Luigi Sacco and Paolo Vanin	2005	"(…) is the **collection of those productive assets** that are *incorporated in the social structure of a group* (rather than in physical good and individual human being, as physical and human capital) and that <u>allow cooperation among its members to reach common goals.</u> It is accumulated through *social participation to community activities*." (Antoci, Sacco and Vanin 2005, p.151)
Beard, Victoria A.	2005	"Social capital is *one type of social relationship* characterized by **trust, reciprocity**, and **cooperation** that <u>is associated with positive community-development outcomes</u> (participation in civil society organizations that <u>deliver public goods and services</u> to communities.)" (Beard 2005, p.23) "(…) understood as **generalized reciprocity**." (Beard 2005, p.24)
Dasgupta, Partha	2005	"Social capital as **interpersonal networks**." (Dasgupta 2005, p.S2)
Granovetter, Mark	2005	"(…) **social networks**." (Granovetter 2005, p.36)
Fafchamps, Marcel	2006	"(…) **membership** to *informal and formal clubs*" (Fafchamps 2006, p.1185)
Miguel, Edward, Paul Gertler and David I. Levine	2006	"(…) **social networks** (…): **the density of voluntary community associational activity** and **levels of trust** and **informal cooperation** (Miguel, Gertler and Levine 2006, p.288)

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[2] Translation of the author form the original Italian version

AUTHOR	YEAR	DEFINITION OF SOCIAL CAPITAL
Sabatini, Fabio	2006	"(…) the "structural" components of social capital, as identified with *social networks*, (…): **informal networks of strong families ties** (bonding social capital), **informal networks of weak bridging ties** connecting friends and acquaintances (bridging social capital), **formal networks connecting members of voluntary organizations** (linking social capital) and **formal networks of activists in political parties**. " (Sabatini 2006, p.23)
Antoci, Angelo, Pier Luigi Sacco and Paolo Vanin	2007	"(…) **accumulated externality**" (Antoci, Sacco and Vanin 2007, p.130)
Beard, Victoria A.	2007	"(…) *relationships* of **trust** and **reciprocity** between individuals that facilitate collective action." (Beard 2007, p.608)
Cassar, Alessandra, Luke Crowley, and Bruce Wydick	2007	"(…) *relational social capital* in the form of **personal trust** *between individuals* and **social homogeneity** *within groups*" (Cassar, Crowley and Wydick 2007, p.F86)
Ahn, Toh-Kyeong and Elinor Ostrom	2008	"(…) a set of **prescriptions**, **values** and **relationships** created by individual in the past that can be drawn on in the present and future to facilitate overcoming of social dilemmas. (…) **trustworthiness, networks** and **institutions** as three basic forms of social capital." (Ahn and Ostrom 2008, p.73)
Arrighetti, Alessandro, Gilberto Seravalli, and Guglielmo Wolleb	2008	It is an *expression of the norms governing community life*, such as **participation in elections**, **respect for public property**, the **maintenance of traditions** and **community identity**, etc."[3] (Arrighetti, Seravalli and Wolleb 2008, p.521)
Esser, Hartmut	2008	"(…) understood to encompass almost everything connected to *social embeddedness*." (Esser 2008, p.22) "First, social capital can be seen as the valued **number of resources** of an actor can employ and use *through direct or indirect personal relations* with other actors (…). Second, social capital can also be considered **an emergent characteristic** *of the entire relation system*." (Esser 2008, p.25)
Fiorillo, Damiano	2008	"(…) repeated *interpersonal relationships*"[4] (Fiorillo 2008, p.81)
Lin, Nan	2008	"Social capital is defined **as resources embedded in one's social networks**, resources that can be accessed or mobilized *through ties in the networks*." (Lin 2008, p.51)

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[3] Translation of the author from the original Italian version
[4] Translation of the author from the original Italian version

AUTHOR	YEAR	DEFINITION OF SOCIAL CAPITAL
Warren, Mark E.	2008	"(…) **individual investment in social relationships** that have the consequences, whether or not intended, <u>of enabling collective actions which return goods in excess</u> of those the individual might achieve by acting alone." (Warren 2008, p.125)
Hayami, Yujiro	2009	"Social capital is defined as the **structure of informal social relationships** conducive <u>to developing cooperation among economic actors aimed at increasing social product</u>, which is expected to accrue to the *group of people embedded in those social relationships*." (Hayami 2009, p.98)
Stiglitz, Joseph E., Amartya Sen and Jean-Paul Fitoussi	2009	"(…) **social connections**." (Stiglitz, Sen and Fitoussi 2009, p.51)
Vial, Virginie	2011	"(…) **networks, norms** and **trust**." (Vial 2011, p.237)

Since the appearance of the term "social capital", at the beginning of the twentieth century, it became clear that this concept was trying to capture the influence of some intangible resource linked to the sociality of individuals. In the words of Lyda J. Hanifan, who is credited with introducing the concept: "I do not refer to real estate, or to personal property or cold cash, but rather to that in life that tends to make this tangible substances count for most in the daily lives of people: namely good will, fellowship, sympathy, and social intercourse among the individuals and families who make up a social unit, the rural community" (Hanifan 1916, p.130). It is possible to observe this same idea when examining major definitions proposed during the seventies (Loury 1977), the eighties (Bourdieu 1980; Coleman 1988), the nineties (Burt 1997; Fukuyama 1999; Knack and Keefer 1997; Putnam, Leonardi and Nanetti 1993) and the last decade (Dasgupta 2005; Esser 2008; Fafchamps 2006; Sen 2003; Woolcock and Narayan 2000). I resume this idea saying that social capital refers to embeddedness (Granovetter 1985). Following this perspective, it is impossible to analyse behaviours and achievements of economic actors without taking into consideration the social structure in which they are embedded. This is probably the only widely acknowledged understanding of social capital.

Otherwise, definitions developed in the literature propose different theoretical frameworks, within different disciplines (especially economics and sociology), and in a wide range of fields from development economics to corporate governance. I overview this

contributions through five perspectives, originally proposed by Sabatini (2006), that differently conceive social capital as: civicness, trust, social status, social networks, or institution.

The works of Putnam (2001; 1993) represents the first perspective. In one of the most cited research on social capital, "Making Democracy works", Putnam refers to social capital as civicness. Social capital here is the result of positive past experiences of cooperation. It is thus possible to observe social capital as the willingness of citizens to associate, cooperate and participate to civil society. Putnam supports the idea that social capital has positive effects on economic development because it improves the efficiency of local institutions and increases cooperation between public and private sectors. In the second perspective, social capital is the result of a state of generalized trust among citizens. Trust is described as an essential glue in society, because when people trust one another they develop collective action and the entire society experiences lower level of conflict (Alesina and La Ferrara 2002; Bjørnskov 2003; Uslaner 2008a). In the third perspective, social capital is conceived as social status. Bourdieu (1980; 1986) in particular developed this perspective and investigated the role that social capital plays, together with economic and cultural capital, in the reproduction of social structure. Bourdieu has been analysed and developed further by Coleman (1990), who proposed the idea that social capital was represented by its function more than by its constituting dimensions. He analysed in particular the mechanism of reciprocity among individuals, the role of authority in relationships and the transmission of information. The fourth perspective belongs to the new economic sociology and it focuses on social networks. It is represented by the work of Granovetter (2005), Burt (1997) and Lin (2008). Granovetter (2005) investigates social relationships among individuals highlighting how economic structures are in fact built up by strong and weak ties that allows the whole structure to communicate and function. Burt (1997) expands social network theory to investigate ties between organizations and not only between individuals. Lin (2008) formally bases the development of social capital theory on network analysis. Finally the fifth perspective is the new institutional economy perspective where social capital is defined as an institution (North 1993). Institutions are conceived as "the rule of the game", as incentives that a society establishes to regulate social, political and economic exchanges between individuals. The originality of this perspective is that it conceives social capital as public good, as the amount of social norms that are continuously produced by individuals and that constitute a capital used by the community to legitimate exchanges. This

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wide range of theoretical perspectives generates confusion on what is social capital and how it can be measured.

In fact, at the empirical level we similarly find a heterogeneous universe of measurements. Van Deth (2008) summarizes social capital measurements in three classes: network measures, trust measures, and civicness measures. Beyond the theoretical perspective, at the empirical level we thus find these three categories of measurements. Measures that are based on networks embrace what is known as the structural perspective, which focuses on characteristics of the social structure in which individuals operate. Variables measure the presence of personal networks, ties between individuals, and links between organizations (Burt 1997; Lin 2008; Newman 2003). Networks' characteristics and the position of individuals within networks are necessary to understand both the functioning and efficiency of the entire network and the range of competitive advantages potentially available to individuals and organizations (Burt 2000; Granovetter 2005; Lin 2008; Sabatini 2006; Sciarrone 2002). The second class of measurements moves the attention from structure to a specific characteristic of social relationships: the presence of trust. These contributions make an implicit assumption: not all networks and not all relationships are conducive to social capital but only those characterized by trust and reciprocity among individuals (Beard 2007; Bjørnskov 2003; Cassar, Crowley and Wydick 2007). These studies measure both particularized trust among individuals (or groups of individuals) and generalized trust in the entire society or in public institutions[5] (Bjørnskov 2003; Fukuyama 2002; Knack and Keefer 1997). Few factors have been identified as responsible for driving down trust, as ethnic diversity and persistence of inequalities (Alesina and La Ferrara 2002; Uslaner 2008b). These studies underline the responsibility of public power to take into consideration the social environment and to implement policies that support the level of trust among the population (Rothstein and Stolle 2008). Finally, the third class of measurements refers to civicness and the related social norms. The attempt is to capture the amount and the quality of associational activity, democratic attitudes, the participation to civil society and the level of solidarity at the community level (Knack and Keefer 1997; Miguel, Gertler and Levine 2006; Narayan and Pritchett 1999; Putnam 2001; Putnam, Leonardi and Nanetti 1993; Woolcock and Narayan 2000).

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[5] It is also possible to find inverse measures, as perceived corruption, that are complementary to confidence in institutions.

Hence, variables considered are heterogeneous, ranging from the presence of voluntary associations, trust levels, newspaper readers, blood donators, voters' turnout for referendum and preferences expressed during legislative elections.

This wide range of approaches is the main responsible of the imprecision that characterize also the operationalization of the concept of social capital. In most of empirical studies, in fact, authors make reference to Bourdieu (1986), Coleman (1988) or Putnam (1993) to provide a general definition of social capital. Then they refer to networks, trust or civicness measures to represent empirically its composition. Finally, they turn to available data, being these surveys, experiments, field's works or official statistics, and measure one or more variables presented as proxies of social capital. What is often contested to social capital researchers is then a general lack of coherence or precision to link the theoretical framework presented in the literature and the final variables measured. To the best of my knowledge, there are just few, but remarkable, attempts to build up a social capital index (Grootaert 1999; Krishna 2008; Narayan and Pritchett 1999; Putnam, Leonardi and Nanetti 1993; Sabatini 2009). If social capital has to represent individuals' embeddedness in the social structure the sole use of proxies constitute in fact a poor operationalization and it is symptomatic of a lack in the identification of what social capital is and which its constituting dimensions are.

I impute this lack of clarity especially to a basic ambiguity in the social capital literature: the confusion between micro and macro levels of analysis. At the micro level, the interest of researchers focuses on individuals, families or organizations. At the macro level, the attention moves to communities and the functioning of the entire society. The object of study is likely to be responsible for these differences in theoretical perspectives and empirical applications. The work of Granovetter (2004) on the strength of the weak ties, for example, investigates social capital at the individual level. Loury (1977) identifies opportunities and constraints linked to ethnic identity, thus at the informal groups level. Burt (2005) worked on group, but formal ones, as firms and organizations more in general. Finally the well-known contribution from Putnam (1993), describing social capital as civicness, refers to the community level. Referring to the three measurement classes presented above, it is possible to observe that network measures usually refer to the individual/group level whereas trust and civicness measures to the community one.

Once the confusion between micro and macro levels of analysis is unveiled, it is possible to understand better the nature of several oppositions in the social capital literature. A recurrent

opposition exists for example between social capital bearing positive or undetermined consequences for the individual and the entire society. In the literature, most of contributions define social capital as something that enhances collective action, cooperation, trust, civicness, etc. In this perspective, social capital accumulation is not a characteristic of all groups or community. It is a specific capital that is accumulated only under certain conditions and that is linked to positive collective outcomes. On the opposite side, social capital is also defined as a capital with no definite effects on society. As other forms of capital, it can have positive or negative consequences depending on the context of its accumulation. This opposition is invalidated when we consider that it is possible that a form of social capital has positive effects for a certain level of analysis while cause negative or underdetermined effects at other levels. Common examples are the constitution of criminal organizations or the negative collective outcomes due to lobbies but also the limits to individual freedom due to social constraints. A second opposition in the literature is the conceptualization of social capital as private or public good. As private good, social capital endowment is a characteristic of individuals. It is available and usable from individuals as other forms of capital even if intangible resources constitute it. As public good, it is not possible to reduce social capital to an individual property and it is therefore necessary to consider the whole reference group, network or community, because social capital is a group characteristic. In this sense, the opposition is again nullified when we consider that both levels of analysis exist. Esser (2008) for example develops the idea that two meanings subsist and can co-exist in the literature: relational and system capital. Relational capital is the form of capital at the micro level. An actor's endowment of relational capital is "the sum of all resources and benefits on which he can draw as a result of direct or indirect relations with other individual actors" (Esser 2008, p.26). System capital resides at the macro level and it "refers instead to the existence of shared social norms, aimed at an efficient control of the members' behaviour within a collectivity" (Esser 2008, p.37). System capital is a by-product of relational capital and, at the same time, likely influences back the context in which individuals develop their relationships. On the other side, individuals can more or less intentionally develop their relational capital and be aware of the existence of system capital but will not be able to control their impact on it. Again, the distinction between different levels of analysis is helpful to link contributions in the literature. When considering social capital as generalized trust (Bjørnskov 2003), for example, we implicitly assume that the accumulation of social capital through social relationships at the

individual level results in a positive level of generalized trust at the community one. Similarly when considering social norms formation and their role in sustaining the pursue of common objectives (Putnam, Leonardi and Nanetti 1993), we ignore that in society contrasting social norms may exist and different groups might be able to turn some of them for their rent seeking purposes (Warren 2008). Hence, individual embeddedness to groups refers to relational social capital whereas social norms and generalized trust are its by-products. Few contributions in social capital literature share this perspective even if they do not explicit separate relational and system capital. Ahn and Ostrom (2008), for example, support the idea that social capital raises the possibility, do not guarantee, the development of trust among individuals. Dasgupta (2009) also affirms: "social capital when suitably applied is only a means to creating trust". I then conclude that trust could be an appropriate proxy for relational social capital only in those situations in which "social capital is suitably applied". In other circumstances (e.g. Mafia and exclusive clubs), social capital may lead members of a group to misappropriate social resources, with a consequent fall of the general trust level. Similarly, civicness measures consider only positive system outcomes of relational social capital, as solidarity and democratic attitudes. Because the system is a by-product of the relational level, I regard as a priority the investigation of the latter. I consider that it is necessary to understand what social capital in terms of individual embeddedness is in the social structure and only in a second time focus on the properties and functioning of the whole system. Also, I acknowledge the fact that it is not possible to conceive system capital as the mere sum up of individuals' endowment. At the relational level, it is then necessary to focus on individuals and the way they are interconnected in the society. In the next section I further develop the investigation of contributions from literature to identify more precisely what functions are performed by social capital.

1.3 Understanding social capital's function: the role of reciprocity

To advance in the development of a new conceptual framework I take into consideration Coleman's observation that social capital "is defined by its function. It is not a single entity but a variety of different entities, with two elements in common: they all consist in some aspect of social structures, and they facilitate certain actions of actors -whether persons or corporate actors-

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within the structure" (Coleman 1988, p.98). The objective is then to first identify social capital's function and subsequently ask the question on what dimensions can be credited as responsible for this function, thus constituting social capital. Keeping Table 1.1 as reference point, Table 1.2, here below, focuses on the great variety of functions attributed to social capital. Contributions are organized as follows. In the first row I support the idea that social capital can be actually considered as a form of capital. In the second row I identify social capital's main function that is coordination. In the third row I describe the possibility that coordination leads to cooperation as well as to cooptation. In the fourth row I consider those contributions that underline out-groups benefits linked to coordination and in the fifth row I focus on in-group benefits.

The first row of the table is directly linked to the understanding of social capital as "capital". The interest here is to defend the concept of "social capital" itself by underlying the fact that it is a productive asset (Antoci, Sacco and Vanin 2005). Social capital is then described as an investment (whether or not intended) in social relationships that makes available to individuals a stock of resources raising returns from individual and joint efforts (Ostrom 2001; Warren 2008). In this sense, I understand social capital as accumulated by and available to individuals. Nevertheless, it has also collective properties because the existence of social capital is linked to the group the individual belongs to. The understanding of social capital as a productive asset is necessary for the existence of a social capital theory in economics as it provides a common ground to analyze and compare social capital with other forms of capital, as human and physical capital. In this sense, social capital is one of the fundamental inputs for the production and exchange of resources (Bourdieu 2001; Coleman 1988).

The second row of the table supports the idea that the principal function performed by social capital is to enable coordination (Ahn and Ostrom 2008). Coordination developed through social capital takes place whenever there is an exchange among individuals or a group of individuals that is not a formal market exchange. To understand this form of coordination I refer to the mechanism of reciprocity. Reciprocity is "a behavioural response to perceived kindness and unkindness" (Falk and Fischbacher 2006, p.294) that implies rewarding of the first and sanction of the second act. Individuals need to exchange, accumulate and transform a wide range of resources, both tangible and intangible ones. Under certain circumstances, this exchange happens following the rule of market exchange but in many other situations there is neither the willingness nor the possibility to apply a contract driven allocation. It is the case when

individuals exchange resources that do not have a market value and when they prefer to exchange in the form of gifts. Even if this kind of exchanges is not based on formal, written, allocation rules, still it follows some normative obligations. These obligations are at the base of reciprocity. Individual *A*, at a given time *t*, provides for his/her support individual *B*, which is in turn supposed to provide for support individual *A*, in a given time *t+1*. For reciprocity to be put in place we need at least two individuals, a relationship between them and the respect of social obligations put in place by the relationship. Translating this to the entire society we will have an *n* number of individuals all connected through multiple relationships. Depending on the quantity and the quality of their relationships we may find different degrees of reciprocity among individuals and among groups these individuals belong to (Falk and Fischbacher 2006; Sethi and Somanathan 2003). This in turn affects the extent to which, in a given context, individuals will recur to reciprocity to exchange (Fehr and Gächter 2000). At this stage of the analysis I recall the definition of social capital given by Bourdieu (1986): "(…) the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition which provides each of its members with the backing of the collectively owned capital" (Bourdieu 1986, p.248). The question I ask then is: what are these actual or potential resources that constitute social capital knowing that their function is to coordinate actions of individuals by mobilizing the mechanism of reciprocity? The analysis of social interactions developed by Coleman (1990) provides for an answer. Coleman identifies several components of social capital: expectations and obligations, information potential, trustworthiness, norms and effective sanctions, authority relations, appropriable social organizations and intentional organizations. I support the idea that expectations and obligations alone can be considered responsible of the mobilization of reciprocity and thus constitute the essence of social capital. I therefore propose a definition of social capital that is the amount of expectations and obligations that individuals develop because they are embedded in the social structure.

Embeddedness thus provides individuals with social capital, which is constituted by a balanced set of expectations and obligations. These expectations and obligations are fundamental to coordinate individual actions through reciprocity and to engage in exchange (Boix and Posner 1998; Fukuyama 1999). This fundamental function has been implicitly described in and applied to very different contexts: social capital as productive asset, facilitating economic transactions; as

a factor enhancing trust, thus resulting in cooperation; as a potentially harmful endowment, when groups behave as rent-seeking organizations. The variety of outcomes analyzed depends on the specific nature of social capital endowment and the context in which it develops. Being part of a network provides to group members a certain set of expectations towards others' trustworthiness and vice versa will also constrain individuals' actions to the respect of their obligations (Coleman 1990). Every time that an individual mobilizes social capital to receive a support from his group, he is expected to provide for support if in the future another member needs it. This coordination mechanism may lead to two different scenarios, represented by the third row of Table 1.2. It is in fact possible that individuals coordinate developing some form of cooperation that has no rent-seeking objectives but it is also possible that coordination among individuals leads to some form of cooptation. The common element between the two scenarios is this balanced mechanism of expectations and obligations within the group mobilizing social capital.

The fourth and fifth rows of the table finally report the range of outcomes described in the literature that likely derive from these two scenarios. The principal outcome resulting from social capital is that when people gather and coordinate they obtain some collective benefits impossible to reach alone (Antoci, Sacco and Vanin 2005; Hayami 2009; Narayan and Cassidy 2001; Woolcock and Narayan 2000). These benefits are for the entire group as well as captured by individuals within the group (Burt 1997; Warren 2008). Under certain circumstances, it is also possible to observe out-group benefits that accrue from the same capacity of individuals to cooperate for the achievement of collective needs (Alesina and La Ferrara 2002; Beard 2005; Putnam, Leonardi and Nanetti 1993). Of course, out-group benefits are not possible when specific groups put in place coordination to jeopardize public resources or to exclude non-members from participating to an activity. Hence, the function of coordination performed by social capital potentially generates benefits but their amount and distribution will depend on the nature of the relationships, the characteristics of the group and the objectives pursued by its members. Although this is not the focus of the present study, I also acknowledge the fact that institutional settings in which groups evolve will influence the conduct and outcomes of in-group coordination (Coleman 1988; Portes 1998; Sciarrone 2002; Warren 2008; Woolcock and Narayan 2000).

Table 1.2   Sorting Rationales for Social Capital Functions

1) Social capital is "capital":

"It is capital because it serves as independent input to economic and political processes and outcomes. All forms of capital involve investments that increase the probability of higher returns from individual and joint efforts over a future time period." (Ahn and Ostrom 2008)

"Like other forms of capital, social capital is productive, making possible the achievement of certain ends that in its absence would be not possible. Like physical capital and human capital, social capital is not completely fungible but may be specific to certain activities." (Coleman 1988, p.S98)

"(…) that people have available to them for productive purposes." (Grootaert et al. 2004, p.3)

"(…) is the collection of those productive assets." (Antoci, Sacco and Vanin 2005, p.151)

"(…) individual investment in social relationships." (Warren 2008, p.125)

Social Capital and other forms of capital:

"Family background is analytically separable into at least three different components: financial capital, human capital, and social capital." (Coleman 1988, p.S168)

Social capital-economic capital:

"(…) villages in traditional settings that are highly stratified, with certain wealthy families who, because of their wealth, have built up extensive credits that they can call in at any time." (Coleman 1988, p.S103)

2) Social capital's function is "coordination":

(…) the ability to organize collective action is more a function of trust and a shared perception of a common good. It stands to reason that this is more readily achieved among people who are kin or share religious convictions." (Grootaert 1999, p.45)

"(…) enable people to act collectively." (Woolcock and Narayan 2000, p.225)

"(…) enable people to coordinate action to achieve desired goals." (Narayan and Cassidy 2001, p.59)

"enhances coordination of individual actions (and therefore overcome collective action dilemmas)."[6] (Arrighetti, Lasagni and Seravalli 2003, p.50)

"(…) relationships of trust and reciprocity between individuals that facilitate collective action." (Beard 2007), p.608

"(…) a set of prescriptions, values and relationships created by individual in the past that can be drawn on in the present and future to facilitate overcoming of social dilemmas." (Ahn and Ostrom 2008, p.73)

"(…) enabling collective actions which return goods in excess of those the individual might achieve by acting alone." (Warren 2008, p.125)

"Features of social organization (…) that can improve the efficiency of society by facilitating coordinated action." (Putnam, Leonardi and Nanetti 1993, p.167)

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[6] Translation from the original Italian version

2.1) When coordination leads to cooperation:	2.2) When coordination leads to cooptation:
"(…) instantiated set of informal values or norms shared among members of a group that permits them to cooperate with one another. If members of the group come to expect that others will behave reliably and honestly, then they will come to trust one another. Trust acts as a lubricant that makes any group or organization run more efficiently." (Fukuyama 1999, p.16)	"(…) the harmful effects of groups as rent-seeking organizations theorized by Olson (1982) are offsetting any positive effects." (Knack and Keefer 1997, p.1273)
"(…) a set of institutionalized expectations that other social actors will reciprocate co-operative overtures." (Boix and Posner 1998, p.686)	"A given form of social capital that is valuable in facilitating certain actions may be useless or even harmful for others." (Coleman 1988, p.S98)
"(…) is the collection of those productive assets that are incorporated in the social structure of a group (rather than in physical good and individual human being, as physical and human capital) and that allow cooperation among its members to reach common goals. It is accumulated through social participation to community activities." (Antoci, Sacco and Vanin 2005, p.151)	"The nature and extent of interactions between communities and institutions hold the key to understanding the prospects for development in a given society. The evidence supports the argument that social capital can be used to promote or to undermine the public good." (Woolcock and Narayan 2000, p.243)
"(…) conducive to developing cooperation among economic actors aimed at increasing social product, which is expected to accrue to the group of people embedded in those social relationships." (Hayami 2009, p.98)	"The dark side of social capital" (Portes 1998)
"Social Capital helps to understand how cooperation is achieved in societies. (…) increases the probability of higher returns from individual and joint efforts over a future time period" (Ahn and Ostrom 2008)	

3.1) Social Capital and out-group benefits:	3.2) Not compatible with cooptation
"We can think of 'social capital' as being growth enhancing through two channels: first, more social capital and trust lead to better functioning public institutions; second, trust and social capital may help where there are market imperfections and thus facilitate economic transactions." (Alesina and La Ferrara 2002, p.211)	"Human beings have a tendency to build 'in-group' solidarity at the expense of outsiders; thus, societies with many tightly bonded groups or networks may be fragmented and rife with conflicts and hostility when viewed as a whole." (Fukuyama 2002, p.30)
"Trust and civic norms measured through the WVS	

positively associated with economic performance. Associational activity is not correlated." (Knack and Keefer 1997, p.1252) "Trusting societies not only have stronger incentives to innovate and to accumulate physical capital, but are also likely to have higher returns to accumulation of human capital." (Knack and Keefer 1997, p.1253) "Social capital is one type of social relationship (…) characterized by trust, reciprocity, and cooperation that is associated with positive community-development outcomes (participation in civil society organizations that deliver public goods and services to communities.)" (Beard 2005, p.23) "Social capital within a particular group or network can produce positive externalities by teaching people social virtues such as honesty, reciprocity, and dependability that they can then apply to relationships with other people." (Fukuyama 2002, p.30)	

4) Social Capital and in-group benefits:

"(…) is defined by its function. It is not a single entity but a variety of different entities (…) they facilitate certain actions of actors -whether persons or corporate actors- within the structure." (Coleman 1988, p.98)
"The function identified by the concept "social capital" is the value of those aspects of social structure to actors to realize their interests." (Coleman 1990, p.305)
"One of the most example of social capital at work in the absence of formal insurance mechanism and financial instruments is the use by the poor of social connections to protect themselves against risk and vulnerability." (Woolcock and Narayan 2000, p.243)
"(…) is what permits individuals to band together to defend their interests and organize to support collective needs" (Fukuyama 2002, p.26)
"(…) represents the ability of actors to secure benefits'' (Portes 1998, p.6)
"(…) social capital refers to opportunity." (Burt 1997, p.339)

Social capital and information:
"(…) in terms of the information and control advantages of being the broker in relations between people otherwise disconnected in social structure." (Burt 1997, p.340)

For a conceptual framework to be complete, it is necessary to identify a set of dimensions that constitute social capital. They must be at the same time responsible for the function of

coordination and for the wide range of outcomes observed in the literature. These dimensions are in ultimate analysis those characteristics of social relationships that shape the set of expectations and obligations among individuals and the resulting level of coordination.

1.4   Social capital as multidimensional concept: in need to identify its constituting dimensions

Social capital is often described as being a multidimensional concept (Nahapiet and Ghoshal 1998; Woolcock and Narayan 2000). I proposed a conceptual framework that identifies social capital as the aggregate of expectations and obligations accumulated by individuals through social relationships. I thus need to identify a set of dimensions that characterizes social relationships responsible for the accumulation of expectations and obligations among individuals. The underlying idea is that the presence and interplay of different dimensions may explain the wide range of outcomes attributed to social capital. In the literature this multidimensionality has been described by Sabatini (2009) by identifying five different types of social capital: "strong family ties (i.e. bonding social capital), weak informal ties (bridging social capital), voluntary organizations (linking social capital), active political participation and civic awareness" (Sabatini 2009, p.430). Following this classification, I argue that social capital dimensions are identified by the characteristics of ties among individuals. From the literature on social capital presented so far and looking for additional contributions from collective action theory and cognitive psychology I identify three group characteristics likely responsible for the accumulation of expectations and obligation among individuals.

Social capital is accumulated through social relationships. The first characteristic that plays a role in this accumulation process is the frequency of contacts between two individuals or between an individual and the group he belongs to. Frequency raises social capital because the repetition of interactions is the funding element of reciprocity among individuals (Sethi and Somanathan 2003). Expectations and obligations evolve together with interaction and the highest the frequency the strongest the ties between two individuals. A part from the interaction between two selected individuals in the group, also the frequency of interactions within the whole group raises the accumulation of social capital because it enhances closure, that is when individuals are

all inter-connected (Coleman 1988). When group members are well-connected with each other, information flows efficiently, and monitoring is less expensive (Bowles and Gintis 2002).

A second characteristic has been extensively cited in the social capital literature: homogeneity. Homogeneity means that individuals share some common value or interest (Cassar, Crowley and Wydick 2007). It is possible to make a distinction between homogenous and heterogeneous groups. In homogenous groups membership is exclusive, that is to say that only individuals sharing the same social status can be part of the group (Narayan and Pritchett 1999). In heterogeneous groups, on the contrary, people gather independently from their social status. They access to a group to perform a specific action or to reach a common objective. Homogeneity raises social capital accumulation but not trough the mechanism of repetition. Because people that belong to the same homogeneous group know they share some common values, they do not need to interact to define their respective expectations and obligations. Information asymmetries are automatically reduced and monitoring is applied through social pressure (Grootaert 1999).

The last characteristic is hierarchy that can be defined as the degree of concentration of contacts around a single individual within a group (Burt 2000). Hierarchy raises social capital accumulation because it clearly defines individual's roles and the allocation of expectations and obligations (Collier 2002). In formal organizations, with well-defined hierarchy, information flows and decisions are effective because rules and roles are clear and monitoring is well structured. Concerning social capital accumulation, it is important to consider not only the hierarchization of the entire group but also the relative position of the individual within this structure. In fact, if the individual is positioned at the very top of the hierarchy he will probably profit of a higher amount of expectations in comparison to the obligations towards other group members, and vice versa at the bottom he/she will be constrained by a higher amount of obligations (Coleman 1988). Table 1.3, here below, illustrates the selected characteristics - frequency, homogeneity, and hierarchy- and contributions from literature that support this choice.

Table 1.3   Sorting Rationales for Social Capital Dimensions

Frequency

- "Thus we find that social capital appears to grow with positive (past) experiences.", (Cassar, Crowley and Wydick 2007, p.F103)

- Frequency of interaction enhances closure (Coleman 1988)

- Frequency as quantity of social capital. "(…) frequency of membership and the characteristics of groups. We created an index of the village associational life, which we argue is a proxy for social capital." (Narayan and Pritchett 1999, p.872)

- "The frequency of interactions among community members, lowers the costs and raises the benefits associated with discovering more about the characteristics recent behavior and likely future actions of other members." (Bowles and Gintis 2002, p.F424)

- "Infinite repetition can give rise to the evolution of behavior that exhibits reciprocity-like features" (Sethi and Somanathan 2003, p.1)

Homogeneity

- "(…) the number of common characteristics among members." (Cassar, Crowley and Wydick 2007, p.F102)

- "Homogeneity of members is preferred because it reduces information asymmetries and may make it easier to employ social sanctions against default." (Grootaert 1999, p.43)

- Homogeneity may refer to "(…) a group in which membership is "exclusive" to a particular clan or ethnic group" (Narayan and Pritchett 1999, p.872)

Hierarchy

- "(…) the extent to which the redundancy can be traced to a single contact in the network."; "In the extreme case a network is hierarchical in the sense that is organized around one contact" (Burt 2000, p.35)

- "(…) in hierarchically structured extended family setting, in which a patriarch (or "godfather") holds an extraordinarily large set of obligations that he can hold in at any time to get what he wants done." (Coleman 1988, p.S103)

- "(…) villages in traditional settings that are highly stratified, with certain wealthy families who, (…), have built up extensive credits that they can call in at any time." (Coleman 1988, p.S103)

- "Hierarchy facilitates observation"; "(…) distinctive contributions is establishing rules and making allocative decisions" (Collier 2002)

I then argue that these three dimensions -hierarchy, homogeneity, and frequency- identify social capital. Individuals belong in fact to a complex set of networks, each of them characterized by different combinations of these dimensions. Depending on the homogeneity, frequency and hierarchization of their relationships individuals will rely on and be exposed to a specific set of expectations and obligations. This set of expectations and obligations represents the individual endowment of social capital and will shape an individual's ability to coordinate with others and within organizations to perform activities and raise benefits. The outcomes of coordination may vary significantly depending on the presence of different combinations of these dimensions, which is to say to different types of social capital. Moreover, also depending on contextual characteristics, this mechanism will result in some in and out-group benefits.

1.5   Conclusion

Literature on social capital belongs to different disciplines and the great variety of conceptualizations and applications demonstrates that a theory of social capital still lacks. Considering the fact that social capital means such different things to researchers, it becomes urgent to understand if any concept of social capital actually exists. In this chapter, I support the existence of social capital by proposing a new conceptual framework able to reconcile contrasting perspectives. In particular, I interpret most of disagreements in the literature as the result of the existence of two different levels of analysis: the micro and macro levels. At the micro level, social capital refers to the relational life of individuals, to their embeddedness in the social structure. At the macro level, it refers to the functioning of the whole system, to the complex set of social norms that governs exchanges among individuals. The presence of these levels of analysis explains why social capital can be conceived both as a public and as a private good, holding both positive and negative effects on society. Because the system level is a by-product of the relational level, the latter should be developed in priority. Following this perspective, I argue that social capital is an intangible form of capital, a set of expectations and obligations accumulated by individuals through social relationships. This accumulation can be intentional or not but enables an individual to engage in certain actions, to coordinate, and to raise benefits otherwise impossible to reach. However, this unique function of coordination may lead to a wide

range of outcomes, more or less desirable, for the individual as well as for the entire society. For this reason, it is necessary to identify social capital's constituting dimensions, that is to say those characteristics of social relationships that shape the set of expectations and obligations among individuals, the resulting level of coordination and its outcomes. I therefore select three dimensions that have never been explicitly identified in the literature as the ones constituting social capital: homogeneity among individuals, frequency of contacts and hierarchization of relationships. I argue that these dimensions identify social capital because they are responsible for the development of reciprocity, and therefore of coordination and exchange among individuals. The sharing of values, repetition of contacts and the recognition of authority, in fact, make possible the mechanism of social solidarity, monitoring and sanctioning proper to coordination. Depending on the characteristics of an individual's relationships, in terms of homogeneity, frequency and hierarchy, he/she will then be exposed to a specific set of expectations and obligations. This set of expectations and obligations constitutes the essential endowment of capital necessary to exchange with others and live a meaningful social life. An individual will rely upon social capital in daily life and in case of need but will also have to face some social constraints. Despite the benefits generated, it is also possible that social relationships or more structured collective activities generate negative outcomes for those individuals that are excluded or even for the entire society, if there is misappropriation of public resources. To investigate this wide range of outcomes it is therefore necessary to operationalize the concept of social capital. For this reason, in the next chapter I propose and measure a multidimensional index of social capital coherently with the conceptual tools developed so far.

2 A multidimensional index of social capital using the Indonesia Family Life Survey[7]

2.1 Introduction

In the previous chapter, I defined social capital as the amount of expectations and obligations that individuals accumulate because they are embedded in the social structure and I identified its underlying dimensions: homogeneity among individuals, frequency of contacts and hierarchization of relationships. The aim was to develop new conceptual tools to assess an individual's endowment of social capital. In this chapter, I therefore employ this conceptual framework and measure a multidimensional index of social capital at the individual level, using as country field Indonesia. I argue that it is important to represent the concept of social capital through an index in order to support the idea that it is a form of capital *per se* and to empirically investigate its function. The construction of an index is, in this perspective, a fundamental step in the development of a theory of social capital.

I first introduce the notion of embeddedness to better identify the complex set of social relationships that individuals may develop. In particular, I focus on the concept of social group and illustrate how different disciplines classify the groups that constitute a society. I then overview existing indices of social capital and appreciate the extent to which they assess individuals' embeddedness. I describe indices' composition and aggregation methodology and identify room for improvement.

Since in this study the index of social capital is measured in the context of Indonesia, I briefly present the country's profile. I then describe how I measure the index following three principal steps. First, for each individual I identify the set of groups he/she belongs to. Second,

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[7] A preliminary version of this chapter has been presented at the Human Development and Capability Association International Conference, *Revisiting Development: Do We Assess It Correctly?,* Jakarta, September 5-7 2012; and at the Fourth International Conference in Political Economy, *Activism and Alterative Economic Strategies*, The Hague, July 9-11 2013.

for each group I explain which variables I measure to represent social capital's dimensions, namely homogeneity, frequency and hierarchy. Third, I aggregate variables in order to obtain the individual's endowment of social capital for each group and the final index. To the best of my knowledge, this is the first index of social capital that takes into account such wide range of aspects of the relational life of individuals. I conclude the chapter by presenting some descriptive analysis of the final index and of its disaggregated components and I illustrate different patterns of inequalities in the accumulation of social capital across the population.

2.2 Embeddedness: identifying structures of social relations

The conceptual framework proposed in the previous chapter describes social capital as the amount of expectations and obligations that individuals develop because they are embedded in the social structure. The growing interest in embeddedness has been inspired by the idea that it plays a major role in shaping both behaviours and institutions (Granovetter 1985; Portes and Sensenbrenner 1993). The influence of the social structure on individuals' behaviours is in fact an ongoing permanent process that works also the other way round. Interactions continuously construct and deconstruct this process and, while shaping individuals' behaviours, they influence back the evolution of institutions. For this reason, interactions are the social phenomena at the base of social capital accumulation. To operationalize the concept of social capital it is thus necessary to observe existing interpersonal relations and their structures, that is to say social groups. The identification of what is a group is not a simple task in social sciences. Different disciplines may agree that social groups comprise "persons acting with reference to given aims, in the prosecution of which an integration of roles and an ordering of social relations come into play" (Hiller 1941, p.189) but then classify them focusing on different analytical elements. I take into consideration three examples within social sciences that illustrate the variety of group classifications. Also, these examples provide a comprehensive realistic account of those groups that we may find in a given society.

The first categorization comes from social capital literature, in particular from the structural perspective (Sabatini 2009) that classifies groups distinguishing between bonding, bridging and linking ties. Two criteria distinguish among groups: whether the group is considered

as a formal organization and the strength and quality of ties among members. These groups are then represented by networks among: family members (bonding), acquaintances (bridging) and voluntary associations (linking). Other groups within the same categorization (although with no official labels) are networks built trough political participation and through civic engagement. The second group categorization refers to cognitive psychology and differentiates among intimacy groups, task oriented groups, social categories and weak social relationships (Lickel et al. 2000). To distinguish among these groups, five criteria are applied: quality of interaction, level of commitment, established goals, expected outcomes and perceived similarity. These categories are then represented by networks respectively within family and small groups of friends (intimacy groups), committees and working groups (task oriented groups), religious and ethnic groups (social categories), and neighbours and leisure groups (weak social relations). The third and last group categorization is based on the new institutional economics (Ahn and Ostrom 2008) and applies as principal criterion the nature of institutions at the base of organizations. Institutions, defined as the rules of the game (North 1993), define which behaviours are acceptable together with the meanings and forms of exchange among people. Individuals are members of different organizations and each of them is based on a set of institutions that regulate its participation, functioning, objective, etc. Groups are then identified looking to these organizations that range in scale from the level of households to the one of the entire community.

Through these classifications, it is possible to appreciate the variety of social groups in a society: ranging in scale, being formalized or not, based on different aims, members' characteristics, etc. To operationalize the concept of social capital it is therefore necessary to measure individuals' embeddedness in the social structure by proposing an index that takes into account this wide range of social groups. In the next section I overview existing indices of social capital and I argue that there is substantial room for improvement in how individual's embeddedness is assessed.

2.3 Multidimensional indices of social capital: state of the art

In this section, I review the few empirical indices of social capital that are proposed in the literature (Grootaert 1999; Krishna 2008; Narayan and Cassidy 2001; Sabatini 2009). These

indices support the idea that social capital is linked to the quality and quantity of social relationships in a community and that it is a multidimensional concept. I overview existing indices through four criteria: the definition of social capital, its constituting dimensions, the dataset, and the methodology used to aggregate variables over dimensions. At the end of this overview, Table 2.1 summarizes basic information for each index: country field, level of analysis, dimensions of social capital, and aggregation methodology.

Grootaert (1999)

Following Portes (1998), Grootaert (1999) conceives social capital as the ability of actors to secure benefits from membership in the social structures. Developing from that, he makes a distinction between the micro and macro levels and specifies that his study refers to the former one. In his words: "At the macro level, social capital includes institutions such as government, the rule of law, civil and political liberties, etc. (...). At the micro and meso levels, social capital refers to the networks and norms that govern interactions among individuals, households and communities" (Grootaert 1999, p.5).

Looking for an empirical application, he considers that, at the micro and meso levels, local associations can be considered as manifestations of social capital. He acknowledges the fact that social capital and local associations are not synonymous. Not only social capital exists in other contexts but also the mere presence of local associations does not imply any social capital endowment. In order to better capture and measure social capital endowment linked to local associations, he thus proposes six dimensions: the density of associations, their internal heterogeneity, the frequency of meeting attendance, members' active participation, payment of dues, and community orientation.

To operationalize the concept of social capital and its dimensions the author measures an index at the household level in Indonesia using a dataset that comes from the Local Level Institutions Study, a comparative study designed and conducted by the World Bank in three countries (Bolivia, Burkina Faso and Indonesia)[8]. In Indonesia, data was collected in the fall of 1996 from a sample of 1.200 households that covers three provinces (Jambi, Jawa Tengah, and Nusa Tenggara Timur). Although the author acknowledges the fact that this sampling framework

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[8] For further detail on this study see the report by the World Bank (1998)

cannot guarantee national representativeness, these provinces have been selected to represent different socio-economic and institutional environments.

Grootaert measures the six dimensions of social capital at the household level as follows:

- Density of membership: the total number of memberships in existing local associations.

- Heterogeneity index: for the three most important associations cited by the interviewee, questions were asked about the internal homogeneity of the group. The final heterogeneity index is an average of the three associations' scores, each measuring on a 0-8 scale whether in the association members where "mostly from different" neighbourhood, kin group, occupation, economic status, religion, gender, age, and level of education.

- Meeting attendance: average number of times someone from the household attended group meetings in a three-month period (normalized for the number of memberships of the household).

- Decision making index: for the three most important associations cited by the interviewee, questions were asked to evaluate if members were "very active" "somewhat active" or "not very active" in the group's decision-making. The final decision making index is the average of the three associations' scores, each measuring participation on a 0-2 scale (final index re-scaled from 0 to 100).

- Membership dues: amount paid to enter/participate to the association (Rupiahs per month) and labour provided as contribution (number of days per year).

- Community orientation: percent of membership in community-initiated organizations.

His model investigates the relationship between social capital and household welfare and is run testing alternatively the index of social capital and its disaggregated dimensions. Without motivating his choice, the author selects two out of six dimensions available (density of memberships and active participation) to construct with equal weights an additive index. However, an alternative additive index, with all dimensions and equal weights, is also proposed and reported as yielding similar results.

Narayan and Cassidy (2001)

Following Putnam et al (1993) the authors define social capital as "these patterns of social interrelationships that enable people to coordinate action to achieve desired goals" (Narayan and Cassidy 2001, p.59).

To identify social capital dimensions, Narayan and Cassidy consider not only the connections among individuals but also their nature and characteristics. They list as social capital dimensions: group characteristics, generalized norms, togetherness, everyday sociability, neighbourhood connections, volunteerism and trust.

The dataset used by Narayan and Cassidy comes from the Global Social Capital Survey, a project developed by the World Bank, whose questionnaires were administrated in Ghana and Uganda during summer and fall of 1998. In Ghana 1471 households from four regions have been interviewed, selected from a previous research project run by the Ghana Statistical Service[9]. In Uganda 950 individuals were interviewed from urban households in Kampala although authors acknowledge the fact that, due to circumstances, it was not possible to select a random representative sample.

The authors explain how they operationalized the dimensions of social capital specifying, for each of them, underlying questions and measurement issues. We resume the whole list here below:

- Group membership: number of groups the individual belongs to (absolute frequency); money the individual contribute (absolute frequency per month); frequency of individual participation (absolute frequency per month); extent to which the individual participate in the group (1-5 scale); homogeneity in terms of neighbourhood, kin, ethnic, religion, education/income, gender (sum of yes/no answers).

- Generalized norms: whether most people can be trusted (1-4 scale); whether people try to be helpful (1-4 scale); whether people try to be fair (1-4 scale).

- Togetherness: whether people get along (1-5 scale); subjective perception of togetherness (1-5 scale).

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[9] For more detail on the sample see Narayan and Cassidy (2001, p. 68)

- Everyday sociability: participation to arts or other recreational activity; participation to games; shopping or spending time (absolute frequency per month); for each branch of question, with whom (scale 1-3= family, friends same caste/ethnicity/education/religion/wealth/gender, friends from different caste/ethnicity/education/religion/wealth/gender); who visit you at home, with whom you eat at home (scale 1-3= family, friends same caste/ethnicity/education/religion/wealth/gender, friends from different caste/ethnicity/education/religion/wealth/gender).

- Neighbourhood connections: whether you ask your neighbours to take care of your children and to help you if you are sick (1-6 scale= very unlikely/very likely).

- Volunteerism: subjective perceptions over community propensy of volunteering; over propensy of punishment if people do not volunteer; whether most people fairly contribute to the community (1-5 scale= strongly disagree/strongly agree); frequency of individual's volunteering (absolute frequency per month).

- Trust: whether the individual trusts people of same ethnicity/religion/tribe, people of different ethnicity/religion/tribe, neighbours, and people form same groups/organizations, business owners the individual is in contact with, politicians, family, government service providers, local government, police (scale 1-5).

Narayan and Cassidy run an exploratory factor analysis and a confirmatory factor analysis to better define and select this final list of dimensions over a larger set. They use these techniques also to show patterns of interrelationships among dimensions and comment differences between Ghana and Uganda, confirming the importance in both countries of the dimension of group membership. They run several models on the relationship between social capital and societal well-being but they always enter the set of social capital dimensions disaggregated.

Krishna (2008)

Following Putnam (1995), Krishna defines social capital as those "features of social organization such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit" (Krishna 2008, p. 439). The author acknowledges the fact that there exist different conceptions of social capital linked to different societal aggregations, namely individual,

community and national levels, and makes explicit his choice of developing on the community-based conception.

In his analysis, Krishna first explains that any proposed dimension of social capital is necessarily context-dependent. In particular, he develops a critique over the sole use of membership to associations as dimension of social capital arguing that this is a valid proxy only in Western countries, where formal associations are prevalent and represent bottom-up initiatives. In the context of Rajasthan, the country-field of his study, he argues that the most appropriate dimensions to be considered should be: membership in labour-sharing groups, dealing with crop-disease, dealing with natural disaster, trust, solidarity, and reciprocity.

Data used to measure these dimensions come from a field study conducted by Krishna himself and 16 field investigators over eight months during 1998-1999. In total, 1989 individuals have been interviewed, from sixty villages in Rajasthan.

- Social capital dimensions have been measured at the village level as follows:
- Membership in labour-sharing groups: whether the individual is a member or not (proportion of the village population being a member).
- Dealing with crop disease: perception over the proportion of the village population that would help in case of crop disease (1-5 scale= none/the whole village; individuals' scores averaged at the village level).
- Dealing with natural disaster: perception over the proportion of the village population that would help in case of natural disaster (1-5 scale= none/the whole village; individuals' scores averaged at the village level).
- Trust: perception over trusting attitudes of people, in the case of sharing cultivated land (1-2 scale= people prefer to cultivate alone/people prefer to share).
- Solidarity: perception over the behaviour of village leader towards the village population (1-3 scale=village leader put first his own welfare/village leader favour village welfare; individuals' scores averaged at the village level).
- Reciprocity: perception over the willingness of other people to intervene in children's education in case of children's misbehaviours (1-4 scale= none in the village would intervene/the whole village would intervene; individuals' scores averaged at the village level).

Krishna synthesizes these dimensions into an index of social capital and investigates the link between social capital and development performance (expressed as livelihood stability, employment generation, poverty reduction, and quality of basic services). The index of social capital introduced in the model is an additive index of the five dimensions. Krishna preliminary runs a factor analysis to show that all dimensions load highly on a single common factor. Each item has been previously divided by its range (then all items are from 0 to 1), then they are added with equal weights and the final index is re-scaled from 0 to 100.

Sabatini (2009)

Following Coleman (1988) Sabatini defines social capital as those aspects of the social structure that facilitate action of the actors within the structure and make possible the achievements of certain ends. Sabatini underlines the fact that, being social capital a multidimensional concept, any empirical application necessarily has to explicit which aspects and contexts are measured.

In this study, he refers to the structural approach to social capital that he identifies with the identification of social capital with social networks. He then explicit five social capital dimensions: strong family ties (*bonding social capital*), weak informal ties (*bridging social capital*), voluntary organizations (*linking social capital*), active political participation and civic awareness.

The dataset used to measure these dimensions has been collected by Sabatini himself drawing from a set of multipurpose surveys carried out by the Italian National Institute of Statistics. The sample consists of 20.000 individuals, interviewed between 1998 and 2002. Here below I present an overview of variables representing each social capital dimension. For a full description see tables A1, A2, A3, A4, and A5 in the appendix in Sabatini (2009, pp.440-441). Variables have been aggregated per enumeration area, as the index of social capital is measured at the community level:

- Family social capital: family composition (number of components for every 100 families in the same area); spatial distance between family members; relevance of other relatives; quality of relationships both with family members and with other relatives (people that meet relatives and family every 100 people in the same area).

- Bridging social capital: informal networks of friends (people that meet friends in informal activities; people that do sports and attend bar, pubs, and circles).

- Linking social capital: density of associations; involvement degree (people that do volunteering; voluntary organizations for every 10.000 people).

- Political participation: degree of involvement in political life (people being part of a political party, spending time or money to support a political party every 100 people in the same area).

- Civic awareness: interest in politics (people reading newspapers, talking about politics every 100 people in the same area).

Principal component analysis is run on each of the five groups in order to build a synthetic index for each dimension. On the other side, a multiple factor analysis is run on the entire dataset to build a unique index. Sabatini argues that the index of social capital differs substantially from the indices of its five dimensions because the former captures what literature generally conceives as "positive" social capital (in the sense that it has a positive impact on society). The five social capital dimensions are supposed to capture, on the contrary, both positive and negative outcomes.

Table 2.1   An overview of existing indices of social capital in development economics

Author	Country	Level	Social Capital	Components	Aggregation
Grootaert (1999)	Indonesia	Household	Participation to local associations	• Density of membership • Heterogeneity index • Meeting attendance • Decision making index • Membership dues • Community orientation	Additive index with equal weights, rescaled 0-100
Narayan and Cassidy (2001)	Ghana and Uganda	Household	Nature and characteristics of connections among individuals	• Group membership • Generalized norms • Togetherness • Everyday sociability • Neighbourhood connections • Volunteerism • Trust	Components left separated but exploratory and confirmatory factor analysis run to select the final set over a larger one
Krishna (2008)	India	Village	Features of social organizations that facilitate cooperation	• Membership in labour-sharing groups • Dealing with crop disease • Dealing with natural disaster • Trust • Solidarity • Reciprocity	Additive index of the five dimensions, each previously divided by its range, with equal weights, re-scaled 0-100
Sabatini (2009)	Italy	Community	Social networks	• Family social capital • Bridging social capital • Linking social capital • Political participation • Civic awareness	Social capital index: multiple factor analysis, over all variables from the five groups Social capital groups indices: principal component analysis over all variables in each of the five groups

These studies all represent good starting points to operationalize the concept of social capital. They show which variables can be selected to better appreciate the quality and quantity of social relationships individuals develop within a community. In addition, they provide examples of measurement and aggregation methods. Nonetheless, here below I point out some limits to be addressed. Grootaert (1999) provides a detailed measure of the associational activity of Indonesian households but, by his own admission, local associations are not the only manifestation of social capital in a society. For this reason, his index may be considered incomplete. Moreover, dimensions measured do not explicitly rely on any theoretical framework that explains why they identify social capital, even if rationales behind variables are presented. Narayan and Cassidy (2001) measure a more comprehensive set of variables but prefer to use each component separately instead of aggregating them into an index. Nevertheless, for the concept of social capital to exist it is necessary to measure and test a unique index. Moreover, as Grootaert (1999) does, the authors measure social capital at the household level without explaining what social capital is supposed to be or represent at this level of analysis. They assume that the endowment attributed to the household head (that is usually the individual interviewed) is enjoyed by, or representative of, the whole household. The index proposed by Krishna (2008) is defined by the same author as context depending and thus has some important limits in terms of comparisons. Although I acknowledge the fact that variables measured to represent social capital may vary depending on the field of investigation I also argue that social capital's underlying dimensions should be clearly defined beyond any context. Sabatini (2009) proposes such conceptual framework and identifies different social capital types that are *a priori* present in a society. However, his index represents social capital at the community level whereas I am interested in the investigation of the relational endowment of social capital at the individual level.

Considering this overview, the index of social capital proposed in the present study brings the following improvements. First, I measure social capital at the individual level and do not aggregate at upper levels. I measure what has been identified as relational social capital (Esser 2008) and I consider social capital as an individual endowment, with no implications over its nature at the community or national level. Social capital at the macro level is not taken into consideration because the conceptual framework proposed in the previous chapter do not develop assumptions on the dynamics between the micro and the macro levels, even if they are interrelated. In addition, I acknowledge the fact that social capital at upper levels would probably

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have emerging properties other than the sum or the average of individuals' scores. Second, I measure social capital considering a wide range of groups individuals belong to. I do not limit social capital to a specific set of groups, but I try to account for the largest set of networks individuals are embedded in. For each group I then identify the corresponding endowment of social capital by measuring its underlying dimensions, namely homogeneity among group members, frequency of contacts and hierarchization of the group. By measuring the same dimensions for each group, I thus maintain the link with the conceptual framework developed in the previous chapter. Third, although additive indices seem to be used without bearing problems of robustness I opt for principal component analysis in the aggregation methodology. A wide range of aggregation methodologies is available for the construction of multidimensional indices (Nardo and et al. 2005). Each methodology indicates how to standardize variables, which weights to apply on each dimension and finally how to aggregate them. The use of different aggregation methodologies reflects the assumptions regarding how different dimensions contribute to the emergence of the phenomenon measured by the final index. However, in the empirical literature of social capital the attention of researchers has focused more on the composition of the index than on the aggregation methodology. This focus is understandable as there is still no agreement on what dimensions constitute social capital nor on how they differently contribute to its accumulation. Without a clear conceptual framework on which to base the measurement and aggregation of social capital's dimensions, the choice of an additive index is the most reasonable one. Considering that in the present study I develop a conceptual framework to identify social capital's dimensions I then propose an alternative aggregation methodology and I opt for a principal component analysis, following the example of Sabatini (2009). The advantage in using principal component analysis is that it allows to keep the same amount of information in a reduced number of variables. Once groups individuals belong to are identified, principal component analysis can be run among variables that represent homogeneity, frequency and hierarchy in order to obtain the corresponding endowment of social capital for each group.

I operationalize the concept of social capital using as country field Indonesia. This country has been the object of extensive research in development economics because of its heterogeneity in terms of cultural and socio-economic characteristics. For this reason, an investigation of social capital in this country holds an interesting potential for generalizability, as better developed in the following section.

2.4 Indonesia: country profile and presentation of the dataset

2.4.1 Indonesia: a former colony transformed into a strong emerging economy

Indonesia is capturing the attention of researchers for decades. Its history, cultural heterogeneity, and geo-political position provide social scientists with a great variety of critical research questions. In this section, I outline main characteristics of this country, presenting its actual profile and historiography. The Unitary State of the Republic of Indonesia (NKRI) is a country in South-East Asia located between the Asian and Australian Continents and the Pacific and Atlantic Oceans (see the map below). Consisting of 17.508 islands, it is the largest archipelago in the world. Indonesia is a presidential republic and its city capital is Jakarta, situated in the island of Java.

With a population of more than 240 millions of people, Indonesia is the fourth most populous country in the world. Islam is the dominant religion and, for this reason, Indonesia is the largest Muslim country in the world. However, other religions, namely Protestantism, Catholicism, Hinduism, and Buddhism, are numerically well represented. We find a similar scenario looking to country's ethnic composition. Although Javanese is the dominant ethnic group, Indonesian population is subdivided between more than thirty large ethnic groups and hundreds of ethnicities. While each ethnic group speaks its own language in daily life, the majority of the population currently speaks the national language, Bahasa Indonesia.

Indonesia is classified by the World Bank as lower middle income country, with a GNI per capita well below the average of the Asia and Pacific region (2.940 US $ against 4.248 for the reference area in 2011). Around 12% of the population is below the poverty line and life expectancy at birth is below the regional average (69 against 72 years in 2010). Adult literacy rate, at the 92.6% in 2009 and constantly growing, is more homogeneous and similar to the reference area. Despite a strong presence of state-owned enterprises, with a GDP growth of 6.2% in 2012 Indonesia is considered by foreign investors as one of the most promising emergent economies.

The economy, demographics and cultural traits of contemporary Indonesia can be better appreciated considering its history. For this reason I overview here below major events that characterized country's colonization and post-independence era. Before colonization, Indonesia

developed intense relations especially with China and India. Trade and religious exchanges continued during not only Hindu and Buddhist kingdoms but also when Muslim traders brought Islam. The richness of the region, the position right on the Strait of Malacca (which is still one of the most important shipping lanes in the world) and the possibility to control the spice trade attracted also European countries, especially Portuguese, Dutch and British. Dutch colonized the archipelago for about 350 years. Although Dutch colonization is often described as having maintained existing structures of native society, researchers have questioned this postulate especially looking at three main evolutions (Geertz 1963; Kahin 1952). The first one is the transformation of Javanese political articulation into a strongly authoritarian structure. On the other side peasantry system, weakened by Javanese aristocracy and by the common practice of leasing villages to Chinese (designated by Dutch as elite immigrants) became more and more communalistic in its economic organization. Finally, we assist in this period to the disappearance of native middle-class, represented in the pre-Dutch society by a flourishing Javanese merchant class. It is possible to observe the consequences of this colonial heritage in the actual organization of Indonesian society, especially looking to the Javanese centralization and the strong presence of Chinese elites. After a brief Japanese occupation, Indonesia declared its independence in 1945. It is with the Indonesian Independence movement and the Indonesian National Revolution that Indonesians, through their common hostility towards foreign interference, found some unity despite their internal divisions (Kahin 1952). During these years, the national motto "Unity in diversity" (Bhinneka Tunggal Ika) became the symbol of country's emancipation. Nevertheless, the first decades after independence have been characterized by violent conflicts between nationalists, communists and the army. At the economic level, in this period Indonesia remained a prevalent agricultural economy. The State, lead by President Sukarno, nationalized ex-colonial manufacturing companies but was unable to avoid a long period of economic stagnation (Vial 2005). The period that followed radically changed this scenario. Suharto came into power in 1968 and inaugurated the New Order Regime. Under his leadership, Indonesia opened his market to foreign investors and experienced a strong economic growth. These changes were accompanied by a rise of corruption and authoritarianism. The resignation of Suharto in 1998 coincided with the peak of the Asian financial crisis. The evolution that Indonesia has experienced after this political and economic crisis has been characterized by the willingness to strengthen administrative decentralization and democratic

processes. Indonesia is today one of the most promising emergent economies in the world. However, it also faces important challenges linked to frequent natural disasters, endemic corruption, separatist movements and a rapid economic growth. In particular, although Indonesian living standards are constantly rising, still inequalities between ethnicities and socio-economic classes remain large.

Indonesia thus results a rich field for the investigation of social capital especially for its internal heterogeneity, which holds important potential for generalizability. At the individual level, we find an extremely wide range of cultural identities and socio-economic status. At the community level, also the institutional and environmental settings vary very much. For example: life in fishing villages across Indonesian islands is very different from the daily activities of Jakarta where 10 millions of individuals live; the Hindus life-style in Bali is different from the sharia-regulated administration in Aceh; the matrilineal society among Minangkabau follows kinship rules at the opposite of the matrilineal organization of Batak. The social context in Indonesia is therefore among the most diverse in the world. In this context, I expect a great variety of social capital endowments depending on the groups individuals may have access to. Particular attention should be given to individuals' family, both within and outside the household, the job environment, political infrastructures, and the role of religions and ethnicities in each community.

Figure 1.   Map of Indonesia (Source: Map No 4110, Rev. 4, United Nations, Cartographic Section, January 2004)

2.4.2 The dataset: Indonesia Family Life Survey

The Indonesia Family Life Survey, (IFLS), is a longitudinal, nationally representative survey, carried out in Indonesia since 1993 by RAND Foundation. At the moment, five waves are available to researchers: IFLS1 (1993), IFLS2 (1997), IFLS2+ (1998), IFLS3 (2000) and IFLS4 (2007). The sample consists of approximately 30,000 individuals, living in 12.000 households and more than 300 villages, spread across 13 of the 27 Indonesian provinces. This sample is representative of about 83% of the population. Data is collected through questionnaires. There are in total 30 "books", which are organized per theme, issue or interviewee's target. There are two principal categories of books: those administrated to individuals, collecting both individual and household's information, and those administrated to village leaders or other village representatives, collecting community's information. Among issues treated in books we can find: household composition, socio-economic status of individuals, consumption attitudes, behaviours and expectations, community's education and health systems, infrastructure's development, local governance, and many others. For a more detailed description of the survey see Strauss *et alii* (2009). To build up the index of social capital I use the last wave of the survey, the IFLS4. This wave has been fielded in 2007 and 2008 by RAND foundation in collaboration with the centre for Population and Policy Studies (CPPS) of the University of Gadjah Mada and Survey METRE. IFLS4 offers the richest set of data (questionnaires are updated after each wave) and, for this reason, it is for the moment the only wave I use to measure the index. In particular, the following questions have been added only in IFLS4: from Book k, the ethnicity of all household members; from Book 3a, question on job satisfaction, whether the individual is member of a labour union or business association, if the job requires skills in dealing with people, and the entire section on religious attitudes; from Book 3b, number of Arisan meetings attended in the last 12 months, factors considered for the election of the mayor, the entire section on contacts with non bio parents and adopted children. Compared to the total amount of information used for the final index the questions that are present only in the last wave constitute a minor percentage. In this study, I privilege the completeness of data in IFLS4 to the possibility to build up a reduced form of the index over several waves.

2.5 Measuring social capital using the Indonesia Family Life Survey

To operationalize the concept of social capital I first identify those groups individuals belong to. For each group I then define which variables measure social capital's dimensions (namely homogeneity among group members, frequency of contacts and hierarchization of the group) and I explain how I measure these variables using the Indonesia Family Life Survey.

I analyzed all questionnaires of the Indonesia Family Life survey and identified groups individuals belong to bearing in mind the different categorizations identified in the literature. Groups selected are: the household, non-co-resident family, job environment, rotating saving group, religious group and the entire community. To my knowledge, this is the first index of social capital at the individual level that takes in consideration such wide range of groups using survey data. Although not exhaustive, this list is my best representation of an individual's embeddedness in the social structure. For each of these groups, in this section I therefore explain what variables I select and measure to represent homogeneity, frequency and hierarchy.

In order to better illustrate this process Table 2.2, here below, resumes the final set of variables (x_i) that represents an individual's social capital endowment, organized per groups (g_i) and dimensions (d_i). I also refer to tables A1 and A2, in the appendix, which provide further details on the transformation and aggregation of variables. Table A1 lists the set of variables x_i subdivided per social capital groups and dimensions and specifies if the final variable results from the combination between individual and group characteristics. The assumption being that the corresponding social capital available to an individual depends on both. Considering the fact that two individuals within the same group (thus sharing the same group variable) may have different roles and relationships with other group members (then having different individual variables), whenever possible, I measured the individual variable and then selected individuals belonging to the same group to measure the corresponding group variable. Table A2 details the set of questions and corresponding answers selected from IFLS4 to measure each variable.

Table 2.2   Social capital variables (*x*) per dimensions (*d*) and groups (*g*) (GxD matrix)

	Social capital dimensions		
	Homogeneity (d1)	Frequency (d2)	Hierarchy (d3)
Household	Ethnic homogeneity Religion homogeneity Education homogeneity Economic homogeneity Salary homogeneity	Household size	Household member's centrality
Non co-resident family	Education homogeneity with father, mother and children Economic homogeneity	Number of non-co-resident family Father, mother and children's residence distance Contacts and exchange with father, mother, children, adopted children and non-bio parents	Assistance to/from parents Assistance to/from siblings Assistance to/from children Assistance to/from non-bio parents
Job	Job satisfaction	Number of co-workers Weeks worked per year Need relational skill for job	Responsibility in job Member of labour union or business association
Arisan	Participants' status	Number of participants Frequency of meetings Number of meetings last year	Organization type
Religion	Religiosity homogeneity Education homogeneity Economic status homogeneity	Religious practice Belongingness to village's main religion	Role of religion in politics Role of religion in marriage
Community	Ethnic homogeneity Religion homogeneity Education homogeneity Economic homogeneity	Population Village classified as urban Number of and population participating to community projects Number of projects participated by the individual Presence of activities of mutual cooperation Presence of communal lands in the village	Presence of a system of community organization in the past Resolution of conflicts by formal institutions Village head chosen by formal institutions Individual is a government worker

2.5.1 Household

The first group I identify is the household. In this group, members essentially share the same living space and are often, but not necessary, linked one another by kinship. I use data from section "BK" of "book K", in which it is possible to collect information about all household members.

Homogeneity is supposed to capture the extent to which individuals share similar identities. In the household, as in any other group, the operationalization of this concept is subject to great debate. I identify two macro-categories that are cited as characterizing individual identities: identity as culture, represented among others by ethnicity and religion (Beard 2007), and class identity represented by variables as education and economic status (Kipp 1993). I thus create five variables that represent ethnic, religion, education and economic homogeneity in the household. The transformation process is the same for each variable. I select in the dataset individuals belonging to the same household. I then measure the group and the individual's corresponding variables and aggregate the two scores. For ethnic homogeneity, I first calculate the ethnic homogeneity of the group, which is the inverse of the number of ethnicities in the household (*nhheth*), and the ethnic homogeneity of the individual (*hhindeth*), which is the proportion of household members belonging to the same ethnicity of the individual over the total number of household members. I then sum the two values to obtain the variable representing an individual's ethnic homogeneity in the household (*etihh*). Similarly, an individual's religious homogeneity (*relihh*) is composed by the group score, which is the inverse of the number of religions represented in the household (*nhhrel*), and the individual score (*indhhrel*), which is the proportion of household members that share the same religion of the individual over the total number of household members. The original variable on education level, which report several educational attainments, has been recoded and ranges in scale from 0, "no education", to 5 "university education" (following the classification proposed within the questionnaire). Only education of adult members has been taken into account to avoid that children still in school artificially lower the education level. Then education homogeneity (*eduihh*) is calculated aggregating group (*hhedua*) and individual (*indhedu*) homogeneity similarly to religion and ethnicity. Finally, there are two variables representing homogeneity in economic status. The first one (*ecoihh*) is calculated aggregating the proportion of household members that are economic active (*hheco*) with a dummy variable assuming value "1" if individual is economic active

(*indheco*). The second one (*indhhsal*) measures also homogeneity in economic status but considering the salary individuals declared to perceive during the last year. Group homogeneity (*hhhsal*) is measured as the standard deviation of the average salary in the household and is then aggregated with individual homogeneity (*inhhsal*), measured as the absolute value of the difference between individual and average salary.

Frequency within the household is supposed to reflect the volume of contacts between household members. Living together already guarantees a high degree of frequency in contacts. Unfortunately, we do not have more detailed information concerning specific exchanges among household members or daily activities within the household. Therefore, we approximate the dimension of frequency as a continuous variable that measures the number of household members (*nhhmb*), arguing that larger households will enjoy greater volumes of exchanges (*findhh*).

The dimension of hierarchy is supposed to describe whether in the household it is possible to identify some authority structure. To operationalize this dimension we make reference to Burt's definition of hierarchy as the redundancy of contacts around one individual (Burt 2005). High levels of hierarchy mean that in the household roles are well defined and that a household member is in a position of centrality. Household composition can vary from nuclear (household head, his/her spouse and children) to complex forms (including extended family members as non-kin individuals). Different compositions, in particular the number of adult members and the total number of household members, will influence the centrality of the household head and consequently the relative centrality of other household members. Household members are subdivided into six categories that correspond to six different ordinal degrees of centrality within the household (household head; household head spouse; household member with a direct kin link with household head; other household members; children; servants). The corresponding variable then represents the individual's centrality in the household. I then measured the final variable (*indcen*) multiplying the individual's centrality (*indrole*) for the number of household members (*nhhmb*), to capture the potential volume of contacts, and dividing by the number of adult members (*nadmb*), to capture the effective redundancy of contacts.

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2.5.2 Non co-resident family

Non-co-resident family members compose the second group identified. Similarly, to the household, this group is essentially composed by individuals that have relationships based on kinship but non co-resident family members do not necessary live in the same community. Most of information for this group comes from sections "BA" and "TF" from "book 3B".

Homogeneity with non co-resident family is treated similarly to the same dimension in the household group. Due to the availability of data, it was possible to measure only education and economic homogeneity with non co-resident father, mother and children. The individual education homogeneity with parents is represented by two dummy variables that assume value "1" whether the individual has the same education level of his/her father (*fathhedu*) and mother (*mothhedu*). Education homogeneity with children (*chbhhedu*) measures the proportion of children having the same education of the individual over the total number of children. Economic homogeneity (*indactnonco*) measures the proportion of non co-resident family that share the same activity of the individual over the total number of non co-resident family.

For the dimension of frequency, it is possible to find extensive information on contacts between the individual and his/her non co-resident family. A set of variables measures contacts with father (*fatcont*), mother (*motcont*), children (*chbcont*), adopted children (*chadcont*) and non-biological parents (*nbpcont*). The original question asks about the frequency of visits, calls and mails on a scale ranging from 1 (never) to 5 (every day) and thus the final variables sum up for each non co-resident member the score on each answer. There is also a set of variables that account for the residence distance of father (*fatres*), mother (*motres*), and children (*chbavres*). Original variables indicated where the non co-resident member lives. The answers are recoded on an ordinal scale, giving the highest score for members living in the same village of the individual (the closest). In addition, a last set of variables takes into consideration whether the individual engages in any exchange with non co-resident family. The original questions on exchange are transformed in six dummy variables taking on value "1" whenever any help is provided and received, in terms of money, goods and household chores. These six dummy variables are summed up into an ordinal variable representing the frequency of exchange with parents (*fmexchfr*), children (*chbexchfr*), non bio parents (*nbpexchfr*) and siblings (*sibexchfr*). Finally, I add a variable that measures the total number of non co resident family (*nnncores*), similarly to what measured for the household group.

Concerning the last dimension, hierarchy, I try to capture whether the individual is one of the leading figure of the non co-resident family group or if he/she mostly relies upon other non co-resident members. For this reason, I measure variables that take into account the value and direction of exchanges between the individual and other members. In this sense, I assume that wealth-flows, in the form of money or in-kind exchange, represent an important aspect of hierarchical relations between family members. Social capital is considered as the amount of expectations and obligations linked to social relationships and hierarchy plays a role shaping the direction of these expectations and obligations. I acknowledge the fact that a great diversity in the structure and meaning of intra family wealth-flows exist. This is true especially in Indonesia if we consider that its wide range of ethnicities corresponds to very different traditional norms regulating family relationships. Among Koto Kayo from West Sumatra, for example, downward flows from parents to children could be source of shame for the child receiving assistance whereas among Kidul, in East Java, the same behaviour is a demonstration of mutual reciprocity (Kreager and Schröder-Butterfill 2008). In this study, however, I consider out-flows as positive (representing an "investment" in social relationships) and in-flows as negative (representing a "need" for assistance). For each type of exchange, namely money, goods or chores, I calculate the amount that is received (in-flows) and provided (out-flows). I then sum up in-flows and out-flows to measure, for each type of exchange, the total volume of exchange. Then I measure the difference between out-flows and in-flows to appreciate the direction of exchange. At this stage, I have the volume and the direction exchanged for money, goods and chores separately. Once variables are rescaled, it is possible to sum up the three variables representing volumes and the three representing directions to obtain the volume of exchanges of the individual with his/her non co-resident family and its direction. The final variables that measure hierarchy is the sum of volume and direction of exchanges for each non co-resident family member: parents (*fmexch*), children (*chbexch*), non bio parents (*nbpexch*) and siblings (*sibexch*).

2.5.3 Job

The third group selected refers to the working environment in which the individual is embedded. Usually, studies on social capital and job environment focus on network analysis and use specific case studies and it is rare to find within a social survey such detailed information.

Although not exhaustive, within IFLS the section "TK" in "book 3A" is dedicated to this issue and then it is used for measuring social capital's dimensions.

Measuring homogeneity within the work environment was not possible in terms of ethnicity, education and the other variables previously used, as I could not identify individuals working together. However, I was able to use a proxy that measures homogeneity in terms of job satisfaction. This measure of homogeneity refers to the concept developed in the specialized literature as commitment (Meyer and Allen 1991). The final variable (*jobs*) is an ordinal variable reporting job satisfaction on a scale from "1" (no satisfy) to "4" (very satisfy).

For the dimension of frequency, I considered the amount of contacts within the individual's working environment. I first measure two continuous variables representing the number of co-workers (*cowork*) and the number of weeks worked per year (*weekwork*) for the volume of contacts. I also add a dummy variable measuring whether the individual needs relational skills in his/her job (*relwork*). These variables all together give a good approximation of the amount and quality of contacts the individual may develop within his/her working environment.

For the last dimension, hierarchy, I calculate two variables supposed to capture the extent to which the individual has job responsibilities. The first variable classifies on an ordinal scale the type of job (*rolework*). At the top of the scale, I place government workers, then self-employed workers, private workers, casual and finally unpaid family workers. The second variable considers not only the type of work but also the relative power of the individual in his/her working environment. This dummy variable then measures whether or not the individual belongs to a labour union or business association (*imluba*).

2.5.4 Arisan

Arisan, the local name for rotating savings and credit associations, represents the fourth group. In Indonesia Arisans are active in most villages and represent a popular gathering among Indonesians. For a focused review and a deeper comprehension of this phenomenon, we refer to an extensive literature ranging from anthropology to economics (Ardener and Burman 1995; Bertrand and Schoar 2006; Dagnelie and Lemay-Boucher 2011; Geertz 1962). Part of section "PM", in "book 3B" questions individuals about their participation to Arisan.

Both the dimensions of homogeneity and hierarchy are derived using available qualitative information about the type of Arisan individuals participate to. Despite a similar functioning, it is possible to find different types of Arisans in Indonesia. The list in the questionnaire comprises: village, neighbourhood, sub-neighbourhood, office, Darma Wanita, Pemberdayaan Kesejahteraan Keluarga, market, farmers, motorcycle, family, religious, friends, youth and retirees. Without direct information on the composition of Arisan or on the presence of formalized hierarchy, for the dimensions of homogeneity and hierarchy, I then classify these types into different classes. For the dimension of homogeneity, I take into consideration the information concerning memberships' profile, individual's characteristics needed to enter the group. The lowest score in homogeneity ($arhh$) is attributed to village, sub-neighbourhood and neighbourhood Arisans. Organized by local government we do not find here the typical auto selection of group members that characterize traditional Arisans. Members are here grouped by geographical residence and meetings are the opportunity for the local government to share information about the village. Most of this information is linked to administrative procedures or implementation of development programs. Second homogeneity class is represented by office, Darma Wanita and Pemberdayaan Kesejahteraan Keluarga Arisans. Office Arisans are created within the work environment. Darma Wanita and Pemberdayaan Kesejahteraan Keluarga are state-sponsored development programs that target women with the main objective to control family planning and promote household welfare. Always organized by local government or government associations, these Arisans are at least characterized by exclusive membership and a certain degree of homogeneity among participants (as being co-workers or women participating to the same development program). Third homogeneity class comprehends groups that apply the principle of auto-selection of the group. Individuals participating to these groups gather because they have common interests or objectives and participate to the same "task oriented" Arisan. These are market, farmers and motorcycle Arisans. Finally, the highest score in homogeneity is given to the class comprising family, religious, friends, youth and retirees Arisans. These groups are exclusive to certain categories and individual's identity and values plays here the most important role compared to all the other classes (Chen 2011).

To measure the dimension of hierarchy ($arhi$) it is necessary to take into consideration the characteristics of participation and the presence of some authoritarian structure. Lowest scores are assigned to market, motorcycle, friends, youth and retirees Arisans. Here gathering is

motivated by certain short-term objectives or by the pleasure of the meeting and usually do not develop clear and strict hierarchies (Hospes 1995). The second class is represented by family and religious Arisans that also gather together people mostly for pleasure or short-term activities but may reproduce power distributions similarly to those present in the original group (the family and the religious group). The third class comprises village, neighbourhood, sub-neighbourhood and farmers Arisans, which refer to formal organizations and respect formal rules of functioning (Kawagoe, Ohkama and Bagyo 1992). The highest score is finally assigned to office, pkk and Darma Wanita Arisans that are not only organized by formal institutions but are also questioned by recent literature in terms of their internal functioning that apparently follows rigid hierarchical schemes (with contexts in which participation is even mandatory).

For the last dimension, frequency, information is available on both group attendance and individual participation. Three continuous variable then measure the number of participants to the Arisan (*arfr*), frequency of meetings (*armeet*) and number of meetings attended by the individual (*arnum*). These variables all together represent the potential quantity of exchange and relationships developed by the individual within the group.

2.5.5 Religious group

The fifth group taken into consideration is the religious group individuals belong to. To delimit the identification of a religious group I consider the group of individuals that belong to the same religion and live in the same village, even if I acknowledge the fact that religious identities do not necessarily fit administrative borders. For each religion individuals belonging to, the same confession has been selected in order to form a religious group at the village level. Variables that measure social capital dimensions for religious group come from several sections in the IFLS questionnaires. Those referring to religious attitudes come from section "TR" in "book 3A". Those referring to the role of religion in other spheres of community life come from "adat" book and section "PM" of "book 3B".

To measure homogeneity I focus on three main factors: education, economic status and religiosity. Education and economic status measure homogeneity following the same process than in previous groups. The final variable representing homogeneity in education (*iedu*) is then the sum of the group scores proper to each religion -namely Islam (*hedumus*), Protestantism (*hedupro*), Catholicism (*heducat*), Hinduism (*heduhin*), Buddhism (*hedubud*), Confucianism

(*heducon*), and the remaining other religions (*heduotr*)- and the individual score (*sdiedu*). Similarly, the final variable representing economic homogeneity (*ieco*) is the sum of the group scores proper to each religion - Islam (*hactmus*), Protestantism (*hactupro*), Catholicism (*hactcat*), Hinduism (*hacthin*), Buddhism (*hactbud*), Confucianism (*hactcon*), and the remaining other religions (*hactotr*)- and the individual score (*sdieco*). I also add a variable that measures the homogeneity in religiosity, based on the subjective perceptions of individuals' own level of religiosity. The final variable (*irely*) is then the sum group scores per religion (*hirelymus, hirelypro, hirelycat, hirelyhin, hirelybud, hirelycon, hirelyotr*) and the individual score (*sdirely*). This variable represents the extent to which an individual's identity is linked to religion and is reinforced by the religiosity of the group as a whole.

Frequency is well represented by a set of questions on religious attitudes and practices. Each religion is represented by a different set of questions coherently with its specific religious practices. For each religion, I sum data from groups (*cmuspra, cpropra, ccatpra, chinpra, cbudpra, cconpra, cotrpra*) and from the individual (*muspra, propra, catpra, hinpra, budpra, conpra, otrpra*) to appreciate the total amount of interactions available to the individual within the religious community (*indrelpra*). I also add a dummy variable that take into account whether the religion of an individual is the main religion in the village (*indmainrel*).

For the dimension of hierarchy, I select two variables representative of the role of religion in community. These variables are: the influence of religion in the selection of local representatives and the importance of religious faith in the selection of a spouse. These two variables imply a certain control exerted by the religious community over the formal or informal rules that govern daily life. They also are representative of the presence and application of social sanctions linked to religion whenever these rules are not respected (Suryadinata 2002), although I acknowledge the fact that recent studies criticize the overestimated influence attributed to religion in politics (Liddle and Mujani 2007). The first variable measures whether the religion of political representatives is the main factor that influences an individual's political preferences. The original question asks to individuals to mention the three most important factors considered when electing the mayor. The individual answer is then recoded into an ordinal variable taking maximum value is religion is cited as the first factor, and minimum is not cited at all. This variable (*indrelpol*) is measured at the group level through the average of answers of members of the same religion, living in the same village -Islam (*cmuspol*), Protestantism (*cpropol*),

Catholicism (*ccatpol*), Hinduism (*chinpol*), Buddhism (*budpol*), Confucianism (*cconpol*), and the remaining other religions (*cotrpol*)- and then summed to the individual answer to the same question subdivided per religion - Islam (*muspol*), Protestantism (*propol*), Catholicism (*catpol*), Hinduism (*hinpol*), Buddhism (*budpol*), Confucianism (*conpol*), and the remaining other religions (*otrpol*)- . The second variable, whether individuals' religion is a formal criterion in marriage (*relmar*), is a dummy variable measured at the community level through interviews to the village leader. As the original question specifies whether mixed marriages are accepted, forbidden or forbidden only for one of the two sexes, the corresponding answer is crossed with the information on individual's sex. It is then possible to take into consideration if the control of religion on marriage could potentially affect the individual or not.

2.5.6 Village

The last group analyzed in this study is the village the individual belongs to. I include this group to take into account the overall environment in which the individual spends his/her daily life. For this group, variables come from "book K" and section "PM" of "book 3B".

Homogeneity within the village is measured taking into account the two macro categories presented for previous groups: ethnicity and religion for cultural identity, education and economic status for class identity. The transformation of variables replicates the one applied for other groups, with the sole difference that here I measure variable at the group level considering all individuals living in the same village. I therefore measure variables that represent individual ethnic (*eticid*), religious (*relicid*), education (*eduicid*), and economic (*ecoicid*) homogeneity within the village.

Frequency is measured taking into consideration several variables that reflect the wide range of contexts providing opportunities to exchange within a village. First, I consider two variables that are extensively used in social capital literature: a continuous variable that report the total population in the village (*pop*) and a dummy variable that indicates whether the village is classified as "urban" (*urban*). These variables represent the density of population and therefore a more important volume of contacts among citizens. At the same time, they could also represent a lack of cohesiveness (Coleman 1988) due to a poor quality of contacts. For this reason, I also add some variables that take into account the presence of collective activities. One variable measures the number of community projects run in the village (*nexprog*) summing the answers on the

existence of 10 different projects. To take into account that some activities are run even if at a non daily basis I assign a value of "2" whether the project is run on a daily basis, "1" if it is non run on a routine manner and "0" if it is not run. Referring to the same set of activities, a variable then measures the amount of population in the village that participate to these activities (*partprog*). The original variable takes value from "1" to "3" and indicates whether less of 25%, between 25-50% or more than 75% of citizens participate to the project. The final variable is obtained by adding answers concerning the participation to each project. A fourth variable measures individual's participation in these activities (*indpartprog*), summing up information on whether the individual participates to each project and thus taking into account the effective involvement and integration of the individual in the community. A fifth variable measures the presence in the village of activities that are developed under the principle of cooperation (*coopact*). The original variable asked whether yes or not a list of activities follow this principle and then the final variable is the sum of each dummy answer. Finally, I include a dummy variable that measures the presence of communal lands (*comland*). Communal lands represent a traditional practice that comes from adat law, which establishes in most villages rules of public property and collective use of land for agriculture. This variable therefore represents the existence of cooperative activities in rural villages and compensates the lack of more formal collective activities.

Hierarchy in the village captures the extent to which a recognized authority is well established and rules of laws are clear. First, a dummy variable (*oldorg*) takes into consideration whether the administrative system was already established at the local level before the reform in the middle of the 90's establishing the presence of RT/RW organizations (local political organizations). Two variables measure the presence of transparent rules of law. One variable report on an ordinal scale whether the resolution of conflicts is managed by official representative of local administration (*consol*). The original variable reports who resolves conflict and it has been rescaled giving the highest score if the village official usually deals with conflict and the lowest if families directly involved solve their disputes. The other variable measures if the power is concentrated into few hands or if it is shared among all citizens (*vhdec*). The original variable, which reports the decision making process used to choose the village head, has been rescaled giving the highest score if the government directly appoints the village head and the lowest if the consensus is built among all villagers. Finally, I take into consideration the relative position of

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the individual vis-à-vis the village. For this reason, I add a dummy variable that reports whether the individual is a government worker, considering that in this case he/she will probably hold some important position within the administration of the village.

The set of variables described above, and resumed in Table 2.2, represents the embeddedness of individuals in the social structure. In the next section, I explain how to aggregate these variables to build up the index of social capital.

2.6 Social capital endowment: construction and overview of a multi-dimensional index

The final dataset contains information on social capital endowment for 20.960 individuals, aged 15 or older, belonging to 7.972 households in 304 villages. Only adult members have been selected because individuals younger than 15 do not answer Book 3b and Book 3a that I use extensively to measure several variables. Table 2.3, here below, summarizes basic information of this sample: sex ratio, age, level of education, religion, whether the individual is economic active, and urban/rural setting.

The sample is represented by men and women almost in equal parts (49.83% of women and 50.17% of men). The population is relatively young, with an average age around 36 years old. Individuals' education level ranges from a large amount of individuals with elementary education (around 37%) to an important share that has junior or senior high education (respectively 19% and 27%). The relative majority of individuals in the sample have elementary education but it is possible to observe that there is a high percentage of individuals with high levels of education. In line with national representativeness, the great majority of the sample is Muslim (around 90%). The majority of individuals are economic active as almost 62% declared that he/she was working during the week prior the survey. A large amount of individuals in the sample is household head (around 35%) or spouse of the household head (around 34%). Households' composition ranges from nuclear to large families. Although the majority of households (more than 53%) are composed by four members or less, still there are an important percentage of large households. In addition, individuals live in urban and rural area almost in equal percentages (around 51% and 49% respectively).

Table 2.3   Socio-economic characteristics of the final sample

Socio-economic status		Freq.	Percent
Sex	Men	10,516	50.17
	Women	10,444	49.83
Age	Average (years)	36.952 (mean)	15.097 (St.dev.)
Education	No education	1,347	6.43
	Elementary	7,796	37.19
	Junior High	4,036	19.26
	Senior High	5,835	27.84
	University	1,946	9.28
Religion	Other	2,036	9.71
	Muslim	18,924	90.29
Job	Not active	8,001	38.17
	Active	12,959	61.83
Environment	Rural	10,622	50.68
	Urban	10,338	49.32

2.6.1 Aggregation process over social capital dimensions and groups

For each individual i in the sample we then have a set of variables x_i representing the three social capital dimensions (homogeneity among group members, frequency of contacts and hierarchization of the group) for each of the six groups individuals belong to (household, non co-resident family, job, Arisan, religion, village). Table A3 in the appendix shows summary statistics for this final set of variables. The final index of social capital at the individual level is then the result of several aggregations. First, it is necessary to obtain a $g_i \mathrm{X} d_i$ matrix, that is a set of 6X3 variables s_{gd}, each of them representing one of the three dimensions in one of the six groups. Then, this matrix is reduced to a vector S_{gi} composed by six variables that represent the individual's endowment of social capital for the six groups. Finally, this vector is aggregated into

the final index of social capital at the individual level, S_i. Before any aggregation, it is necessary

to standardize all variables to make sure that they all contribute evenly to a scale. All variables

x_i are then transformed into dimensionless quantities by subtracting their mean and then dividing

the difference by their standard deviation.

Table 2.2, in the previous section, shows the whole list of variables x_i subdivided into

groups and dimensions. In this table, it is possible to observe that, depending on the availability

of data, each of the three social capital dimensions is represented by a different number of

variables x_i across the six social capital groups. I then sum up all the x_i variables that represent

the same dimension d_i for each of the six groups g_i. That is to say that I sum up all the x_{gd1},

x_{gd2}, and x_{gd3} variables: all the variables representing homogeneity, $d1$, within each of the six

groups and similarly for frequency, $d2$, and hierarchy, $d3$. Once variables belonging to the same

dimension have been summed up for all groups, I re-scale values to limit all variables' range

between 0 and 100. I therefore subtract the minimum from each variable, then divide the result by

the difference between maximum and minimum, and finally multiply for 100.

$$s_{gd} = \frac{\left[\left(\sum_{d1,d2,d3=1}^{k} x_{gd1,gd2,gd3}\right) - \min s_{gd}\right] * 100}{\max s_{gd} - \min s_{gd}}$$

Table 2.4, here below, provides descriptive statistics for the resulting $g_i X d_i$ matrix. At the

end of this process I have, for each of the six groups (household, non co-resident family, job,

Arisan, religion, village), three s_{gd} variables measuring homogeneity, frequency and hierarchy.

Table 2.4   Social capital endowment per dimension and group (re-scaled 0-100)

Group	Dimension	Obs	Mean	Std. Dev.	Min	Max
Household	Homogeneity	20960	80.3	9.12	0	100
	Frequency	20960	16.6	11.6	0	100
	Hierarchy	20960	24.1	10.7	0	100
Non co-resident family	Homogeneity	20960	8.13	11.5	0	100
	Frequency	20960	18	12.3	0	100
	Hierarchy	20960	23.2	12.8	0	100
Job	Homogeneity	20960	38.8	26	0	100
	Frequency	20960	8.68	7.25	0	100
	Hierarchy	20960	18.7	20.4	0	100
Arisan	Homogeneity	20960	6.26	13.8	0	100
	Frequency	20960	.919	2.98	0	100
	Hierarchy	20960	6.29	13.7	0	100
Religious group	Homogeneity	20960	37.5	9.46	0	100
	Frequency	20960	92.9	14.2	0	100
	Hierarchy	20960	63.5	21.4	0	100
Village	Homogeneity	20960	64.4	13.5	0	100
	Frequency	20960	35.4	14.5	0	100
	Hierarchy	20960	32	17	0	100

For each individual i in the sample, social capital variables are then now organized in a matrix S_i, composed by m social capital's groups (g) per n social capital's dimensions (d).

$$S = (s_{gd}) \quad 1 \le g \le m, 1 \le d \le n$$

In the matrix, each row is a vector g_{md} representing scores for the mth social capital group across the three dimensions d. Each column is a vector d_{gn} that represents scores for the nth dimension across the six social capital groups g.

Table 2.5   A GxD matrix representing individual's endowment of social capital S_i

GxD matrix	Homogeneity	Frequency	Hierarchy
Household	S_{g1d1}	S_{g1d2}	S_{g1d3}
Non co-resident family	S_{g2d1}	S_{g2d2}	S_{g2d3}
Job	S_{g3d1}	S_{g3d2}	S_{g3d3}
Arisan	S_{g4d1}	S_{g4d2}	S_{g4d3}
Religion	S_{g5d1}	S_{g5d2}	S_{g5d3}
Village	S_{g6d1}	S_{g6d2}	S_{g6d3}

After the matrix has been measured, principal component analysis is run on each row vector (g_{md}) to reduce social capital variables and obtain social capital scores at the group level (S_{ig}). For each group g, I extract the first component that represents the linear combination of the three dimensions d weighted by a_{1d} (which corresponds to the weight for the first principal component and the dth dimension). Variables have then been rescaled from 0 to 100.

$$S_g = \frac{\left[\left(\sum_{d=1}^{n} a_{1d} s_{gd}\right) - \min s_g\right] * 100}{\max s_g - \min s_g}$$

For each individual, I now have six variables measuring social capital endowment at the group level (6 variables for each individual). Table 2.5, here below, reports main descriptive statistics for each group.

Table 2.6   Individual's endowment of social capital per group (re-scaled 0-100)

	Obs	Mean	Std. Dev.	Min	Max
Household	20960	23.6	10.7	0	100
Non co-resident family	20960	25.4	14.9	0	100
Job	20960	22.2	15.6	0	100
Arisan	20960	2.94	6.47	0	100
Religious group	20960	76.6	16.1	0	100
Village	20960	34.3	13.5	0	100

The final index of social capital at the individual level (S_i) is an additive index. It is obtained by summing up the scores of social capital at the group level (s_g) with equal weights, then rescaling the variable into a 0-100 range.

$$S_i = \frac{\left[\left(\sum_{g=1}^{m} s_g\right) - \min s_i\right] * 100}{\max s_i - \min s_i}$$

The final index is a continuous variable, ranging from 0 to 100, with a mean of 29.9 and a standard deviation of 8.74. In the next section, I develop some descriptive analysis to appreciate patterns of inequalities in social capital endowment across the Indonesian population.

2.6.2 Social capital endowment: likely profiles across the Indonesian population

To observe social capital's endowment across the Indonesian population, I grouped individuals in quintiles based on their ranking on the index. For each quintile is then possible to observe the likely profile of individuals together with some characteristics of households and communities where they live. Table 2.7, here below, shows summary statistics of individual (sex, age, education, and religion), household (assets per capita, number of children in the household) and community characteristics (whether the village is an urban area) subdivided per social capital quintiles. It is important to underline here that "lowest" or "highest" scores in social capital are not linked necessarily to lowest or highest welfare outcomes or to any other level of individual well-being. In this study, the analysis is limited to the investigation of the distribution of social capital *per se*.

I start by looking to individual characteristics. Women seem to be represented in the lowest and highest quintiles, so they are especially poor or rich in social capital whereas men have the average endowment. Regarding age, individuals enjoy higher levels of social capital while they get older and this relationship appears linear. On the contrary, the pattern described by individuals' education is less definite even if it is possible to observe that individuals with the highest scores in education (on a 1-5 scale, where "1" corresponds to "no education" and "5" to "university education") also have the highest endowments of social capital. Considering that Islam is the main religion, it is not surprising that Muslim citizens are more represented especially in the highest quintiles of social capital.

Concerning the household, a variable has been measured to take into account household welfare. This variable measures the value of assets belonging to the household. Original variables come from section HR in Book 3a. A list of assets is provided and the individual answers on the value of each of them, also specifying the percentage that is shared with others if the asset is not entirely owned by the household. Once the total value of assets is calculated, I divide for the number of household members to obtain the final continuous variable representing assets per capita. Using the average exchange rate in 2008, I also convert the value of assets from Indonesian rupiah to US dollars for descriptive purposes. Individuals living in households with the highest assets levels clearly also enjoy the highest scores in social capital. Although it is not possible to observe a symmetric inverted U curve, looking to the second and third quintiles it seems that poorest households are better off than middle-class households in terms of social capital endowment. I also look to the number of children living in the household and I notice that individuals living in households with more children also enjoy higher levels of social capital. Similarly, the only community characteristic describes a linear pattern and therefore individuals living in urban villages are associated with the highest scores in social capital endowment.

Table 2.7   Individual, household and community characteristics, by quintiles of social capital

	Social capital quintiles				
	1	2	3	4	5
Individual characteristics					
Being a woman (d)	.52171	.51336	.47615	.45229	.52791
Age (years)	34.591	35.788	37.405	38.23	38.745
Education (1-5 scale)	2.8953	2.8278	2.8674	2.9411	3.2865
Being Muslim (d)	.77672	.8917	.93822	.95157	.95611
Household characteristics					
Log assets	2237.7	2019.4	2102.6	2318.8	3187.2
N. children	.90196	1.1625	1.303	1.4332	1.6257
Community characteristics					
Urban (d)	.39385	.4313	.46517	.51837	.65744

This table permits to appreciate some differences in the distribution of social capital. To better assess these differences I further develop descriptive analysis using the disaggregated

components of the index. I then look to the same individual, household and community characteristics through the lenses of different social capital groups. Table 2.8, here below, shows descriptive statistics for each social capital group and for the final index.

The index of social capital is slightly lower for men than for women, but in this table it is possible to observe from which social capital groups this difference steams from. Women have lower scores only in job social capital, where the difference between men and women is moreover the highest, but they are better off in all other groups. In particular, they seem to rely more on non-co resident family and Arisan groups. Concerning individual's age, the distribution of the final index of social capital draws an inverted U curve seemingly skewed on the right. Individuals probably accumulate social capital especially during their adult life and then start to be less active only when they are old but still enjoy the endowment cumulated. This distribution is not replicated in all social capital groups and, in particular, social capital accumulation in household, religious and village groups does not seem influenced by age. I now look to the distribution of social capital across education levels. Better educated individuals have higher scores in social capital. However, this trend is clearly followed only in the Arisan group, whereas for all other groups it is not possible to describe any pattern. On the contrary, observing the distribution of social capital between Muslim and non-Muslim citizens two opposite trends can be drawn. Being Muslim is in fact linked with higher social capital scores compared to those of individuals belonging to other religions but Muslims are worse off in household, job and village groups whereas they show very high scores in the remaining religious, non co-resident family and Arisan groups.

Similarly, looking to household characteristics the trends in distribution vary considerably across social capital groups. Looking to household assets, it is possible to observe that wealthier households also have higher scores in social capital, and this holds for household, job and Arisan groups. To be noticed that, especially concerning job an Arisan groups, this is an expected trend because individuals with a job or an access to credit also have the economic possibility to buy assets. However, poorest households are the ones with the highest scores in social capital with non co-resident family (probably because the family plays also a role of economic insurance so that poor tend to rely more upon them) whereas in religious group they have both the highest and the lowest scores. The distribution of social capital per number of children follows a positive linear trend that is mainly driven as expected by the scores of social capital at the household

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level. For the other groups, on the contrary, living in households with more children does not correspond to higher scores in social capital. I suggest the idea that for these groups the trend is driven by women scores that probably have less time to dedicate to external activities when they have children to care about.

I finally observe trends in distribution of social capital for two community characteristics. The final index indicates that, for the majority of groups, individuals living in urban villages are endowed with higher amounts of social capital. Social capital of religious and non co-resident groups constitute an exception and show higher scores in rural settings. It is also possible to appreciate the difference in social capital distribution towards IFLS provinces. I do not analyse social capital endowment in each of these provinces but I notice that two social capital groups' scores are particularly different distributed. In fact, religious and village groups' scores vary a lot across provinces while the rest of the groups present a lower variance. This indicates that the accumulation of social capital for the majority of groups is mainly influenced by individual and household characteristics. This is especially true for those groups that are relatively small in terms of number of members whereas when considering larger groups, as the religious group or the village, socio-environmental factors play a major role.

Considering the totality of individual, household and community characteristics so far analysed, it is in fact possible to observe that each social capital group seems to be affected by a specific set of socio-economic factors. Social capital at the household level varies especially considering household assets, number of children and urban location. Social capital developed with non co-resident family shows specific patterns of distribution depending on sex, age, religion, household assets and urban location. Social capital linked to the job environment is on the contrary especially linked only with an individual's sex and religion. Social capital developed thanks to the participation to Arisan varies considering sex, education, household assets, and urban location. Social capital within the religious group shows some clear pattern in distribution especially depending on sex, religion, urban setting and province. Similarly, an individual's endowment of social capital within the village varies following characteristics as the individual's religion, urban setting and the province of origin.

Table 2.8　Individual, household and community characteristics, per social capital group

		Social capital groups						Social capital
		Household	Non co-res. family	Job	Arisan	Religious group	Village	
Individual characteristics								
Sex	Men	23.107	24.054	27.757	1.473	75.999	34.144	29.788
	Women	24.026	26.722	16.548	4.4124	77.191	34.421	30.102
Age (quintiles)	1	25.661	18.655	14.013	1.6209	76.084	35.078	25.92
	2	22.201	28.408	23.402	3.1077	76.546	34.003	30.677
	3	23.431	28.942	26.165	3.5351	76.343	34.533	32.267
	4	23.809	26.213	27.07	3.7364	77.165	33.745	32.024
	5	22.279	25.882	21.224	2.8513	76.871	33.942	29.363
Education (1-5 scale)	No education	22.593	25.397	19.068	1.4578	76.632	30.035	26.865
	Elementary	22.055	28.282	22.542	2.5448	79.217	29.568	29.493
	Junior high	25.18	23.955	19.75	2.9022	77.562	35.834	29.971
	Senior high	24.625	22.87	21.413	3.2136	74.004	36.96	29.705
	University	23.756	24.263	30.13	4.7819	71.808	44.859	34.545
Being Muslim (d)	0	24.607	23.077	24.606	2.4488	42.823	40.348	24.503
	1	23.453	25.632	21.91	2.9902	80.226	33.629	30.53
Household characteristics								
HH expenditures (quintiles)	1	22.606	26.913	21.113	1.7434	77.071	33.595	28.92
	2	22.848	26.264	21.957	2.2127	78.151	32.072	29.213
	3	23.496	25.091	21.922	2.9361	78.481	32.39	29.717
	4	23.404	24.82	22.659	3.354	76.691	34.133	30.138
	5	25.471	23.825	23.211	4.4464	72.564	39.23	31.735

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		Social capital groups						
		Household	Non co-res. family	Job	Arisan	Religious group	Village	Social capital
N. children	0	17.517	23.222	21.795	2.7629	75.661	34.345	27.198
	1	21.944	26.387	22.399	3.046	77.027	33.731	29.81
	>1	29.444	25.906	22.21	2.9528	76.817	34.787	32.013
Community characteristics								
Urban (d)	0	22.209	26.063	22.138	2.3583	78.98	28.156	28.352
	1	24.957	24.685	22.205	3.5329	74.14	40.576	31.58
Province	West Java	22.897	25.631	20.826	1.6574	83.471	33.719	29.883
	North Sumatra	25.274	23.676	23.458	1.8659	70.445	30.783	27.542
	West Sumatra	24.459	24.993	22.862	2.2531	80.264	37.003	31.233
	South Sumatra	25.569	25.628	20.098	2.3126	81.729	39.246	31.883
	Lampung	24.244	28.971	21.803	1.2061	84.683	37.777	32.315
	Jakarta	28.348	24.654	23.27	3.635	72.551	47.116	34.158
	Central Java	22.112	27.602	23.381	4.3815	77.961	28.862	30.348
	Yogyakarta	21.633	26.043	24.313	8.4781	72.611	40.847	34.528
	East Java	21.786	23.513	21.971	3.9438	75.329	25.453	27.186
	Bali	22.979	24.332	25.08	1.2934	39.285	43.662	23.765
	West Nusa Tenggara	22.527	27.474	20.511	.88844	88.765	31.935	30.314
	South Kalimantan	21.814	25.206	22.293	2.3861	82.398	31.559	29.582
	South Sulawesi	29.111	22.105	20.077	2.7122	69.538	41.325	30.287
	Total	23.565	25.383	22.171	2.9376	76.593	34.282	29.944

2.7 Conclusion

The notion of embeddedness enlarged our understanding of the mechanisms by which the social structure shapes individuals' behaviours and institutions. Social relations became, in this perspective, a research object *per se,* a phenomenon that needs to be analytically described and empirically investigated. In economics, in the last decades social capital emerged as the concept that could operationalize embeddedness. Despite the growing interest, however, a great vagueness still surrounds its definition as well as the assumptions about its constituting dimensions and accumulation process. Consequently, there is still no agreement on which measures better assess social capital and, even though a wide range of measurements have been proposed, most of them relies on the sole use of proxies. To give new impulse to empirical investigation, the challenge is then to propose an index of social capital whose composition reflects a clear conceptual framework.

In this chapter, I address this challenge and propose a multidimensional index of social capital. This index improves upon existing measures in three ways. First, it is developed coherently with a given definition and a set of assumptions over its constituting dimensions. Following the conceptual framework proposed in the previous chapter, social capital is here described as the amount of expectations and obligations that individuals accumulate when they engage in social relationships. Its constituting dimensions are the homogeneity among individuals, the frequency of contacts and the hierarchization of relationships. Variables that constitute the index therefore measure, for each social group the individual belongs to, the same set of dimensions. Although I acknowledge the fact that the variables that assess social capital's dimensions are context depending, the possibility to identify and measure the same set of dimensions across groups guarantees the link between the empirical and the conceptual frameworks. Second, this index takes into account a wide range of social groups to assess individual's embeddedness in the social structure. In the context of Indonesia, the country field of this study, these are: the household, non co-resident family, job environment, Arisan, religious groups and the village. To the best of my knowledge, this index provides the most extensive information over the relational life of individuals using survey data. Finally, as this index measures social capital endowment at the individual level, it constitutes a useful tool to develop empirical research at this level of analysis that is often under investigated. Once the index of

social capital is measured, it is possible to observe its distribution across the population and to compare it with its disaggregated components, which represent individuals' endowment of social capital for each of the six groups they belong to. From descriptive analysis, it is possible to draw the likely profile of an individual with a high endowment in social capital: an adult woman, well educated, with children, Muslim, living in a wealthy household in an urban area in the province of Yogyakarta. However, the final endowment of social capital often is the result of very different endowments in different groups. Women's endowment of social capital, for example, is slightly higher than men but this near-parity hides a very different distribution at the group level. Women are in fact better off in all social groups with the sole exception of job environment in which men outperform and thus recover the gap. These differences in trends are observable across all individual, household and community characteristics.

This index of social capital thus provides a comprehensive account of the extent to which individuals are integrated into society. While it is necessary to assess this embeddedness through a unique index, it is also very useful to observe the distribution of its disaggregated components across the population. In particular, individuals seem to accumulate different types of social capital depending on their own socio-economic characteristics and the context in which they live. Future research must further investigates social capital accumulation in order to enrich our understanding of the concept *per se* and observe what patterns of inequalities exist across a population. In addition, the index can be used to empirically explore social capital's function and test more in general what role it plays for individuals' well-being.

3 The capability approach as theoretical framework to investigate social capital: the role of situated agency

3.1 Introduction

Welfare economics deals with the evaluation of well-being and more in general with issues concerning the quality of life. It addresses questions on which criteria are relevant and what information are needed to assess personal well-being and social welfare. Because the answers to these questions can vary importantly, a wide range of perspectives and applications have been developed in the last decades. Their merit has been to enlarge the traditional definition of welfare, which was essentially focused on the production and consumption of goods and services and on the use of utility as metric of measurement. In fact, traditional views of welfare were ignoring important determinants of well-being, as health and other personal conditions, issues of inequality, and the quality of social relations (Fleurbaey 2009; Sen 1997).

Within this debate, the capability approach emerged with the work of Sen and Nussbaum proposing innovative normative assumptions on the nature of well-being and of a "good" quality of life (Nussbaum and Sen 1993; Sen 1980; Sen 1999). This approach introduced two new concepts within the vocabulary of welfare economics: functionings and capabilities. Functionings are conceived as valuable states of doing and beings and capabilities as the freedom that individuals have to choose among functionings. In this perspective, it is not the final set of achievements, or functionings, that matters when assessing well-being but capabilities, the set of opportunities available to individuals. To say it with Nussbaum: "the approach takes each person as an end, asking not just about total or average well-being but about opportunities available to each person. It is focused on choice or freedom, holding that the crucial good societies should be promoting for their people is a set of opportunities, or substantial freedoms, which people then may or may not exercise in action" (Nussbaum 2011b, p.18).

In this chapter, I argue that the investigation of social capital should be framed within the capability approach to welfare economics. I first present the normative assumptions at the base of the approach and I describe the process through which initial sets of resources are transformed

into functionings. I then turn to existing empirical applications and I identify few gaps in the way capabilities have been operationalized. In particular, I focus on the concept of agency and I extrapolate the analytical tools that can be used to better understand the role of social capital for individual well-being. I therefore conclude the chapter explaining why the investigation of social capital within the capability approach may constitute a practical direction for future improvements.

3.2   The capability approach: a normative framework to understand well-being and development

The capability approach is an economic theory developed by Sen and Nussbaum (Nussbaum 2011a; Nussbaum and Sen 1993; Sen 1989; Sen 1999; Sen 2004) that proposes an alternative framework to traditional approaches of welfare economics. The focus of the entire approach is on capability, "the freedom that a person has to lead one kind of life or another" (Nussbaum and Sen 1993, p.3), and human life is described as a "combination of doings and beings, which can be generically called functionings" (Nussbaum and Sen 1993, p.3). Individuals may be more or less able (capable) to achieve this set of functionings depending on resources available to them and the context in which they live. For this reason, capabilities are conceived as the freedom to choose a meaningful life. Consequently, the evaluation of the quality of life should focus more on individuals' freedom (capabilities) and less on their final set of achievements (functionings).

By developing the capability approach, Sen and Nussbaum propose a new normative framework in the sense that they explicit ethical judgements on what should be valued and which are positive and negative aspects of an individual's quality of life. All approaches in welfare economics have normative grounds as they all have to define how to assess individual well-being and social welfare. Before the development of the capability approach, traditional welfare economics and the resourcist approach were the two principal references.

Traditional welfare economics, based on consequentialist ethics, argues that what matters to assess well-being is the utility individuals get from their achievements. This implies that for ethical judgments and evaluation of social arrangements we should consider only individuals'

preferences (utility) over a set of alternatives (Fleurbaey 2008). Sen criticizes this normative framework following three main arguments (Sen 1977; Sen 1980). First, utilitarians fail to take into account non-utility aspects of individuals' preferences. It is essential to account both for utility and non-utility information because individuals may value, and pursue, achievements that are not directly linked to improvements of their own utility level. The utility approach would then be incomplete in its accounting of individuals' well-being. Second, Sen argues that the measurement of utility is misleading because when assessing individuals' preferences we do not take into consideration the role of adaptation in the subjective assessment of well-being. The utility approach will then also be biased by the context in which individuals live. Third, using utility as a metric to assess individual's well-being is impossible to make interpersonal (and intergenerational) comparisons because of the ordinal nature of individuals' subjective preferences. Thus, the utility approach is finally impossible to use to elaborate welfare considerations. It is important to notice, however, that the utility approach rejected by Sen refers to traditional views of utility whereas new developments of utilitarianism (based on informed preferences and the realization of desired goals) are more compatible with the capability approach (Clark 2005).

An alternative framework to assess well-being comes from the resourcist approach and it is based on deontological ethics. Instead of evaluating welfare on the set of outcomes, whether achievements or derived satisfaction, it considers the initial set of resources available to individuals. The focus moves from the ends to the means. Clark (2005) resumes the wide range of "means" that have been proposed in this approach as the material requirement for good living, being this represented by income, commodities or commands. Individuals are considered as agents responsible to define their own objectives and consequently the state should be responsible only to provide them with an equal set of initial resources (Fleurbaey 2008). Utilitarianism has been criticized because of the presence of non-utility aspects in individual preferences, the role of adaptation and the impossibility of interpersonal and intergenerational comparisons. The resourcist approach is not concerned by these problems and could be considered as a more "objective" method to assess individual well-being. However, Sen criticizes this approach because it "seems to take little note of the diversity of human beings" (Sen 1980, p.215). In particular, the approach does not take in consideration the fact that individuals may have different

needs and thus they may assign different values to the same set of resources or have different abilities to transform them into achievements.

Considering that the existing scenario in welfare economics was failing to assess individual well-being and social welfare, Sen alternatively developed the capability approach. This new normative framework follows what has been defined as a Kantian open deontology that, by refusing both utilitarianism and traditional deontology, tries to propose a third way: a virtue ethics (Nussbaum 1993; Van Staveren 2007). The origins of this approach have been identified in the works of Aristotle, Smith, and Marx (Nussbaum and Sen 1993; Sen 1988). Aristotle defines the meaning of life, the ensemble of activities that individuals value, by making a distinction among the means, commodities, that are necessary to live and the ability to define and pursue an objective (Clark 2005). Also, Aristotle defends the idea that it is possible to define what is a meaningful life looking to universal human experiences and related human virtues (Nussbaum 1993). Following Smith and Marx, Sen (1988) supports the idea that a person's well-being can be evaluated through a person's ability to achieve functionings and that the possibility of realising activities is an inner necessity of any human life.

These normative considerations motivated Sen to develop a new metric to assess individuals' well-being. Initially he replaced the traditional binary relationship between commodities and utilities with a triadic structure: commodities, functionings, and valuations (Sen 1985). In this perspective, commodities are means individuals use to achieve functionings and utility is replaced by a valuation function. He then developed the notion of individual well-being towards capabilities (Sen 1999) to make explicit that in terms of welfare considerations the sole assessment of functionings was not appropriate.

3.2.1 Commodities, capabilities, and functionings: the role of conversion factors and agency

The capability approach brings about a revolution in the traditional distinction between means and ends. When assessing well-being, capabilities are the ends. On the other hand, functionings are the ultimate outcomes of capabilities but not an end *per se* and commodities are only the means by which achievements are attained (Usher 1987). A bicycle, for example, is a commodity and the consequent individual's mobility is the functioning. A visit to a doctor is a commodity and individual's health is the corresponding functioning. Traditional approaches focus

only on means (commodities) to well-being or on the satisfaction (utility) derived from functionings and miss what is in the middle: the conversion from the former to the latter.

The capability approach, on the contrary, recognizes that the ability to convert commodities into functionings likely depends both on individual and external characteristics (Clark 2005). In the capability approach literature these characteristics are called conversion factors and have been classified into personal, social and environmental types (Robeyns 2005). Personal conversion factors are linked to individuals' characteristics as sex, age, education and health. They play a role because depending on personal characteristics individuals may need different sets or quantity of resources to enjoy the same functioning. For example, a disabled child would need a support at school to attain the same education level compared to other class-mates. Social factors comprise a wide range of aspects linked to the social conditions in which individuals live. They include social norms, traditions, the quality of the institutional framework, etc. For example, if the law of a country forbids the use of bicycles to women, they will not be able to enjoy the functioning of mobility through this commodity. Finally, environmental factors refer both to physical and built environments as the geographical position, climate specificities, and the level of pollution. We may think, for example, to the fact that at different latitudes people may need different quantity and quality of food to be considered well-nourished. As a result, this wide range of conversion factors defines whether a commodity can be transformed into a resource available to the individual, that is a capability, or not. Only when individuals control a set of capabilities they are free to choose a set of achieved functionings. A set of capabilities can then be conceived as a vector that contains more sets of different functionings, alternatives, among which the individual can choose. For this reason, in the capability approach individuals are conceived as agents that are endowed with a set of resources and have the power to make decisions over them (Robeyns 2005). As Sen himself reports: individuals are agents that "act or refuse to act and can choose to act one way rather than another" (Sen 1999, p.190). It is important to underline that the concept of agency in this perspective is understood as situated agency (Peter 2003), in which is not possible to dissociate the freedom of choice of the individual from the real opportunities the individual has to exert this freedom. In Figure 2, here below, I reproduce a scheme by Robeyns (2000, p.5) that resumes the transformation mechanism so far explained.

Figure 2.   From a vector of commodities to a vector of functionings: the role of conversion factors and choice

Means to achieve	Freedom to achieve	Achieved functionings

Vector of commodities → **Conversion factors** → Vector of capabilities (Vectors of functioning) → **Choice** → Vector of functionings
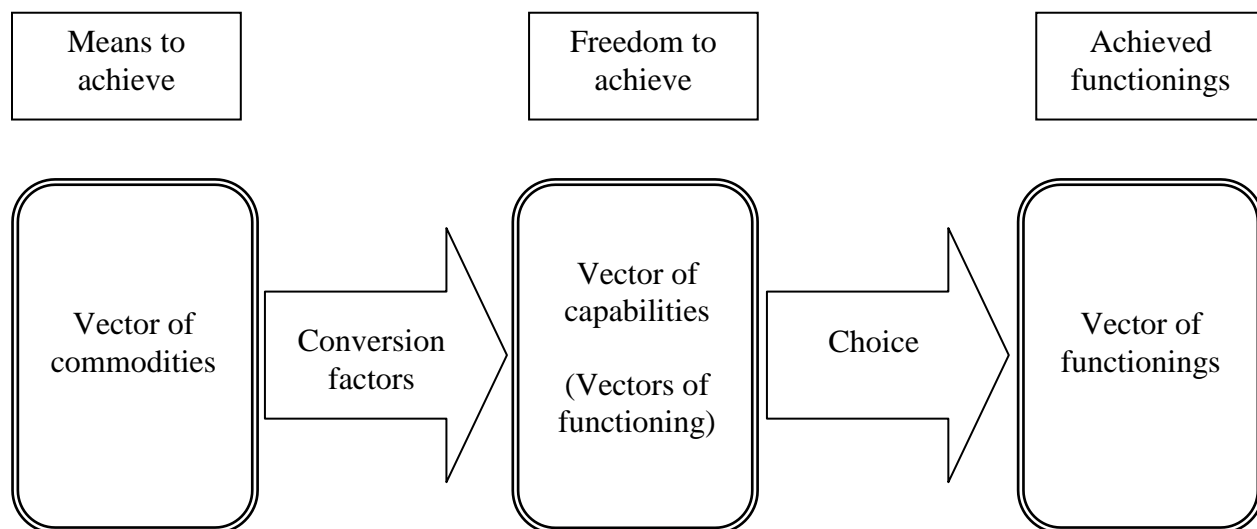
3.2.2 Some critical insights about the capability approach

In welfare economics, the capability approach has been, in turn, the object of criticism. In particular, it has been accused of paternalism and individualism because of its focus on individual freedom. In this section, I elaborate on the concerns expressed and on how capability researchers answered.

Paternalism refers here to the libertarian paternalism described in economic literature as "a policy (...) selected with the goal of influencing the choices of affected parties in a way that will make those parties better off" (Thaler and Sunstein 2003, p.175). A welfare economist is paternalistic by considering a set of welfare outcomes as preferable to their alternatives. Consequently, this economist will develop, propose or evaluate policies using as metric for evaluation this set of preferred welfare outcomes. In the capability approach, Sen argues that individual freedom is the preferable outcome to be analysed and pursued. In his view, an individual that is free to choose among a larger set of opportunities is better off than an individual that has only one choice. This position is paternalistic as it gives priority to the dimension of the set of opportunity compared to other criteria, first of all the final achievements. To answer to this

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criticism a first option is to accept the responsibility of this choice. Being free to choose among opportunities is maybe only one aspect of individual well-being but Sen demonstrated that this approach is the only one that avoids most important problems linked to interpersonal comparison, adaptation, and the effective ability to access/use resources. It is also possible to answer to this criticism by showing that at the empirical level freedom is not assessed without taking into account the context in which it develops. The accusations of paternalism in this sense misinterpret the specific nature of freedom proposed in the capability approach, that is "opportunity freedom" (Sen 2000). This means that freedom is not valued *per se* but linked to the context in which it operates. Sen himself claims that assuming individuals' freedom as central goes together with investigating which freedoms, which opportunities, individuals value and convert into achievements (Sen 2004). Empirical applications of the capability approach thus consider that capabilities are time and context dependent. They depend on human diversity and on the heterogeneity of what may be considered as valuable states of doings and beings.

Concerning the problem of individualism, it has to be noticed that, although the capability approach does take into account the context in which individuals live, the subject of analysis is always the individual. The supremacy of the individual over society implies that whenever a conflict opposes the two the former's needs are given a legitimate priority. This position risks to relegate collective needs and the welfare of the whole society as secondary issues and to see social norms and collectivistic cultures even as potentially harmful.

In answer to this criticism, it has been pointed out that the type of individualism that Sen promotes is at the ethical, not ontological, level (Robeyns 2005). Ethical individualism identifies the individual as the reference entity in terms of investigation, but acknowledges the existence of other entities as groups and societies. Ontological individualism on the contrary considers that groups, collective processes and societies can be reduced to and understood as complexes of individuals and their actions. The capability approach defends individual freedom because of the normative statement that individual's dignity must be guaranteed (ethical individualism) and not because it states that individuals and their behaviours are the only entities that actually exist (ontological individualism). On the other hand, it is true that the capability approach is critical towards social constraints even if it recognizes that the collective dimension of social life is of a great relevance for an individual's well-being.

The capability approach proposes a renewed conceptualization of well-being as freedom and of development as capability expansion. Compared to traditional approaches to welfare economics, it opens to interpersonal comparisons of well-being and takes into account the role of adaptation. In addition, it can be applied among individuals that may have different abilities to transform their initial set of resources into achievements. For these reasons, the capability approach has been applied in development economics especially to address questions linked to well-being, poverty and inequalities, as presented in the next section.

3.3   Applications in development economics

3.3.1 List(s) of capabilities

In development economics, the capability approach provides a theoretical basis for evaluating individual well-being and social welfare addressing at the same time issues of inequalities and efficiency (Sen 1988). Researchers willing to apply the capability approach have raised two questions. Should we measure functionings or capabilities? And can we effectively identify and measure either one of the two concepts? We should measure capabilities to respect the normative assumption that we value individuals' freedom and not their final achievements. Also, we should measure capabilities to underline the importance of individuals' agency, their responsibility in choosing a life they value. However, there is a practical problem when measuring capabilities, because we usually do not have lot of information about the set of opportunities available to individuals while data about their final achievements are more available. Although we may have some information on the existing alternatives, this would probably be a poor basis to measure a full capability set. At the same time, it has been pointed out that a mix of basic functionings together with real opportunities available to individuals could be a more flexible and meaningful way to account for individuals well-being (Fleurbaey 2006). For these reasons, in the capability approach there is a convergence towards the use of "refined functionings", which means measuring achieved functionings adding, whenever possible, the information about the alternatives available.

Whether we decide to measure functionings, capabilities or refined functionings we need to select a bunch of variables that represent these concepts. This means making a choice about which are the valuable functionings and capabilities. In the literature, there is a debate about whether this exercise is acceptable. The two opposite positions are represented by Sen (2004) and Nussbaum (2003; 2011a). Sen affirms that he is not against a list of capabilities but against "one" list of capabilities that could be considered as universal. He argues that the definition of capabilities or functionings that individuals should value is not a theoretical task but an issue that has to be treated at the local levels, through democratic participation. Nussbaum acknowledges the fact that a meaningful life could be described in different ways in different contexts but she defends the existence of universal human capabilities. Most importantly, she argues that all governments should take on the responsibility to define a basic list of capabilities that need to be defended and promoted. By making a parallel between capabilities and human rights, she argues that not taking this responsibility would reduce the guaranty and improvement of individuals' well-being to abstract and unrealized goals. She justifies her position with few incisive words: "we must make commitment about substance" (Nussbaum 2003, p.33). Nussbaum therefore develops her own list of basic capabilities and leave it open to debate (Nussbaum 2007). While the academic attention is mainly focused on her work, other researchers proposed alternative lists of capabilities. These researchers all support the idea that it is necessary to commit with a list of capabilities to avoid the risk that any capability, even when unethical, could be arguably defined as valuable. Table 3.1, here below, presents the list of capabilities proposed by Nussbaum (2007) together with the ones by Alkire and Black (1997) and Robeyns (2003). Alkire and Black (1997) propose an universal list of capabilities whereas Robeyns (2003) select a set of capabilities to investigate gender inequality in Western society.

Table 3.1   A list(s) of capabilities: what is a "good" life?

Nussbaum (2007)	Alkire and Black (1997)	Robeyns (2003)
Life: both in terms of normal length and worth of living conditions. Bodily health: comprising reproductive health and good nutrition and shelter conditions. Bodily integrity: heterogeneous set of freedom of mobility, being safe from violence, autonomy concerning decisions about sexual satisfaction and reproduction.	Life: its maintenance and transmission, comprising health and safety.	Life and physical health: being able to be physically healthy and enjoy a life of normal length. Mental well-being: being able to be mentally healthy. Bodily integrity and safety: being able to be protected from violence of any sort. Shelter and environment: being able to be sheltered and to live in a safe and pleasant environment. Mobility: being able to be mobile.
Senses, imagination and thought: having the instruments to imagine and reason, from basic education to cognitive skills, and enjoy freedom of expression in all its forms.	Knowledge and appreciation of beauty: as result of human rationality.	Education and knowledge: being able to be educated and to use and produce knowledge.
Emotions: being free to feel and express all human emotions towards people and things outside ourselves.	Self-integration: as an internal harmony between different dimensions of the person.	Respect: being able to be respected and treated with dignity.
Practical reason: being free to develop and follow a conception of the good.	Coherent self-determination: as a harmony among judgements, choices, and performances; also in terms of consistency; comprising the dimension of participation into a community.	
Affiliation: in terms of the opportunity to engage in different forms of social interaction and fee of discrimination.	Friendship: harmony between and among individuals and groups of persons living at peace with others, neighbourliness, friendship'.	Social relations: being able to be part of social networks and to give and receive social support.
Other species: having the opportunity to being concerned and develop relations with the world of nature we belong.		

Nussbaum (2007)	Alkire and Black (1997)	Robeyns (2003)
Play: being able and free to enjoy recreational activities. Control over one's environment: including the material environment, as having property rights and dignity in the work environment, and the political environment, as participation and freedom of expression.	Excellence in work and play: related to the capacity of humans to transform the natural world, to express meanings and serve purposes.	Leisure activities: being able to engage in leisure activities. Political empowerment: being able to participate in and have a fair share of influence on political decision-making. Paid work and other projects: being able to work in the labour market or to undertake projects, including artistic ones.
	Transcendence or Religion: in terms of harmony with some more-than-human source of meaning.	Religion: being able to choose to live or not to live according to a religion.
		Domestic work and nonmarket care: being able to raise children and to take care of others.
		Time-autonomy: being able to exercise autonomy in allocating one's time.

Although these lists have been developed following different aims, they strikingly seem to converge towards a bunch of "basic" capabilities. In fact, taking the list of Nussbaum as reference, it is possible to observe that these capabilities are represented also in the other lists: life and bodily integrity, senses imagination and thought, emotions, affiliation, being able to participate to leisure, working and political activities. Yet, in the literature, there is no agreement on a final list of such basic capabilities. A refined list should also define a hierarchy and the interplay among different capabilities that could be translated into weights or research priorities. Consequently, whether this convergence means that it is possible to identify which dimensions constitute a good life is a question still open to debate. However, at the empirical level, the interest of researchers is moving from the question "is it possible to list capabilities?" to "which capabilities for which context?". In the next section, I look to empirical applications and I illustrate how the capability approach has been operationalized in development economics[10].

3.3.2 Capabilities to assess poverty and well-being

The wide range of applications of the capability approach can be subdivided into two principal strands of investigations. The first one focuses on basic capabilities with object to assess poverty. The second one tries to operationalize the lists of capabilities in the literature to propose a multidimensional measure of well-being.

Researches that focus on basic capabilities try to assess poverty in order to propose targeted development policies. When referring to basic capabilities researchers use three categories of variables: living standards, education and health. Living standards comprehends different sets of variables measuring living conditions, housing facilities, income and assets. Variables linked to education represent human capital and are usually measured through years of schooling or literacy rates. Health variables measure physical and mental conditions to assess individual's basic ability to enjoy other functionings.

The Oxford Poverty and Human Development Initiative follows this approach. This initiative supports in fact a wider research project, known as the human development approach,

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[10] For a comprehensive review of the applications of the capability approach across different disciplines see Kuklys, Wiebke, and Ingrid Robeyns. 2005. "Sen's Capability Approach to Welfare Economics." Pp. 9-30 in *Amartya Sen's Capability Approach*: Springer Berlin Heidelberg.

which has the objective to assess individual well-being and to promote human development around the world. In this study the objective is to measure a minimum set of basic capabilities to appreciate the amount of population that lies below the poverty line (Alkire 2008). The tool used to assess poverty is an inequality-adjusted human development index (Alkire and Foster 2010). The contribution of the index is that it proposes an aggregation methodology that takes into account the distribution among population and among dimensions instead of considering only averages. Through the index, it is then possible to observe the incidence of poverty and its evolution and the distribution of its disaggregated dimensions. Applied to most countries in the world and available for several years, it constitutes a valuable alternative to standard indices as the GDP. Studies that focus on basic lists of capabilities thus contain important information on multi-dimensional poverty and constitute an important improvement with respect to traditional approaches, which only take into account economic variables and fail to address issues of distribution.

The second strand of researches enlarges the set of capabilities taken into consideration and proposes a more comprehensive account of multi-dimensional well-being. Also, they engage in the investigation of the relationship between well-being and alternative welfare approaches.

In a recent study, for example, Anand *et alii* (2009) investigate the relationship between capabilities and life satisfaction. They operationalize the list of capabilities proposed by Nussbaum (2007) and measure more than 60 indicators thanks to an ad hoc survey administrated to 1000 UK citizens (whose survey questions were based on the British Household Panel Survey for sake of future and cross-country comparisons). They show that a restricted set of capabilities, 17 indicators, have a strong and multivariate impact on life satisfaction. The authors also estimate their model for different set of population sub-samples based on socio-demographic variables: sex and age. Their results describe differences in significance and impact between men and women. Only three variables -*plans life*, *useful role* and *feeling worthless*- are significant both for men and women and authors suggest that this could be a proof in favour of the universal importance given to autonomy and agency. On the other side, observing that coefficients maintain the same signs in the two subsamples, the authors conclude that the relationship between capabilities and life satisfaction is quantitatively and not qualitatively different between men and women. Considering age groups the same conclusions are drawn on the importance of

agency for individuals' life satisfaction as the only variables that result significant in all age groups are in fact *family love*, *plans life*, and *useful role*.

Similarly, Chiappero-Martinetti develops an investigation on the distribution of capabilities in Italy (Chiappero-Martinetti 2000). The author uses a dataset provided by the Italian Bureau of Statistics (ISTAT) to measure a large set of variables subdivided into five functionings: housing, health, education and knowledge, social interactions and psychological conditions. The results show that it is possible to identify several socio-economic groups that present less favourable conditions, independently from the methodology used to measure their overall well-being. These groups are represented by women, people living in the South of Italy, and blue-collar workers.

Another study investigates the distribution of capabilities but in the context of South-Africa (Klasen 2000). Using a household panel survey the author measures a set of 12 variables that represents a wide range of capabilities: health, education, wealth, living conditions, safety and perceived well-being. The aim of the study is to compare these measures with expenditures-based ones. Two main conclusions are drawn. First, the two sets of variables are strongly correlated, meaning that there is a relationship between deprivation in terms of capabilities and expenditures-based measures of well-being. Second, it is possible to identify categories of individuals that are the most affected by poverty: individuals living in rural areas, Africans, living in female-headed households. Nevertheless, differences between the two measures also exist. For example, people in the least favoured groups are especially deprived of different functionings without showing such a dramatic fall in their expenditures-based poverty measure.

What do we learn from these empirical applications of the capability approach? First, that the concepts of poverty and well-being are multidimensional. Any investigation of individual well-being or social welfare should thus follow this approach to substantially enrich the evaluation of individuals' quality of life. Second, capabilities' distributions describe several patterns of inequalities otherwise disregarded by traditional welfare approaches. On the other hand, being the capability approach a relatively new approach in welfare economics, few issues deserve further investigation. I argue, in particular, that it is possible to identify a gap between theory and practice concerning the role of agency, as developed in the next section.

3.4 Operationalizing capabilities: perspectives on future directions

3.4.1 In need of a better understanding of situated agency

The central idea in the capability approach is that individuals are agents and that they should be free to choose a life they value. For this reason, when engaging with welfare evaluations, it is important to investigate capabilities in terms of real opportunities available to individuals, and not achieved functionings. The assumption behind this claim is that the dimension and the content of a set of capabilities reflect individual's agency. I argue that this assumption deserves further examination. It is important to better understand what an agent is and in which sense an agent, thanks to his capabilities, is free. To answer to these questions it is necessary to focus on two relationships.

The first one is the interplay between commodities and individuals' personal, social and environmental conversion factors. The combination of commodities and conversion factors results into a set of capabilities, resources actually available to individuals. This combination has been in part explored, as shown in the previous section. It is necessary to pursue in this direction by investigating conversion factors in a systematic way in order to better identify the role that each of them play in this transformation mechanism. It thus would be possible to identify which categories of individuals are better and worse off through a multidimensional notion of well-being. Future developments in this direction could then provide a comprehensive account of those patterns of inequalities and discrimination that mostly affect a population. However, as it has been investigated so far, these contributions describe the distribution of inequalities but fail to identify which channels are responsible for inequalities to be created: why certain conversion factors generate inequalities?

This question introduces a second relationship that needs to be further investigated, that is the one between capabilities (the result of the interplay between commodities and conversion factors) and individuals' effective control over decision making. In this study, in fact, I identify agency as the combination of the control over resources, i.e. capabilities, and decision making (Kabeer 1999). The identification of decision making as the funding moment of agency comes from the consideration that "a person's agency freedom is the freedom to so decide and the power to act and be effective" (Crocker and Robeyns 2010, p.75). An agent is free because he can

choose how to act. Therefore, the objective should be to empirically investigate that a link between capabilities and decision making actually exists. Are capabilities linked with the actual ability of individuals to take decisions over valuable functionings? Conversion factors play different roles depending on the types of decisions? And which relationships can be observed concerning the interplay among personal, social, and environmental conversion factors? Contributions from this research questions will then better describe those channels through which inequalities develop. From a theoretical perspective, Sen proposes to represent this link as a conversion function in which resources are transformed into functionings through conversion rates, which in turn depend on personal, social and environmental characteristics (Sen 1997). In his view the channel through which conversion factors impact on individuals' agency is by shaping their needs and preferences (Kuklys and Robeyns 2005). Few researches are further developing this perspective by focusing on a specific set of conversion factors: the role of social environment.

3.4.2 Being free to choose a meaningful life: the role of social environment

In the capability approach, the belongingness of the individual to the social structure captures great attention. The individual and the society are indissolubly linked one another: from one side, the social structure influences individual's behaviours and from the other the individual conditions the social structure through cognitive construction (Ibrahim 2006). In the capability approach, social environment is described as a factor holding very strong intrinsic and instrumental values for individual's well-being. On the one hand, it is possible to observe that social interactions are considered as one of the central human capabilities (Nussbaum 2011a; Sen 2004). In this sense, social environment has an intrinsic value, meaning that the possibility of being connected with others has a value *per se*. On the other hand, social environment holds also an instrumental value, and, in this sense, it operates as conversion factor in the transformation from commodities to functionings. Within her list, for example, Nussbaum (2007) takes into account the role of social environment as conversion factor when she considers freedom of association as constituting part of the "control over one's political environment". In this example, social interactions have a value *per se* but are also an instrument for the reach of another capability.

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The investigation of the role of social environment in the capability approach is especially critical because of political and social purposes, as social conversion factors are likely to be the only ones that can be changed (Robeyns 2005). For this reason, although a comprehensive picture of the role of personal, social and environmental conversion factors is desirable, we may agree to give the priority to the assessment of social determinants.

It has been argued that social environment plays a role in the transformation from commodities to functionings at different levels. In Figure 3, here below, I propose a scheme by Robeyns (2005, p.98) that represents a person's capability set and the influence of personal, social, and environmental factors.

Figure 3.   A Non-dynamic scheme of a person's capability set (Robeyns 2005, p.98)
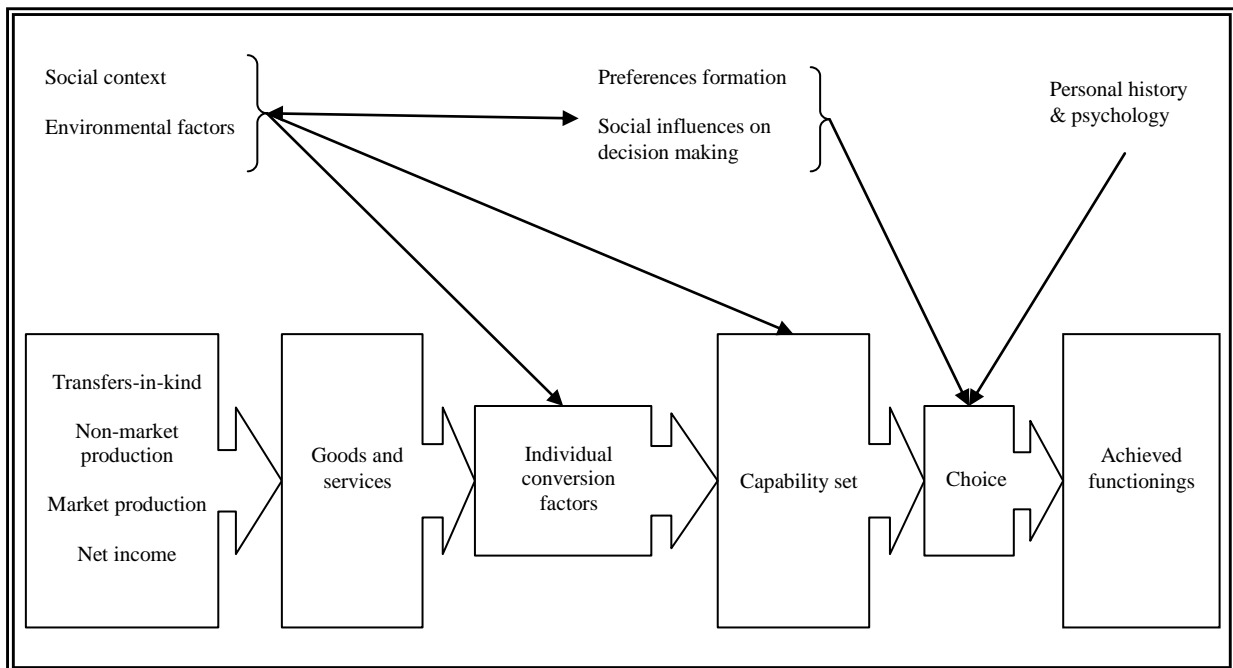
This scheme illustrates the two principal levels through which social environment influences an individual's achieved functionings. First, the social context intervenes in the transformation from commodities to capabilities. At this level, it shapes an individual's opportunity set, together with other inputs, as commodities and personal conversion factors. Riding a bike in country A where the law forbids this activity to women is an example. Even if a

woman belongs to a family that has the means to buy a bike, she will not have the capability to ride it. She will not have the opportunity to choose whether to engage or not in this activity. Second, the social context intervenes also in the choice of a vector of functionings among a larger set of capabilities. At this level, it influences individual's preferences and the process of decision making affecting the actual choice made by the individual. Considering the same example of riding a bike, in country B there is no law prescribing the access to this activity but it is common sense that men ride bikes. In this situation, a woman living in a family with the means to buy a bike has the opportunity both to buy and to ride one. However, she will probably prefer to allocate her money and time to other activities (effect on individual's preferences) or, even if she were tempted to try this experience, she would be discouraged by social pressure (effect on decision making). This second level of influence corresponds to what Sen has identified as the role of adaptation in the assessment of subjective well-being (Sen 1989).

In the capability approach, the role of social environment has been particularly developed by feminist economists to investigate issues of women empowerment (Kabeer 1999; Peter 2003; Robeyns 2003). Formerly, Sen and Nussbaum developed the idea that social norms and traditions likely affect women's well-being by shaping their preferences and choices (Nussbaum 2000; Sen 1999). Women are often the most vulnerable agents in a society. For example, they are likely to be exposed to punishment by their family or the entire community whenever they do not give priority to family needs even to the detriment of their own well-being (Robeyns 2005). The process of women empowerment is therefore identified by feminists with the control over a large set of resources and autonomy in decision making (Kabeer 1999).

In the capability approach, there is another hybrid strand of research that threats the role of social environment: the literature on social capital as social capabilities (Bebbington 1999; Bertin and Sirven 2006; Comim 2008; Ibrahim 2006). Although in the capability approach the term "capabilities" is preferred to the one of "capital", few complementarities between the two theories have been identified (Comim 2008). From the literature on social capital, concepts as trust and reciprocity may help in explaining the channels through which the social context influences individuals' choices and preferences. From the capability approach, social capital could borrow the focus on individual well-being and move towards this level of analysis in order to further investigate issues of distribution. The concept of social capital, so far presented, is too vague. For this reason, it is important to precise that I refer here to the definition of social capital

developed in the first chapter of this thesis. Relying on the structural perspective, I considered social capital as the amount of expectations and obligations individuals develop because they are embedded in the social structure. Because individuals belong to a wide range of formal and informal groups, they accumulate a complex set of expectations and obligations depending on the characteristics of their relationships. In particular, I identified three characteristics responsible of different sets of expectations and obligations: homogeneity among group members, frequency of contacts and hierarchy in the group. The specific sets of expectations and obligations can be considered a form of capital because it performs the function of coordinating individual's actions. This definition is compatible with the individualistic perspective in the capability approach because it conceives social capital as an endowment available to individuals that is potentially responsible for a wide range of opportunities and constrained (Bertin and Sirven 2006).

This form of social capital plays a role in the transformation from commodities to functionings coherently with the scheme presented in Figure 3. In the transformation from commodities to capabilities, the set of expectations and obligations accumulated through social relationships defines the way individuals mobilize reciprocity, coordinate and exchange their resources (being these tangible or intangible resources). At this level of the process, social capital plays a role in the access to resources together with other assets and conversion factors. More precisely, it is a precursor of the access to resources, as the existence of a network of relationships is at the base of all market and non market exchanges (Bebbington 2004). While it has not been framed within the context of capabilities, this relationship has a long tradition of investigation in the social capital literature (Bourdieu 1986; Burt 1997; Coleman 1988; Granovetter 2004). Expectations and obligations play a role also at another level of the transformation from commodities to functionings: in the choice of valuable functionings over a set of capabilities. This role refers to what has been identified as the social imprinting on valuation processes (Bourdieu 1979). The way individuals value their needs and their choices is in fact likely influenced by the social environment in which they grow up and live and this interplay thus deserves great attention in the operationalization of the capability approach.

3.5 Conclusion

The capability approach is a new approach in welfare economics that proposes to assess individual well-being based on the real opportunities that individuals have to pursue a meaningful life. In this sense, the capability approach revolutionizes traditional views of well-being by changing the way of thinking about means and ends of welfare evaluations. Individuals may have access to different resources, in terms of goods and services, to satisfy their needs. They have, in sum, different means to improve their well-being. These resources will be necessary to achieve final states of "doings and beings", which in the capability approach are defined as functionings. However, neither initial means nor final achievements matter when assessing well-being but the (cap)ability to transform the formers into the latters. Why individuals may have different capabilities? Because a part from resources available they are subject to different personal, social and environmental conversion factors. The concept of capability thus enriches our understanding of well-being in many respects. It considers the individual as an agent that act consistently to his own vision and objectives and that can be more or less constrained by a wide range of factors. It reframes issues of inequalities and discriminations in terms of "lack of real opportunities". Also, it embraces a notion of well-being that comprises a great variety of aspects of human life beyond material achievements. Empirical applications of the capability approach mainly focus on this last point proposing alternative measures and indices and comparing them with more traditional measures of well-being.

In this chapter, I argue that the notion of agency, which is so central in the theoretical development of the capability approach, is poorly investigated. What is lacking is an account of how different resources and conversion factors shape individuals' effective ability to make choices. Future empirical research should then give the priority to the investigation of what is known as situated agency. In particular, I suggest to focus on social conversion factors, which already received the attention of researchers, as they are likely to play a prominent role in situated agency. The social context may in fact affect individuals' ability to make choices through the mechanism of social pressure and the indirect influence on the formation of individuals' preferences. In the literature, these analytical tools have been developed especially by feminist economists to explain the link between the social context and women empowerment. I also notice

that the social capital approach contributes to this issue as it details the mechanism through which both social pressure and social solidarity are put in place.

Following these considerations, I suggest the idea that the feminist perspective in the capability approach and the research branch on social capital as social capability, together, may enrich our understanding of situated agency. Men and women are differently embedded in the social structure? Is this difference significant in terms of their well-being? Both intrinsic and instrumental values can be explored. Social capital holds in fact an intrinsic value because social relationships are valuable resources by themselves. In this case, the initial endowment of social capital is directly transformed in the final social functioning that the individual enjoys and that contributes to his well-being. It corresponds to the capability listed under the label of *affiliation* by Nussbaum (2007). However, it is more critical in terms of policies to further explore the instrumental value of social capital with a gender perspective. That is to say, to explore the role that it plays in terms of reduction or reproduction of gender inequalities at different levels of the transformation from commodities to functionings. A first exploratory study that goes in this direction is presented in the next chapter.

4 Social capital and women empowerment: investigating the determinants of women's autonomy in decision making in Indonesia[11]

4.1 Introduction

"In no area are there greater problems about measuring quality of life than in the area of women's lives and capabilities" (Nussbaum and Sen 1993, p.5). With this few words, Nussbaum and Sen (1993) resumes the general difficulty in welfare economics of assessing well-being with a gender perspective. As long as gender equality is not seen as an essential matter, important gaps in analysis and policy persists, with bias in welfare evaluations and the corresponding implementation of development programs. In this chapter, I focus on the lack of a gender perspective in the investigation of social capital at the household level. I show that this gap reduces our understanding of the internal functioning of households and overlook the question of women empowerment. I therefore propose an empirical investigation that addresses the relationship between social capital and women empowerment, using as country field Indonesia.

In development economics, an extensive literature investigates the role of social capital in improving household welfare. Despite a heterogeneous treatment of the concept itself, these studies underline its role in the enhancement of resources available to household members and the consequent improvements of several living standards. At the same time, however, they say little about intra-household inequalities in terms of individual well-being. It is in fact possible that, while social capital improves general household welfare, this happens at the expenses of some household members. This can be especially the case for women. All over the world, women are indeed considered as "agents of a family's general prosperity" (Nussbaum 2000, p.220). This positive role of women within the household is particularly important especially in developing

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[11] A preliminary version of this chapter has been presented at the Fourth International Conference in Political Economy, *Activism and Alterative Economic Strategies*, The Hague, July 9-11 2013.

countries but, at the same time, it is potentially accompanied by negative effects for women empowerment.

In order to investigate this issue, it is necessary to understand how the distribution of power is organized within the household, who is responsible of which tasks and which autonomy individuals enjoy. Following this perspective, I suggest the idea that the distribution of decision making within the household is the key element to investigate, to appreciate both achievements in household welfare and issues of intra-household discrimination. In the literature, several models of household decision making have been developed. Empirical applications focus on the control over resources as a factor of autonomy and investigate how different household members, depending on the degree of autonomy that they enjoy, contribute to household's welfare outcomes. The role of social capital is not taken into consideration and it is thus not clear which role it may play in the allocation of decision making within the household.

For this reason, I turn the attention to the capability approach of welfare economics. In this approach it is possible to conceive the household as a place of "cooperative conflict" (Sen et al. 2003) where, despite the benefits and emotions that link members, different forms of inequalities may develop. The social context receives here great attention in the definition of the opportunities and constraints that women face in their daily lives. I then develop from this approach in order to identify those channels through which social capital influences women's autonomy and empowerment.

I therefore operationalize this question by investigating the determinants of women's autonomy in decision making and adding as principal explanatory variable social capital, together with a wide range of individual, household and community characteristics. The aim is to investigate whether social capital improves women's autonomy in the household and if this impact evolves together or in contrast with women's own well-being. This empirical application contributes to existing literature in two ways. First, it goes beyond the positive or negative impact of social capital for household welfare by investigating intra-household power distribution. Second, it is, to the best of my knowledge, the first study to address women's autonomy in decision making taking into account social capital endowment.

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4.2 Overview of the empirical literature on social capital and household welfare: the neglected role of women's empowerment

In development economics, the investigation of social capital at the micro level focused on its role in improving household welfare. Few domains have been empirically explored. It has been showed, for example, that social capital improves household's consumption, expenditures and income (Grootaert 1999; Haddad and Maluccio 2003; Maluccio, Haddad and May 2000; Narayan and Pritchett 1999). This relationship is supported by studies that demonstrate the role of social capital in enhancing access to resources (Wetterberg 2007), in particular credit (Okten and Osili 2004) and government assistance (Perdana, Matakos and Radin 2006), as well as sustaining the development of micro-entrepreneurship (Vial 2011). Also, social capital is associated with better individual and children's health status (Carter and Maluccio 2003; Nobles and Frankenberg 2009; Tampubolon 2007) and children's education (Dufur, Parcel and Troutman 2013). These studies have in common the idea that social capital, through social support, enhancing of trust, and the reduction of information asymmetries, gives access to a wide range of resources and thus improves household welfare. However, they also overlook critical issues that I discuss following three principal steps. First, these studies identify, and consequently measure, different "social capital". Second, they do not question the internal functioning of the household. Third, they consequently neglect issues of individual well-being and inequalities within the household. In this section, I support the idea that this gap is especially critical because it fails to address the question of women empowerment.

It is first important to underline that the treatment of the concept of social capital itself is not the same among these studies. Some studies look to social capital as social relationships and therefore measure it taking into consideration different forms of group memberships at the household level. Grootaert (1999), for example, measures household's membership in different types of local associations to investigate the impact on household expenditures. Other studies refer to a more general definition of social capital in terms of trust, networks and social norms and thus measure it at the community level. Narayan and Pritchett (1999) explore the same relationship with household expenditures, as Grootaert (1999) does, but by referring to social capital as the general associational life in the village and the degree of trust in different social groups and government institutions. The vagueness of the conceptualization of social capital is an

issue under debate in development economics and it has motivated the proposition of a new conceptual framework in chapter one. In particular, I have supported the idea that it is necessary to develop further research on social capital at the individual level and to postpone the more complex interplay between community social capital and individual outcomes.

A part from this lack of homogeneity in the treatment of the concept, the relationship between social capital and household welfare investigated so far hides an important issue: intra-household inequalities. The household is often analyzed through a unitary model in which all household members are supposed to participate to the same objectives to improve household welfare. This is not necessarily true. Household members may have different preferences and constraints. Consequently, conflicts possibly will emerge within households where people try to pursue different objectives or increase their own well-being at others' expenses. There is, in sum, a wide range of potential inequalities behind similar household welfare outcomes. An extensive literature on the role of women within the household, in particular, focuses on intra-household inequalities. Among forms of inequalities between men and women in the household there are: assets ownership (Diana Deere, Alvarado and Twyman 2012), non-paid household production (Bonke 1992) and exclusive childcare (Sevilla-Sanz, Gimenez-Nadal and Fernàndez 2010). It has to be noticed that some of these sources of inequalities are at the same time sources of household welfare. Women are in fact the main actors of the reproduction economy, which comprehends a wide range of caring non-market activities. Women remain central in the reproduction economy even when they have a paid job and thus play a role also in the production economy (Elson 1999). The unitary model of household is therefore unfitting because it hides this double role of women as creator of welfare and potential victims of exploitation within the household. Not considering this issue bears strong consequences particularly looking to social capital research and policy. By naturalizing the idea that women are essentially mothers, less motivated by individualism and more predisposed to being embedded in family and neighbourhood ties, the concept of social capital becomes an instrument of gender inequalities (Molyneux 2002). It is necessary, on the contrary, to investigate gender differences in roles and behaviours as phenomena that are socially constructed (Lorber 1994). This change in perspective motivates the investigation of the relationship between social capital and women empowerment within the household developed in the present study.

In this sense, it is thus necessary to abandon the unitary model of the household. In the literature, few household decision making models have been proposed as alternatives to the unitary one. These include bargaining, consensual and independent individual models (Grossbard 2011). Bargaining and consensual models explain how the final decision in the household is reached or through cooperative and non-cooperative games (bargaining) or following a social welfare function (consensual). Independent individual models, on the contrary, do not assume any necessity of final joint decision and thus consider individuals as independent decision-makers. It is not an objective of the present study to define *a priori* which model rules out relationships within households. Nevertheless, these alternative models enrich the present study by providing few useful considerations. First, decision making within the household is the critical issue to be investigated. Together (in conflict or cooperating) or independently, individuals have to take decisions over a certain amount of available resources to reach any individual or household welfare outcome. Second, by refuting the unitary model where only the total amount of household resources matter, we need to investigate who takes which decisions, who is actually responsible for a given household welfare outcome. Looking to women's role in decision making, past contributions found women's autonomy critical for household welfare outcomes such as children health (Beegle, Frankenberg and Thomas 2001), time devoted to childcare (Paolisso et al. 2002), household agricultural productivity (Smith and Chavas 2003), and efficiency of family-owned enterprises (Akpalu, Alnaa and Aglobitse 2012). Third, and most importantly, being responsible of decisions within the household may enhance household welfare even at the individual's own well-being expenses. This has been underlined especially for women in low-income countries that may have control over decisions both in the reproductive and productive economy but disregard their own needs (Moser 2002). In developing countries, in particular, being integrated in the job market may improve women's control over decision making but it is not a guarantee of less work at home, at least as long as also wage gaps reduce (MacPhail and Xiao-yuan 2007). From these studies, it appears that women have in general a good control over intra-household decision making but that the issue of their own empowerment does not correspond to this control and additionally goes beyond the objective of economic empowerment (O'Laughlin 2007). These contributions support the idea that the complex relationship between decision making, household welfare and individual well-being need to be further investigated especially through a gender perspective.

In this study, I argue that social capital plays a critical role in explaining this complexity. A wide range of factors, from economic status to social norms, likely influence an individual's ability to contribute to household welfare and to his/her own well-being. In particular, it has been noticed that the social context in which women live likely plays an important role for their bargaining power in the household (Agarwal 1997). The objective of this paper is then to empirically investigate to which extent social capital may be responsible both of women empowerment and of women's role of mothers and wives, devoted to the improvement of household welfare. Acknowledging the fact that these two aspects are not necessarily in contrast, how to conciliate the fact that women are active in bettering household welfare but at the same time may not improve their own well-being? To which extent different resources available to women and the context in which they live influence their control over decision making and the way they use of this autonomy? Is it possible that social capital is responsible both of women empowerment and of some form of exploitation within the household?

The capability approach to welfare economics, introduced in chapter 3, frames the role of social capital within the household and identifies possible channels responsible for women empowerment and exploitation. The fact that the capability approach focuses on individuals is the necessary precondition to investigate women's inequalities in the household. Following this approach, the priority is given to the investigation of each individual's well-being instead of averages at the household level. It is also important to notice that Sen himself considers conceives the household as a place of cooperative conflict and women's exploitation in the household as one of the seven main gender inequalities within societies (Sen 2001; Sen et al. 2003). Also, the capability approach embraces a definition of multi-dimensional well-being that goes far beyond the traditional welfare measures. This is particularly important in order to avoid the trap of looking to women empowerment only as an issue of income welfare (Robeyns 2003). For these reasons, the capability approach is a suitable framework to investigate the interdependency among individual capabilities and their relationship with agency within the household (Iversen 2003). In the capability approach literature, empowerment can be conceived as a process where individuals have the control over a set of resources and are consequently able to act to achieve their own objectives (Kabeer 1999). The social context is credited with playing a prominent role in defining intra-household imbalances of power in general and the specific role of women in particular (Hill 2003; Robeyns 2005). It has been argued that social relationships,

together with other resources available to women, contribute to define the set of opportunity, capabilities, that they mobilize to reach desired functionings. In this sense, social capital intervenes through those channels that have been described in the literature, e.g. reduction of information asymmetries, access to credit, and social support. However, the social context also intervenes after the set of opportunity is available to women in the actual choice of the final vector of functionings. At this level, social capital influences women's preferences and their decision making attitudes. Because of social pressure and the interiorization of gendered roles, women may opt for using their control over decision making to promote household welfare outcomes even at their own well-being expenses (Kabeer 1999; Peter 2003; Sen 1999).

So far, I argued that the role of women in the household needs to be unveiled to improve our understanding of the relationship between social capital and household welfare outcomes. In particular, the critical issue is to investigate to which extent social capital may be responsible for enhancing women's control over resources and decision making but also keeping them within their role of mothers and wives. The capability approach provides the general framework to understand why this ambivalent relationship exists and invites to focus research on the interplay among different resources available to women and their autonomy in decision making. In the next section, I develop an empirical investigation that goes in this direction and investigate the role of social capital in women's autonomy in decision making in the context of Indonesia.

4.3 Social capital and women's autonomy in Indonesia

4.3.1 The Indonesian context

I investigate the relationship between women's endowment in social capital and their role in decision making in the context of Indonesia. In chapter 2, I overviewed Indonesia's history and its main socio-demographic and economic characteristics. Two principal elements make of Indonesia a very rich country field. First, Indonesia is one of the most culturally heterogeneous countries in the world. In its territory hundreds of ethnicities, languages and all the five main religions -Islam, Catholicism, Hinduism, Buddhism and Confucianism- coexist. Second, Indonesia is one of the strongest emergent economies. Especially since 1998 (end of Suharto

dictatorship), it is drastically changing its administrative organization, toward decentralization, and experiencing a constant rise in living standards. It is therefore not surprising that Indonesia has been the object of several researches in social science, comprising research on social capital and women empowerment. In this section, I present an overview of women's status in Indonesia and propose a set of hypotheses concerning the relationship between women's endowment in social capital and their control over decision making in the household.

Although Indonesia shows high GDP growth rates, around 6% in 2008, women's economic participation (Widarti 1998) and education (Chaudhuri 2010) are low compared to other countries of South East Asia. Nevertheless, in Indonesia there is not a problem of "missing daughters" or nutrition discrimination and educational gaps are narrowing (Kevane and Levine 2000; Quisumbing and Otsuka 2001). To have a comprehensive picture of Indonesian women status it is fundamental to consider the role of three different factors: the state, religion and ethnicity.

It is first important to take into consideration the role of the state and its control over Indonesian society. The motto "Healthy mother, strong country" (*Ibu sehat, negara kuat*) well resumes the idea that women's citizenship is mostly identified with their role of mothers and wives. Since the '70s Indonesian women have been in fact the target of state-sponsored development programs whose main objective was to control family planning and promote household welfare (Maralani 2008). Nowadays, among the most attended programs, the "Mother serving all of family members" (Pemberdayaan Kesejahteraan Keluarga) and "Mother serving father" (Dharma Wanita) are a good example of the control that the state still has on the family discourse (Agusta 2009). An ideal nuclear family, reduced in size and based on patriarchal kinship, has been therefore sponsored to have a better control over the family and to promote economic development often ignoring real patterns of household welfare (Maralani 2008). An example of this attempt to control family planning is also the marriage law passed in 1974 that, even though the majority of Indonesian population follows Islam, restricted the practice of polygamy (Brenner 2006).

Nevertheless, religion still plays an important role in daily life of Indonesians. The traditional interpretation may therefore represent a potential threaten to the equality between women and men (Othman 2006). More in general, it has been noticed that the social-religious context in Indonesia shapes gender relations and tends to strengthen control over women in order

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to control the whole socio-economic change (Adamson 2007). At the same time, the recent Islamic revival in Indonesia coincided with a growing activism of Muslim women that are more and more motivated to join national debates and to play a significant role in the evolution of society (Rinaldo 2008).

It is however important to understand that the strong state control over society and the religious influence over daily life have to coexist in Indonesia also with ethnic affiliations and in particular with adat, the rules and practices of social life at the local level. Adat is a collection of social norms specific to the community of reference that presides over different domains, from land inheritance to local disputes. There is an open debate on the necessity of harmonizing traditional norms from adat with state-enforced laws and religious commands (Bowen 2003). A part from the debate, this harmonization is evolving in practice. For example, the Minangbakau maintained part of their matrilineal social organisation but accepted to conform to the new reforms era by changing the laws on land inheritance, giving men and women the same rights (Khan 1976; Quisumbing and Otsuka 2001).

The interplay between adat, religion, and state laws thus shapes the social context in Indonesia and consequently characterizes the embeddedness of women in Indonesian society. This complex set of social norms and institutional settings influences behaviours in household and marriage (Buttenheim and Nobles 2009) and I expect that it also plays a major role for women empowerment in the household.

I now turn the attention to the empirical studies that already investigated the relationship between man and women's access to resources, their bargaining power and resulting household welfare outcomes in the Indonesian context (Beegle, Frankenberg and Thomas 2001; Thomas, Contreras and Frankenberg 2002). These studies mainly focused on assets' property and education level to explain relative power of men and women and their effective ability to take decisions within the household. In particular, women's autonomy in decision making has been found positively correlated with children health. These results are in line with similar studies in other developing countries, where age, education and income levels are found positively correlated with women's autonomy in decision making (Acharya et al. 2010; Arooj et al. 2013; Hajra 2012; Senarath and Nalika Sepali 2009; Smith-Greenaway 1997). However, these studies do not specifically address the question of the role of the social context for women empowerment. The study by Rammohan and Johar (2009), on the contrary, brings a new light on

this research question. The authors demonstrate that labour force participation, education and household's wealth together with kinship and social norms have an impact on women's autonomy. In their model, they take into account the ethnic background of the household, distinguishing between matrilineal and patrilineal kinship norms. In addition to that, they consider in their account of "women's autonomy" only those decision making spheres that, they argue, empower women. They thus exclude those spheres that possibly constitute a burden for women. Their distinction among types of decision making is very useful to improve our understanding of women empowerment within the larger role of women in household decision making. The spheres linked to women empowerment are constituted by personal autonomy (control over their clothing and children caring), economic autonomy (control over savings, large expenditures, gifts and transfers to parents) and physical autonomy (possibility to participate to savings groups and control over time spent socializing). The authors find that, in matrilineal communities, women enjoy greater personal autonomy, while in patrilineal communities women have less physical autonomy.

Hence, at the empirical level, there are two categories of variables that have been taken into consideration to assess women's autonomy in decision making: socio-economic status and ethnic background. Several aspects could be further investigated in this context. Given the literature presented so far, I contribute to this strand of research by adding to determinants of women's autonomy the relational environment of Indonesian women, through the concept of social capital. This investigation is based on the following assumptions: women within the household have access to a wide range of resources and this will give them a certain control over decision making in the household; some of these resources, in particular social capital, may impact not only on the control over decision making but also on women empowerment; women empowerment will result from a control over decisions that avoid to charge women with responsibilities linked to the caring of the household at the expenses of their autonomy. Several hypotheses arise from this perspective.

The rationale behind the first hypothesis is simply that by improving women embeddedness in society women will be able to mobilize more resources and thus gain more control over decision making: *Hp1. Social capital available to women enhances their autonomy in decision making in the household.*

Social capital is considered as a form of capital in the sense that it should provides benefits for the individual that has access to it. Yet, I have discussed the possible negative influence of social capital in driving women's autonomy in decision making towards household oriented priorities. It thus seems necessary to test whether this form of capital has also negative effects concerning the women's control over decision making: *Hp.2. Social capital available to women is exclusively associated with women's autonomy in decision making linked to the spheres of women empowerment.*

In addition to these considerations, in chapter 1 I developed the idea that, being social capital multidimensional, it is possible that different forms of social capital play different roles, with both positive and negative effects for the individual. For this reason, in chapter 2 I have measured the final index and reported its disaggregated components, the endowment of social capital corresponding to each social group the individual belongs to. Social capital index may result associated to women's autonomy but it is necessary to turn to the use of its disaggregated components to observe which social capital groups is mainly responsible for this impact. It could be that some social groups play a more significant role depending on the type of decision, but also that different groups play conflicting roles for the same decision making type. I formalize these expectations as: *Hp.3 Different social capital groups play different roles in women's autonomy concerning the same decision* and *Hp.4 The same social capital group plays different roles on women's autonomy depending on the type of decision.*

These last two hypotheses are exploratory in nature as I do not have *a priori* expectations on which social capital components should enhance or decrease women's autonomy. All groups potentially give women more access to resources and at the same time produce social control and social pressure. Results will then contribute to a more comprehensive understanding of the interplay between women's embeddedness in society and their role within the household. In particular, it could be possible to observe which social capital groups are responsible for enhancing women empowerment and which contribute to their leading role in household welfare.

4.3.2 Empirical framework: the Indonesia Family Life Survey

The present study investigates the relationship between social capital and women's autonomy in decision making using as database the Indonesia Family Life Survey (IFLS). The Indonesia Family Life Survey is a longitudinal survey run by RAND foundation between 1992

and 2008 and it collects a very rich set of information at the individual, household and community levels. This database has been used also in some of the studies cited in the previous section (Beegle, Frankenberg and Thomas 2001; Rammohan and Johar 2009; Thomas, Contreras and Frankenberg 2002). In chapter 2 I have presented this database, in particular IFLS4, fielded in 2008 and therefore I refer to this chapter for further information. I use here the same wave, IFLS4, to measure a set of dependent variables that represent women's role in decision making in Indonesian households.

Dependent variable(s): women's autonomy in decision making

To measure women's role in decision making I use a section from IFLS4 administered to adult married women and men whose spouses live in the household (currently live in the household or were living in the household in the last six months). The question asked is: "In your household, who makes decisions about (...)?" A list of 18 types of decisions is then provided ranging from decisions concerning daily expenses to the use of free time (see Table 4.1 here below for the complete list). I thus have 18 dependent variables, one for each decision making type. For each type of decision, the individual answers who takes the decision choosing with no restriction in options among: her/himself, her/his spouse, son, daughter, mother, father, mother-in-law, father-in-law, brother, sister, brother-in-law, sister-in-law, grandparent, son/daughter-in-law, and grandchild.

The final sample is composed by adult women, aged 15-50, that are spouses of the household head and have at least one child in the household. I selected answers from women with at least one child in the household because few decisions are related to childcare. Also, because women have to answer about their use of contraception, the final sample takes into consideration fertility age and women older than 50 have then been excluded following the example of the study by Beegle, Frankenberg and Thomas (2001). Finally, since the model investigates women's role in decision making at the household level only the spouse of the household head was selected. Table 4.1 validates this choice as it shows that most of decision making in Indonesian households is controlled by the couple head of the household. In this table, all 18 dependent variables have been rescaled to assume value "0", if the woman does not take part to the decision, "1" if she takes the decision together with other household members, "2" if she shares the responsibility of the decision with her husband, and "3" if she is autonomous. Two types of

decision making, *money for monthly Arisan* and *money for monthly savings*, have been recoded as "0" if the woman reported that the household was not concerned by this choice (households with zero savings are then equalized to households were the woman does not have control over savings). The table reports percentages and it is possible to observe that the options "with husband" and "woman alone" represent the great majority of answers. Among possible developments of the present study, the investigation of other patterns of decision making and different women's profile is taken into consideration in order to observe whether inequalities may develop also among women within the same households.

Table 4.1   Women's control over decision making in the household, per types of decision

Type of decision	No	With others	With husband	Woman alone	Total
Food expenditure	8.96	3.87	23.89	63.28	100
Food choice	6.30	6.91	18.84	67.96	100
Routine purchase	7.05	2.37	26.69	63.89	100
Clothes (woman)	6.14	0.32	44.23	49.32	100
Clothes (spouse)	21.05	0.45	53.17	25.33	100
Child clothes	3.46	2.15	84.50	9.89	100
Child education	6.79	6.30	59.98	26.93	100
Child health	6.38	3.63	81.22	8.77	100
Large purchase	10.84	1.93	81.78	5.45	100
Transfers (woman's family)	4.21	0.34	88.86	6.59	100
Transfers (spouse's family)	5.63	0.16	89.58	4.64	100
Gifts	3.73	0.39	85.84	10.03	100
Arisan (money)	48.08	0.36	35.40	16.17	100
Savings (money)	54.61	0.36	36.37	8.67	100
Socializing (spouse)	36.64	0.28	55.58	7.50	100
Socializing (woman)	8.31	0.24	58.99	32.46	100
Whether to work	19.17	0.28	75.14	5.41	100
Contraception	17.22	0.10	63.42	19.27	100

I finally transform women's answers into a dummy variable, taking value "1" if the woman takes the decision alone and "0" otherwise. To be noticed that within the couple head of the household, women are always classified as the "spouse of the household head" because whenever the husband is living in the household he is *de jure* the household head even when women are *de facto* responsible for the majority of decisions (Jones 2002). This is confirmed by

Table 4.2, here below, where it is possible to observe women's control over decision making compared to men. Decision making types are listed subdivided into spheres: daily expenditures, child caring, non-daily expenditures, savings, husband free-time, wife free-time, whether to work, and use of contraception. Among these types of decision making, "1" always indicates that the woman or the man takes the decision alone and "0" otherwise. In the table, answers' means are reported. It is possible to observe that women have a more autonomous control over decision making compared to men but that this control is not homogeneously distributed across decision making types. In few spheres women report to decide alone more than their husbands: this is the case especially for decisions within the daily expenditures sphere, children education and clothing, gifts giving, Arisan participation, savings, woman own free time, and use of contraception. In a minority of decisions, an equal percentage of women and men report to be the sole deciders: for children health and giving money to their families. Finally, men are reported to choose in autonomy more than women concerning: money used for large expenses, the man's own free time and whether or not the man and his wife work.

It is then possible to observe a difference in the autonomy in decision making both between men and women and across decision making types. The dominant role of women is evident in decisions linked to the management of household's daily life, activities linked to party and religious ceremonies and savings attitudes. On the other side men play a minor role in decision making but intervene importantly in the economic sphere. To be noticed also that, on average, men report to use of their free time autonomously more than what women do. These differences in the control that women have over decision making in the household support the interest in further investigating its determinants.

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Table 4.2   Women and Men's autonomy in decision making under comparison: descriptive analysis per decision making type

Decision making type		Women		Men	
		ȳ	σ	ȳ	σ
Daily expenditures	Expenditure on food eaten at home	0.63	0.48	0.09	0.29
	Choice of food eaten at home	0.68	0.47	0.05	0.21
	Routine purchases for the household of items	0.64	0.48	0.06	0.24
	Your clothes	0.49	0.50	0.27	0.44
	Your spouse's clothes	0.25	0.43	0.05	0.22
Children	Your children's clothes	0.10	0.30	0.06	0.23
	Your children's education	0.27	0.44	0.04	0.19
	Your children's health	0.09	0.28	0.07	0.25
Non-daily expenditures	Large expensive purchases for the household	0.05	0.23	0.12	0.32
	Giving money to your parents/family	0.07	0.25	0.08	0.27
	Giving money to your spouse's parents/family	0.05	0.21	0.05	0.22
	Gifts for parties/weddings	0.10	0.30	0.06	0.24
Savings	Money for monthly Arisan (savings lottery)	0.16	0.37	0.04	0.20
	Money for monthly savings	0.09	0.28	0.06	0.23
Husband free-time	Time the husband spends socializing	0.08	0.26	0.43	0.50
Wife free-time	Time the wife spends socializing	0.32	0.47	0.09	0.29
Whether to work	Whether you/your spouse work?	0.05	0.23	0.26	0.44
Use of contraception	Whether you and your spouse use contraception?	0.19	0.39	0.03	0.17

Explanatory and control variables: social capital, individual, household and community characteristics

The key explanatory variable of the present study is the index of social that has been measured in chapter 2. This index takes into account individual's membership in a set of groups and for each group it measures homogeneity among group members, frequency of contacts and hierarchization of the group. In the empirical model, it is therefore possible to use alternatively the final index of social capital or its six disaggregated components that represent a person's endowment of social capital for each group: household, non co-resident family, job, Arisan, religion, and village. The index of social capital thus represents the extent to which women are integrated into different groups in the Indonesian society. The index as well as its disaggregated components is standardized as they do not have a measurement unit of reference.

Here below Table 4.3 provides a descriptive analysis of women's role in decision making subdividing the sample in quintiles of social capital endowment. For each type of decision making, it is thus possible to observe whether women with highest levels of social capital are more autonomous than those with low levels.

In half of decision making types, women that are endowed with higher levels of social capital also report to be more autonomous in decisions within the household: *Food expenditure*, *Routine purchase*, *Clothes (woman), Clothes (spouse), Child education, Transfers (spouse family), Gifts, Arisan (money), Savings (money), Socializing (woman)*. However, this trend is not always linear and it is even inversed for the other half of decision making types. This heterogeneity in the distribution of autonomy supports the idea that these types of decision making need to be investigated separately in order to appreciate for each of them which determinants play a major role, especially looking to differences in the impact of social capital.

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Table 4.3   Distribution of woman's autonomy in decision making per decision making type, subdivided into quintiles of Social Capital

| | Women's endowment in social capital, wSCi (quintiles) | | | | | wSCi |
	1	2	3	4	5	Total
Food expenditure	.6002	.63277	.63179	.64561	.6535	.63277
Food choice	.66634	.69299	.69595	.69102	.65153	.67957
Routine purchase	.61599	.64956	.64265	.64857	.63771	.63889
Clothes (woman)	.47976	.49951	.45311	.5153	.51826	.49319
Clothes (spouse)	.24482	.25962	.22507	.25173	.28529	.25331
Child clothes	.12142	.09674	.07799	.09082	.1076	.09891
Child education	.28628	.27838	.22804	.26357	.29023	.09891
Child health	.10069	.09181	.06515	.08095	.0997	.08766
Large purchase	.0612	.06022	.04442	.04837	.05824	.05449
Transfers (woman's family)	.07305	.07108	.05627	.05824	.07108	.06594
Transfers (spouse family)	.04936	.05627	.04344	.03258	.05035	.0464
Gifts	.10069	.10267	.08786	.08588	.12438	.1003
Arisan (money)	.1076	.10859	.13327	.19941	.25962	.1617
Savings (money)	.07601	.0691	.07996	.0849	.1234	.08667
Socializing (spouse)	.08588	.06614	.07206	.077	.07404	.07502
Socializing (woman)	.31984	.34847	.31392	.3228	.31787	.32458
Whether to work	.05035	.05923	.06318	.04738	.05035	.0541
Contraception	.20039	.18559	.20039	.1925	.1846	.19269

In addition to social capital, other factors are likely to influence women's autonomy in decision making. Coherently with the literature presented in the previous section I then measure some individual, household and community characteristics that have been already investigated in the Indonesian context (Beegle, Frankenberg and Thomas 2001; Rammohan and Johar 2009; Thomas, Contreras and Frankenberg 2002). At the individual level, I measure woman's age and education. The variable *age* is left as continuous variable, ranging from 15 to 50 years old. The variable *education* is expressed on an ordinal scale ranging from "1" to "5" that indicates whether the woman has "no education", "elementary education, "junior high education, "senior high education", or "university education". I consider the differences in age as well as in education between women and their spouses as they are included in the study by Beegle, Frankenberg and

Thomas (2001). Women are on average less educated and younger than their husbands and in the literature little differences in both variables are associated with a better egalitarian status (Kabeer 1999). To take into account household economic welfare I measure household assets per adult, in logarithmic form[12]. In addition, I measure a dummy variable that takes on value "1" whether the spouse of the woman works and "0" otherwise. The last two variables concerning household characteristics are the number of children up to 6 years old and the number of adult women. Concerning the first variable, *number of children* (ranging from 0 to 7 with a mean of 1.4), it is introduced in the model to account for the corresponding potential amount of childcare needed (Rammohan and Johar 2009). The variable *number of adult women* has not been considered in previous studies but it may captures whether other women share the responsibility of household's chores. Table 4.4, here below, presents a brief description of individual and household characteristics.

Table 4.4   Descriptive analysis: women and household's characteristics

Variable	Mean	Std. Dev.	Min	Max
Age	34.2	8.16	15	50
Age Diff	-4.67	4.86	-46	15
Education	2.9	1.08	1	5
Education Diff	-.148	.879	-3	3
Household assets (log)	6.428673	1.598828	0	11.41773
Spouse is economic active	.9424475	.2329182	0	1
N. of children	.6790414	.6677461	0	4
N. of adult women	1.401493	.6712374	1	7

In chapter 2 and in the literature in previous section, I overviewed Indonesia's profile underling its heterogeneity in terms of ethnicity and socio-economic status. To take into account these factors I then consider as potential determinants of women's autonomy of decision making also the ethnicity of the household head and provincial dummies. The variable *ethnicity* controls for traditional norms that may influence gender relations within the household. In particular, two

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[12] For further details about the measurement of household assets, see section 2.6.2 in Chapter 2.

ethnicities known for their matrilineal and matrilineal structure (Minangkabau, matrilineal, and Toba batak, patrilineal) will be compared. The variable *province* classifies households into one of the 13 provinces fielded for the Indonesia Family Life Survey and that are representative of the 83% of the population.

4.3.3 Estimation strategy and robustness issues

The objective of this empirical research is to investigate the determinants of women's autonomy in decision making. I have 18 dependent variables, each of them representing one type of decision in the household, assuming value "1" whether the woman takes the decision alone and "0" otherwise. Due to the nature of the dependent variable, I opt for a probit model and I formalize it as follow:

$$Y_i = \alpha + \beta_i SC_i + \gamma_i \ I_i + \theta_i H_i + \ \delta_i C_i$$

Where Y is the dependent variable that represents the probability that the woman takes the decision alone. SC is social capital endowment available to the woman, and I, H, and C are vectors respectively of individual, household, and community characteristics. Individual characteristics are: *Age*, *Age difference*, *Education*, *Education difference*. Household characteristics are: *HH assets per adult (log)*, *Spouse is economic active*, *N. of children*, *N. of adult woman*. Finally, there are two community characteristics: *Ethnicity dummies* and *Province dummies*.

A probit model is run for each of the 18 dependent variables to appreciate whether social capital plays a role for women's autonomy in decision making and, if so, for which types of decision. To investigate more in detail the role of social capital, an alternative version of the model is run introducing the six social capital components instead of the final index. Subsequently, marginal effects are calculated to better appreciate the magnitude of the impact. In the next section, it is possible to observe all results from probit regressions in tables 4.7-4.8 and 4.11-4.12 whereas in the Appendix tables with marginal effects are reported (tables A.4 and A.5).

Due to the nature of explanatory and control variables, a certain degree of multicollinearity is expected. In order to check that it remains under control three principal measures are undertaken. First, it is possible to find in the Appendix Table A.6 and A.7 with two correlation matrix among all independent variables (Table A.6 with the index of social capital and Table A.7 with social capital disaggregated components). Although a certain degree of correlation is detected for some pairs of variables, the matrix shows that there is not a strong

issue of multicollinearity, and this is especially true among the six disaggregated components of social capital (thus justifying the analysis at the disaggregated level). Second, to better quantify the severity of multicollinearity I run a variance inflation factor (VIF) test after each probit regression. As the VIF never exceeds the value of five, and thus remains well below the recommended limit of 10, I consider that the problem of multicollinearity remains under control. Again, it is important to report that the variance inflation factor is especially low for social capital variables that are the main explicative variables. Third, to better appreciate how different variables contribute to the estimation results, in the appendix (Table A.8-A.13) it is also possible to observe each regression run in four steps. First, the regression is run only with the explanatory variable (social capital) and woman's individual characteristics. Second, household characteristics are added. Third and fourth, ethnic and then province dummies are finally introduced in the model. In each table, it is thus possible to observe whether signs and significance change. Especially, province and ethnic dummies capture a strong part of significance in the model thus confirming the importance in taking into account these sources of heterogeneity among women.

In addition to that, the endogeneity of the explanatory variable, social capital, is addressed using an instrumental variable procedure. The index of social capital is the main explicative variable for women's autonomy in decision making but it is possible that the causality works also the other way round, that is to say that the fact that women are more autonomous give them more opportunities to develop their relational life. To control that this reverse causality is not biasing results I propose to introduce in the model an instrumental variable, *migration.* To calculate this variable I take into consideration a question from the Indonesia Family Life Survey that precisely asks for the number of migrations since 12 years old. This is originally a continuous variable that I transformed in a dummy, as the great majority of women that migrated did it only once in their life. Around 30% of the women migrated at least once since 12 years old. *Migration* is therefore a dummy variable that takes on value "1" if the woman has migrated at least once in her life since she was 12 years old and "0" otherwise. An instrumental variable is a variable correlated to the independent but not directly to the dependent variable. In this model *migration* is an instrumental variable in the sense that it may affect women's autonomy in decision making but only through the strength of her integration in the community where she actually resides (the integration in the social capital groups that form the final index). I run a two step instrumental variable procedure for all decision making types and show results in the appendix (tables A.14 and A.15). As the

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Wald test of exogeneity is never rejected, I conclude that the original version of the model (without instrumental variable) is robust enough.

In addition, an alternative instrumental variable procedure is developed to test the potential endogeneity of one of the components of the final index of social capital: Arisan social capital. The variable that measures women's endowment of Arisan social capital takes into account whether the woman participate to savings groups and the characteristics of this participation. The endogeneity issue arise because one of the dependent variable is about whether the woman decides autonomously to participate to Arisan. It is then possible to argue that Arisan participation reinforce woman's autonomy or inversely that the fact that she is autonomous gives her the possibility to participate. The instrumental variable measured to control for this potential reverse causality is the participation to Arisan in the past. *Arisan 2000* is thus a dummy variable calculated from IFLS3, fielded in 2000 (Strauss et al. 2004). A question asks directly to the woman whether she participated to Arisan in the past year, so no further transformation is needed. More than 40% of women in the sample participated to an Arisan in 2000. Similarly, to the previous instrumental variable procedure I run a two step instrumental variable model for all types of decision making. Results are presented in the appendix, in tables A.16 and A.17. The Wald test of exogeneity is again never rejected and thus the original version of the model is preferred. There is only one exception: in the regression having as dependent variable the control over gifts (*gifts*) Arisan social capital resulted endogenous and therefore in the table in next section (Table 4.12) results showed for the column *gifts* are the ones from the instrumental variable procedure. In the next section, I comment main results from the two alternative models: the first with the final index of social capital and the second with its disaggregated components.

4.3.4 Discussion of results

4.3.4.1 Does social capital improve women's role in decision making?

A first version of the model is run using as exploratory variable woman's index of social capital. Table 4.5, here below, presents a schematic summary of results with the objective to observe whether the index of social capital plays a role in women's autonomy in the household and if this impact is homogeneous among decision making types. Each line of the table represents a regression with its corresponding dependent variable (a type of decision making in the

household). For each type of decision, I indicate whether social capital index was found significative and, if it the case, if it holds a positive or negative sign. It is possible to observe that whenever social capital plays a role, the impact is positive. Although social capital does not improve women's autonomy in all decisions, it never has a negative impact and therefore I partially accept *Hp1: Social capital available to women enhances their autonomy in decision making in the household.*

Table 4.5   Social capital index and decision making: positive vs. negative effects

Type of decision	Social capital effect	
	Positive	Negative
Exp. food	/	/
Choice food	/	/
Routine exp	yes	/
W clothes	yes	/
M clothes	yes	/
Ch. clothes	yes	/
Ch. education	yes	/
Ch. health	yes	/
Large exp.	/	/
W. family	/	/
M. family	/	/
Gifts	yes	/
Arisan	yes	/
Savings	yes	/
M. free time	/	/
W. free time	/	/
Work	/	/
Contraception	/	/

In the previous sections, I argued that increased autonomy in decision making is not *per se* associated with an increase in women empowerment. This happens because women are often responsible of decisions in the household that improve household welfare but that are, at the same time, a sort of burden for their own well-being. Which decisions from this list are associated with spheres of women empowerment? And which role social capital plays for this restricted list of decisions?

I select those decisions that have been already identified as sources of women empowerment by Rammohan and Johar (2009). The authors propose three different categories of decisions linked to women empowerment in Indonesia. The first one is personal and child-related autonomy that comprises: own clothes, children clothes, children education, and children health. The second one is economic autonomy: large expenses, money to own family, money for gifts, and savings. The third one is physical autonomy and comprises: participation to Arisan and time spent socializing. Social capital index has a positive impact on all decisions in the personal and child-related autonomy (*W. clothes*, *Ch. clothes*, *Ch. education*, *Ch. health*), in two out of four decisions in the sphere of economic autonomy (*Gifts*, *Savings*), and in *Arisan* in the physical autonomy sphere. These results may support the hypothesis that social capital enhances women empowerment, especially in the personal and child-related sphere. However, it has to be noticed that the index of social capital has an impact also on two other decisions that are not related to women empowerment: routine expenditures and choice of clothes for the husband. For this reason, although I acknowledge the positive role of social capital for women empowerment I reject *Hp.2: Social capital available to women is exclusively associated with women's autonomy in decision making linked to the spheres of women empowerment.*

Table 4.6   Social capital index and women empowerment

Autonomy	Social capital effect	
	Positive	Negative
Personal and child-related:		
W clothes	yes	/
Ch. clothes	yes	/
Ch. education	yes	/
Ch. health	yes	/
Economic:		
Large exp.	/	/
W. family	/	/
Gifts	yes	/
Savings	yes	/
Physical:		
Arisan	yes	/
W. free time	/	/

In Table 4.6, here below, I report estimates from the set of probit models. To be noticed that, in two columns, the total number of observations is slightly lower than the final sample. This happens because, for these two decisions, women from two ethnic groups never took the decision alone. The model thus predicts failure perfectly and consequently drops the individuals. I did not merged these ethnicities with others to maintain the full meaning of the control variable and I did not dropped these individuals from the whole sample because the problem concerns only 2 out of 18 decisions, and a limited number of women. From the table, it is possible to observe that, in addition to the index of social capital, also individual, household and community characteristics play a role for the autonomy of women in the household.

Age is positively correlated as expected even if it does not result significant for savings attitudes and time spent socializing. The only decision where it is negatively correlated is the use of contraception that can be explained by the fact that older women are probably simply less concerned about the question or decide with their husband whether to have children late in age. The effect of *Age* difference is mostly non significant apart from a negative impact on control over the purchase of the spouse's clothes and the positive one on participation to Arisans. This could be interpreted in the sense that in young couples with no large differences in age men prefer to choose their own clothes and women are freer to decide about their savings attitudes. An opposite scenario is linked to the effect of education and education difference between women and their spouse. Education is in fact negatively correlated with most of decisions a part from: food expenditures, large expenses, participation to Arisan and savings and the decision whether or not to work. Women that are more educated thus maintain their autonomy linked to the use of money for major activities, but probably delegate or share most of other decisions (especially daily decisions). On the contrary, difference in education is positively correlated with the personal and child related sphere and the economic sphere. This could mean that when women have a similar education level to their husbands they tend to control more the decision making in the household.

Looking to characteristics at the household level it is possible to observe that assets do not have a strong impact for the majority of decisions. They have a negative role for decisions as *choice of food*, *children's clothes* and *children's health*, and whether or not to *work*. A positive role on women's autonomy is maintained only for household's control on *savings*. A possible interpretation could be that women in wealthier families tend to delegate some responsibilities.

The lower autonomy in decisions linked to job does not corroborate this explanation unless women in very rich families do not need to gain money and then do not even think about whether or not to work. This interpretation may be confirmed by the significance of another variable, whether the woman's spouse is economic active, that when is significant holds a negative signs (and it has a negative and significant sign for women's decision whether or not to work). The effect of the number of children does not seem to be very strong. Two exceptions are the negative impact on the autonomy on savings and the positive one on the decision whether or not to work. More children mean that there is a major need for resources within the household. Women are then apparently less autonomous in managing savings and they have to ask themselves whether they need to work to assure the subsistence of the family. The role of other adult women in the household tends to support the "reproductive economy" theory, which suggests that most responsibilities in the household are reserved to women. We can observe in fact that the presence of other women in the household lower women's autonomy in the areas of daily decision making and child caring. Therefore, when some tasks in the household are time consuming, the spouse of the household head may delegate these tasks but this would probably mean to delegate to other women in the household. Also, women's autonomy in the use of contraception lower when more adult women are present in the household, thus meaning that this type of decision is mostly shared among women than between the woman and her spouse.

Finally, it is important to observe that these results hold with two different sets of community dummies. I have introduced in the model the ethnicity of the household head and the province code to check for the possible influence of some community and environmental characteristics. Although the investigation of these determinants is not the objective of the present study, we can observe that both dummies have significant coefficients for most decisions. The interplay between traditional adat laws and local institutional settings is likely to play a prominent role in the definition of women's autonomy within the household. I comment two different ethnicities, Minangbakau and Toba Batak that are particularly interesting to observe for of their opposite kinship structures. The Minangbakau are a matrilineal ethnic group while the Toba Batak follows patrilineal kinship rules. Results show that Minang women are more autonomous in their participation to Arisan, in the time they spend socializing, and in their job attitudes while Batak women are still more autonomous in participation to Arisan but less in the choice whether to work and not in the time they spend socializing. Moreover, tobak women are

more autonomous in decisions linked to routine expenditures and child caring, together with more autonomy in the management of transfers to family. From one side it is then possible to observe that patrilineal ethnic groups guarantee more autonomy to women especially in the reproductive economy and in some aspects of the economic sphere but at the expenses of their own free time. In matrilineal ethnic groups women are more autonomous especially in spheres directly linked to their own well-being and probably share most of other decisions with other members of the household (especially women). In the next section, we look closer to the impact of social capital on women's autonomy by running the same set of probit models using the disaggregated components of social capital index.

Table 4.7   Social capital index and women's role in decision making, per decision making type (probit models) (1)

VARIABLES	Exp. food	Choice food	Routine exp	W clothes	M clothes	Ch. clothes	Ch. education	Ch. health	Large exp.
Social capital	0.030	0.011	0.038**	0.070***	0.080***	0.047*	0.070***	0.073***	0.003
	(0.020)	(0.020)	(0.019)	(0.019)	(0.021)	(0.027)	(0.020)	(0.027)	(0.033)
Individual characteristics									
Age	0.006*	0.007**	0.006**	0.005	0.006**	0.008*	-0.003	0.008**	0.016***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.004)	(0.005)
Education	0.007	-0.095***	-0.040*	-0.052**	-0.129***	-0.093***	-0.064***	-0.119***	-0.020
	(0.022)	(0.022)	(0.022)	(0.021)	(0.024)	(0.029)	(0.023)	(0.031)	(0.035)
Household characteristics									
HH assets per adult (log)	0.003	-0.026*	-0.014	0.003	-0.015	-0.041**	-0.015	-0.036*	-0.015
	(0.013)	(0.014)	(0.013)	(0.013)	(0.014)	(0.018)	(0.014)	(0.018)	(0.021)
N. of children	-0.015	0.026	-0.031	-0.070**	-0.006	-0.028	0.046	-0.047	0.005
	(0.034)	(0.034)	(0.034)	(0.033)	(0.036)	(0.045)	(0.035)	(0.046)	(0.054)
N. of adult woman	-0.152***	-0.169***	-0.104***	0.010	-0.008	-0.025	-0.089***	-0.082*	0.047
	(0.030)	(0.030)	(0.030)	(0.029)	(0.032)	(0.041)	(0.032)	(0.044)	(0.045)
Age difference	-0.004	-0.003	-0.004	-0.007*	-0.006	0.002	-0.003	-0.002	-0.004
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)	(0.005)	(0.006)
Education difference	0.008	0.021	0.043*	0.068***	0.109***	0.090***	0.068***	0.108***	0.083**
	(0.023)	(0.023)	(0.023)	(0.022)	(0.025)	(0.031)	(0.024)	(0.033)	(0.037)
Spouse is economic active (d)	-0.007	0.024	-0.072	-0.082	-0.010	-0.067	0.024	-0.067	-0.197*
	(0.081)	(0.082)	(0.082)	(0.078)	(0.083)	(0.100)	(0.083)	(0.103)	(0.110)
Ethnicity dummies									
02. Sundanese	0.016	0.041	0.059	0.112	0.107	-0.055	0.120	0.044	-0.078
	(0.080)	(0.081)	(0.080)	(0.080)	(0.086)	(0.110)	(0.086)	(0.119)	(0.138)
03. Bali	-0.137	-0.062	-0.481**	-0.111	0.167	0.296	-0.084	0.380	0.475**

VARIABLES	Exp. food	Choice food	Routine exp	W clothes	M clothes	Ch. clothes	Ch. education	Ch. health	Large exp.
	(0.224)	(0.226)	(0.228)	(0.218)	(0.255)	(0.301)	(0.228)	(0.319)	(0.188)
04. Batak	-0.042	0.319**	0.283**	0.284**	0.431***	0.448**	0.443***	0.512***	0.300
	(0.137)	(0.145)	(0.141)	(0.136)	(0.142)	(0.180)	(0.140)	(0.178)	(0.198)
05. Bugis	0.189	-0.058	0.111	-0.079	0.109	0.098	-0.099	-0.058	-0.125
	(0.170)	(0.169)	(0.168)	(0.162)	(0.173)	(0.227)	(0.166)	(0.226)	(0.254)
07. Maduranese	0.029	0.032	-0.227*	-0.315***	-0.417***	-0.343**	-0.178	-0.286	0.015
	(0.130)	(0.134)	(0.124)	(0.115)	(0.125)	(0.172)	(0.123)	(0.180)	(0.199)
08. Sasak	-0.063	-0.472*	-0.057	0.131	-0.338	0.000	-0.023	0.089	-0.228
	(0.233)	(0.243)	(0.233)	(0.239)	(0.345)	(0.000)	(0.355)	(0.750)	(0.387)
09. Minang	-0.195	-0.175	0.260	0.110	0.197	0.078	0.069	0.070	-0.025
	(0.158)	(0.159)	(0.160)	(0.158)	(0.174)	(0.223)	(0.171)	(0.221)	(0.231)
10. Banjar	-0.391**	-0.504***	-0.406**	-0.288*	-0.360	-0.457	-0.328*	0.065	-0.558
	(0.168)	(0.169)	(0.168)	(0.166)	(0.219)	(0.292)	(0.174)	(0.278)	(0.355)
11. Bima-Dompu	0.037	-0.180	0.081	0.108	-0.406	0.074	0.292	0.540	0.221
	(0.236)	(0.248)	(0.238)	(0.242)	(0.363)	(0.267)	(0.317)	(0.466)	(0.268)
12. Makasar	0.535**	0.507**	0.394*	0.354	0.425*	0.487*	0.268	0.232	0.203
	(0.240)	(0.247)	(0.228)	(0.218)	(0.219)	(0.259)	(0.214)	(0.256)	(0.278)
17. Betawi	0.125	-0.002	0.190	0.261**	0.065	0.142	0.198	0.107	0.016
	(0.123)	(0.122)	(0.121)	(0.121)	(0.129)	(0.149)	(0.122)	(0.158)	(0.187)
25. Other Southern Sumatrans	-0.027	-0.014	-0.200	-0.001	-0.160	0.118	0.086	0.265	-0.046
	(0.127)	(0.129)	(0.126)	(0.124)	(0.138)	(0.168)	(0.136)	(0.168)	(0.211)
27. Cirebon	0.341**	0.345**	0.416***	0.451***	0.519***	-0.028	0.341**	0.245	-0.180
	(0.134)	(0.137)	(0.135)	(0.131)	(0.137)	(0.174)	(0.136)	(0.176)	(0.249)
Other ethnicities	0.007	-0.185*	-0.049	0.184*	0.080	0.128	0.122	0.200	0.153
	(0.102)	(0.103)	(0.101)	(0.101)	(0.110)	(0.136)	(0.107)	(0.140)	(0.155)
Province dummies									
North Sumatra (d)	0.148	0.274**	0.358***	0.373***	0.263**	-0.156	0.221*	0.057	0.098
	(0.117)	(0.119)	(0.118)	(0.117)	(0.126)	(0.166)	(0.124)	(0.169)	(0.184)

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VARIABLES	Exp. food	Choice food	Routine exp	W clothes	M clothes	Ch. clothes	Ch. education	Ch. health	Large exp.
West Sumatra (d)	-0.126	0.063	-0.285*	0.003	-0.117	-0.291	-0.098	-0.159	0.041
	(0.148)	(0.148)	(0.149)	(0.148)	(0.165)	(0.203)	(0.160)	(0.205)	(0.219)
South Sumatra	-0.097	-0.077	0.166	0.055	0.281**	-0.205	0.001	-0.097	0.143
	(0.122)	(0.124)	(0.122)	(0.121)	(0.134)	(0.168)	(0.132)	(0.172)	(0.207)
Lampung	0.641***	0.430***	0.613***	0.054	0.275***	-0.073	-0.151	-0.039	0.095
	(0.105)	(0.105)	(0.105)	(0.100)	(0.107)	(0.137)	(0.110)	(0.149)	(0.164)
Jakarta	0.491***	0.382***	0.404***	0.591***	0.377***	0.150	0.469***	0.342***	0.362**
	(0.099)	(0.099)	(0.098)	(0.096)	(0.102)	(0.119)	(0.097)	(0.123)	(0.148)
Central Java	0.369***	0.355***	0.211**	0.050	0.250***	-0.268**	0.004	-0.224*	0.122
	(0.088)	(0.089)	(0.087)	(0.086)	(0.093)	(0.123)	(0.094)	(0.135)	(0.149)
Yogyakarta	0.449***	0.295***	0.349***	0.135	-0.099	-0.353**	-0.085	-0.260	0.019
	(0.114)	(0.113)	(0.112)	(0.110)	(0.125)	(0.165)	(0.121)	(0.174)	(0.189)
East Java	0.797***	0.693***	0.815***	0.398***	0.534***	0.041	0.327***	0.104	0.004
	(0.091)	(0.092)	(0.091)	(0.087)	(0.093)	(0.117)	(0.092)	(0.128)	(0.151)
Bali	-0.013	0.050	0.395*	0.405*	-0.139	-0.562*	0.241	-0.355	-0.389**
	(0.221)	(0.222)	(0.226)	(0.215)	(0.249)	(0.296)	(0.225)	(0.316)	(0.196)
West Nusa Tenggara	0.210	0.557**	0.185	-0.034	-0.568*	-1.102***	-1.482***	-1.470***	-0.668***
	(0.221)	(0.230)	(0.221)	(0.228)	(0.316)	(0.214)	(0.289)	(0.554)	(0.216)
South Kalimantan	0.277*	0.218	0.315**	0.597***	-0.280	-0.372	0.247	-0.553**	-0.057
	(0.156)	(0.158)	(0.156)	(0.155)	(0.186)	(0.233)	(0.159)	(0.253)	(0.277)
South Sulawesi	0.471***	0.434**	0.450**	0.545***	0.435**	0.346	0.556***	0.614***	0.793***
	(0.180)	(0.179)	(0.176)	(0.170)	(0.181)	(0.223)	(0.175)	(0.222)	(0.248)
Constant	0.052	0.633***	0.292*	-0.200	-0.588***	-0.808***	-0.291	-0.907***	-2.000***
	(0.178)	(0.180)	(0.177)	(0.173)	(0.188)	(0.233)	(0.187)	(0.244)	(0.283)
Observations	5,091	5,091	5,091	5,091	5,091	4,876	5,091	5,091	5,091
Pseudo R2	0.0547	0.0469	0.0444	0.0289	0.0677	0.0551	0.0596	0.0707	0.0684

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4.8   Social capital index and women's role in decision making, per decision making type (probit models) (2)

VARIABLES	W. family	M. family	Gifts	Arisan	Savings	M. free time	W. free time	Work	Contraception
Social capital	0.010	0.016	0.050*	0.258***	0.114***	0.013	0.004	-0.012	0.032
	(0.030)	(0.034)	(0.027)	(0.023)	(0.027)	(0.028)	(0.020)	(0.031)	(0.023)
Individual characteristics									
Age	0.009**	0.019***	0.009**	0.005	-0.002	0.005	0.003	0.009*	-0.010***
	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)	(0.005)	(0.003)
Education	-0.070**	-0.064*	-0.063**	0.040	0.039	-0.048	-0.057**	-0.038	-0.045*
	(0.033)	(0.036)	(0.029)	(0.026)	(0.030)	(0.031)	(0.022)	(0.035)	(0.025)
Household characteristics									
HH assets per adult (log)	-0.025	-0.030	-0.014	0.012	0.043**	-0.041**	-0.016	-0.035*	-0.026*
	(0.020)	(0.021)	(0.018)	(0.016)	(0.019)	(0.019)	(0.014)	(0.020)	(0.015)
N. of children	-0.011	0.022	-0.057	-0.178***	-0.087*	0.003	0.004	0.119**	-0.009
	(0.050)	(0.058)	(0.046)	(0.042)	(0.048)	(0.048)	(0.035)	(0.052)	(0.039)
N. of adult woman	0.023	0.028	-0.005	-0.046	-0.004	0.053	-0.022	-0.017	0.095***
	(0.046)	(0.052)	(0.039)	(0.036)	(0.042)	(0.041)	(0.031)	(0.047)	(0.033)
Age difference	-0.006	-0.003	-0.007	0.008*	-0.007	0.001	0.003	-0.008	0.004
	(0.006)	(0.006)	(0.005)	(0.005)	(0.006)	(0.005)	(0.004)	(0.006)	(0.004)
Education difference	0.091**	0.076*	0.066**	-0.002	0.005	0.062*	0.001	-0.017	0.020
	(0.035)	(0.039)	(0.031)	(0.028)	(0.032)	(0.033)	(0.024)	(0.037)	(0.027)
Spouse is economic active (d)	-0.219**	-0.205*	-0.156*	0.100	-0.018	0.122	-0.106	-0.329***	-0.021
	(0.104)	(0.113)	(0.093)	(0.094)	(0.107)	(0.120)	(0.080)	(0.106)	(0.089)
Ethnicity dummies									
02. Sundanese	0.125	-0.085	0.162	0.158	0.026	0.120	-0.166**	-0.239*	-0.115
	(0.122)	(0.139)	(0.103)	(0.096)	(0.112)	(0.114)	(0.083)	(0.132)	(0.088)
03. Bali	0.362	0.739***	0.065	0.186	0.119	0.250	-0.499**	0.475	-0.015

VARIABLES	W. family	M. family	Gifts	Arisan	Savings	M. free time	W. free time	Work	Contraception
	(0.226)	(0.228)	(0.288)	(0.247)	(0.301)	(0.303)	(0.237)	(0.336)	(0.255)
04. Batak	0.503***	0.548***	0.104	0.403**	0.219	0.112	0.132	-0.460**	-0.078
	(0.186)	(0.210)	(0.190)	(0.171)	(0.212)	(0.228)	(0.145)	(0.234)	(0.195)
05. Bugis	-0.184	0.314	-0.103	-0.093	0.243	0.200	-0.193	0.684***	-0.117
	(0.237)	(0.282)	(0.201)	(0.190)	(0.219)	(0.232)	(0.172)	(0.248)	(0.175)
07. Maduranese	-0.500**	-0.301	-0.513**	-0.737***	-0.332**	-0.253	0.171	-0.155	-0.059
	(0.212)	(0.214)	(0.203)	(0.156)	(0.162)	(0.189)	(0.114)	(0.196)	(0.122)
08. Sasak	0.683	0.000	-0.173	0.165	0.436	0.334	-0.021	0.566**	-0.078
	(0.540)	(0.000)	(0.464)	(0.351)	(0.425)	(0.318)	(0.263)	(0.277)	(0.253)
09. Minang	0.013	0.089	0.124	0.508**	0.326	0.485*	0.474***	0.438*	-0.053
	(0.218)	(0.248)	(0.196)	(0.199)	(0.234)	(0.274)	(0.177)	(0.242)	(0.220)
10. Banjar	-0.284	-0.417	-0.318	0.065	0.102	0.551**	-0.407**	0.350	-0.192
	(0.267)	(0.363)	(0.213)	(0.219)	(0.350)	(0.271)	(0.170)	(0.523)	(0.207)
11. Bima-Dompu	0.243	0.000	0.311	0.287	0.297	-0.123	0.330	0.069	-0.051
	(0.571)	(0.000)	(0.361)	(0.330)	(0.408)	(0.347)	(0.261)	(0.352)	(0.256)
12. Makasar	0.317	0.651**	0.387	0.450**	0.080	0.098	0.161	0.691**	0.041
	(0.267)	(0.319)	(0.246)	(0.228)	(0.268)	(0.331)	(0.218)	(0.329)	(0.222)
17. Betawi	0.090	0.143	0.146	0.307**	0.139	0.023	0.125	-0.022	0.202*
	(0.179)	(0.201)	(0.146)	(0.133)	(0.148)	(0.168)	(0.120)	(0.164)	(0.121)
25. Other Southern Sumatrans	-0.178	-0.102	-0.065	-0.176	-0.228	0.139	0.048	-0.142	-0.049
	(0.216)	(0.242)	(0.176)	(0.153)	(0.189)	(0.178)	(0.133)	(0.204)	(0.141)
27. Cirebon	-0.032	-0.228	-0.109	0.227	0.013	-0.244	-0.713***	-0.522*	-1.492***
	(0.231)	(0.247)	(0.192)	(0.164)	(0.203)	(0.215)	(0.160)	(0.270)	(0.253)
Other ethnicities	-0.048	0.056	0.097	0.115	0.069	0.208	0.231**	0.287*	-0.018
	(0.162)	(0.169)	(0.135)	(0.128)	(0.152)	(0.147)	(0.102)	(0.148)	(0.118)
Province dummies									
North Sumatra (d)	0.002	-0.556***	-0.152	-0.181	-0.016	-0.241	-0.230*	0.164	-0.833***
	(0.186)	(0.199)	(0.165)	(0.153)	(0.186)	(0.190)	(0.124)	(0.173)	(0.157)

VARIABLES	W. family	M. family	Gifts	Arisan	Savings	M. free time	W. free time	Work	Contraception
West Sumatra (d)	0.484**	-0.081	0.198	-0.578***	-0.402*	-0.722***	-0.707***	-0.605**	-0.928***
	(0.210)	(0.230)	(0.186)	(0.194)	(0.227)	(0.273)	(0.169)	(0.243)	(0.206)
South Sumatra	0.378*	0.105	0.250	0.128	0.110	0.116	-0.373***	0.162	-0.108
	(0.199)	(0.218)	(0.161)	(0.145)	(0.173)	(0.168)	(0.130)	(0.189)	(0.132)
Lampung	0.037	-0.138	-0.355**	-0.060	-0.139	-0.338**	-0.075	-0.302*	-0.783***
	(0.166)	(0.178)	(0.155)	(0.129)	(0.156)	(0.161)	(0.105)	(0.181)	(0.129)
Jakarta	0.586***	0.045	0.547***	0.330***	0.481***	0.086	0.052	0.404***	-0.023
	(0.143)	(0.172)	(0.114)	(0.108)	(0.122)	(0.134)	(0.100)	(0.139)	(0.099)
Central Java	0.184	0.032	-0.016	-0.061	0.040	-0.203	-0.306***	-0.118	-0.664***
	(0.136)	(0.142)	(0.116)	(0.110)	(0.123)	(0.132)	(0.091)	(0.141)	(0.101)
Yogyakarta	0.066	-0.220	0.089	0.204	0.111	0.460***	0.124	-0.462**	-0.658***
	(0.186)	(0.205)	(0.149)	(0.133)	(0.151)	(0.145)	(0.114)	(0.221)	(0.136)
East Java	0.426***	0.138	0.131	0.667***	0.473***	0.144	0.391***	-0.048	0.059
	(0.134)	(0.143)	(0.115)	(0.103)	(0.116)	(0.123)	(0.088)	(0.141)	(0.092)
Bali	0.088	-0.712***	0.005	-0.198	0.021	0.138	0.030	-0.349	-0.402
	(0.230)	(0.229)	(0.284)	(0.242)	(0.296)	(0.299)	(0.230)	(0.332)	(0.250)
West Nusa Tenggara	-1.577***	0.000	-1.061***	-1.061***	-1.140***	-0.419	-0.246	-1.061***	-0.403*
	(0.496)	(0.000)	(0.338)	(0.296)	(0.382)	(0.295)	(0.248)	(0.232)	(0.236)
South Kalimantan	0.292	-0.203	0.386**	-0.065	-0.605*	-0.502*	1.011***	-1.254**	-0.572***
	(0.237)	(0.275)	(0.190)	(0.201)	(0.320)	(0.259)	(0.157)	(0.490)	(0.182)
South Sulawesi	0.782***	0.143	0.437**	0.564***	0.477**	-0.331	0.437**	-0.684**	-0.009
	(0.243)	(0.287)	(0.210)	(0.193)	(0.226)	(0.250)	(0.177)	(0.277)	(0.179)
Constant	-1.573***	-1.819***	-1.269***	-1.402***	-1.770***	-1.441***	-0.172	-1.276***	0.012
	(0.269)	(0.295)	(0.239)	(0.218)	(0.251)	(0.256)	(0.180)	(0.259)	(0.202)
Observations	5,091	4,717	5,091	5,091	5,091	5,091	5,091	5,091	5,091
Pseudo R2	0.0660	0.0533	0.0596	0.108	0.0706	0.0339	0.0588	0.0626	0.0672

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.3.4.2 Do social capital groups have different impacts on women's autonomy?

Tables 4.9 and 4.10, here below, propose a schematic summary of results from the alternative version of probit models. In these regressions, social capital index, our independent variable, has been replaced by its disaggregated components: *household social capital*, *non co-resident family social capital, job social capital, Arisan social capital, religion social capital and village social capital*. The objective is to investigate if the impact of social capital on women's autonomy derives from some specific social groups or if all groups contribute in the same way to women's autonomy in decision making. Tables 4.11 and 4.12 show results from regressions for all decision making types and social capital groups. Compared to the model presented in the previous section, signs and significances of control variables do not vary much and I therefore comment only on the impact of the six social capital components constituting the principal explanatory variables.

Table 4.9   Social capital groups and decision making: positive vs. negative effects

Type of decision	Social capital groups effect	
	Positive	Negative
Exp. food	Arisan	/
Choice food	/	/
Routine exp	/	/
W clothes	Household, Job, Arisan	/
M clothes	Job, Arisan, Village	/
Ch. clothes	Arisan	Religion
Ch. education	Household, Arisan, Village	/
Ch. health	Household, Job, Arisan	Religion
Large exp.	Arisan	NcR_Family, Religion
W. family	Job	/
M. family	/	/
Gifts	Arisan	NcR_Family
Arisan	Job, Arisan	/
Savings	Job, Arisan	Religion
M. free time	/	/
W. free time	/	/
Work	/	NcR_Family
Contraception	Household	/

The main result is that the positive impact of social capital previously observed is driven by specific social capital groups, while some groups have even a negative impact on women's autonomy in decision making. The positive and negative impacts of different social capital groups coexist for the same types of decision, as it is the case for decisions over children's clothes and health, large expenditures, gifts and savings. I then confirm *Hp.3: Different social capital groups play different roles in women's autonomy concerning the same decision.*

At the same time, there is a separation between social capital groups in their impact on decisions. No matter the type of decision making, whenever they hold significant signs *Household*, *Job*, *Arisan* and *Village* social capital always have positive signs while *Non co-resident family* and R*eligion* social capital always have a negative one. It seems from these results that each social capital group plays the same positive or negative role for women's autonomy in decisions. Those groups that have a positive impact provide women with a certain set of resources (e.g. money, information, social status) that give them also more autonomy in managing decisions in the household. In this sense, being connected is a resource *per se* but also holds a multiplier effect and it is a necessary condition to access resources in general. Those groups that have a negative impact may equally provide resources to women but are especially a source of social control or social pressure and lower their autonomy in the household. I then have to reject *Hp.4: The same social capital group plays different roles on women's autonomy depending on the type of decision*.

Not only social capital has both positive and negative impacts on women's autonomy, but it is possible to observe the same trend on women's empowerment. To appreciate which social capital groups play a positive or negative role for women's empowerment I make reference again to the list of personal, economic and physical spheres proposed by Rammohan and Johar (2009). Through this classification of decision making types, it is possible to observe that household social capital improves most of the decisions belonging to the personal and child-related sphere, which is expected (Woman clothes, children education and health). Job social capital plays an important role in two out of four decisions in personal and economic spheres and in one of the two decisions in the physical sphere. Arisan social capital also plays a role in almost all decisions and is the social capital group that affects the most both women's autonomy and empowerment. Religious and village social capital on the contrary hold negative signs. Together they affect negatively the economic sphere, whereas religion social capital has a negative impact on some of

the child-related decisions. The division between positive and negative impacts of social capital groups on women's autonomy in decision making is then maintained even when looking to decisions linked directly to women empowerment. These results support the more general view developed in the literature according to which social capital, because of its multidimensionality, may hold both positive and negative effects (Dasgupta 2005; Portes 1998; Sabatini 2009).

Table 4.10   Social capital groups and women empowerment

| | Social capital groups effect | |
Autonomy	Positive	Negative
Personal and child-related:		
W. clothes	Household, Job, Arisan	/
Ch. clothes	Arisan	Religion
Ch. education	Household, Arisan, Village	/
Ch. health	Household, Job, Arisan	Religion
Economic:		
Large exp.	Arisan	NcR_Family, Religion
W. family	Job	/
Gifts	Arisan	NcR_Family
Savings	Job, Arisan	Religion
Physical:		
Arisan	Job, Arisan	/
W. free time	/	/

Table 4.11   Social capital groups and their impact on women's autonomy in decision making (Probit models) (1)

VARIABLES	Exp food	Choice food	Routine exp	W clothes	M clothes	C clothes	C education	C health	Large exp
Social Capital groups									
SC household	0.018	0.031	0.026	0.066***	-0.000	0.043	0.056**	0.063*	-0.025
	(0.024)	(0.024)	(0.024)	(0.023)	(0.025)	(0.031)	(0.025)	(0.032)	(0.037)
SC non co resident family	0.002	0.028	0.030	-0.012	-0.016	-0.001	-0.005	-0.007	-0.121***
	(0.023)	(0.023)	(0.023)	(0.022)	(0.025)	(0.031)	(0.024)	(0.033)	(0.036)
SC job	-0.006	-0.026	0.009	0.061***	0.035*	0.019	0.021	0.056**	0.042
	(0.019)	(0.020)	(0.019)	(0.019)	(0.021)	(0.026)	(0.020)	(0.027)	(0.031)
SC arisan	0.047**	0.020	0.027	0.035**	0.057***	0.051**	0.047***	0.048**	0.048*
	(0.019)	(0.018)	(0.018)	(0.017)	(0.018)	(0.022)	(0.018)	(0.023)	(0.026)
SC religion	-0.024	-0.013	-0.003	-0.009	0.017	-0.070**	0.016	-0.043	-0.070*
	(0.027)	(0.027)	(0.027)	(0.026)	(0.028)	(0.033)	(0.027)	(0.034)	(0.038)
SC village	0.001	-0.019	-0.010	0.035	0.106***	0.028	0.058**	0.037	0.048
	(0.024)	(0.025)	(0.024)	(0.023)	(0.026)	(0.032)	(0.025)	(0.033)	(0.038)
Individual characteristics									
Age	0.005*	0.007**	0.006**	0.001	0.005	0.006	-0.005	0.006	0.011**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.004)	(0.005)
Education	0.000	-0.090***	-0.035	-0.065***	-0.164***	-0.118***	-0.080***	-0.139***	-0.063
	(0.024)	(0.024)	(0.023)	(0.023)	(0.025)	(0.032)	(0.025)	(0.033)	(0.038)
Household characteristics									
HH assets per adult (log)	0.003	-0.026*	-0.015	0.006	-0.014	-0.039**	-0.012	-0.032*	-0.016
	(0.013)	(0.014)	(0.013)	(0.013)	(0.014)	(0.018)	(0.014)	(0.019)	(0.022)

VARIABLES	Exp food	Choice food	Routine exp	W clothes	M clothes	C clothes	C education	C health	Large exp
N. of children	-0.018	0.007	-0.038	-0.093***	0.011	-0.045	0.026	-0.068	0.026
	(0.037)	(0.038)	(0.037)	(0.036)	(0.039)	(0.049)	(0.038)	(0.050)	(0.059)
N. of adult woman	-0.158***	-0.175***	-0.106***	-0.017	-0.008	-0.043	-0.111***	-0.108**	0.030
	(0.032)	(0.032)	(0.032)	(0.031)	(0.034)	(0.044)	(0.034)	(0.047)	(0.049)
Age difference	-0.004	-0.002	-0.004	-0.007*	-0.007	0.002	-0.003	-0.002	-0.006
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)	(0.005)	(0.006)
Education difference	0.013	0.023	0.043*	0.073***	0.120***	0.100***	0.077***	0.115***	0.093**
	(0.023)	(0.024)	(0.023)	(0.022)	(0.025)	(0.031)	(0.024)	(0.033)	(0.038)
Spouse is economic active (d)	-0.007	0.034	-0.068	-0.053	-0.016	-0.047	0.047	-0.037	-0.205*
	(0.082)	(0.083)	(0.083)	(0.078)	(0.085)	(0.102)	(0.085)	(0.105)	(0.112)
Ethnicity dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Province dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	0.089	0.606***	0.279	-0.018	-0.476**	-0.643***	-0.178	-0.710***	-1.699***
	(0.187)	(0.190)	(0.186)	(0.182)	(0.198)	(0.245)	(0.197)	(0.258)	(0.297)
Observations	5,091	5,091	5,091	5,091	5,091	4,876	5,091	5,091	5,091
Pseudo R2	0.0556	0.0479	0.0447	0.0304	0.0706	0.0583	0.0610	0.0733	0.0785

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4.12   Social capital groups and their impact on women's autonomy in decision making (Probit models) (2)

VARIABLES	W family	M family	Gifts	Arisan	Savings	M free time	W free time	Work	Contraception
Social Capital groups									
SC household	-0.039	-0.015	0.023	-0.029	0.005	-0.020	0.012	0.020	0.045*
	(0.034)	(0.038)	(0.031)	(0.029)	(0.032)	(0.034)	(0.024)	(0.036)	(0.026)
SC non co resident family	-0.053	-0.052	-0.045	-0.035	-0.029	-0.044	-0.012	-0.061*	0.002
	(0.035)	(0.039)	(0.031)	(0.029)	(0.033)	(0.033)	(0.023)	(0.036)	(0.026)
SC job	0.060**	0.024	0.026	0.045*	0.104***	0.043	-0.012	-0.038	0.034
	(0.029)	(0.032)	(0.025)	(0.023)	(0.027)	(0.028)	(0.020)	(0.032)	(0.022)
SC arisan	0.006	0.031	0.067***	0.306***	0.097***	0.021	0.019	0.039	0.014
	(0.025)	(0.028)	(0.022)	(0.023)	(0.021)	(0.024)	(0.018)	(0.027)	(0.020)
SC religion	-0.022	-0.041	0.026	0.012	-0.069**	-0.054	0.003	-0.040	-0.016
	(0.039)	(0.041)	(0.035)	(0.032)	(0.035)	(0.038)	(0.027)	(0.040)	(0.030)
SC village	0.045	0.049	-0.026	0.016	0.038	0.037	-0.011	0.033	-0.008
	(0.037)	(0.043)	(0.032)	(0.029)	(0.032)	(0.034)	(0.025)	(0.037)	(0.027)
Individual characteristics									
Age	0.007	0.016***	0.008*	0.007*	-0.005	0.003	0.003	0.006	-0.011***
	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)	(0.005)	(0.004)
Education	-0.094***	-0.096**	-0.060**	0.016	0.006	-0.075**	-0.055**	-0.068*	-0.044*
	(0.035)	(0.039)	(0.030)	(0.028)	(0.032)	(0.033)	(0.024)	(0.037)	(0.026)
Household characteristics									
HH assets per adult (log)	-0.026	-0.030	-0.016	-0.003	0.041**	-0.041**	-0.017	-0.032	-0.025*
	(0.020)	(0.021)	(0.018)	(0.017)	(0.020)	(0.019)	(0.014)	(0.020)	(0.015)

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VARIABLES	W family	M family	Gifts	Arisan	Savings	M free time	W free time	Work	Contraception
N. of children	0.020	0.036	-0.050	-0.090**	-0.056	0.022	-0.001	0.102*	-0.027
	(0.056)	(0.065)	(0.049)	(0.046)	(0.051)	(0.053)	(0.038)	(0.058)	(0.042)
N. of adult woman	0.028	0.023	-0.022	-0.029	-0.008	0.053	-0.029	-0.041	0.078**
	(0.049)	(0.055)	(0.042)	(0.040)	(0.046)	(0.045)	(0.033)	(0.050)	(0.036)
Age difference	-0.007	-0.004	-0.008	0.007	-0.008	-0.000	0.003	-0.009	0.004
	(0.006)	(0.006)	(0.005)	(0.005)	(0.006)	(0.005)	(0.004)	(0.006)	(0.004)
Education difference	0.094***	0.086**	0.063**	0.001	0.008	0.068**	0.002	-0.001	0.021
	(0.036)	(0.040)	(0.032)	(0.029)	(0.032)	(0.034)	(0.024)	(0.037)	(0.027)
Spouse is economic active (d)	-0.231**	-0.201*	-0.163*	0.002	-0.028	0.116	-0.103	-0.311***	-0.001
	(0.105)	(0.115)	(0.095)	(0.097)	(0.108)	(0.121)	(0.081)	(0.108)	(0.090)
Ethnicity dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Province dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	-1.420***	-1.648***	-0.863***	-1.410***	-1.548***	-1.268***	-0.165	-1.124***	0.101
	(0.284)	(0.306)	(0.313)	(0.231)	(0.263)	(0.266)	(0.190)	(0.275)	(0.213)
Observations	5,091	4,717	4,811	5,091	5,091	5,091	5,091	5,091	5,091
Pseudo R2	0.0697	0.0566	0.0626	0.140	0.0788	0.0371	0.0592	0.0670	0.0679

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.4   Conclusion

In this chapter, I investigate determinants of women's autonomy in decision making by adding a new element, social capital, which was so far unexplored. The variable of social capital introduced in the model takes into account a wide range of social groups women belong to and thus provides rich information about the extent to which they are integrated into society. These groups include the household, non co-resident family, job environment, rotating savings, religious group, and the village. I run two alternative models: one with the final index of social capital and the other with its disaggregated components, which are the endowments of social capital for each group. The objective is to observe if social capital influences women's autonomy and whether this impact is homogeneously distributed among different groups. For each of the two models, I run several regressions as I take into consideration 18 different types of decisions within the household. I keep these decisions separate because I acknowledge the fact that not all types of decisions have the same repercussion in terms of women empowerment. In particular, I underline the problem that arises when women are responsible for household welfare but improve it at the expenses of their own well-being. By referring to a previous study (Rammohan and Johar 2009), I thus select some of these decisions and identify women empowerment in terms of personal, economic and physical autonomy. In this sense, I observe not only if social capital has an impact on women's autonomy in decision making in general but also if this impact holds for the restricted list of decisions corresponding to women empowerment.

Results confirm that social capital has an impact on women's autonomy in decision making and that this impact is always positive but it is not only restricted to decisions that enhance women's empowerment. Focusing to social capital endowment at the group level, it is possible to observe that, when significant, household, job, Arisan and village groups always hold positive signs, whereas non co-resident and religious groups negative ones. Similarly to what happens with the index of social capital, these endowments at the group level do not have an impact exclusively on those decisions that are linked to women empowerment. These results thus indicate that social capital enhances women empowerment with two principal limits. The first limit concerns the fact that social capital improves women's autonomy also in decisions where more autonomy means more burdens and not necessarily an increase in their own well-being. The second limit is that some social capital groups play also a negative role in some decisions

identified as empowering. In this sense, social capital can be conceived as a factor that has especially a positive impact for women's own well-being but that may operates also as source of social control or social pressure, limiting women's autonomy or charging them with responsibilities for the good of household welfare.

These considerations raise in turn new questions. In the empirical research, it is necessary to better distinguish autonomy from empowerment, as the difference between the two may change substantially the interpretation of results. To take into account this question, I refer to a study that already proposed the distinction between autonomy and empowerment in Indonesian setting but the issue needs to be further developed. It is therefore also important to refer to a theoretical framework that clearly identifies these concepts. For this reason, in the literature I refer to the capability approach to welfare economics. This approach frames the investigation of social capital within a multidimensional view of agency and well-being. In this perspective, women's empowerment is investigated in terms of situated agency and social capital demonstrates to play a central role. What elements constitute well-being (women's free time, participation to work, control over savings, etc) and what is the interplay among them is a question to be developed along with empirical research to better identify which factors are especially critical. In this study, I work in this direction by focusing on this wide range of decisions and investigating those patterns that give women more autonomy, aware that some of them may increase their well-being while others may hamper it.

Conclusion

The concept of social capital captures the extent to which individuals are embedded in the social structure. Economists are in fact more and more interested in the role that networks and the related social norms play in many human activities. In development economics, in particular, social capital is a useful tool to investigate the interplay between different forms of capital, the functioning of cooperation and a wide range of welfare outcomes. Yet, both at the theoretical and empirical levels, substantial ambiguity exists about how to assess the "social" aspect of human life and what meaning to attribute to the term "capital". This thesis addresses these two questions through a new conceptual framework that clearly identifies social capital, the conditions of its accumulation, and the function that it performs. It also establishes a connection with the capability approach to welfare economics to better understand how social capital may affect individual well-being and therefore proposes an empirical investigation of the determinants of women empowerment in the household, with social capital as the main explanatory variable.

I start by looking to the wide range of definitions developed in the last decades. Despite the differences, it is possible to observe that they all link the accumulation of social capital to the fact that individuals engage in social relationship. Developing from that, I argue that social capital is constituted by the amount of expectations and obligations that are established when individuals interact and that this amount is the main responsible of the mechanism of reciprocity. This interpretation supports the idea that social capital has the main function of coordinating individuals' behaviours in order to exchange and pursue common objectives. I underline the fact that coordination among individuals lead to a wide range of outcomes both for those that are engaged in the relationship and for those that remain outside. In this sense, social capital may trigger cooperation and social solidarity as well as be the source of social pressure or cooptation. I then conclude that social capital is multidimensional and that the variety of outcomes must depend upon the characteristics of social relationships through which it is accumulated. I therefore select three characteristics of social relationships that differently shape reciprocity: the homogeneity among individuals, the frequency of contacts and the hierarchization of the relationship. The identification of these dimensions sheds a new light on the micro-foundations of social capital accumulation and on reasons behind the wide range of effects that it may generate. It permits to go beyond the "positive" interpretation of social capital as resource useful for

enhancing cooperation and improving economic welfare and illustrates, more in general, its role in the mechanism of reciprocity.

To operationalize this conceptual framework, I measure a multidimensional index of social capital at the individual level using the Indonesia Family Life Survey, a longitudinal survey run by RAND foundation. Because Indonesia is a country with a rich ethnic, religious and institutional context, this is an ideal setting for this kind of investigations. The index takes into account a wide range of social groups individuals belong to -household, non co-resident family, job environment, savings group, religious group, and village- and measures, for each of them, a set of variables that represents the homogeneity among group members, the frequency of contacts and the hierarchization of the group. This index represents a very rich source of information about the relational life of individuals. From an empirical perspective, it is possible to observe the distribution of the index across the Indonesian population as well as the one of its disaggregated components, which means the indices of social capital for each of the six groups. Descriptive analysis therefore draws the likely profile of an individual with a high endowment in social capital: an adult woman, well-educated, with children, Muslim, living in a wealthy household in an urban area, in the main island of Java. At the same time, I highlight the fact that the endowment of social capital is not homogeneous over social groups considering different individual, household and community characteristics. The final index of social capital, for example, is higher for women than men but this average hides the fact that men outperform in the job environment while maintaining lower scores in all other groups. The possibility to operationalize the concept of social capital thus improves substantially our understanding of how individuals are integrated in society. Also, the fact that individuals accumulate different types of social capital generates in turn new questions on the relationship between this endowment and other aspects of individual well-being.

To frame these questions, I turn the attention to the capability approach to welfare economics. This approach looks to individuals as agents and consequently defines well-being as the individuals' freedom to choose a meaningful life. What is central in the capability approach is that individuals' agency is determined by different personal, social or environmental factors and therefore social capital can be conceived as a factor that may enhance or constraint individuals' freedom. I suggest the idea that the capability approach is a suitable framework to investigate the interplay between social capital and well-being, especially towards a gendered perspective. The

feminist perspective in the capability approach has in fact developed analytical tools useful to understand the role of social capital in women empowerment. In this view, the social context affects women's well-being by enhancing or limiting their access to resources and by influencing the formation of their preferences. The convergence between social capital approach and the gendered perspective on capabilities thus opens to new research directions that have not been empirically investigated so far. In particular, I underline the fact that empirical applications of the capability approach do not address the relationship, yet central, between conversion factors and individuals' effective ability to choose.

For this reason, I develop an exploratory analysis on the determinants of women's autonomy in decision making in Indonesian households. This study represents a significant contribution to both social capital and capability approach. From the social capital perspective, this study goes beyond the impact of social capital at the household level to look deeper into intra-household functioning. In particular, it seems that social capital improves women's autonomy in decision making in those spheres linked to her personal, economic and physical autonomy. The positive impact is especially driven by social capital endowments linked to job environment, savings groups and the village. The positive impact of social capital on women empowerment has two principal limits. First, social capital also improves women's autonomy in decision making in spheres that may represent a burden for women. Second, the endowments of social capital linked to non co-resident family and religious group play even a negative role in women's autonomy. I then conclude that social capital is effectively a multidimensional concept as some social groups may play a resource-enhancing role while others may be more a source of social pressure. Results seem to describe, more in general, a complex set of adaptive and strategic practices that women develop in order to cope with their own well-being while improving household welfare.

This work thus develops new analytical tools to identify social capital and investigate its accumulation at the individual level. From a theoretical perspective, these tools can be useful to understand how social capital solves coordination problems through the activation of reciprocity and the interiorization of those expectations and obligations that derive from embeddedness. From an empirical perspective, the operationalization of the concept can shed a new light on the relationships between different aspects of well-being towards a better understanding of situated agency.

Appendix

Table A.1 Variables measuring social capital, per dimension (homogeneity, frequency, hierarchy) and group (household, non co-resident family, job environment, Arisan, religious group, village)

Household

Dimension	Principal composing variables	Variables
Homogeneity	nhheth "number of ethnicities in the household"	etihh "individual ethnic homogeneity in the household "
	hhindeth "individual co-ethnicity in the household"	
	nhhrel "number of religions in the household"	relihh "individual religion homogeneity in the household "
	indhhrel "individual co-religiosity in the household"	
	hhedu "education homogeneity in the household"	eduihh "individual education homogeneity in the household "
	indhedu "individual education as household members"	
	hheco "household economic homogeneity"	ecoihh "individual economic homogeneity in the household "
	indact "individual is economic active"	
	hhhsal "household homogeneity in salary"	indhhsal "individual salary homogeneity in the household "
	inhhsal "individual homogeneity with average salary in the household"	
Frequency	nhhmb "n. household members"	findhh "frequency of contacts in the household "
Hierarchy	nadmb "n. adult members"	indcen "hh member centrality "
	indrole "individual role in the hh"	

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Non co-resident family

Dimension	Principal composing variables	Variable
Homogeneity	fatedu "father education"	fathhedu "education homogeneity with non co-resident father"
	motedu "mother education"	mothhedu "education homogeneity with non co-resident mothe"
	hhchbedu " children education homogeneity"	chbhhedu " education homogeneity with non co-resident children"
	chbedu " children education"	
	indedu "individual education level"	
	fatact "father is economic active"	indactnonco " economic homogeneity with non co-resident family"
	motact "mother is economic active"	
	chbactrt " children economic homogeneity "	
	indact "individual is economic active"	
Frequency	nchb "number of non coresident children"	nnncores "number of non coresident family "
	nbp "presence of non coresident non-bio parents"	
	nsib "number of non coresident siblings"	
	nach "presence of non coresident adopted children"	
	fatres "residence distance of father"	fatres "residence distance of father"
	motres "residence distance of mother"	motres "residence distance of mother"
	chbres "residence distance of child"	chbavres "residence distance of children"
	fatcont "contacts with father"	fatcont "contacts with father"
	motcont "contacts with mother"	motcont "contacts with mother"
	chbcont "contacts with children"	chbcont "contacts with children"
	chadcont "contacts with adopted children"	chadcont "contacts with adopted children"

Dimension	Principal composing variables	Variable
	nbpcont "contacts with non biological parents"	nbpcont "contacts with non biological parents"
	chbexto "amount of exchange from respondent to children"	chbexchfr "frequency exchange btw respondent & children"
	chbexfr "amount of exchange to respondent from children"	
	fmexto "amount of exchange from respondent to parents"	fmexchfr "frequency exchange btw respondent & parents"
	fmexfr "amount of exchange to respondent from parents"	
	sibexto "amount of exchange from respondent to siblings"	sibexchfr "frequency exchange btw respondent & siblings "
	sibexfr "amount of exchange to respondent from siblings"	
	nbpexto "amount of exchange from respondent to non bio parents"	nbpexchfr "frequency exchange btw respondent & non bio parents"
	nbpexfr "amount of exchange to respondent from non bio parents"	
Hierarchy	fmammoh "hierarchy money between respondent and parents"	fmexch "hierarchy exchange btw respondent & parents"
	fmgoodh "hierarchy good between respondent and parents"	
	fmchoresh "hierarchy chores between respondent and parents"	
	sibammoh "hierarchy money between respondent and siblings"	sibexch "hierarchy exchange btw respondent & sibling "
	sibgoodh "hierarchy good between respondent and siblings"	
	sibchoresh "hierarchy chores between respondent and siblings "	
	chbammoh "hierarchy money between respondent and children"	chbexch "hierarchy exchange btw respondent & children"
	chbgoodh "hierarchy good between respondent and children"	
	chbchoresh "hierarchy chores between respondent and children"	
	nbpammoh "hierarchy money between respondent and non bio parents"	nbpexch "hierarchy exchange btw respondent & non bio parents"
	nbpgoodh "hierarchy good between respondent and non bio parents"	
	nbpchoresh "hierarchy chores between respondent and non bio parents"	

Job environment

Dimension	Principal composing variables	Variable
Homogeneity	jobs "job satisfaction"	Jobs "job satisfaction"
Frequency	tk20a "number of co-workers classes"	cowork "number of co-workers "
	tk22a "normal total week worked per year"	weekwork "week worked per year "
	relwork "need relational skill for job"	relwork "need relational skill for job "
Hierarchy	rolework "role in job"	rolework "role in job "
	imluba "individual member of a labour union or business association"	imluba "individual member of a labor union or business association "

Arisan

Dimension	Principal composing variables	Variable
Homogeneity	pm1type "type of Arisan"	arhh "homogeneity within Arisan "
Frequency	pm05a "number of people participating to Arisan"	arfr "number of participants in Arisan "
	armeet "frequency of Arisan meetings"	armeet "frequency of Arisan meetings "
	arnum "number of meetings last year"	arnum "number of meetings last year "
Hierarchy	pm1type "type of Arisan"	arhi "hierarchy within Arisan "

Religious group

Dimension	Principal composing variables	Variable
Homogeneity	hirelymus "religiosity homogeneity among muslim citizens "	irely "individual religiosity homogeneity same religion "
	hirelypro "religiosity homogeneity among protestant citizens"	
	hirelycat "religiosity homogeneity among catholic citizens"	
	hirelyhin "religiosity homogeneity among hindu citizens"	
	hirelybud "religiosity homogeneity among buddha citizens"	
	hirelycon "religiosity homogeneity among confucians citizens"	
	hirelyotr "religiosity homogeneity among other confessions citizens"	
	sdirely "individual homogeneity co-religiosity"	
	hedumus "education homogeneity among muslim citizens"	iedu "individual education homogeneity same religion "
	hedupro "education homogeneity among protestant citizens"	
	heducat "education homogeneity among catholic citizens "	
	heduhin "education homogeneity among hindu citizens"	
	hedubud "education homogeneity among buddha citizens "	
	heducon "education homogeneity among confucians citizens"	
	heduotr "education homogeneity among other confessions citizens"	
	sdiedu "individual homogeneity in education same religion"	
	hactmus "economic status homogeneity among muslim citizens"	iact "individual economic status homogeneity same religion "
	hactpro "economic status homogeneity among protestant citizens "	
	hactcat "economic status homogeneity among catholic citizens"	
	hacthin "economic status homogeneity among hindu citizens"	

Dimension	Principal composing variables	Variable
	hactbud "economic status homogeneity among buddha citizens "	
	hactcon "economic status homogeneity among confucians citizens"	
	hactotr "economic status homogeneity among other confessions citizens"	
	sdiact "indiividual homogeneity economic status same religion"	
Frequency	cmuspra "religious practice of muslim citizens"	indrelpra "individual religious practice same religion"
	ccatpra "religious practice of catholic citizens"	
	cpropra "religious practice of protestant citizens"	
	chinpra "religious practice of hindu citizens"	
	cbudpra "religious practice of buddha citizens"	
	cconpra "religious practice of confucians citizens"	
	muspra "individual religious practice"	
	catpra "individual religious practice"	
	propra "individual religious practice"	
	hinpra "individual religious practice"	
	budpra "individual religious practice"	
	conpra "individual religious practice"	
	indmainrel "individual religion same as village main religion"	indmainrel "individual religion same as village main religion "
Hierarchy	cmuspol "role of religion in politics for muslim citizens"	indrelpol "role of religion in politics for the individual same religion "
	ccatpol "role of religion in politics for catholic citizens"	
	cpropol "role of religion in politics for protestant citizens"	

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Dimension	Principal composing variables	Variable
	chinpol "role of religion in politics for hindu citizens"	
	cbudpol "role of religion in politics for buddha citizens"	
	cconpol "role of religion in politics for confucians citizens"	
	cotrpol "role of religion in politics for other citizens"	
	irelpol "role of religion in politics for the individual"	
	relmar "role of religion in marriage"	relmar "role of religion in marriage "

Village

Dimension	Principal composing variables	Variable
Homogeneity	ncideth "number of ethicities in community"	eticid "individual ethnic homogeneity in the community "
	ethcid "community ethnic homogeneity"	
	cidhrel "community religion homogeneity"	relicid "individual religion homogeneity in the community "
	indrel "individual religion"	
	cidedua "average adult community members education"	eduicid "individual education homogeneity in the community "
	cidedu "education homogeneity in the community"	
	cideco "community economic homogeneity"	ecoicid "individual economic homogeneity in the community "
	indact "individual is economic active"	
Frequency	pop "population in the village"	pop "population in the village "
	urban "village classified as urban"	urban "village classified as urban "
	nexprog "number of community projects"	nexprog "number of community projects "
	partprog "population participating to community projects"	partprog "population participating to community projects "
	indpartprog "number of projects participated by the individual"	indpartprog "number of projects participated by the individual "
	coopact "presence of activities of mutual cooperation"	coopact "presence of activities of mutual cooperation "
	comland "presence of communal lands in the village"	comland "presence of communal lands in the village "
Hierarchy	oldorg "presence of a system of community organization in the past"	oldorg "presence of a system of community organization in the past"
	consol "resolution of conflicts by formal institutions"	consol "resolution of conflicts by formal institutions "
	vhdec "village head chosen by formal institutions"	vhdec "village head chosen by formal institutions "
	igovfun "individual is a government worker"	igovfun "individual is a government worker "

Table A.2   Variables measuring social capital and corresponding questions from IFLS4, per dimension and group

Household

Dimension	Variable	Book	Code	Question	Answer
Homogeneity	individual ethnic homogeneity in the household	BK_AR1	AR15d	What is your ethnicity?	A. Jawa; B. Sunda; C. Bali; D. Batak; E. Bugis; D. Tionghoa; G. Madura; H. Sasak; I. Minang; J. Banjar;K. Bima-Dompu; L. Makassar; M. Nias; N. Palembang; O. Sumbawa; P. Toraja; Q. Betawi; R. Dayak; S. Melayu; T. Komering; U. Ambon; A1. Manado; B1. Aceh; C1. Other South Sumatera; D1. Banten; E1. Cirebon; F1. Gorontalo; G1. Kutai; V. Other
	individual religion homogeneity in the household	BK_AR1	AR15	Religion	01. Islam; 02. Protestant; 03. Catholic; 04. Hindu; 05. Budha; 07. Confucians; 95. Others
	individual education homogeneity in the household	BK_AR1	AR16	Highest Level of Schooling Attended by HHM	01. No/Not yet in school; 02. Elementary school; 03. Junior high - general; 04. Junior high - vocational; 05. Senior high - general; 06. Senior high - vocational; 11. Adult Education A; 12. Adult Education B; 13. Open University; 14. Pesantren; 15. Adult Education C; 17. School for the disabled; 60. College D1, D2, D3; 61. University S1; 62. University S2; 63. University S3; 72. Islamic Elementary School (Madrasah Ibtidaiyah); 73. Islamic Junior High School (Madrasah Tsanawiyah); 74. Islamic Senior High School (Madrasah Aliyah); 90. Kindergarten; 98. DON'T KNOW; 95. OTHERS
	individual economic homogeneity in the household	BK_AR1	AR15c	What was […]'s primary activity during the past week?	01. Working/trying to work/helping to earn income; 02. Job searching; 03. Attending school; 04. Housekeeping; 05. Retired; 07. Sick/disable; 09. On vacation/just graduated; 95. Other
	individual salary homogeneity in the household	BK_AR1	AR15b	What were the total earnings of [...] in the last 12 months?	1. └─┴─┴─┘ , └─┴─┴─┘ , └─┴─┴─┘ Rp.; 6. UNPAID FAMILY WORKER; 8.DON'T KNOW

Frequency	frequency of contacts in the household	BK_AR1	AR01a	Still living in household	0. Died; 1. Yes, HHM is still in HH; 2. Yes, HHM was in other IFLS HH in previous wave; 3. No; 5. New HHM; 11. HHM returns in current wave
Hierarchy	Individual role in the hh	BK_AR1	AR02b	Relation to household head	01. Household head; 02. Husband/Wife; 03. Child (biological); 04. Child (non-biological); 05. Son/daughter-in-law; 06. Parents; 07. Parent-in-law; 08. Sibiling; 09. Brother/Sister-in-law; 10. Grandchild; 11. Grandparent; 12. Uncle/Aunt; 13. Nephew/Niece; 14. Cousin; 15. Servant; 16. Other family; 11. Grandparent; 17. Non-family
	Individual age	BK_AR	AR09	Age now	└─┴─┴─┘

Non co-resident family

Dimension	Variable	Book	Code	Question	Answer
Homogeneity	father education	B3B_BA0	BA08p	What is the highest level of education of your father?	02. Elementary school; 03. Junior high - general; 04. Junior high - vocational; 05. Senior high - general; 06. Senior high - vocational; 11. Adult Education A; 12. Adult Education B; 13. Open University; 14. Pesantren; 15. Adult Education C; 17. School for the disabled; 60. College D1, D2, D3; 61. University S1; 62. University S2; 63. University S3; 72. Islamic Elementary School (Madrasah Ibtidaiyah); 73. Islamic Junior High School (Madrasah Tsanawiyah); 74. Islamic Senior High School (Madrasah Aliyah); 90. Kindergarten; 98. DON'T KNOW; 95. OTHERS
	mother education	B3B_BA0	BA08m	What is the highest level of education of your mother?	02. Elementary school; 03. Junior high - general; 04. Junior high - vocational; 05. Senior high - general; 06. Senior high - vocational; 11. Adult Education A; 12. Adult Education B; 13. Open University; 14. Pesantren; 15. Adult Education C; 17. School for the disabled; 60. College D1, D2, D3; 61. University S1; 62. University S2; 63. University S3; 72. Islamic Elementary School (Madrasah Ibtidaiyah); 73. Islamic Junior High School (Madrasah Tsanawiyah); 74. Islamic Senior High School (Madrasah Aliyah); 90. Kindergarten; 98. DON'T KNOW; 95. OTHERS
	biological children education homogeneity	B3B_BA6/ B4_BA6	BA68	Highest education level	02. Elementary school; 03. Junior high - general; 04. Junior high - vocational; 05. Senior high - general; 06. Senior high - vocational; 11. Adult Education A; 12. Adult Education B; 13. Open University; 14. Pesantren; 15. Adult Education C; 17. School for the disabled; 60. College D1, D2, D3; 61. University S1; 62. University S2; 63. University S3; 72. Islamic Elementary School (Madrasah Ibtidaiyah); 73. Islamic Junior High School (Madrasah Tsanawiyah); 74. Islamic Senior High School (Madrasah Aliyah); 90. Kindergarten; 98. DON'T KNOW; 95. OTHERS

individual education homogeneity with non coresident family	BK_AR1	AR16	Highest Level of Schooling Attended by HHM	01. No/Not yet in school; 02. Elementary school; 03. Junior high - general; 04. Junior high - vocational; 05. Senior high - general; 06. Senior high - vocational; 11. Adult Education A; 12. Adult Education B; 13. Open University; 14. Pesantren; 15. Adult Education C; 17. School for the disabled; 60. College D1, D2, D3; 61. University S1; 62. University S2; 63. University S3; 72. Islamic Elementary School (Madrasah Ibtidaiyah); 73. Islamic Junior High School (Madrasah Tsanawiyah); 74. Islamic Senior High School (Madrasah Aliyah); 90. Kindergarten; 98. DON'T KNOW; 95. OTHERS
father primary activity	B3B_BA 0	BA11p	Father's primary activity	01. Working/helping to earn income; 02. Job searching; 03. Attending school; 04. Housekeeping; 05. Retired; 06. At home /don't work; 07. Sick/disabled; 98. DON'T KNOW
mother primary activity	B3B_BA 0	BA11m	Mother's primary activity	01. Working/helping to earn income; 02. Job searching; 03. Attending school; 04. Housekeeping; 05. Retired; 06. At home /don't work; 07. Sick/disabled; 98. DON'T KNOW
biological children economic homogeneity	B3B_BA 6/ B4_BA6	BA80	What is/was [ ]'s primary activity now/before his/her death?	01. Working/helping to earn income; 02. Job searching; 03. Attending school; 04. Housekeeping; 05. Retired; 06. At home /don't work; 07. Sick/disabled; 98. DON'T KNOW
individual economic homogeneity with non coresident family	BK_AR1	AR15c	What was […]'s primary activity during the past week?	01. Working/trying to work/helping to earn income; 02. Job searching; 03. Attending school; 04. Housekeeping; 05. Retired; 07. Sick/disable; 09. On vacation/just graduated; 95. Other
Frequency	residence distance of father	B3B_BA 1	BA14cp	Where does […] live now/before his death?	00. In this household; 01. In the same village; 02. In the same subdistrict; 03. In the same district; 04. In the same province; 08. DON'T KNOW; 05. In another province, specify _____; 06. In another country _____

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residence distance of mother	B3B_BA 1	BA14cm	Where does […] live now/before his death?	00. In this household; 01. In the same village; 02. In the same subdistrict; 03. In the same district; 04. In the same province; 08. DON'T KNOW; 05. In another province, specify _____; 06. In another country _____
residence distance of biological children	B3B_BA 6/ B4_BA6	BA70	Where does […] live now/before died?	000. In this household; 001. In the same village; 002. In the same subdistrict; 003. In the same district; 004. In the same province; 010. Sumatera; 011. Nanggroe Aceh Darussalam; 012. North Sumatra; 013. West Sumatra; 014. Riau; 015. Jambi; 016. South Sumatra; 017. Bengkulu; 018. Lampung; 019. Bangka Belitung; 020. Riau Islands; 030. Java; 031. DKI Jakarta; 032. West Java; 033. Central Java; 034. D.I. Yogyakarta; 035. East Java; 036. Banten; 051. Bali; 052. West Nusa Tenggara; 053. East Nusa Tenggara; 060. Kalimantan; 061. West Kalimantan; 062. Central Kalimantan; 063. South Kalimantan; 064. East Kalimantan; 070. Sulawesi; 071. North Sulawesi; 072. Central Sulawesi; 073. South Sulawesi; 074. Southeast Sulawesi; 075. Gorontalo; 076. West Sulawesi; 081. Maluku; 082. North Maluku; 090. Irian; 091. West Irian Jaya; 094. Papua; 101. Malaysia; 102. Singapore; 103. Brunei Darussalam; 104. Hongkong; 105. Japan; 106. South Korea; 107. Taiwan; 108. Timor Leste; 121. Yaman; 122. Saudi Arabia; 123. Kuwait; 124. United Arab Emirates; 131. Argentina; 132. USA; 141. Australia; 151. Holland; 152. England; 998. DON'T KNOW; 995. Other
contacts with father	B3B_BA 0	BA06bp	How often have you seen your father in the last 12 months?	5. Everyday; 4. At least once per week; 3. At least once per month; 2. At least once per year; 1. Never
	B3B_BA 0	BA06bbp	How often were you in telephone contact with your father in the last 12 months?	5. Everyday; 4. At least once per week; 3. At least once per month; 2. At least once per year; 1. Never

contacts with mother	B3B_BA0	BA06bm	How often have you seen your mother in the last 12 months?	5. Everyday; 4. At least once per week; 3. At least once per month; 2. At least once per year; 1. Never
	B3B_BA0	BA06bbm	How often were you in telephone contact with your mother in the last 12 months?	5. Everyday; 4. At least once per week; 3. At least once per month; 2. At least once per year; 1. Never
contacts with biological children	B3B_BA6/ B4_BA6	BA84	How often do/did you meet with [ ] during the past year now/before his/her death?	5. Everyday; 4. At least once per week; 3. At least once per month; 2. At least once per year; 1. Never
	B3B_BA6/ B4_BA6	BA84a	How often do/did you have contact with […] by telephone during the past year now/before his/her death?	5. Everyday; 4. At least once per week; 3. At least once per month; 2. At least once per year; 1. Never
	B3B_BA6/B4_BA6	BA84b	How often do/did you have contact with […] by mail, sms, email/chatting during the past year now/before his/her death?	5. Everyday; 4. At least once per week; 3. At least once per month; 2. At least once per year; 1. Never
contacts with adopted children	B4_BX6	BX84	How often do/did you meet with [ ] during the past year now/before his/her death?	5. Everyday; 4. At least once per week; 3. At least once per month; 2. At least once per year; 1. Never
	B4_BX6	BX84a	How often do/did you have contact with […] by telephone during the past year now/before his/her death?	5. Everyday; 4. At least once per week; 3. At least once per month; 2. At least once per year; 1. Never

				How often do/did you have contact with […] by mail, sms, email/chatting during the past year now/before his/her death?	5. Everyday; 4. At least once per week; 3. At least once per month; 2. At least once per year; 1. Never
		B4_BX6	BX84b		
	contacts with non-bio parents	B3B_TF	TF03a	How often have you seen […]in the last 12 months?	5. Everyday; 4. At least once per week; 3. At least once per month; 2. At least once per year; 1. Never
		B3B_TF	TF03b	How often were you in telephone contact with […] in the last 12 months?	5. Everyday; 4. At least once per week; 3. At least once per month; 2. At least once per year; 1. Never
		B3B_TF	TF03c	How often were you in contact through email, text messages, or chatting with […]in the last 12 month	5. Everyday; 4. At least once per week; 3. At least once per month; 2. At least once per year; 1. Never
Hierarchy	assistance to/from father and mother	B3B_BA 1	BA20	What type of help did you provide to [...] in the past 12 months (before his/her death) and how much? (A. Money, loan, tuition, health care costs (including treatment); D. Value of food stuff or other goods; G. Doing household chores, or providing child care or assisting during physical recovery; H. Helping family business; V. Other)	A. ⌊⌊⌊⌊⌋ . ⌊⌊⌊⌊⌋ . ⌊⌊⌊⌊⌋ Rp.; D. ⌊⌊⌊⌊⌋ . ⌊⌊⌊⌊⌋ . ⌊⌊⌊⌊⌋ Rp.; G. ⌊⌊⌋ 03. Days 05. Months; H. ⌊⌊⌋ 03. Days 05. Months; V. .... ⌊⌊⌊⌊⌋ . ⌊⌊⌊⌊⌋ . ⌊⌊⌊⌊⌋ Rp.

	B3B_BA1	BA22	What type of help did you receive from [...] in the past 12 months (before his/her death) and how much? (A. Money, loan, tuition, health care costs (including treatment); D. Value of food stuff or other goods; G. Doing household chores, or providing child care or assisting during physical recovery; H. Helping family business; V. Other)	A. └─┴─┴─┘ . └─┴─┴─┘ . └─┴─┴─┘ Rp.; D. └─┴─┴─┘ . └─┴─┴─┘ . └─┴─┴─┘ Rp.; G. └─┴─┘ 03. Days 05. Months; H. └─┴─┘ 03. Days 05. Months; V. .... └─┴─┴─┘ . └─┴─┴─┘ . └─┴─┴─┘ Rp.
assistance from/to siblings	B3B_BA4	BA55	What type of help did you (or your spouse) provide to the siblings during the past 12 months and how much?	A. └─┴─┴─┘ . └─┴─┴─┘ . └─┴─┴─┘ Rp.; D. └─┴─┴─┘ . └─┴─┴─┘ . └─┴─┴─┘ Rp.; G. └─┴─┘ 03. Days 05. Months; H. └─┴─┘ 03. Days 05. Months; V. .... └─┴─┴─┘ . └─┴─┴─┘ . └─┴─┴─┘ Rp.
	B3B_BA4	BA57	What type of help did you (or your spouse) receive from the siblings during the past 12 months and how much?	A. └─┴─┴─┘ . └─┴─┴─┘ . └─┴─┴─┘ Rp.; D. └─┴─┴─┘ . └─┴─┴─┘ . └─┴─┴─┘ Rp.; G. └─┴─┘ 03. Days 05. Months; H. └─┴─┘ 03. Days 05. Months; V. .... └─┴─┴─┘ . └─┴─┴─┘ . └─┴─┴─┘ Rp.
asistance to/from biological children	B3B_BA6/ B4_BA6	BA88	What type of assistance did you provide and what is the value?	A. └─┴─┴─┘ . └─┴─┴─┘ . └─┴─┴─┘ Rp.; D. └─┴─┴─┘ . └─┴─┴─┘ . └─┴─┴─┘ Rp.; G. └─┴─┘ 03. Days 05. Months; H. └─┴─┘ 03. Days 05. Months; V. .... └─┴─┴─┘ . └─┴─┴─┘ . └─┴─┴─┘ Rp.

		B3B_BA 6/ B4_BA6	BA90	What type of assistance did you receive and what is the value?	A. └──┴──┘ . └──┴──┘ . └──┴──┘ Rp.; D. └──┴──┘ . └──┴──┘ . └──┴──┘ Rp.; G. └──┘ 03. Days 05. Months; H. └──┘ 03. Days 05. Months; V. .... └──┴──┘ . └──┴──┘ . └──┴──┘ Rp.
assistance from/to non-bio parents	B3B_TF	TF04	What type of help did you provide to […] during the past 12 months and how much?	A. └──┴──┘ . └──┴──┘ . └──┴──┘ Rp.; D. └──┴──┘ . └──┴──┘ . └──┴──┘ Rp.; G. └──┘ 03. Days 05. Months; H. └──┘ 03. Days 05. Months; V. .... └──┴──┘ . └──┴──┘ . └──┴──┘ Rp.
	B3B_TF	TF06	What type of help did you receive from […] during the past 12 months and how much?	A. └──┴──┘ . └──┴──┘ . └──┴──┘ Rp.; D. └──┴──┘ . └──┴──┘ . └──┴──┘ Rp.; G. └──┘ 03. Days 05. Months; H. └──┘ 03. Days 05. Months; V. .... └──┴──┘ . └──┴──┘ . └──┴──┘ Rp.

Job environment

Dimension	Variable	Book	Code	Question	Answer
Homogeneity	Job satisfaction	B3A_TK 2	TK16c1	How satisfied are you with your current job?	Very satisfied............................. 1 Satisfied .... 2 Unsatisfied .... 3 Very unsatisfied........................ 4
Frequency	number of workers	B3A_TK 2	TK20aA	How many people work at your firm?	1. └─┴─┘ , └─┴─┴─┘ Persons; 8. DON'T KNOW
		B3A_TK 2	TK20aB	Is it (1-4, 5-19, 20-99, +100)	1. 1- 4 people; 2. 5-19 people; 3. 20-99 people; 4. ≥ 100 people
	hours worked	B3A_TK 2	TK23A	Number of weeks worked per year ?	└─┴─┴─┘ Weeks/Year
	job requiring relational skills	B3A_TK 2	TK26A10	My job requires skill in dealing with people.	1. All/Almost all the time; 2. Most of the time; 3. Some of the time; 4. None/Almost none of the time
Hierarchy	job responsability	B3A_TK 2	TK24A	Which category best describes the work that you do?	01. Self employed; 02. Self-employed with unpaid family worker/temporary worker; 03. Self-employed with permanent worker; 04. Government worker; 05. Private worker; 07. Casual worker in agriculture; 08. Casual worker not in agriculture; 06. Unpaid family worker
	member labour union/business association	B3A_TK 2	TK23A4	Are you a member of a labor union or a business association?	1. Yes; 3. No

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Arisan

Dimension	Variable	Book	Code	Question	Answer
Homogeneity	type of Arisan	B3B_PM 2	PM1T YPE	Type of Arisan	01. Office; 02. RT (sub-neighborhood); 03. RW (neighborhood); 04. Village; 05. Dharma Wanita/Dharma Pertiwi (Wives of civil servant/military); 06. PKK; 07. Market; 08. Family; 09. Religious group; 12. Friend; 13. Retirees; 14. Farmers group; 15. Youth group; 16. Motorcycle Arisan; 95. Other
Frequency	number of participants in Arisan	B3B_PM 2	PM05a	How many people normally participate in this Arisan?	└─┴─┴─┘
	frequency of meetings	B3B_PM 2	PM03	What is the interval between meetings of the [...] Arisan ?	Every : └─┴─┘ 03. Days 04. Weeks 05. Months 06. Years
	number of meetings	B3B_PM 1	PM01c	How many Arisan meetings did you attend in the last 12 months	└─┴─┘ Meetings
Hierarchy	type of Arisan	B3B_PM 2	PM1T YPE	Type of Arisan	01. Office; 02. RT (sub-neighborhood); 03. RW (neighborhood); 04. Village; 05. Dharma Wanita/Dharma Pertiwi (Wives of civil servant/military); 06. PKK; 07. Market; 08. Family; 09. Religious group; 12. Friend; 13. Retirees; 14. Farmers group; 15. Youth group; 16. Motorcycle Arisan; 95. Other

Religious group

Dimension	Variable	Book	Code	Question	Answer
Homogeneity	religiosity homogeneity among coreligious members of community	B3A_TR	TR11	How religious are you?	1. Very religious. 2. Religious. 3. Somewhat religious. 4. Not religious. 7. REFUSED
		BK_AR1	AR15	Religion	01. Islam; 02. Protestant; 03. Catholic; 04. Hindu; 05. Budha; 07. Confucians; 95. Others
	individual religiosity homogeneity same religion	B3A_TR	TR11	How religious are you?	1. Very religious. 2. Religious. 3. Somewhat religious. 4. Not religious. 7. REFUSED
		BK_AR1	AR15	Religion	01. Islam; 02. Protestant; 03. Catholic; 04. Hindu; 05. Budha; 07. Confucians; 95. Others
	individual education homogeneity same religion	BK_AR1	AR16	Highest Level of Schooling Attended by HHM	01. No/Not yet in school; 02. Elementary school; 03. Junior high - general; 04. Junior high - vocational; 05. Senior high - general; 06. Senior high - vocational; 11. Adult Education A; 12. Adult Education B; 13. Open University; 14. Pesantren; 15. Adult Education C; 17. School for the disabled; 60. College D1, D2, D3; 61. University S1; 62. University S2; 63. University S3; 72. Islamic Elementary School (Madrasah Ibtidaiyah); 73. Islamic Junior High School (Madrasah Tsanawiyah); 74. Islamic Senior High School (Madrasah Aliyah); 90. Kindergarten; 98. DON'T KNOW; 95. OTHERS
	individual economic status homogeneity same religion	BK_AR1	AR15c	What was […]'s primary activity during the past week?	01. Working/trying to work/helping to earn income; 02. Job searching; 03. Attending school; 04. Housekeeping; 05. Retired; 07. Sick/disable; 09. On vacation/just graduated; 95. Other

Frequency	religious practice of coreligious members of community	B3A_TR	TR12	What is your religion?	1. Islam; 2. Catholic; 3. Protestant; 4. Hindu; 5. Budha; 6. Konghucu; 96. NOT APPLICABLE
		B3A_TR	TR13	How many times do you How many times do you pray each day?	1. ⎣_⎦ times; 2. Not every day; 3. Do not practice; 7. REFUSED
		B3A_TR	TR14	Do you only eat/drink halal food?	1. YES; 3. No
		B3A_TR	TR15	How often do you pray/read the bible?	1. Before each activities; 2. Morning and evening; 3. Once a day; 4. Sometimes; 5. Do not practice; 7. REFUSED
		B3A_TR	TR16	Do you actively participate in religious activities such as prayer fellowship, etc?	1. YES; 3. No
		B3A_TR	TR17	Do you practice risadya/meditation/ yoga/ or pray in pura/sanggah/merajan/candi?	1. Every day; 2. During kajeng kliwon/full moon/tilem; 3. On holy days; 4. Don't practice; 6. Sometimes; 7. REFUSED
		B3A_TR	TR18	Do you observe a certain diet for spiritual reason?	1. Yes, vegetarian/mutih; 2. Yes, don't eat animals except fish; 3. Yes, don't eat read meat; 4. Yes, don't eat beefi; 5. Yes, other dietary resriction ; 6. No dietary restriction
		B3A_TR	TR19	Do you practice pujamantra/meditation/ to Vihara/ or in temple?	1. Every day; 2. Every week/every 1st or 15th of the month According to Chinese calendar; 3. Don't practice; 6. Sometimes; 7. REFUSED
		B3A_TR	TR20	Are you a vegetarian?	1. YES; 3. No
		B3A_TR	TR21	Do you pray/perform rituals?	1. Every day; 2. Every week; 3. No; 6. Sometimes; 7. REFUSED

		B3A_TR	TR22	Do you practice individual development according to your faith?	1. YES; 3. No
	individual religion same as village main religion	ADT	KD15	What is the most common religion in this village?	01. Islam; 02. Protestant; 03. Catholic; 04. Hindu; 05. Budha; 07. Confucians; 95. Others
		B3A_TR	TR12	What is your religion?	1. Islam; 2. Catholic; 3. Protestant; 4. Hindu; 5. Budha; 6. Konghucu; 96. NOT APPLICABLE
Hierarchy	role of religion in politics for the individual same religion	B3B_PM1	PM26	What factors do you consider in electing a Bupate/Mayor?	a. Appearance 1. Yes 3. No; b. Popularity 1. Yes 3. No; c. Quality of the program 1. Yes 3. No; d. Political affiliation 1. Yes 3. No; e. Faith/religion 1. Yes 3. No; f. Ethnicity 1. Yes 3. No; g. Experience in governance 1. Yes 3. No; h. Gender 1. Yes 3. No; i. Gifts ("transport money") 1. Yes 3. No
		B3B_PM1	PM27	Mention the three most important factors you consider in electing a Bupati/Mayor .	a. First ⌐⌐ ; b. Second ⌐⌐ ; c. Third ⌐⌐
	role of religion in marriage same religion	BK_AR1	AR07	Sex	1. male; 2. girl
		ADT_AP1	AP01b	Can a […] be married with someone from a different religion? (Man; Woman)	1. Yes; 3. No

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Dimension	Variable	Book	Code	Question	Answer
Homogeneity	community ethnic homogeneity	BK_AR1	AR15d	What is your ethnicity?	A. Jawa; B. Sunda; C. Bali; D. Batak; E. Bugis; D. Tionghoa; G. Madura; H. Sasak; I. Minang; J. Banjar;K. Bima-Dompu; L. Makassar; M. Nias; N. Palembang; O. Sumbawa; P. Toraja; Q. Betawi; R. Dayak; S. Melayu; T. Komering; U. Ambon; A1. Manado; B1. Aceh; C1. Other South Sumatera; D1. Banten; E1. Cirebon; F1. Gorontalo; G1. Kutai; V. Other
	individual religion homogeneity in the community	BK_AR1	AR15	Religion	01. Islam; 02. Protestant; 03. Catholic; 04. Hindu; 05. Budha; 07. Confucians; 95. Others
	individual education homogeneity in the community	BK_AR1	AR16	Highest Level of Schooling Attended by HHM	01. No/Not yet in school; 02. Elementary school; 03. Junior high - general; 04. Junior high - vocational; 05. Senior high - general; 06. Senior high - vocational; 11. Adult Education A; 12. Adult Education B; 13. Open University; 14. Pesantren; 15. Adult Education C; 17. School for the disabled; 60. College D1, D2, D3; 61. University S1; 62. University S2; 63. University S3; 72. Islamic Elementary School (Madrasah Ibtidaiyah); 73. Islamic Junior High School (Madrasah Tsanawiyah); 74. Islamic Senior High School (Madrasah Aliyah); 90. Kindergarten; 98. DON'T KNOW; 95. OTHERS
	community economic homogeneity	BK_AR1	AR15c	What was […]'s primary activity during the past week?	01. Working/trying to work/helping to earn income; 02. Job searching; 03. Attending school; 04. Housekeeping; 05. Retired; 07. Sick/disable; 09. On vacation/just graduated; 95. Other
Frequency	population	BK2	S31	What is the total male, female, population in this village/township?	a. └┴┴┴┘ , └┴┴┴┘ Total population; b. └┴┴┴┘ , └┴┴┘ Male population; c. └┴┴┴┘ , └┴┴┘ Female population
	urban/rural	BK2	LK05	Status of area: urban or rural	1. URBAN; 2. RURAL

presence of community projects	BK1_PM KD	PMKD 2	In this village is [...] program or activity conducted?	(Cooperative, Youth Group, Village Mobile Library, Village Mobile Library, Community public works, Activities associated with IDT Programs, Program Perbaikan Kampung (Kampung Improvement Program/KIP/Proyek MHT), Infrastructure Development Program for Underdeveloped Village (P3DT) , Water Management System (drinking/cooking and bathing/washing), Solid Waste Management System) 3. It has never been conducted; 1. It is presently conducted on a routine basis; 2. It has been conducted, but presently it is not conducted in a routine manner
participation in community projects	BK1_PM KD	PMKD 4	Approximately how many people from this community are members/users of this […] program?	1. < 25 %; 2. 25-75 %; 3. > 75 %
individual participation in community projects	B3B_PM 3	PM16	During the last 12 months did you participate in or use […]?	A. Community Meeting; B. Cooperatives; C. Voluntary Labor; D. Program to Improve the Village/Neighborhood; N. Youth Groups Activity; O. Religious Activities; P. Village library; Q. Village Savings and Loans; R. Health Fund; E. Neighbourhood Security Organization; F1. Water for Drinking System/Supply; H. System for garbage disposal; I. Women's Association Activities (PKK); J. Community Weighing Post (Posyandu)
other community projects	ADT	FG03a	What are the activities in this village that uses the principal of mutual cooperation?	(a. Construction of places of worship ; Construction of house for extended family ; c. Construction of house for individual family; d. Construction of public infrastructure; e. Village cleanliness; f. Deaths/funerals; g. Weddings) 1. Yes; 3. No
adat rules on common land	ADT_D G1	DG01	Is there a communal land or land owned by the community in this village? (A. According to traditional law; B. Common practice now)	1. Yes; 3. No

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Hierarchy	previous community organization	ADT	GO01	Was there a system of community organization before the current RT/RW system?	1. Yes; 3. No; 8. Don't know
	participation in conflict solving	ADT	FG21	Who resolves conflicts between families/members of the community?	01. Community figure/"adat" figure; 02. Religious figure; 03. All village residents; 04. Villlage official ; 05. Families involved in conflict; 95. Other; w. NONE
	decision making to choose village head	ADT	FG20	What is the decision making process used to choose the village head?	01. Consensus building among all village residents; 02. Local elites decide ; 03. Local institutions decide; 04. Voting; 05. Appointed by government; 95. Other
	role in goverment	B3A_TK 2	TK24A	Which category best describes the work that you do?	01. Self employed; 02. Self-employed with unpaid family worker/temporary worker; 03. Self-employed with permanent worker; 04. Government worker; 05. Private worker; 07. Casual worker in agriculture; 08. Casual worker not in agriculture; 06. Unpaid family worker

Table A.3   Summary statistics for social capital variables, per dimension and group

Group	Social Capital Dimension	Variable	Obs	Mean	Std. Dev.	Min	Max
Household	Homogeneity	etihh	20960	93.88527	16.45156	19.44444	100
		relihh	20960	99.27354	5.979914	33.56907	100
		eduihh	20960	59.4351	25.5203	17.5	100
		ecoihh	20960	44.96725	22.42926	0	100
		indhhsal	20960	75.91664	13.70077	0	100
	Frequency	findhh	20960	21.55057	10.94157	5.882353	100
	Hierachy		20960	26.89444	10.3237	3.703704	100	100
Non co-resident family	Homogeneity	fathhedu	20960	.1985687	.398932	0	1
		mothhedu	20960	.1337309	.3403711	0	1
		chbhhedu	20960	1.104817	6.64604	0	100
		indactnonco	20960	18.05377	35.81582	0	100
	Frequency	nnoncores	20960	4.754819	3.022484	0	29
		fatres	20960	37.56123	42.19899	0	100
		motres	20960	37.73219	42.52557	0	100
		chbavres	20960	3.063519	11.68893	0	100
		fatcont	20960	19.02937	27.40272	0	100
		motcont	20960	24.99788	29.04193	0	100
		chbcont	20960	1.725116	7.634706	0	100
		chadcont	20960	.3234361	2.880375	0	100
		nbpcont	20960	3.162666	9.666848	0	100
		chbexchfr	20960	.7904405	4.003137	0	100
		nbpexchfr	20960	19.63502	20.89422	0	100
		fmexchfr	20960	16.43845	22.47917	0	100
		sibexchfr	20960	17.88486	19.72209	0	100

Group	Social Capital Dimension	Variable	Obs	Mean	Std. Dev.	Min	Max
	Hierachy	chbexch	20960	2.614151	9.494487	0	100
		nbpexch	20960	18.69594	18.02022	0	100
		fmexch	20960	16.81518	17.12969	0	100
		sibexch	20960	9.047221	15.10964	0	100
Job	Homogeneity	jobs	20960	.3876431	.2595933	0	1
	Frequency	cowork	20960	183.3104	1267.42	0	35000
		weekwork	20960	29.81179	22.19248	0	52
		relwork	20960	43.75954	39.7093	0	100
	Hierachy	imluba	20960	.052958	.223955	0	1
		rolework	20960	37.62583	31.66392	0	100
Arisan	Homogeneity	arhh1	20960	14.27004	30.75876	0	100
		arhh2	20960	3.888359	17.54344	0	100
		arhh3	20960	1.346613	10.65088	0	100
		arhh4	20960	.4305821	6.04344	0	100
	Frequency	arnum	20960	4.684065	12.66687	0	96
		armeet1	20960	6.632846	22.42517	0	365
		armeet2	20960	1.484419	10.50741	0	365
		armeet3	20960	.4115902	5.063549	0	365
		armeet4	20960	.1938372	5.442816	0	365
		arfr1	20960	10.55239	31.2676	0	800
		arfr2	20960	2.848616	18.46354	0	900
		arfr3	20960	.9836355	12.77842	0	720
		arfr4	20960	.2636927	4.592428	0	234
	Hierachy	arhi1	20960	14.0947	28.95178	0	100

Group	Social Capital Dimension	Variable	Obs	Mean	Std. Dev.	Min	Max
		arhi2	20960	3.888359	17.54344	0	100
		arhi3	20960	1.346613	10.65088	0	100
		arhi4	20960	.4305821	6.04344	0	100
Religious group	Homogeneity	irely	20960	89.21154	6.885545	55.83521	100
		iedu	20960	47.64431	11.42933	0	100
	Frequency	iact	20960	53.41148	8.418622	37.5	100
		indrelpra	20960	92.49054	13.64669	13.54167	100
		indmainrel	20960	.9511927	.21547	0	1
	Hierachy	indrelpol	20960	48.68003	18.51928	4.166667	100
		relmar	20960	.8298664	.3757591	0	1
Village	Homogeneity	eticid	20960	79.11069	20.25322	.1057082	100
		relicid	20960	87.71385	18.68288	2.027027	100
		eduicid	20960	24.58218	20.80556	0	100
		ecoicid	20960	54.05075	14.16645	16.66667	100
	Frequency	pop	20960	9434.805	13513.02	260	206000
		urban	20960	.4932252	.499966	0	1
		nexprog	20960	16.51202	5.897267	0	31
		partprog	20960	43.94097	17.53908	0	100
		indpartprog	20960	1.712786	1.583875	0	11
		coopact	20960	5.837214	1.145142	1	7
		comland	20960	.300334	.4584141	0	1
	Hierachy	oldorg	20960	.4699905	.4991105	0	1
		consol	20960	69.4313	32.47186	0	100
		vhdec	20960	50.7605	26.51928	20	100
		igovfun	20960	.0507634	.2195193	0	1

Table A.4   Marginal effects. Probit model(s) with social capital index (1)

VARIABLES	Exp. food	Choice food	Routine exp	W clothes	M clothes	Ch. education	Ch. health	Ch. clothes	Large exp.
Social capital	0.011	0.004	0.014**	0.027***	0.024***	0.022***	0.073***	0.008*	0.000
	(0.007)	(0.007)	(0.007)	(0.007)	(0.006)	(0.006)	(0.027)	(0.005)	(0.003)
Age	0.002*	0.002**	0.002**	0.002	0.002**	-0.001	0.008**	0.001*	0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.004)	(0.001)	(0.001)
Education	0.002	-0.032***	-0.014*	-0.020**	-0.039***	-0.020***	-0.119***	-0.016***	-0.002
	(0.008)	(0.008)	(0.008)	(0.008)	(0.007)	(0.007)	(0.031)	(0.005)	(0.004)
HH assets per adult (log)	0.001	-0.009*	-0.005	0.001	-0.005	-0.005	-0.036*	-0.007**	-0.002
	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)	(0.018)	(0.003)	(0.002)
N. of children	-0.005	0.009	-0.011	-0.027**	-0.002	0.014	-0.047	-0.005	0.001
	(0.012)	(0.012)	(0.012)	(0.013)	(0.011)	(0.011)	(0.046)	(0.008)	(0.006)
N. of adult woman	-0.054***	-0.057***	-0.037***	0.004	-0.002	-0.028***	-0.082*	-0.004	0.005
	(0.011)	(0.010)	(0.011)	(0.011)	(0.010)	(0.010)	(0.044)	(0.007)	(0.005)
Age difference	-0.001	-0.001	-0.002	-0.003*	-0.002	-0.001	-0.002	0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.005)	(0.001)	(0.001)
Education difference	0.003	0.007	0.015*	0.026***	0.032***	0.021***	0.108***	0.015***	0.009**
	(0.008)	(0.008)	(0.008)	(0.009)	(0.007)	(0.007)	(0.033)	(0.005)	(0.004)
Spouse is economic active (d)	-0.003	0.008	-0.026	-0.032	-0.003	0.007	-0.067	-0.011	-0.020*
	(0.029)	(0.028)	(0.029)	(0.030)	(0.025)	(0.026)	(0.103)	(0.017)	(0.011)
02. Sundanese	0.006	0.014	0.021	0.043	0.033	0.038	0.044	-0.009	-0.007
	(0.029)	(0.027)	(0.028)	(0.031)	(0.027)	(0.027)	(0.119)	(0.017)	(0.013)
03. Bali	-0.050	-0.021	-0.181**	-0.043	0.052	-0.025	0.380	0.058	0.069**
	(0.083)	(0.079)	(0.086)	(0.083)	(0.082)	(0.066)	(0.319)	(0.067)	(0.034)
04. Batak	-0.015	0.099**	0.096**	0.109**	0.142***	0.149***	0.512***	0.095**	0.038
	(0.050)	(0.041)	(0.045)	(0.052)	(0.050)	(0.050)	(0.178)	(0.046)	(0.030)
05. Bugis	0.066	-0.020	0.039	-0.030	0.033	-0.029	-0.058	0.017	-0.012
	(0.057)	(0.059)	(0.058)	(0.062)	(0.054)	(0.048)	(0.226)	(0.041)	(0.022)

VARIABLES	Exp. food	Choice food	Routine exp	W clothes	M clothes	Ch. education	Ch. health	Ch. clothes	Large exp.
07. Maduranese	0.010	0.011	-0.084*	-0.118***	-0.105***	-0.051	-0.286	-0.045**	0.002
	(0.046)	(0.045)	(0.047)	(0.041)	(0.027)	(0.033)	(0.180)	(0.018)	(0.021)
08. Sasak	-0.023	-0.173*	-0.021	0.051	-0.088	-0.007	0.089	0.000	-0.020
	(0.085)	(0.091)	(0.085)	(0.092)	(0.079)	(0.106)	(0.750)	(0.000)	(0.028)
09. Minang	-0.072	-0.061	0.088*	0.042	0.062	0.021	0.070	0.013	-0.002
	(0.060)	(0.057)	(0.052)	(0.061)	(0.057)	(0.054)	(0.221)	(0.040)	(0.023)
10. Banjar	-0.146**	-0.185***	-0.152**	-0.108*	-0.093*	-0.089**	0.065	-0.055**	-0.037**
	(0.064)	(0.064)	(0.064)	(0.061)	(0.049)	(0.042)	(0.278)	(0.026)	(0.015)
11. Bima-Dompu	0.013	-0.063	0.029	0.042	-0.103	0.096	0.540	0.013	0.027
	(0.084)	(0.089)	(0.083)	(0.093)	(0.078)	(0.110)	(0.466)	(0.048)	(0.037)
12. Makasar	0.170***	0.147**	0.130*	0.135*	0.140*	0.087	0.232	0.105	0.024
	(0.066)	(0.060)	(0.068)	(0.081)	(0.077)	(0.074)	(0.256)	(0.067)	(0.037)
17. Betawi	0.044	-0.001	0.066	0.100**	0.019	0.064	0.107	0.025	0.002
	(0.042)	(0.041)	(0.041)	(0.046)	(0.039)	(0.040)	(0.158)	(0.028)	(0.019)
25. Other Southern Sumatrans	-0.010	-0.005	-0.074	-0.001	-0.044	0.027	0.265	0.021	-0.004
	(0.046)	(0.044)	(0.047)	(0.048)	(0.036)	(0.043)	(0.168)	(0.031)	(0.020)
27. Cirebon	0.114***	0.106***	0.136***	0.171***	0.175***	0.113**	0.245	-0.005	-0.016
	(0.042)	(0.038)	(0.040)	(0.047)	(0.049)	(0.047)	(0.176)	(0.028)	(0.020)
Other ethnicities	0.002	-0.065*	-0.018	0.071*	0.024	0.038	0.200	0.023	0.017
	(0.037)	(0.037)	(0.037)	(0.039)	(0.034)	(0.034)	(0.140)	(0.025)	(0.019)
North Sumatra (d)	0.058	0.101**	0.135***	0.145***	0.080**	0.073*	0.057	-0.028	0.010
	(0.045)	(0.043)	(0.043)	(0.045)	(0.039)	(0.042)	(0.169)	(0.029)	(0.019)
West Sumatra (d)	-0.049	0.024	-0.111*	0.001	-0.031	-0.029	-0.159	-0.048	0.004
	(0.058)	(0.056)	(0.057)	(0.057)	(0.042)	(0.047)	(0.205)	(0.030)	(0.022)
South Sumatra	-0.038	-0.030	0.064	0.021	0.086**	0.000	-0.097	-0.036	0.015
	(0.048)	(0.048)	(0.047)	(0.046)	(0.042)	(0.041)	(0.172)	(0.028)	(0.023)
Lampung	0.232***	0.153***	0.221***	0.021	0.083**	-0.044	-0.039	-0.014	0.010
	(0.035)	(0.036)	(0.035)	(0.038)	(0.033)	(0.032)	(0.149)	(0.026)	(0.017)

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VARIABLES	Exp. food	Choice food	Routine exp	W clothes	M clothes	Ch. education	Ch. health	Ch. clothes	Large exp.
Jakarta	0.183***	0.138***	0.152***	0.228***	0.118***	0.164***	0.342***	0.032	0.045**
	(0.035)	(0.034)	(0.035)	(0.036)	(0.033)	(0.035)	(0.123)	(0.026)	(0.020)
Central Java	0.140***	0.128***	0.081**	0.019	0.075***	0.001	-0.224*	-0.045**	0.013
	(0.033)	(0.032)	(0.033)	(0.033)	(0.028)	(0.029)	(0.135)	(0.021)	(0.015)
Yogyakarta	0.168***	0.108***	0.132***	0.052	-0.026	-0.026	-0.260	-0.056**	0.002
	(0.041)	(0.040)	(0.041)	(0.043)	(0.032)	(0.036)	(0.174)	(0.024)	(0.018)
East Java	0.277***	0.231***	0.280***	0.155***	0.174***	0.111***	0.104	0.008	0.000
	(0.030)	(0.030)	(0.030)	(0.033)	(0.030)	(0.031)	(0.128)	(0.024)	(0.014)
Bali	-0.005	0.019	0.148*	0.157*	-0.036	0.080	-0.355	-0.079**	-0.026**
	(0.087)	(0.084)	(0.080)	(0.082)	(0.062)	(0.078)	(0.316)	(0.032)	(0.013)
West Nusa Tenggara	0.081	0.192***	0.071	-0.013	-0.120**	-0.229***	-1.470***	-0.109***	-0.036***
	(0.084)	(0.070)	(0.084)	(0.086)	(0.052)	(0.026)	(0.554)	(0.018)	(0.011)
South Kalimantan	0.107*	0.081	0.120**	0.230***	-0.068	0.082	-0.553**	-0.059*	-0.005
	(0.059)	(0.057)	(0.057)	(0.057)	(0.042)	(0.055)	(0.253)	(0.031)	(0.024)
South Sulawesi	0.176***	0.155***	0.167***	0.211***	0.139**	0.198***	0.614***	0.082	0.134**
	(0.063)	(0.059)	(0.062)	(0.064)	(0.062)	(0.065)	(0.222)	(0.058)	(0.056)
Observations	5,091	5,091	5,091	5,091	5,091	5,091	5,091	4,876	5,091

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A.5   Marginal effects. Probit model(s) with social capital index (2)

VARIABLES	W. family	M. family	Gifts	Arisan	Savings	M. free time	W. free time	Work	Contraception
Social capital	0.001	0.002	0.008*	0.056***	0.017***	0.002	0.001	-0.001	0.008
	(0.004)	(0.003)	(0.004)	(0.005)	(0.004)	(0.004)	(0.007)	(0.003)	(0.006)
Age	0.001**	0.002***	0.002**	0.001	-0.000	0.001	0.001	0.001*	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)
Education	-0.008**	-0.006*	-0.010**	0.009	0.006	-0.006	-0.019**	-0.004	-0.012*
	(0.004)	(0.004)	(0.005)	(0.006)	(0.004)	(0.004)	(0.007)	(0.004)	(0.006)
HH assets per adult (log)	-0.003	-0.003	-0.002	0.003	0.006**	-0.006**	-0.006	-0.004*	-0.007*
	(0.002)	(0.002)	(0.003)	(0.004)	(0.003)	(0.003)	(0.005)	(0.002)	(0.004)
N. of children	-0.001	0.002	-0.009	-0.039***	-0.013*	0.000	0.001	0.012**	-0.002
	(0.006)	(0.006)	(0.008)	(0.009)	(0.007)	(0.007)	(0.012)	(0.005)	(0.010)
N. of adult woman	0.003	0.003	-0.001	-0.010	-0.001	0.007	-0.007	-0.002	0.024***
	(0.006)	(0.005)	(0.007)	(0.008)	(0.006)	(0.006)	(0.010)	(0.005)	(0.009)
Age difference	-0.001	-0.000	-0.001	0.002*	-0.001	0.000	0.001	-0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Education difference	0.011**	0.007*	0.011**	-0.000	0.001	0.008*	0.000	-0.002	0.005
	(0.004)	(0.004)	(0.005)	(0.006)	(0.005)	(0.005)	(0.008)	(0.004)	(0.007)
Spouse is economic active (d)	-0.026**	-0.020*	-0.026*	0.022	-0.003	0.017	-0.035	-0.034***	-0.005
	(0.013)	(0.011)	(0.015)	(0.020)	(0.016)	(0.016)	(0.027)	(0.011)	(0.023)
02. Sundanese	0.016	-0.007	0.029	0.035	0.004	0.016	-0.054**	-0.020**	-0.030
	(0.016)	(0.011)	(0.019)	(0.022)	(0.016)	(0.016)	(0.027)	(0.010)	(0.022)
03. Bali	0.054	0.118**	0.011	0.041	0.018	0.036	-0.148**	0.066	-0.004
	(0.040)	(0.050)	(0.050)	(0.058)	(0.048)	(0.050)	(0.060)	(0.060)	(0.068)
04. Batak	0.082**	0.077**	0.018	0.097**	0.035	0.015	0.046	-0.032***	-0.020
	(0.038)	(0.039)	(0.035)	(0.047)	(0.038)	(0.032)	(0.051)	(0.012)	(0.050)
05. Bugis	-0.019	0.037	-0.016	-0.018	0.039	0.028	-0.062	0.109**	-0.030
	(0.022)	(0.039)	(0.029)	(0.036)	(0.039)	(0.036)	(0.053)	(0.053)	(0.044)

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VARIABLES	W. family	M. family	Gifts	Arisan	Savings	M. free time	W. free time	Work	Contraception
07. Maduranese	-0.040***	-0.022*	-0.060***	-0.103***	-0.037**	-0.025	0.060	-0.014	-0.016
	(0.012)	(0.012)	(0.017)	(0.015)	(0.015)	(0.016)	(0.041)	(0.015)	(0.031)
08. Sasak	0.124	0.000	-0.025	0.036	0.079	0.051	-0.007	0.084	-0.020
	(0.135)	(0.000)	(0.061)	(0.082)	(0.094)	(0.058)	(0.088)	(0.054)	(0.065)
09. Minang	0.002	0.009	0.022	0.128**	0.055	0.082	0.172***	0.060	-0.014
	(0.026)	(0.026)	(0.036)	(0.057)	(0.046)	(0.059)	(0.065)	(0.041)	(0.057)
10. Banjar	-0.027	-0.027	-0.042*	0.014	0.015	0.097	-0.124***	0.045	-0.048
	(0.021)	(0.017)	(0.024)	(0.047)	(0.055)	(0.061)	(0.046)	(0.083)	(0.048)
11. Bima-Dompu	0.034	0.000	0.061	0.067	0.050	-0.014	0.118	0.007	-0.014
	(0.092)	(0.000)	(0.081)	(0.084)	(0.079)	(0.035)	(0.096)	(0.039)	(0.067)
12. Makasar	0.046	0.098	0.079	0.111*	0.012	0.013	0.056	0.111	0.011
	(0.046)	(0.066)	(0.058)	(0.064)	(0.041)	(0.045)	(0.078)	(0.073)	(0.062)
17. Betawi	0.011	0.015	0.026	0.072**	0.021	0.003	0.043	-0.002	0.059
	(0.023)	(0.022)	(0.028)	(0.034)	(0.024)	(0.021)	(0.042)	(0.016)	(0.037)
25. Other Southern Sumatrans	-0.018	-0.009	-0.010	-0.033	-0.027	0.019	0.016	-0.013	-0.013
	(0.020)	(0.019)	(0.027)	(0.027)	(0.020)	(0.026)	(0.046)	(0.017)	(0.037)
27. Cirebon	-0.004	-0.017	-0.017	0.051	0.002	-0.024	-0.196***	-0.035***	-0.195***
	(0.026)	(0.016)	(0.028)	(0.040)	(0.029)	(0.018)	(0.035)	(0.012)	(0.015)
Other ethnicities	-0.005	0.005	0.017	0.025	0.010	0.029	0.082**	0.035*	-0.005
	(0.018)	(0.017)	(0.024)	(0.028)	(0.023)	(0.022)	(0.037)	(0.021)	(0.032)
North Sumatra (d)	0.000	-0.039***	-0.021	-0.035	-0.002	-0.032	-0.074*	0.026	-0.198***
	(0.017)	(0.013)	(0.022)	(0.028)	(0.026)	(0.023)	(0.039)	(0.028)	(0.031)
West Sumatra (d)	0.066*	-0.008	0.035	-0.090***	-0.042**	-0.068***	-0.193***	-0.057***	-0.211***
	(0.035)	(0.023)	(0.035)	(0.025)	(0.020)	(0.019)	(0.038)	(0.019)	(0.034)
South Sumatra	0.047*	0.012	0.045	0.029	0.016	0.019	-0.115***	0.026	-0.034
	(0.029)	(0.027)	(0.032)	(0.034)	(0.027)	(0.029)	(0.037)	(0.031)	(0.041)
Lampung	0.004	-0.013	-0.043**	-0.012	-0.018	-0.041**	-0.025	-0.035*	-0.190***
	(0.016)	(0.017)	(0.017)	(0.026)	(0.019)	(0.018)	(0.035)	(0.020)	(0.028)

VARIABLES	W. family	M. family	Gifts	Arisan	Savings	M. free time	W. free time	Work	Contraception
Jakarta	0.085***	0.005	0.118***	0.082***	0.092***	0.014	0.018	0.074***	-0.008
	(0.025)	(0.020)	(0.028)	(0.028)	(0.026)	(0.022)	(0.035)	(0.027)	(0.032)
Central Java	0.020	0.004	-0.002	-0.013	0.006	-0.027	-0.097***	-0.015	-0.170***
	(0.015)	(0.016)	(0.018)	(0.023)	(0.018)	(0.018)	(0.029)	(0.019)	(0.026)
Yogyakarta	0.007	-0.020	0.015	0.048	0.017	0.095***	0.044	-0.048**	-0.169***
	(0.019)	(0.017)	(0.025)	(0.032)	(0.023)	(0.033)	(0.041)	(0.020)	(0.031)
East Java	0.055***	0.017	0.022	0.187***	0.090***	0.024	0.144***	-0.007	0.020
	(0.018)	(0.017)	(0.020)	(0.029)	(0.023)	(0.021)	(0.032)	(0.019)	(0.031)
Bali	0.009	-0.045***	0.001	-0.038	0.003	0.023	0.011	-0.039	-0.115*
	(0.024)	(0.014)	(0.044)	(0.043)	(0.042)	(0.054)	(0.080)	(0.032)	(0.063)
West Nusa Tenggara	-0.045***	0.000	-0.079***	-0.124***	-0.070***	-0.049*	-0.079	-0.073***	-0.115*
	(0.011)	(0.000)	(0.016)	(0.023)	(0.016)	(0.028)	(0.075)	(0.017)	(0.060)
South Kalimantan	0.034	-0.019	0.076*	-0.013	-0.054***	-0.055**	0.377***	-0.076***	-0.153***
	(0.032)	(0.023)	(0.043)	(0.040)	(0.021)	(0.023)	(0.053)	(0.018)	(0.042)
South Sulawesi	0.130**	0.017	0.089*	0.153***	0.091*	-0.041	0.162**	-0.061***	-0.003
	(0.053)	(0.037)	(0.049)	(0.058)	(0.051)	(0.027)	(0.067)	(0.021)	(0.059)
Observations	5,091	4,717	5,091	5,091	5,091	5,091	5,091	5,091	5,091

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

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Table A.6   Correlation matrix, all explicative variables (with Social Capital index)

	SC	Age	Edu	Apc	N. C	N. AW	Age diff.	Edu diff.	M act
SC	1.0000								
Age	0.1175	1.0000							
Edu	0.2052	-0.2044	1.0000						
Apcl	0.1863	0.2642	0.2468	1.0000					
N. C	0.0176	-0.5161	0.2269	-0.2380	1.0000				
N. AW	0.1134	0.3652	-0.1086	0.1605	-0.2152	1.0000			
Age diff.	0.0191	0.0346	0.1703	-0.0081	0.0513	-0.0326	1.0000		
Edu diff.	0.0120	-0.0705	0.3659	-0.0148	0.0718	-0.0505	0.0955	1.0000	
M act	-0.0549	-0.1149	0.0582	0.0183	0.0682	-0.0834	0.0627	0.0093	1.0000

Legend:

SC : "Social capital", *Age*: "Age", *Edu*: "Education", *Apc*: "HH assets per capita -log-", *N. C*: "N. of children", *N. AW*: "N. of adult woman", *Age diff.*: "Age difference", *Edu diff.*: "Education difference", *M act*: "Spouse is economic active"

Table A.7   Correlation matrix, all explicative variables (with Social Capital groups)

	SC H	SC NCF	SC J	SC A	SC R	SC V	Age	Edu	Apc	N. C	N. AW	Age diff.	Edu diff.	S act
SC H	1.0000													
SC NCF	-0.1388	1.0000												
SC J	-0.1471	0.0523	1.0000											
SC A	-0.0336	0.0357	0.1400	1.0000										
SC R	-0.0730	0.0660	-0.0637	-0.0426	1.0000									
SC V	0.1649	-0.0276	-0.0772	0.1107	-0.2483	1.0000								
Age	0.1576	-0.2606	0.2345	0.0800	-0.0120	0.0169	1.0000							
Edu	-0.0254	0.0312	0.0670	0.1998	-0.1585	0.3297	-0.2044	1.0000						
Apc	-0.0673	-0.0213	0.1717	0.2331	-0.0538	0.0735	0.2642	0.2468	1.0000					
N. C	0.2528	0.1320	-0.1732	-0.0875	-0.0422	0.0727	-0.5161	0.2269	-0.2380	1.0000				
N. AW	0.3218	-0.2279	0.0987	0.0541	-0.0149	0.0314	0.3652	-0.1086	0.1605	-0.2152	1.0000			
Age diff.	-0.0229	-0.0520	0.0469	0.0324	-0.0638	0.0816	0.0346	0.1703	-0.0081	0.0513	-0.0326	1.0000		
Edu diff.	-0.0842	0.0153	0.0499	0.0164	0.0081	0.0024	-0.0705	0.3659	-0.0148	0.0718	-0.0505	0.0955	1.0000	
S act	-0.1740	0.0482	-0.0319	0.0091	0.0284	-0.0320	-0.1149	0.0582	0.0183	0.0682	-0.0834	0.0627	0.0093	1.0000

Legend:

SC H: "SC household", *SC NCF*: "SC non coresident family", *SC J*: "SC job", *SC A*: "SC Arisan", *SC R*: "SC religion", *SC V*: "SC village", *Age*: "Age", *Edu*: "Education", *Apc*: "HH assets per capita -log-", *N. C*: "N. of children", *N. AW*: "N. of adult woman", *Age diff.*: "Age difference", *Edu diff.*: "Education difference", *M act*: "Spouse is economic active"

Table A.8   Determinants of women's autonomy in decision making (probit): model in four steps for each decision making type (1)

VARIABLES	Exp food				Choice food				Routine exp			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
SC household	-0.021	0.007	0.018	0.018	-0.011	0.027	0.032	0.031	0.009	0.027	0.029	0.026
	(0.021)	(0.023)	(0.023)	(0.024)	(0.022)	(0.023)	(0.024)	(0.024)	(0.021)	(0.023)	(0.023)	(0.024)
SC non coresident family	0.030	0.016	0.010	0.002	0.055**	0.039*	0.033	0.028	0.044**	0.034	0.033	0.030
	(0.022)	(0.022)	(0.022)	(0.023)	(0.022)	(0.023)	(0.023)	(0.023)	(0.022)	(0.022)	(0.022)	(0.023)
SC job	-0.027	-0.021	-0.002	-0.006	-0.043**	-0.035*	-0.025	-0.026	-0.005	-0.001	0.012	0.009
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.020)	(0.019)	(0.019)	(0.019)	(0.019)
SC Arisan	0.089***	0.092***	0.056***	0.047**	0.053***	0.056***	0.028	0.020	0.055***	0.058***	0.029*	0.027
	(0.018)	(0.018)	(0.018)	(0.019)	(0.017)	(0.017)	(0.017)	(0.018)	(0.017)	(0.017)	(0.017)	(0.018)
SC religion	-0.019	-0.019	-0.055**	-0.024	-0.040*	-0.039*	-0.043*	-0.013	-0.019	-0.020	-0.044*	-0.003
	(0.020)	(0.020)	(0.025)	(0.027)	(0.020)	(0.020)	(0.026)	(0.027)	(0.020)	(0.020)	(0.025)	(0.027)
SC village	-0.034*	-0.031	-0.028	0.001	-0.081***	-0.078***	-0.056**	-0.019	-0.059***	-0.053**	-0.037*	-0.010
	(0.021)	(0.021)	(0.022)	(0.024)	(0.021)	(0.021)	(0.023)	(0.025)	(0.021)	(0.021)	(0.022)	(0.024)
Age	0.004	0.006*	0.005*	0.005*	0.008**	0.009***	0.007**	0.007**	0.007**	0.008**	0.006*	0.006**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Education	-0.011	-0.024	0.007	0.000	-0.075***	-0.091***	-0.081***	-0.090***	-0.020	-0.040*	-0.034	-0.035
	(0.020)	(0.022)	(0.023)	(0.024)	(0.020)	(0.023)	(0.023)	(0.024)	(0.020)	(0.022)	(0.023)	(0.023)
HH assets per adult (log)	0.010	0.017	0.008	0.003	-0.027**	-0.019	-0.022	-0.026*	-0.016	-0.008	-0.009	-0.015
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.014)	(0.014)	(0.013)	(0.013)	(0.013)	(0.013)
N. of children	0.005	-0.011	-0.024	-0.018	0.052	0.029	0.005	0.007	-0.015	-0.024	-0.044	-0.038
	(0.035)	(0.036)	(0.036)	(0.037)	(0.036)	(0.037)	(0.037)	(0.038)	(0.035)	(0.036)	(0.036)	(0.037)
N. of adult woman		-0.127***	-0.141***	-0.158***		-0.150***	-0.162***	-0.175***		-0.088***	-0.096***	-0.106***
		(0.031)	(0.032)	(0.032)		(0.031)	(0.032)	(0.032)		(0.031)	(0.031)	(0.032)

VARIABLES	Exp food				Choice food				Routine exp			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Age difference		-0.005	-0.004	-0.004		-0.002	-0.003	-0.002		-0.004	-0.004	-0.004
		(0.004)	(0.004)	(0.004)		(0.004)	(0.004)	(0.004)		(0.004)	(0.004)	(0.004)
Education difference		0.029	0.013	0.013		0.029	0.022	0.023		0.053**	0.043*	0.043*
		(0.023)	(0.023)	(0.023)		(0.023)	(0.023)	(0.024)		(0.023)	(0.023)	(0.023)
Spouse is economic active (d)		-0.045	-0.026	-0.007		0.006	0.018	0.034		-0.094	-0.078	-0.068
		(0.080)	(0.081)	(0.082)		(0.082)	(0.082)	(0.083)		(0.081)	(0.082)	(0.083)
02. Sundanese			-0.280***	0.021			-0.231***	0.040			-0.227***	0.060
			(0.059)	(0.080)			(0.060)	(0.082)			(0.059)	(0.080)
03. Bali			-0.669***	-0.142			-0.422***	-0.069			-0.587***	-0.495**
			(0.105)	(0.224)			(0.107)	(0.226)			(0.105)	(0.229)
04. Batak			-0.369***	-0.074			0.159	0.307**			0.131	0.262*
			(0.111)	(0.139)			(0.123)	(0.148)			(0.117)	(0.144)
05. Bugis			0.131	0.199			-0.059	-0.045			0.134	0.122
			(0.105)	(0.171)			(0.104)	(0.170)			(0.105)	(0.169)
07. Maduranese			0.327***	0.034			0.288**	0.035			0.141	-0.221*
			(0.122)	(0.131)			(0.126)	(0.134)			(0.115)	(0.124)
08. Sasak			-0.203**	-0.052			-0.239**	-0.456*			-0.218**	-0.047
			(0.094)	(0.233)			(0.095)	(0.243)			(0.094)	(0.233)
09. Minang			-0.684***	-0.193			-0.444***	-0.172			-0.339***	0.254
			(0.099)	(0.159)			(0.099)	(0.159)			(0.098)	(0.161)
10. Banjar			-0.517***	-0.379**			-0.636***	-0.500***			-0.470***	-0.406**
			(0.096)	(0.168)			(0.096)	(0.169)			(0.096)	(0.168)
11. Bima-Dompu			-0.119	0.038			0.028	-0.170			-0.092	0.084
			(0.119)	(0.236)			(0.125)	(0.248)			(0.120)	(0.238)
12. Makasar			0.571***	0.542**			0.576***	0.512**			0.458***	0.408*

	Exp food				Choice food				Routine exp			
VARIABLES	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
			(0.170)	(0.242)			(0.180)	(0.249)			(0.162)	(0.229)
17. Betawi			-0.001	0.115			-0.129	-0.012			0.054	0.185
			(0.105)	(0.123)			(0.104)	(0.122)			(0.104)	(0.121)
25. Other Southern Sumatrans			-0.350***	-0.022			-0.316***	-0.017			-0.311***	-0.204
			(0.096)	(0.127)			(0.098)	(0.129)			(0.096)	(0.127)
27. Cirebon			-0.057	0.332**			-0.011	0.334**			0.038	0.405***
			(0.118)	(0.135)			(0.121)	(0.138)			(0.119)	(0.135)
Other ethnicities			-0.264***	-0.002			-0.335***	-0.186*			-0.282***	-0.047
			(0.087)	(0.104)			(0.088)	(0.104)			(0.087)	(0.103)
North Sumatra (d)				0.143				0.256**				0.342***
				(0.117)				(0.120)				(0.119)
West Sumatra (d)				-0.126				0.062				-0.282*
				(0.148)				(0.148)				(0.149)
South Sumatra				-0.101				-0.076				0.171
				(0.122)				(0.124)				(0.123)
Lampung				0.657***				0.432***				0.616***
				(0.105)				(0.106)				(0.106)
Jakarta				0.474***				0.377***				0.407***
				(0.101)				(0.101)				(0.100)
Central Java				0.342***				0.338***				0.192**
				(0.090)				(0.091)				(0.089)
Yogyakarta				0.408***				0.282**				0.338***
				(0.116)				(0.116)				(0.114)
East Java				0.763***				0.672***				0.790***
				(0.095)				(0.096)				(0.095)

VARIABLES	Exp food				Choice food				Routine exp			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Bali				-0.082				0.035				0.377
				(0.228)				(0.231)				(0.234)
West Nusa Tenggara				0.228				0.550**				0.180
				(0.220)				(0.230)				(0.222)
South Kalimantan				0.259*				0.213				0.308**
				(0.156)				(0.158)				(0.156)
South Sulawesi				0.425**				0.407**				0.429**
				(0.182)				(0.181)				(0.177)
Constant	0.112	0.273	0.442**	0.089	0.520***	0.686***	0.893***	0.606***	0.271*	0.463***	0.635***	0.279
	(0.143)	(0.167)	(0.173)	(0.187)	(0.146)	(0.171)	(0.176)	(0.190)	(0.143)	(0.167)	(0.173)	(0.186)
Observations	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091
Pseudo R2	0.00638	0.00934	0.0353	0.0556	0.0111	0.0149	0.0348	0.0479	0.00538	0.00773	0.0252	0.0447

Robust standard errors in parentheses

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Table A.9   Determinants of women's autonomy in decision making (probit): model in four steps for each decision making type (2)

VARIABLES	W clothes				M clothes				C clothes			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
SC household	0.082***	0.085***	0.075***	0.066***	0.012	0.013	0.005	-0.000	0.056**	0.066**	0.048	0.043
	(0.021)	(0.022)	(0.023)	(0.023)	(0.022)	(0.024)	(0.025)	(0.025)	(0.028)	(0.030)	(0.031)	(0.031)
SC non coresident family	-0.023	-0.026	-0.019	-0.012	-0.024	-0.025	-0.024	-0.016	-0.021	-0.021	-0.015	-0.001
	(0.021)	(0.022)	(0.022)	(0.022)	(0.023)	(0.023)	(0.024)	(0.025)	(0.029)	(0.029)	(0.030)	(0.031)
SC job	0.056***	0.056***	0.060***	0.061***	0.019	0.017	0.029	0.035*	-0.001	-0.002	0.012	0.019
	(0.018)	(0.018)	(0.019)	(0.019)	(0.020)	(0.020)	(0.021)	(0.021)	(0.025)	(0.025)	(0.026)	(0.026)
SC Arisan	0.035**	0.038**	0.035**	0.035**	0.075***	0.079***	0.053***	0.057***	0.052***	0.055***	0.040*	0.051**
	(0.016)	(0.016)	(0.016)	(0.017)	(0.017)	(0.017)	(0.017)	(0.018)	(0.020)	(0.020)	(0.021)	(0.022)
SC religion	-0.043**	-0.046**	-0.042*	-0.009	-0.036*	-0.041**	-0.007	0.017	-0.073***	-0.075***	-0.066**	-0.070**
	(0.019)	(0.019)	(0.024)	(0.026)	(0.020)	(0.020)	(0.026)	(0.028)	(0.024)	(0.024)	(0.031)	(0.033)
SC village	0.025	0.033	0.027	0.035	0.035	0.049**	0.061***	0.106***	0.032	0.042	0.014	0.028
	(0.020)	(0.021)	(0.022)	(0.023)	(0.023)	(0.023)	(0.024)	(0.026)	(0.028)	(0.028)	(0.030)	(0.032)
Age	0.001	0.001	0.001	0.001	0.008***	0.008**	0.005	0.005	0.007*	0.007	0.006	0.006
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)
Education	-0.033*	-0.056***	-0.057***	-0.065***	-0.102***	-0.143***	-0.153***	-0.164***	-0.056**	-0.096***	-0.099***	-0.118***
	(0.020)	(0.021)	(0.022)	(0.023)	(0.021)	(0.023)	(0.025)	(0.025)	(0.027)	(0.029)	(0.031)	(0.032)
HH assets per adult (log)	0.000	0.005	0.010	0.006	-0.027**	-0.019	-0.010	-0.014	-0.057***	-0.049***	-0.037**	-0.039**
	(0.012)	(0.013)	(0.013)	(0.013)	(0.013)	(0.014)	(0.014)	(0.014)	(0.017)	(0.017)	(0.018)	(0.018)
N. of children	-0.091***	-0.088**	-0.099***	-0.093***	0.021	0.027	0.010	0.011	-0.030	-0.034	-0.049	-0.045
	(0.034)	(0.035)	(0.035)	(0.036)	(0.038)	(0.038)	(0.039)	(0.039)	(0.047)	(0.048)	(0.049)	(0.049)
N. of adult woman		-0.014	-0.015	-0.017		0.007	-0.000	-0.008		-0.026	-0.040	-0.043
		(0.031)	(0.031)	(0.031)		(0.033)	(0.034)	(0.034)		(0.042)	(0.043)	(0.044)

VARIABLES	W clothes				M clothes				C clothes			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Age difference		-0.006	-0.007*	-0.007*		-0.006	-0.007*	-0.007		0.004	0.002	0.002
		(0.004)	(0.004)	(0.004)		(0.004)	(0.004)	(0.004)		(0.005)	(0.005)	(0.005)
Education difference		0.070***	0.068***	0.073***		0.120***	0.114***	0.120***		0.095***	0.088***	0.100***
		(0.022)	(0.022)	(0.022)		(0.024)	(0.025)	(0.025)		(0.030)	(0.031)	(0.031)
Spouse is economic active (d)		-0.046	-0.053	-0.053		-0.069	-0.037	-0.016		-0.075	-0.062	-0.047
		(0.077)	(0.078)	(0.078)		(0.082)	(0.083)	(0.085)		(0.098)	(0.100)	(0.102)
02. Sundanese			-0.009	0.119			-0.094	0.113			0.099	-0.043
			(0.058)	(0.080)			(0.063)	(0.087)			(0.079)	(0.110)
03. Bali			-0.100	-0.140			-0.342***	0.219			-0.324**	0.305
			(0.104)	(0.219)			(0.118)	(0.250)			(0.151)	(0.279)
04. Batak			0.337***	0.237*			0.389***	0.440***			0.346**	0.379**
			(0.112)	(0.139)			(0.113)	(0.145)			(0.135)	(0.183)
05. Bugis			0.172*	-0.099			0.085	0.094			0.345***	0.112
			(0.100)	(0.164)			(0.103)	(0.175)			(0.121)	(0.225)
07. Maduranese			-0.113	-0.300***			-0.180	-0.428***			-0.186	-0.317*
			(0.109)	(0.115)			(0.119)	(0.126)			(0.163)	(0.173)
08. Sasak			-0.042	0.111			-1.133***	-0.358			0.000	0.000
			(0.094)	(0.238)			(0.160)	(0.343)			(0.000)	(0.000)
09. Minang			-0.065	0.099			-0.141	0.217			-0.049	0.080
			(0.098)	(0.158)			(0.108)	(0.173)			(0.142)	(0.226)
10. Banjar			0.110	-0.277*			-0.890***	-0.335			-0.673***	-0.417
			(0.096)	(0.167)			(0.144)	(0.219)			(0.211)	(0.286)
11. Bima-Dompu			-0.077	0.069			-1.126***	-0.422			-0.774***	0.068
			(0.118)	(0.241)			(0.211)	(0.361)			(0.289)	(0.268)
12. Makasar			0.660***	0.348			0.546***	0.398*			0.904***	0.503*

VARIABLES	W clothes				M clothes				C clothes			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
			(0.152)	(0.219)			(0.142)	(0.221)			(0.150)	(0.258)
17. Betawi			0.387***	0.262**			0.005	0.067			0.335***	0.136
			(0.102)	(0.121)			(0.107)	(0.129)			(0.124)	(0.149)
25. Other Southern Sumatrans			-0.116	-0.010			-0.144	-0.139			0.104	0.117
			(0.096)	(0.124)			(0.105)	(0.136)			(0.128)	(0.167)
27. Cirebon			0.273**	0.453***			0.268**	0.548***			0.113	-0.030
			(0.115)	(0.132)			(0.117)	(0.137)			(0.149)	(0.174)
Other ethnicities			0.103	0.148			-0.136	0.048			0.077	0.067
			(0.087)	(0.103)			(0.094)	(0.112)			(0.113)	(0.138)
North Sumatra (d)				0.361***				0.302**				-0.178
				(0.118)				(0.126)				(0.165)
West Sumatra (d)				0.000				-0.126				-0.289
				(0.148)				(0.164)				(0.205)
South Sumatra				0.059				0.257*				-0.204
				(0.121)				(0.133)				(0.167)
Lampung				0.068				0.282***				-0.062
				(0.100)				(0.107)				(0.137)
Jakarta				0.564***				0.324***				0.087
				(0.098)				(0.104)				(0.122)
Central Java				0.048				0.269***				-0.304**
				(0.088)				(0.096)				(0.125)
Yogyakarta				0.124				-0.140				-0.428**
				(0.112)				(0.127)				(0.168)
East Java				0.385***				0.565***				-0.010
				(0.090)				(0.097)				(0.121)

	W clothes				M clothes				C clothes			
VARIABLES	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Bali				0.315				-0.250				-0.808***
				(0.224)				(0.256)				(0.284)
West Nusa Tenggara				0.015				-0.517				-1.057***
				(0.227)				(0.315)				(0.217)
South Kalimantan				0.580***				-0.290				-0.418*
				(0.155)				(0.186)				(0.228)
South Sulawesi				0.515***				0.415**				0.250
				(0.173)				(0.184)				(0.222)
Constant	0.112	0.191	0.143	-0.018	-0.522***	-0.389**	-0.247	-0.476**	-1.020***	-0.796***	-0.847***	-0.643***
	(0.139)	(0.163)	(0.168)	(0.182)	(0.150)	(0.175)	(0.182)	(0.198)	(0.187)	(0.219)	(0.228)	(0.245)
Observations	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	4,876	4,876
Pseudo R2	0.00954	0.0114	0.0200	0.0304	0.0127	0.0176	0.0544	0.0706	0.0157	0.0191	0.0464	0.0583

Robust standard errors in parentheses

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Table A.10   Determinants of women's autonomy in decision making (probit): model in four steps for each decision making type (3)

VARIABLES	Ch. education				Ch. health				Large exp.			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
SC household	0.047**	0.074***	0.064***	0.056**	0.047**	0.074***	0.064***	0.056**	0.026	0.008	-0.014	-0.025
	(0.022)	(0.024)	(0.024)	(0.025)	(0.022)	(0.024)	(0.024)	(0.025)	(0.034)	(0.037)	(0.037)	(0.037)
SC non coresident family	-0.017	-0.028	-0.022	-0.005	-0.017	-0.028	-0.022	-0.005	-0.129***	-0.125***	-0.119***	-0.121***
	(0.023)	(0.023)	(0.024)	(0.024)	(0.023)	(0.023)	(0.024)	(0.024)	(0.035)	(0.035)	(0.036)	(0.036)
SC job	0.002	0.007	0.018	0.021	0.002	0.007	0.018	0.021	0.039	0.033	0.039	0.042
	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)	(0.030)	(0.030)	(0.031)	(0.031)
SC Arisan	0.061***	0.065***	0.046***	0.047***	0.061***	0.065***	0.046***	0.047***	0.055**	0.058**	0.047*	0.048*
	(0.017)	(0.017)	(0.017)	(0.018)	(0.017)	(0.017)	(0.017)	(0.018)	(0.024)	(0.024)	(0.025)	(0.026)
SC religion	-0.070***	-0.072***	-0.029	0.016	-0.070***	-0.072***	-0.029	0.016	-0.087***	-0.091***	-0.065*	-0.070*
	(0.020)	(0.020)	(0.025)	(0.027)	(0.020)	(0.020)	(0.025)	(0.027)	(0.027)	(0.027)	(0.036)	(0.038)
SC village	0.032	0.039*	0.038*	0.058**	0.032	0.039*	0.038*	0.058**	0.073**	0.083**	0.055	0.048
	(0.022)	(0.022)	(0.023)	(0.025)	(0.022)	(0.022)	(0.023)	(0.025)	(0.033)	(0.033)	(0.035)	(0.038)
Age	-0.004	-0.003	-0.005	-0.005	-0.004	-0.003	-0.005	-0.005	0.013***	0.012**	0.012**	0.011**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.005)	(0.005)	(0.005)	(0.005)
Education	-0.032	-0.062***	-0.068***	-0.080***	-0.032	-0.062***	-0.068***	-0.080***	-0.033	-0.065*	-0.054	-0.063
	(0.021)	(0.023)	(0.024)	(0.025)	(0.021)	(0.023)	(0.024)	(0.025)	(0.032)	(0.035)	(0.037)	(0.038)
HH assets per adult (log)	-0.028**	-0.020	-0.009	-0.012	-0.028**	-0.020	-0.009	-0.012	-0.029	-0.022	-0.018	-0.016
	(0.013)	(0.014)	(0.014)	(0.014)	(0.013)	(0.014)	(0.014)	(0.014)	(0.020)	(0.020)	(0.021)	(0.022)
N. of children	0.042	0.026	0.017	0.026	0.042	0.026	0.017	0.026	0.029	0.047	0.029	0.026
	(0.037)	(0.037)	(0.038)	(0.038)	(0.037)	(0.037)	(0.038)	(0.038)	(0.055)	(0.057)	(0.058)	(0.059)
N. of adult woman		-0.099***	-0.109***	-0.111***		-0.099***	-0.109***	-0.111***		0.043	0.033	0.030
		(0.033)	(0.034)	(0.034)		(0.033)	(0.034)	(0.034)		(0.047)	(0.049)	(0.049)

VARIABLES	Ch. education				Ch. health				Large exp.			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Age difference		-0.002	-0.003	-0.003		-0.002	-0.003	-0.003		-0.004	-0.006	-0.006
		(0.004)	(0.004)	(0.004)		(0.004)	(0.004)	(0.004)		(0.006)	(0.006)	(0.006)
Education difference		0.071***	0.068***	0.077***		0.071***	0.068***	0.077***		0.100***	0.089**	0.093**
		(0.023)	(0.024)	(0.024)		(0.023)	(0.024)	(0.024)		(0.037)	(0.038)	(0.038)
Spouse is economic active (d)		0.015	0.038	0.047		0.015	0.038	0.047		-0.201*	-0.196*	-0.205*
		(0.082)	(0.083)	(0.085)		(0.082)	(0.083)	(0.085)		(0.109)	(0.110)	(0.112)
02. Sundanese			0.058	0.124			0.058	0.124			-0.060	-0.050
			(0.062)	(0.086)			(0.062)	(0.086)			(0.105)	(0.140)
03. Bali			-0.105	-0.063			-0.105	-0.063			-0.147	0.456**
			(0.111)	(0.227)			(0.111)	(0.227)			(0.169)	(0.194)
04. Batak			0.476***	0.445***			0.476***	0.445***			0.296*	0.208
			(0.112)	(0.143)			(0.112)	(0.143)			(0.159)	(0.204)
05. Bugis			0.186*	-0.113			0.186*	-0.113			0.348***	-0.124
			(0.101)	(0.166)			(0.101)	(0.166)			(0.135)	(0.255)
07. Maduranese			0.032	-0.183			0.032	-0.183			-0.026	0.035
			(0.116)	(0.123)			(0.116)	(0.123)			(0.187)	(0.201)
08. Sasak			-1.552***	-0.051			-1.552***	-0.051			-0.864**	-0.240
			(0.227)	(0.355)			(0.227)	(0.355)			(0.350)	(0.392)
09. Minang			-0.114	0.077			-0.114	0.077			-0.040	-0.041
			(0.108)	(0.171)			(0.108)	(0.171)			(0.168)	(0.235)
10. Banjar			-0.183*	-0.315*			-0.183*	-0.315*			-0.677**	-0.536
			(0.107)	(0.173)			(0.107)	(0.173)			(0.264)	(0.347)
11. Bima-Dompu			-1.043***	0.265			-1.043***	0.265			-0.388	0.188
			(0.195)	(0.318)			(0.195)	(0.318)			(0.297)	(0.275)
12. Makasar			0.653***	0.246			0.653***	0.246			0.853***	0.208

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VARIABLES	Ch. education				Ch. health				Large exp.			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
			(0.143)	(0.215)			(0.143)	(0.215)			(0.163)	(0.281)
17. Betawi			0.338***	0.193			0.338***	0.193			0.164	0.023
			(0.101)	(0.122)			(0.101)	(0.122)			(0.157)	(0.188)
25. Other Southern Sumatrans			-0.026	0.087			-0.026	0.087			0.050	-0.026
			(0.103)	(0.135)			(0.103)	(0.135)			(0.162)	(0.210)
27. Cirebon			0.249**	0.353***			0.249**	0.353***			-0.202	-0.154
			(0.117)	(0.136)			(0.117)	(0.136)			(0.226)	(0.253)
Other ethnicities			-0.013	0.092			-0.013	0.092			0.180	0.098
			(0.091)	(0.108)			(0.091)	(0.108)			(0.131)	(0.160)
North Sumatra (d)				0.228*				0.228*				0.147
				(0.125)				(0.125)				(0.185)
West Sumatra (d)				-0.107				-0.107				0.056
				(0.160)				(0.160)				(0.223)
South Sumatra				-0.005				-0.005				0.132
				(0.132)				(0.132)				(0.208)
Lampung				-0.141				-0.141				0.144
				(0.111)				(0.111)				(0.166)
Jakarta				0.437***				0.437***				0.303**
				(0.099)				(0.099)				(0.149)
Central Java				0.020				0.020				0.099
				(0.096)				(0.096)				(0.155)
Yogyakarta				-0.095				-0.095				-0.077
				(0.123)				(0.123)				(0.193)
East Java				0.344***				0.344***				-0.035
				(0.095)				(0.095)				(0.159)

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VARIABLES	Ch. education				Ch. health				Large exp.			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Bali				0.188				0.188				-0.576***
				(0.234)				(0.234)				(0.213)
West Nusa Tenggara				-1.434***				-1.434***				-0.580**
				(0.291)				(0.291)				(0.226)
South Kalimantan				0.242				0.242				-0.109
				(0.158)				(0.158)				(0.272)
South Sulawesi				0.536***				0.536***				0.715***
				(0.177)				(0.177)				(0.253)
Constant	-0.247*	-0.102	-0.101	-0.178	-0.247*	-0.102	-0.101	-0.178	-1.828***	-1.633***	-1.686***	-1.699***
	(0.148)	(0.174)	(0.181)	(0.197)	(0.148)	(0.174)	(0.181)	(0.197)	(0.226)	(0.261)	(0.272)	(0.297)
Observations	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091
Pseudo R2	0.00880	0.0118	0.0464	0.0610	0.00880	0.0118	0.0464	0.0610	0.0311	0.0367	0.0665	0.0785
Robust standard errors in parentheses												

Table A.11   Determinants of women's autonomy in decision making (probit): model in four steps for each decision making type (4)

VARIABLES	W. family				M. family				Gifts			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
SC household	0.004	-0.018	-0.035	-0.039	0.010	-0.008	-0.021	-0.015	0.045*	0.042	0.027	0.023
	(0.031)	(0.033)	(0.034)	(0.034)	(0.034)	(0.037)	(0.037)	(0.038)	(0.027)	(0.030)	(0.030)	(0.031)
SC non coresident family	-0.075**	-0.070**	-0.064*	-0.053	-0.071*	-0.067*	-0.064*	-0.052	-0.061**	-0.062**	-0.055*	-0.045
	(0.033)	(0.033)	(0.035)	(0.035)	(0.037)	(0.036)	(0.038)	(0.039)	(0.030)	(0.030)	(0.030)	(0.031)
SC job	0.053*	0.048*	0.055*	0.060**	0.011	0.006	0.016	0.024	0.019	0.018	0.028	0.026
	(0.028)	(0.028)	(0.029)	(0.029)	(0.031)	(0.031)	(0.032)	(0.032)	(0.024)	(0.024)	(0.025)	(0.025)
SC Arisan	0.022	0.024	0.011	0.006	0.049*	0.051**	0.034	0.031	0.073***	0.075***	0.071***	0.067***
	(0.023)	(0.023)	(0.024)	(0.025)	(0.025)	(0.025)	(0.027)	(0.028)	(0.020)	(0.020)	(0.021)	(0.022)
SC religion	-0.085***	-0.089***	-0.056	-0.022	-0.065**	-0.069**	-0.037	-0.041	-0.008	-0.010	-0.001	0.026
	(0.026)	(0.026)	(0.037)	(0.039)	(0.029)	(0.029)	(0.039)	(0.041)	(0.024)	(0.024)	(0.032)	(0.035)
SC village	0.045	0.053*	0.038	0.045	0.040	0.048	0.025	0.049	0.039	0.044	0.004	-0.026
	(0.031)	(0.032)	(0.033)	(0.037)	(0.036)	(0.036)	(0.039)	(0.043)	(0.027)	(0.028)	(0.030)	(0.032)
Age	0.009*	0.008*	0.007	0.007	0.017***	0.015***	0.016***	0.016***	0.007*	0.006	0.008*	0.008*
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)
Education	-0.052*	-0.081**	-0.085**	-0.094***	-0.064*	-0.096***	-0.083**	-0.096**	-0.032	-0.050*	-0.049	-0.060**
	(0.029)	(0.032)	(0.034)	(0.035)	(0.033)	(0.036)	(0.038)	(0.039)	(0.025)	(0.028)	(0.030)	(0.030)
HH assets per adult (log)	-0.030	-0.025	-0.021	-0.026	-0.034*	-0.027	-0.028	-0.030	-0.023	-0.017	-0.013	-0.016
	(0.019)	(0.019)	(0.020)	(0.020)	(0.020)	(0.020)	(0.021)	(0.021)	(0.017)	(0.017)	(0.018)	(0.018)
N. of children	0.004	0.026	0.017	0.020	0.020	0.038	0.030	0.036	-0.074	-0.065	-0.057	-0.050
	(0.053)	(0.054)	(0.055)	(0.056)	(0.061)	(0.063)	(0.064)	(0.065)	(0.047)	(0.048)	(0.048)	(0.049)
N. of adult woman		0.045	0.037	0.028		0.037	0.025	0.023		-0.013	-0.019	-0.022
		(0.047)	(0.048)	(0.049)		(0.052)	(0.055)	(0.055)		(0.041)	(0.042)	(0.042)

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VARIABLES	W. family				M. family				Gifts			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Age difference		-0.005	-0.007	-0.007		-0.002	-0.004	-0.004		-0.007	-0.008	-0.008
		(0.006)	(0.006)	(0.006)		(0.006)	(0.006)	(0.006)		(0.005)	(0.005)	(0.005)
Education difference		0.092***	0.087**	0.094***		0.094**	0.079**	0.086**		0.066**	0.055*	0.063**
		(0.035)	(0.036)	(0.036)		(0.038)	(0.040)	(0.040)		(0.030)	(0.031)	(0.032)
Spouse is economic active (d)		-0.252**	-0.243**	-0.231**		-0.249**	-0.238**	-0.201*		-0.179*	-0.171*	-0.163*
		(0.102)	(0.103)	(0.105)		(0.112)	(0.115)	(0.115)		(0.093)	(0.093)	(0.095)
02. Sundanese			0.000	0.134			-0.058	-0.072			0.183**	0.172*
			(0.093)	(0.124)			(0.105)	(0.140)			(0.078)	(0.104)
03. Bali			0.029	0.376*			-0.062	0.765***			-0.016	0.049
			(0.153)	(0.226)			(0.172)	(0.234)			(0.145)	(0.291)
04. Batak			0.290*	0.465**			0.079	0.512**			-0.062	0.086
			(0.152)	(0.193)			(0.179)	(0.222)			(0.162)	(0.196)
05. Bugis			0.182	-0.191			0.318**	0.325			0.224*	-0.073
			(0.140)	(0.238)			(0.144)	(0.284)			(0.125)	(0.202)
07. Maduranese			-0.304	-0.487**			-0.181	-0.293			-0.428**	-0.508**
			(0.206)	(0.213)			(0.205)	(0.214)			(0.197)	(0.204)
08. Sasak			-1.035***	0.609			0.000	0.000			-1.206***	-0.136
			(0.347)	(0.529)			(0.000)	(0.000)			(0.351)	(0.476)
09. Minang			0.234*	-0.001			0.019	0.095			0.241*	0.101
			(0.136)	(0.220)			(0.166)	(0.250)			(0.124)	(0.197)
10. Banjar			-0.239	-0.289			-0.623**	-0.397			-0.002	-0.332
			(0.175)	(0.268)			(0.270)	(0.361)			(0.135)	(0.211)
11. Bima-Dompu			-0.910***	0.164			0.000	0.000			-0.578**	0.319
			(0.351)	(0.562)			(0.000)	(0.000)			(0.249)	(0.378)
12. Makasar			0.824***	0.316			0.768***	0.659**			0.752***	0.416*

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VARIABLES	W. family				M. family				Gifts			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
			(0.159)	(0.270)			(0.173)	(0.322)			(0.154)	(0.248)
17. Betawi			0.222	0.100			0.163	0.140			0.439***	0.135
			(0.143)	(0.179)			(0.161)	(0.201)			(0.118)	(0.147)
25. Other Southern Sumatrans			-0.078	-0.174			-0.019	-0.096			0.078	-0.066
			(0.160)	(0.215)			(0.174)	(0.239)			(0.133)	(0.178)
27. Cirebon			-0.236	-0.016			-0.208	-0.215			-0.147	-0.126
			(0.207)	(0.232)			(0.222)	(0.248)			(0.173)	(0.193)
Other ethnicities			-0.034	-0.086			-0.054	0.013			0.149	0.132
			(0.133)	(0.167)			(0.152)	(0.174)			(0.115)	(0.137)
North Sumatra (d)				0.031				-0.536***				-0.153
				(0.189)				(0.203)				(0.167)
West Sumatra (d)				0.499**				-0.078				0.207
				(0.213)				(0.232)				(0.186)
South Sumatra				0.374*				0.099				0.261
				(0.200)				(0.218)				(0.163)
Lampung				0.049				-0.126				-0.309**
				(0.168)				(0.180)				(0.156)
Jakarta				0.561***				-0.003				0.585***
				(0.146)				(0.174)				(0.118)
Central Java				0.181				0.018				-0.035
				(0.141)				(0.149)				(0.120)
Yogyakarta				0.032				-0.279				0.081
				(0.191)				(0.211)				(0.153)
East Java				0.419***				0.121				0.084
				(0.141)				(0.151)				(0.120)

VARIABLES	W. family				M. family				Gifts			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Bali				-0.035				-0.885***				0.072
				(0.250)				(0.257)				(0.306)
West Nusa Tenggara				-1.489***				0.000				-1.075***
				(0.483)				(0.000)				(0.357)
South Kalimantan				0.278				-0.242				0.370*
				(0.239)				(0.274)				(0.189)
South Sulawesi				0.765***				0.079				0.413*
				(0.244)				(0.290)				(0.215)
Constant	-1.465***	-1.243***	-1.243***	-1.420***	-1.912***	-1.650***	-1.676***	-1.648***	-1.243***	-1.065***	-1.187***	-1.208***
	(0.212)	(0.242)	(0.248)	(0.284)	(0.241)	(0.272)	(0.278)	(0.306)	(0.188)	(0.217)	(0.226)	(0.248)
Observations	5,091	5,091	5,091	5,091	5,091	5,091	4,750	4,717	5,091	5,091	5,091	5,091
Pseudo R2	0.0170	0.0231	0.0510	0.0697	0.0245	0.0304	0.0470	0.0566	0.0145	0.0177	0.0454	0.0626

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

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Table A.12   Determinants of women's autonomy in decision making (probit): model in four steps for each decision making type (5)

VARIABLES	Arisan				Savings				M. free time			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
SC household	-0.020	-0.016	-0.026	-0.029	0.024	0.018	0.013	0.005	-0.031	-0.037	-0.031	-0.020
	(0.025)	(0.027)	(0.028)	(0.029)	(0.029)	(0.032)	(0.032)	(0.032)	(0.031)	(0.033)	(0.034)	(0.034)
SC non coresident family	-0.057**	-0.058**	-0.052*	-0.035	-0.043	-0.044	-0.043	-0.029	-0.048	-0.043	-0.051	-0.044
	(0.027)	(0.027)	(0.028)	(0.029)	(0.031)	(0.031)	(0.032)	(0.033)	(0.032)	(0.032)	(0.032)	(0.033)
SC job	0.027	0.026	0.038*	0.045*	0.083***	0.084***	0.097***	0.104***	0.043	0.041	0.044	0.043
	(0.023)	(0.023)	(0.023)	(0.023)	(0.026)	(0.026)	(0.027)	(0.027)	(0.028)	(0.028)	(0.028)	(0.028)
SC Arisan	0.308***	0.309***	0.301***	0.306***	0.114***	0.115***	0.097***	0.097***	0.033	0.033	0.038*	0.021
	(0.021)	(0.021)	(0.022)	(0.023)	(0.020)	(0.020)	(0.020)	(0.021)	(0.021)	(0.021)	(0.022)	(0.024)
SC religion	-0.023	-0.022	-0.025	0.012	-0.095***	-0.096***	-0.096***	-0.069**	-0.084***	-0.086***	-0.081**	-0.054
	(0.022)	(0.022)	(0.029)	(0.032)	(0.024)	(0.024)	(0.031)	(0.035)	(0.027)	(0.027)	(0.034)	(0.038)
SC village	0.020	0.019	-0.010	0.016	0.033	0.035	0.015	0.038	0.046	0.053*	0.044	0.037
	(0.025)	(0.025)	(0.027)	(0.029)	(0.028)	(0.028)	(0.029)	(0.032)	(0.030)	(0.030)	(0.031)	(0.034)
Age	0.007**	0.007*	0.007*	0.007*	-0.004	-0.004	-0.004	-0.005	0.004	0.003	0.004	0.003
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Education	0.033	0.028	0.034	0.016	0.012	0.015	0.029	0.006	-0.040	-0.062*	-0.058*	-0.075**
	(0.024)	(0.027)	(0.028)	(0.028)	(0.027)	(0.031)	(0.031)	(0.032)	(0.029)	(0.032)	(0.033)	(0.033)
HH assets per adult (log)	-0.004	-0.001	0.004	-0.003	0.042**	0.041**	0.043**	0.041**	-0.041**	-0.040**	-0.041**	-0.041**
	(0.016)	(0.016)	(0.016)	(0.017)	(0.019)	(0.019)	(0.020)	(0.020)	(0.019)	(0.019)	(0.019)	(0.019)
N. of children	-0.084*	-0.089**	-0.095**	-0.090**	-0.067	-0.059	-0.060	-0.056	-0.004	0.003	0.020	0.022
	(0.044)	(0.045)	(0.046)	(0.046)	(0.050)	(0.051)	(0.051)	(0.051)	(0.052)	(0.052)	(0.053)	(0.053)
N. of adult woman		-0.016	-0.020	-0.029		0.004	0.003	-0.008		0.057	0.058	0.053
		(0.038)	(0.039)	(0.040)		(0.043)	(0.044)	(0.046)		(0.044)	(0.044)	(0.045)

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VARIABLES	Arisan				Savings				M. free time			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Age difference		0.007	0.007	0.007		-0.008	-0.008	-0.008		-0.000	0.000	-0.000
		(0.005)	(0.005)	(0.005)		(0.005)	(0.005)	(0.006)		(0.005)	(0.005)	(0.005)
Education difference		-0.002	-0.013	0.001		0.012	-0.003	0.008		0.061*	0.063*	0.068**
		(0.028)	(0.029)	(0.029)		(0.031)	(0.032)	(0.032)		(0.033)	(0.033)	(0.034)
Spouse is economic active (d)		-0.045	-0.029	0.002		-0.083	-0.055	-0.028		0.092	0.098	0.116
		(0.095)	(0.096)	(0.097)		(0.105)	(0.106)	(0.108)		(0.119)	(0.119)	(0.121)
02. Sundanese			0.134*	0.206**			-0.011	0.049			0.137	0.128
			(0.071)	(0.099)			(0.086)	(0.112)			(0.083)	(0.114)
03. Bali			-0.296**	0.207			-0.336**	0.140			0.142	0.238
			(0.135)	(0.264)			(0.148)	(0.298)			(0.136)	(0.293)
04. Batak			0.041	0.322*			-0.079	0.081			-0.195	0.047
			(0.136)	(0.179)			(0.158)	(0.215)			(0.174)	(0.230)
05. Bugis			0.182	0.018			0.368***	0.265			-0.120	0.170
			(0.117)	(0.196)			(0.121)	(0.223)			(0.148)	(0.230)
07. Maduranese			-0.400**	-0.752***			-0.046	-0.295*			-0.114	-0.225
			(0.162)	(0.170)			(0.157)	(0.163)			(0.179)	(0.190)
08. Sasak			-0.819***	0.337			-0.712***	0.482			0.001	0.338
			(0.191)	(0.366)			(0.231)	(0.420)			(0.146)	(0.303)
09. Minang			-0.084	0.519**			-0.137	0.324			-0.136	0.478*
			(0.122)	(0.203)			(0.147)	(0.239)			(0.159)	(0.276)
10. Banjar			-0.154	0.097			-0.575***	0.168			0.065	0.573**
			(0.128)	(0.224)			(0.199)	(0.350)			(0.140)	(0.265)
11. Bima-Dompu			-0.682***	0.409			-0.689**	0.292			-0.469*	-0.136
			(0.224)	(0.335)			(0.281)	(0.404)			(0.249)	(0.334)
12. Makasar			0.854***	0.572**			0.373**	0.122			-0.288	0.079

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VARIABLES	Arisan				Savings				M. free time			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
			(0.145)	(0.232)			(0.175)	(0.272)			(0.240)	(0.328)
17. Betawi			0.394***	0.268**			0.329***	0.149			0.048	0.024
			(0.113)	(0.136)			(0.123)	(0.148)			(0.145)	(0.169)
25. Other Southern Sumatrans			-0.114	-0.127			-0.235	-0.215			0.203	0.150
			(0.125)	(0.157)			(0.157)	(0.191)			(0.131)	(0.179)
27. Cirebon			0.074	0.192			-0.109	0.007			-0.212	-0.241
			(0.142)	(0.166)			(0.181)	(0.203)			(0.196)	(0.217)
Other ethnicities			0.007	0.193			-0.136	0.021			-0.073	0.161
			(0.110)	(0.130)			(0.131)	(0.158)			(0.127)	(0.148)
North Sumatra (d)				-0.129				0.003				-0.237
				(0.157)				(0.186)				(0.189)
West Sumatra (d)				-0.554***				-0.390*				-0.723***
				(0.196)				(0.232)				(0.275)
South Sumatra				0.130				0.118				0.103
				(0.150)				(0.173)				(0.168)
Lampung				0.084				-0.087				-0.324**
				(0.132)				(0.157)				(0.163)
Jakarta				0.391***				0.447***				0.035
				(0.111)				(0.123)				(0.135)
Central Java				-0.192				-0.021				-0.227*
				(0.118)				(0.127)				(0.137)
Yogyakarta				0.057				0.023				0.393***
				(0.142)				(0.157)				(0.150)
East Java				0.502***				0.386***				0.111
				(0.110)				(0.123)				(0.131)

VARIABLES	Arisan				Savings				M. free time			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Bali				-0.291				-0.294				-0.038
				(0.277)				(0.304)				(0.317)
West Nusa Tenggara				-1.094***				-1.109***				-0.388
				(0.314)				(0.378)				(0.281)
South Kalimantan				-0.135				-0.686**				-0.536**
				(0.205)				(0.318)				(0.253)
South Sulawesi				0.411**				0.379				-0.372
				(0.200)				(0.230)				(0.251)
Constant	-1.405***	-1.292***	-1.349***	-1.410***	-1.515***	-1.499***	-1.510***	-1.548***	-1.202***	-1.280***	-1.333***	-1.268***
	(0.178)	(0.205)	(0.211)	(0.231)	(0.196)	(0.230)	(0.238)	(0.263)	(0.203)	(0.244)	(0.247)	(0.266)
Observations	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091
Pseudo R2	0.0914	0.0919	0.116	0.140	0.0337	0.0347	0.0569	0.0788	0.0115	0.0137	0.0209	0.0371

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

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Table A.13   Determinants of women's autonomy in decision making (probit): model in four steps for each decision making type (6)

VARIABLES	W. free time				Work				Contraception			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
SC household	0.008	0.011	0.009	0.012	0.055*	0.041	0.033	0.020	0.048**	0.027	0.032	0.045*
	(0.021)	(0.023)	(0.024)	(0.024)	(0.032)	(0.035)	(0.035)	(0.036)	(0.023)	(0.025)	(0.026)	(0.026)
SC non coresident family	-0.040*	-0.043*	-0.030	-0.012	-0.052	-0.056	-0.061*	-0.061*	-0.036	-0.027	-0.039	0.002
	(0.022)	(0.022)	(0.023)	(0.023)	(0.036)	(0.036)	(0.036)	(0.036)	(0.024)	(0.025)	(0.025)	(0.026)
SC job	-0.019	-0.018	-0.011	-0.012	-0.039	-0.044	-0.045	-0.038	0.010	0.004	0.021	0.034
	(0.019)	(0.019)	(0.020)	(0.020)	(0.031)	(0.031)	(0.031)	(0.032)	(0.021)	(0.021)	(0.022)	(0.022)
SC Arisan	0.046***	0.047***	0.024	0.019	0.023	0.025	0.020	0.039	0.018	0.017	0.006	0.014
	(0.016)	(0.016)	(0.017)	(0.018)	(0.026)	(0.026)	(0.027)	(0.027)	(0.018)	(0.018)	(0.019)	(0.020)
SC religion	0.002	0.003	-0.031	0.003	-0.084***	-0.083***	-0.050	-0.040	-0.010	-0.010	-0.035	-0.016
	(0.019)	(0.019)	(0.024)	(0.027)	(0.029)	(0.029)	(0.037)	(0.040)	(0.022)	(0.022)	(0.027)	(0.030)
SC village	-0.041*	-0.041*	-0.043*	-0.011	0.074**	0.071**	0.043	0.033	-0.000	0.000	-0.044*	-0.008
	(0.021)	(0.021)	(0.023)	(0.025)	(0.033)	(0.033)	(0.035)	(0.037)	(0.023)	(0.023)	(0.025)	(0.027)
Age	0.001	0.001	0.002	0.003	0.005	0.006	0.006	0.006	-0.012***	-0.013***	-0.011***	-0.011***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.005)	(0.005)	(0.005)	(0.005)	(0.003)	(0.003)	(0.003)	(0.004)
Education	-0.052***	-0.057***	-0.038*	-0.055**	-0.073**	-0.067*	-0.053	-0.068*	-0.044*	-0.045*	-0.015	-0.044*
	(0.020)	(0.022)	(0.023)	(0.024)	(0.033)	(0.036)	(0.036)	(0.037)	(0.023)	(0.025)	(0.026)	(0.026)
HH assets per adult (log)	-0.002	0.001	-0.010	-0.017	-0.028	-0.025	-0.032	-0.032	-0.008	-0.010	-0.018	-0.025*
	(0.013)	(0.013)	(0.014)	(0.014)	(0.019)	(0.020)	(0.020)	(0.020)	(0.014)	(0.015)	(0.015)	(0.015)
N. of children	-0.008	-0.010	-0.016	-0.001	0.061	0.075	0.093	0.102*	-0.061	-0.047	-0.031	-0.027
	(0.036)	(0.036)	(0.037)	(0.038)	(0.055)	(0.056)	(0.057)	(0.058)	(0.039)	(0.040)	(0.041)	(0.042)
N. of adult woman		-0.029	-0.034	-0.029		-0.029	-0.030	-0.041		0.083**	0.077**	0.078**
		(0.031)	(0.032)	(0.033)		(0.049)	(0.049)	(0.050)		(0.034)	(0.035)	(0.036)

VARIABLES	W. free time				Work				Contraception			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Age difference		0.002	0.003	0.003		-0.007	-0.007	-0.009		0.003	0.003	0.004
		(0.004)	(0.004)	(0.004)		(0.005)	(0.006)	(0.006)		(0.004)	(0.004)	(0.004)
Education difference		0.007	-0.008	0.002		0.001	-0.009	-0.001		0.007	0.001	0.021
		(0.023)	(0.023)	(0.024)		(0.035)	(0.036)	(0.037)		(0.025)	(0.026)	(0.027)
Spouse is economic active (d)		-0.102	-0.112	-0.103		-0.328***	-0.327***	-0.311***		-0.054	-0.048	-0.001
		(0.079)	(0.080)	(0.081)		(0.106)	(0.106)	(0.108)		(0.087)	(0.088)	(0.090)
02. Sundanese			-0.175***	-0.164**			-0.121	-0.230*			0.191***	-0.111
			(0.062)	(0.083)			(0.100)	(0.133)			(0.064)	(0.088)
03. Bali			-0.534***	-0.504**			0.090	0.498			-0.183	-0.049
			(0.116)	(0.237)			(0.153)	(0.318)			(0.120)	(0.254)
04. Batak			-0.172	0.130			-0.281	-0.503**			-0.579***	-0.121
			(0.117)	(0.148)			(0.198)	(0.238)			(0.155)	(0.198)
05. Bugis			0.179*	-0.185			0.147	0.671***			0.098	-0.121
			(0.100)	(0.172)			(0.138)	(0.246)			(0.109)	(0.176)
07. Maduranese			0.488***	0.168			-0.081	-0.151			0.314***	-0.042
			(0.108)	(0.115)			(0.185)	(0.198)			(0.116)	(0.122)
08. Sasak			-0.260***	-0.018			-0.351*	0.557**			-0.109	-0.085
			(0.101)	(0.263)			(0.194)	(0.280)			(0.110)	(0.253)
09. Minang			-0.189*	0.472***			0.032	0.445*			-0.563***	-0.068
			(0.105)	(0.178)			(0.156)	(0.239)			(0.142)	(0.223)
10. Banjar			0.546***	-0.409**			-0.711***	0.356			-0.435***	-0.188
			(0.096)	(0.171)			(0.268)	(0.518)			(0.129)	(0.206)
11. Bima-Dompu			0.092	0.330			-0.773**	0.068			-0.106	-0.074
			(0.120)	(0.263)			(0.375)	(0.354)			(0.139)	(0.256)
12. Makasar			0.568***	0.164			0.024	0.651**			0.380**	0.049

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VARIABLES	W. free time				Work				Contraception			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
			(0.142)	(0.218)			(0.213)	(0.327)			(0.149)	(0.223)
17. Betawi			0.134	0.119			0.262*	-0.039			0.529***	0.200*
			(0.101)	(0.120)			(0.140)	(0.165)			(0.103)	(0.121)
25. Other Southern Sumatrans			-0.248**	0.049			0.042	-0.118			0.105	-0.063
			(0.105)	(0.134)			(0.152)	(0.205)			(0.108)	(0.141)
27. Cirebon			-0.740***	-0.719***			-0.410	-0.504*			-1.163***	-1.502***
			(0.145)	(0.160)			(0.255)	(0.271)			(0.242)	(0.253)
Other ethnicities			0.112	0.238**			0.116	0.254*			-0.030	-0.037
			(0.088)	(0.104)			(0.133)	(0.153)			(0.099)	(0.119)
North Sumatra (d)				-0.230*				0.186				-0.853***
				(0.125)				(0.173)				(0.159)
West Sumatra (d)				-0.707***				-0.609**				-0.925***
				(0.169)				(0.241)				(0.208)
South Sumatra				-0.372***				0.144				-0.097
				(0.130)				(0.190)				(0.132)
Lampung				-0.063				-0.281				-0.776***
				(0.105)				(0.180)				(0.130)
Jakarta				0.058				0.358**				-0.030
				(0.102)				(0.141)				(0.101)
Central Java				-0.312***				-0.117				-0.679***
				(0.093)				(0.145)				(0.103)
Yogyakarta				0.120				-0.511**				-0.664***
				(0.116)				(0.223)				(0.138)
East Java				0.381***				-0.058				0.031
				(0.092)				(0.144)				(0.096)

VARIABLES	W. free time				Work				Contraception			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Bali				0.056				-0.451				-0.451*
				(0.240)				(0.335)				(0.260)
West Nusa Tenggara				-0.242				-1.008***				-0.385
				(0.250)				(0.236)				(0.237)
South Kalimantan				1.009***				-1.269***				-0.586***
				(0.157)				(0.485)				(0.181)
South Sulawesi				0.428**				-0.730***				-0.033
				(0.179)				(0.276)				(0.181)
Constant	-0.337**	-0.193	-0.175	-0.165	-1.488***	-1.234***	-1.229***	-1.124***	-0.247	-0.254	-0.337*	0.101
	(0.144)	(0.168)	(0.174)	(0.190)	(0.221)	(0.248)	(0.251)	(0.275)	(0.160)	(0.188)	(0.196)	(0.213)
Observations	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091	5,091
Pseudo R2	0.00443	0.00488	0.0319	0.0592	0.0199	0.0251	0.0401	0.0670	0.00406	0.00536	0.0347	0.0679

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A.14   Determinants of women autonomy in decision making (*Social capital* instrumented with *migration*) (1)

VARIABLES	Exp. food	Choice food	Routine exp	W clothes	M clothes	Ch. education	Ch. health	Ch. clothes	Large exp.
Social Capital	0.292	0.193	0.327	0.508**	0.166	0.049	0.334	0.173	0.312
	(0.244)	(0.245)	(0.244)	(0.246)	(0.262)	(0.341)	(0.258)	(0.346)	(0.414)
Age	0.001	0.003	0.000	-0.004	0.005	0.008	-0.008	0.006	0.010
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.008)	(0.006)	(0.008)	(0.009)
Education	-0.050	-0.135**	-0.103*	-0.148**	-0.148**	-0.094	-0.121**	-0.141*	-0.087
	(0.057)	(0.057)	(0.057)	(0.058)	(0.061)	(0.082)	(0.060)	(0.082)	(0.097)
HH assets per adult (log)	-0.014	-0.039*	-0.034	-0.026	-0.021	-0.041	-0.033	-0.043	-0.036
	(0.021)	(0.021)	(0.021)	(0.021)	(0.023)	(0.029)	(0.022)	(0.030)	(0.035)
N. of children	-0.056	-0.002	-0.076	-0.139***	-0.019	-0.028	0.005	-0.063	-0.043
	(0.051)	(0.051)	(0.051)	(0.051)	(0.054)	(0.070)	(0.054)	(0.072)	(0.085)
N. of adult woman	-0.183***	-0.190***	-0.138***	-0.042	-0.018	-0.026	-0.121***	-0.094	0.011
	(0.042)	(0.042)	(0.042)	(0.042)	(0.044)	(0.057)	(0.045)	(0.059)	(0.066)
Age difference	-0.003	-0.002	-0.004	-0.006	-0.006	0.002	-0.003	-0.002	-0.004
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)	(0.005)	(0.006)
Education difference	0.032	0.037	0.069**	0.106***	0.117***	0.091**	0.091***	0.117**	0.111**
	(0.032)	(0.032)	(0.032)	(0.032)	(0.034)	(0.044)	(0.034)	(0.045)	(0.053)
Spouse is economic active (d)	0.060	0.071	0.002	0.030	0.012	-0.066	0.091	-0.041	-0.120
	(0.103)	(0.103)	(0.104)	(0.103)	(0.106)	(0.133)	(0.107)	(0.136)	(0.153)
02. Sundanese	-0.019	0.017	0.021	0.054	0.096	-0.055	0.085	0.031	-0.118
	(0.088)	(0.088)	(0.089)	(0.090)	(0.093)	(0.114)	(0.093)	(0.118)	(0.147)
03. Bali	-0.030	0.012	-0.363	0.069	0.203	0.297	0.024	0.422	0.606
	(0.245)	(0.245)	(0.250)	(0.253)	(0.281)	(0.387)	(0.269)	(0.402)	(0.497)
04. Batak	0.047	0.380**	0.381**	0.432***	0.460***	0.449**	0.531***	0.546***	0.402
	(0.161)	(0.169)	(0.167)	(0.165)	(0.166)	(0.205)	(0.165)	(0.206)	(0.245)
05. Bugis	0.189	-0.058	0.110	-0.079	0.110	0.098	-0.100	-0.057	-0.123
	(0.169)	(0.166)	(0.169)	(0.169)	(0.174)	(0.201)	(0.170)	(0.216)	(0.236)

VARIABLES	Exp. food	Choice food	Routine exp	W clothes	M clothes	Ch. education	Ch. health	Ch. clothes	Large exp.
07. Maduranese	-0.088	-0.049	-0.356**	-0.510***	-0.455***	-0.344	-0.295*	-0.330	-0.123
	(0.172)	(0.175)	(0.168)	(0.164)	(0.171)	(0.230)	(0.169)	(0.236)	(0.272)
08. Sasak	-0.074	-0.480*	-0.070	0.110	-0.343	0.000	-0.032	0.086	-0.239
	(0.243)	(0.248)	(0.243)	(0.246)	(0.319)	(0.000)	(0.464)	(0.612)	(0.608)
09. Minang	-0.259	-0.219	0.189	0.005	0.176	0.077	0.005	0.046	-0.099
	(0.171)	(0.171)	(0.174)	(0.176)	(0.187)	(0.235)	(0.183)	(0.246)	(0.287)
10. Banjar	-0.309*	-0.447**	-0.317*	-0.151	-0.333	-0.456	-0.246	0.097	-0.459
	(0.186)	(0.185)	(0.187)	(0.191)	(0.232)	(0.314)	(0.196)	(0.335)	(0.390)
11. Bima-Dompu	0.032	-0.183	0.075	0.101	-0.407	0.074	0.291	0.540	0.222
	(0.248)	(0.253)	(0.248)	(0.251)	(0.327)	(0.513)	(0.409)	(0.510)	(0.530)
12. Makasar	0.433*	0.436*	0.279	0.182	0.392	0.486*	0.163	0.192	0.080
	(0.256)	(0.259)	(0.253)	(0.249)	(0.242)	(0.273)	(0.241)	(0.286)	(0.317)
17. Betawi	0.098	-0.021	0.160	0.215*	0.056	0.142	0.171	0.097	-0.015
	(0.127)	(0.125)	(0.127)	(0.129)	(0.130)	(0.149)	(0.126)	(0.157)	(0.191)
25. Other Southern Sumatrans	-0.020	-0.009	-0.191	0.012	-0.157	0.118	0.094	0.267	-0.038
	(0.128)	(0.127)	(0.128)	(0.131)	(0.134)	(0.166)	(0.136)	(0.169)	(0.204)
27. Cirebon	0.303**	0.318**	0.375***	0.390***	0.507***	-0.029	0.304**	0.231	-0.220
	(0.140)	(0.143)	(0.142)	(0.142)	(0.141)	(0.177)	(0.143)	(0.177)	(0.258)
Other ethnicities	-0.016	-0.201*	-0.074	0.147	0.073	0.127	0.100	0.192	0.124
	(0.105)	(0.104)	(0.106)	(0.107)	(0.111)	(0.134)	(0.110)	(0.140)	(0.161)
North Sumatra (d)	0.142	0.270**	0.351***	0.363***	0.261**	-0.156	0.215*	0.055	0.094
	(0.119)	(0.121)	(0.122)	(0.123)	(0.126)	(0.155)	(0.124)	(0.158)	(0.192)
West Sumatra (d)	-0.131	0.059	-0.290*	-0.005	-0.119	-0.291	-0.103	-0.161	0.038
	(0.150)	(0.150)	(0.152)	(0.155)	(0.168)	(0.205)	(0.161)	(0.213)	(0.247)
South Sumatra	-0.201	-0.149	0.051	-0.119	0.247	-0.206	-0.105	-0.136	0.022
	(0.157)	(0.156)	(0.157)	(0.160)	(0.166)	(0.211)	(0.167)	(0.217)	(0.254)
Lampung	0.510***	0.339**	0.468***	-0.167	0.231	-0.074	-0.284*	-0.090	-0.060
	(0.163)	(0.163)	(0.163)	(0.162)	(0.169)	(0.217)	(0.171)	(0.222)	(0.269)

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VARIABLES	Exp. food	Choice food	Routine exp	W clothes	M clothes	Ch. education	Ch. health	Ch. clothes	Large exp.
Jakarta	0.396***	0.316**	0.299**	0.431***	0.346**	0.149	0.372***	0.305*	0.250
	(0.134)	(0.134)	(0.133)	(0.135)	(0.139)	(0.172)	(0.136)	(0.175)	(0.210)
Central Java	0.267**	0.284**	0.099	-0.121	0.217	-0.269	-0.098	-0.263	0.002
	(0.130)	(0.131)	(0.130)	(0.132)	(0.139)	(0.177)	(0.138)	(0.183)	(0.215)
Yogyakarta	0.214	0.132	0.090	-0.257	-0.176	-0.355	-0.321	-0.349	-0.257
	(0.247)	(0.247)	(0.247)	(0.248)	(0.266)	(0.343)	(0.261)	(0.352)	(0.414)
East Java	0.837***	0.720***	0.860***	0.465***	0.547***	0.041	0.368***	0.120	0.052
	(0.100)	(0.100)	(0.100)	(0.099)	(0.102)	(0.124)	(0.102)	(0.132)	(0.162)
Bali	0.021	0.073	0.432*	0.461**	-0.129	-0.562	0.275	-0.343	-0.353
	(0.224)	(0.223)	(0.229)	(0.232)	(0.256)	(0.354)	(0.244)	(0.372)	(0.471)
West Nusa Tenggara	0.158	0.521**	0.129	-0.118	-0.583**	-1.102**	-1.537***	-1.491***	-0.731
	(0.236)	(0.241)	(0.235)	(0.238)	(0.290)	(0.505)	(0.417)	(0.537)	(0.520)
South Kalimantan	0.169	0.142	0.196	0.417**	-0.315	-0.373	0.139	-0.593*	-0.185
	(0.188)	(0.187)	(0.188)	(0.192)	(0.214)	(0.271)	(0.194)	(0.316)	(0.326)
South Sulawesi	0.453**	0.422**	0.431**	0.516***	0.429**	0.346*	0.539***	0.607***	0.772***
	(0.179)	(0.176)	(0.178)	(0.180)	(0.182)	(0.206)	(0.178)	(0.215)	(0.239)
Constant	0.593	1.009*	0.890*	0.705	-0.410	-0.803	0.255	-0.701	-1.360
	(0.535)	(0.537)	(0.535)	(0.537)	(0.571)	(0.745)	(0.564)	(0.755)	(0.900)
Observations	5,091	5,091	5,091	5,091	5,091	4,876	5,091	5,091	5,091

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A.15   Determinants of women autonomy in decision making (*Social capital* instrumented with *migration*) (2)

VARIABLES	W. family	M. family	Gifts	Arisan	Savings	M. free time	W. free time	Work	Contraception
Social Cappital	0.413	0.642	0.320	0.257	0.124	0.124	0.374	-0.492	0.070
	(0.391)	(0.470)	(0.336)	(0.297)	(0.348)	(0.356)	(0.255)	(0.401)	(0.275)
Age	0.001	0.007	0.004	0.005	-0.003	0.003	-0.004	0.018*	-0.011*
	(0.009)	(0.010)	(0.008)	(0.007)	(0.008)	(0.008)	(0.006)	(0.009)	(0.006)
Education	-0.158*	-0.205*	-0.122	0.041	0.037	-0.072	-0.137**	0.066	-0.054
	(0.092)	(0.113)	(0.079)	(0.070)	(0.082)	(0.083)	(0.060)	(0.094)	(0.064)
HH assets per adult (log)	-0.052	-0.072*	-0.032	0.012	0.042	-0.049	-0.042*	-0.002	-0.028
	(0.033)	(0.039)	(0.029)	(0.026)	(0.030)	(0.031)	(0.022)	(0.035)	(0.024)
N. of children	-0.074	-0.070	-0.099	-0.178***	-0.089	-0.014	-0.054	0.195**	-0.015
	(0.081)	(0.091)	(0.070)	(0.063)	(0.073)	(0.075)	(0.053)	(0.083)	(0.058)
N. of adult woman	-0.024	-0.045	-0.037	-0.045	-0.006	0.040	-0.066	0.040	0.091*
	(0.064)	(0.073)	(0.056)	(0.050)	(0.058)	(0.060)	(0.044)	(0.069)	(0.047)
Age difference	-0.005	-0.003	-0.007	0.008	-0.007	0.001	0.003	-0.009	0.004
	(0.006)	(0.007)	(0.005)	(0.005)	(0.005)	(0.006)	(0.004)	(0.006)	(0.005)
Education difference	0.127**	0.133**	0.090**	-0.002	0.006	0.071	0.034	-0.059	0.023
	(0.050)	(0.060)	(0.044)	(0.038)	(0.045)	(0.046)	(0.033)	(0.052)	(0.036)
Spouse is economic active (d)	-0.118	-0.042	-0.086	0.100	-0.015	0.150	-0.010	-0.453***	-0.012
	(0.146)	(0.171)	(0.131)	(0.122)	(0.139)	(0.149)	(0.106)	(0.152)	(0.114)
02. Sundanese	0.072	-0.170	0.126	0.158	0.024	0.106	-0.215**	-0.178	-0.120
	(0.142)	(0.161)	(0.118)	(0.106)	(0.126)	(0.128)	(0.093)	(0.142)	(0.095)
03. Bali	0.529	1.018*	0.175	0.185	0.123	0.295	-0.350	0.275	0.001
	(0.429)	(0.547)	(0.355)	(0.348)	(0.355)	(0.343)	(0.266)	(0.387)	(0.280)
04. Batak	0.638**	0.759**	0.195	0.402**	0.223	0.149	0.257	-0.618**	-0.065
	(0.248)	(0.314)	(0.232)	(0.205)	(0.230)	(0.250)	(0.173)	(0.272)	(0.209)
05. Bugis	-0.185	0.318	-0.104	-0.093	0.243	0.201	-0.194	0.683***	-0.117
	(0.237)	(0.269)	(0.204)	(0.198)	(0.211)	(0.248)	(0.168)	(0.259)	(0.182)

VARIABLES	W. family	M. family	Gifts	Arisan	Savings	M. free time	W. free time	Work	Contraception
07. Maduranese	-0.678**	-0.577*	-0.633**	-0.736***	-0.337	-0.302	0.007	0.053	-0.076
	(0.277)	(0.305)	(0.249)	(0.205)	(0.225)	(0.240)	(0.166)	(0.268)	(0.173)
08. Sasak	0.671	0.000	-0.185	0.165	0.436	0.331	-0.037	0.585	-0.080
	(0.892)	(0.000)	(0.579)	(0.452)	(0.577)	(0.399)	(0.254)	(0.550)	(0.282)
09. Minang	-0.090	-0.063	0.058	0.509**	0.324	0.460*	0.388**	0.545*	-0.062
	(0.263)	(0.325)	(0.228)	(0.227)	(0.263)	(0.276)	(0.189)	(0.278)	(0.227)
10. Banjar	-0.160	-0.213	-0.236	0.064	0.105	0.585*	-0.294	0.202	-0.180
	(0.302)	(0.418)	(0.237)	(0.232)	(0.350)	(0.322)	(0.194)	(0.504)	(0.228)
11. Bima-Dompu	0.249	0.000	0.308	0.287	0.298	-0.123	0.325	0.080	-0.052
	(0.614)	(0.000)	(0.474)	(0.429)	(0.524)	(0.431)	(0.256)	(0.578)	(0.287)
12. Makasar	0.155	0.398	0.278	0.451*	0.076	0.055	0.013	0.881**	0.026
	(0.317)	(0.369)	(0.282)	(0.263)	(0.295)	(0.371)	(0.242)	(0.377)	(0.253)
17. Betawi	0.046	0.078	0.118	0.307**	0.138	0.012	0.087	0.027	0.198
	(0.183)	(0.206)	(0.151)	(0.138)	(0.158)	(0.178)	(0.128)	(0.179)	(0.127)
25. Other Southern Sumatrans	-0.166	-0.088	-0.058	-0.176	-0.227	0.143	0.059	-0.158	-0.048
	(0.205)	(0.225)	(0.174)	(0.164)	(0.202)	(0.179)	(0.139)	(0.198)	(0.142)
27. Cirebon	-0.086	-0.313	-0.146	0.227	0.012	-0.259	-0.765***	-0.457*	-1.498***
	(0.246)	(0.270)	(0.201)	(0.166)	(0.208)	(0.224)	(0.167)	(0.273)	(0.258)
Other ethnicities	-0.085	0.001	0.073	0.115	0.068	0.200	0.200*	0.325**	-0.021
	(0.170)	(0.193)	(0.139)	(0.128)	(0.152)	(0.153)	(0.111)	(0.155)	(0.119)
North Sumatra (d)	-0.006	-0.575**	-0.159	-0.181	-0.016	-0.244	-0.238*	0.168	-0.834***
	(0.208)	(0.267)	(0.176)	(0.158)	(0.174)	(0.186)	(0.128)	(0.173)	(0.151)
West Sumatra (d)	0.483**	-0.091	0.193	-0.578***	-0.402	-0.726***	-0.717***	-0.591**	-0.928***
	(0.232)	(0.281)	(0.201)	(0.214)	(0.249)	(0.264)	(0.171)	(0.264)	(0.199)
South Sumatra	0.218	-0.137	0.143	0.129	0.106	0.072	-0.522***	0.350	-0.123
	(0.248)	(0.277)	(0.209)	(0.191)	(0.226)	(0.222)	(0.169)	(0.238)	(0.172)
Lampung	-0.166	-0.456	-0.490**	-0.059	-0.144	-0.393	-0.262	-0.062	-0.803***
	(0.266)	(0.307)	(0.233)	(0.197)	(0.237)	(0.244)	(0.168)	(0.270)	(0.188)

VARIABLES	W. family	M. family	Gifts	Arisan	Savings	M. free time	W. free time	Work	Contraception
Jakarta	0.439**	-0.184	0.448***	0.330**	0.477***	0.045	-0.084	0.577***	-0.037
	(0.199)	(0.236)	(0.169)	(0.153)	(0.176)	(0.187)	(0.138)	(0.198)	(0.142)
Central Java	0.028	-0.213	-0.121	-0.060	0.036	-0.245	-0.451***	0.064	-0.679***
	(0.211)	(0.240)	(0.179)	(0.159)	(0.186)	(0.193)	(0.138)	(0.207)	(0.148)
Yogyakarta	-0.293	-0.783*	-0.152	0.205	0.102	0.361	-0.208	-0.035	-0.692**
	(0.399)	(0.474)	(0.335)	(0.294)	(0.346)	(0.350)	(0.257)	(0.418)	(0.280)
East Java	0.488***	0.233	0.173	0.666***	0.474***	0.161	0.448***	-0.125	0.065
	(0.155)	(0.169)	(0.131)	(0.114)	(0.133)	(0.139)	(0.100)	(0.152)	(0.102)
Bali	0.139	-0.656	0.041	-0.198	0.022	0.152	0.081	-0.410	-0.397
	(0.401)	(0.509)	(0.325)	(0.326)	(0.321)	(0.309)	(0.241)	(0.345)	(0.254)
West Nusa Tenggara	-1.660*	0.000	-1.115**	-1.060**	-1.142**	-0.443	-0.319	-0.972*	-0.411
	(0.874)	(0.000)	(0.492)	(0.423)	(0.548)	(0.389)	(0.245)	(0.530)	(0.272)
South Kalimantan	0.127	-0.469	0.276	-0.064	-0.609*	-0.548*	0.860***	-1.060**	-0.588***
	(0.295)	(0.363)	(0.236)	(0.231)	(0.333)	(0.325)	(0.197)	(0.479)	(0.219)
South Sulawesi	0.758***	0.104	0.421**	0.564***	0.477**	-0.339	0.414**	-0.658**	-0.011
	(0.245)	(0.281)	(0.213)	(0.201)	(0.218)	(0.265)	(0.178)	(0.283)	(0.187)
Constant	-0.737	-0.537	-0.712	-1.406**	-1.750**	-1.211	0.593	-2.267***	0.091
	(0.855)	(1.007)	(0.730)	(0.650)	(0.759)	(0.780)	(0.558)	(0.873)	(0.601)
Observations	5,091	4,717	5,091	5,091	5,091	5,091	5,091	5,091	5,091

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A.16   Determinants of women autonomy in decision making (*SC Arisan* instrumented with *Arisan 2000*) (1)

VARIABLES	Exp. food	Choice food	Routine exp	W clothes	M clothes	Ch. education	Ch. health	Ch. clothes	Large exp.
SC household	0.018	0.035	0.031	0.073***	0.006	0.049	0.068***	0.074**	-0.021
	(0.024)	(0.024)	(0.024)	(0.023)	(0.026)	(0.032)	(0.025)	(0.033)	(0.037)
SC non coresident family	-0.004	0.029	0.036	-0.007	-0.009	0.010	0.004	0.003	-0.120***
	(0.024)	(0.025)	(0.024)	(0.024)	(0.026)	(0.034)	(0.026)	(0.034)	(0.039)
SC job	-0.016	-0.028	0.018	0.074***	0.049**	0.039	0.044*	0.079**	0.047
	(0.023)	(0.023)	(0.023)	(0.022)	(0.024)	(0.031)	(0.024)	(0.032)	(0.037)
SC Arisan	0.157	0.045	-0.076	-0.091	-0.100	-0.129	-0.182	-0.147	0.001
	(0.123)	(0.124)	(0.122)	(0.119)	(0.132)	(0.164)	(0.130)	(0.174)	(0.200)
SC religion	-0.024	-0.013	0.004	-0.004	0.025	-0.070**	0.024	-0.041	-0.070*
	(0.027)	(0.027)	(0.027)	(0.026)	(0.028)	(0.034)	(0.028)	(0.036)	(0.040)
SC village	-0.008	-0.018	0.010	0.055**	0.131***	0.051	0.092***	0.063	0.056
	(0.029)	(0.029)	(0.028)	(0.028)	(0.030)	(0.038)	(0.030)	(0.040)	(0.045)
Age	0.006*	0.007**	0.006*	0.001	0.004	0.005	-0.005	0.005	0.010**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.004)	(0.005)
Education	-0.020	-0.097***	-0.021	-0.049	-0.143***	-0.089**	-0.042	-0.111**	-0.061
	(0.032)	(0.032)	(0.032)	(0.031)	(0.035)	(0.044)	(0.034)	(0.046)	(0.053)
HH assets per adult (log)	-0.006	-0.027	-0.005	0.018	0.001	-0.022	0.006	-0.014	-0.010
	(0.017)	(0.017)	(0.017)	(0.017)	(0.018)	(0.022)	(0.018)	(0.023)	(0.028)
N. of children	-0.003	0.013	-0.046	-0.106***	-0.007	-0.067	-0.004	-0.094*	0.017
	(0.039)	(0.040)	(0.039)	(0.038)	(0.042)	(0.053)	(0.042)	(0.055)	(0.064)
N. of adult woman	-0.167***	-0.178***	-0.100***	-0.016	-0.000	-0.038	-0.104***	-0.107**	0.032
	(0.032)	(0.032)	(0.032)	(0.031)	(0.034)	(0.044)	(0.035)	(0.046)	(0.050)
Age difference	-0.003	-0.001	-0.003	-0.006*	-0.006	0.003	-0.002	-0.001	-0.006
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)	(0.006)	(0.006)
Education difference	0.019	0.024	0.033	0.067***	0.111***	0.086**	0.059**	0.100***	0.085**
	(0.025)	(0.025)	(0.025)	(0.024)	(0.027)	(0.035)	(0.027)	(0.036)	(0.042)
Spouse is economic active (d)	-0.009	0.042	-0.053	-0.039	0.007	-0.020	0.072	-0.003	-0.185

VARIABLES	Exp. food	Choice food	Routine exp	W clothes	M clothes	Ch. education	Ch. health	Ch. clothes	Large exp.
	(0.083)	(0.084)	(0.084)	(0.081)	(0.086)	(0.105)	(0.087)	(0.109)	(0.118)
02. Sundanese	0.014	0.034	0.056	0.113	0.111	-0.036	0.122	0.065	-0.038
	(0.082)	(0.083)	(0.082)	(0.081)	(0.089)	(0.106)	(0.087)	(0.111)	(0.137)
03. Bali	-0.142	-0.114	-0.576**	-0.180	0.148	0.236	-0.126	0.321	0.439
	(0.226)	(0.227)	(0.231)	(0.226)	(0.263)	(0.354)	(0.250)	(0.373)	(0.441)
04. Batak	-0.072	0.338**	0.262*	0.248*	0.450***	0.408**	0.476***	0.515***	0.215
	(0.142)	(0.152)	(0.148)	(0.142)	(0.148)	(0.177)	(0.146)	(0.180)	(0.208)
05. Bugis	0.250	-0.038	0.085	-0.135	0.000	0.031	-0.182	-0.130	-0.142
	(0.174)	(0.173)	(0.174)	(0.169)	(0.184)	(0.212)	(0.178)	(0.227)	(0.246)
07. Maduranese	0.014	0.039	-0.192	-0.303**	-0.436***	-0.271	-0.160	-0.212	0.046
	(0.137)	(0.142)	(0.132)	(0.122)	(0.134)	(0.180)	(0.130)	(0.187)	(0.208)
08. Sasak	0.033	-0.503**	-0.164	0.076	-0.442	0.000	-0.136	-0.000	-0.268
	(0.247)	(0.255)	(0.247)	(0.243)	(0.325)	(0.000)	(0.465)	(0.613)	(0.608)
09. Minang	-0.234	-0.175	0.253	0.096	0.201	0.095	0.150	0.095	-0.058
	(0.162)	(0.163)	(0.165)	(0.163)	(0.185)	(0.230)	(0.177)	(0.242)	(0.277)
10. Banjar	-0.374**	-0.522***	-0.456***	-0.329*	-0.377*	-0.459	-0.392**	0.052	-0.544
	(0.172)	(0.173)	(0.172)	(0.172)	(0.222)	(0.301)	(0.184)	(0.321)	(0.377)
11. Bima-Dompu	0.099	-0.217	-0.012	0.053	-0.494	0.009	0.201	0.449	0.168
	(0.251)	(0.259)	(0.251)	(0.247)	(0.332)	(0.518)	(0.409)	(0.510)	(0.527)
12. Makasar	0.562**	0.518**	0.411*	0.350	0.372*	0.495**	0.261	0.249	0.194
	(0.237)	(0.240)	(0.232)	(0.222)	(0.223)	(0.244)	(0.219)	(0.255)	(0.271)
17. Betawi	0.097	-0.019	0.218*	0.295**	0.101	0.176	0.247*	0.146	0.035
	(0.126)	(0.125)	(0.126)	(0.124)	(0.132)	(0.152)	(0.127)	(0.159)	(0.192)
25. Other Southern Sumatrans	0.002	-0.018	-0.195	-0.032	-0.156	0.085	0.034	0.224	-0.034
	(0.130)	(0.129)	(0.129)	(0.128)	(0.138)	(0.172)	(0.139)	(0.174)	(0.207)
27. Cirebon	0.287**	0.313**	0.424***	0.475***	0.606***	0.022	0.403***	0.302*	-0.129
	(0.138)	(0.142)	(0.139)	(0.136)	(0.143)	(0.179)	(0.144)	(0.179)	(0.257)
Other ethnicities	0.017	-0.191*	-0.071	0.119	0.005	0.034	0.052	0.115	0.097
	(0.108)	(0.107)	(0.108)	(0.107)	(0.117)	(0.141)	(0.115)	(0.148)	(0.165)

VARIABLES	Exp. food	Choice food	Routine exp	W clothes	M clothes	Ch. education	Ch. health	Ch. clothes	Large exp.
North Sumatra (d)	0.127	0.237*	0.331***	0.326***	0.286**	-0.175	0.192	-0.001	0.169
	(0.120)	(0.123)	(0.122)	(0.120)	(0.130)	(0.160)	(0.127)	(0.165)	(0.195)
West Sumatra (d)	-0.125	0.040	-0.296*	-0.015	-0.144	-0.306	-0.159	-0.190	0.050
	(0.150)	(0.151)	(0.152)	(0.151)	(0.174)	(0.211)	(0.165)	(0.220)	(0.251)
South Sumatra	-0.129	-0.079	0.181	0.087	0.304**	-0.143	0.070	-0.023	0.156
	(0.128)	(0.128)	(0.128)	(0.128)	(0.137)	(0.173)	(0.138)	(0.180)	(0.206)
Lampung	0.691***	0.460***	0.633***	0.067	0.287***	-0.070	-0.144	-0.033	0.147
	(0.109)	(0.108)	(0.108)	(0.102)	(0.110)	(0.135)	(0.114)	(0.142)	(0.173)
Jakarta	0.440***	0.368***	0.406***	0.570***	0.354***	0.109	0.464***	0.316**	0.310**
	(0.102)	(0.102)	(0.101)	(0.101)	(0.106)	(0.125)	(0.103)	(0.129)	(0.153)
Central Java	0.261**	0.322**	0.272**	0.141	0.390***	-0.167	0.187	-0.095	0.130
	(0.124)	(0.126)	(0.124)	(0.122)	(0.135)	(0.167)	(0.133)	(0.178)	(0.204)
Yogyakarta	0.267	0.241	0.455**	0.268	0.053	-0.219	0.175	-0.077	-0.016
	(0.183)	(0.184)	(0.182)	(0.178)	(0.202)	(0.253)	(0.197)	(0.270)	(0.305)
East Java	0.701***	0.655***	0.852***	0.458***	0.666***	0.090	0.480***	0.178	-0.002
	(0.115)	(0.117)	(0.116)	(0.111)	(0.122)	(0.148)	(0.120)	(0.157)	(0.188)
Bali	-0.075	0.066	0.434*	0.333	-0.194	-0.783**	0.213	-0.543	-0.568
	(0.230)	(0.231)	(0.234)	(0.229)	(0.266)	(0.357)	(0.254)	(0.378)	(0.451)
West Nusa Tenggara	0.158	0.585**	0.271	0.014	-0.460	-1.016**	-1.392***	-1.371***	-0.559
	(0.234)	(0.242)	(0.234)	(0.229)	(0.291)	(0.502)	(0.413)	(0.530)	(0.510)
South Kalimantan	0.212	0.213	0.374**	0.648***	-0.194	-0.326	0.359**	-0.489*	-0.083
	(0.169)	(0.169)	(0.168)	(0.167)	(0.199)	(0.248)	(0.176)	(0.297)	(0.298)
South Sulawesi	0.328*	0.370*	0.472**	0.574***	0.531***	0.357	0.645***	0.647***	0.756***
	(0.192)	(0.191)	(0.191)	(0.188)	(0.201)	(0.231)	(0.195)	(0.241)	(0.267)
Constant	0.212	0.629***	0.179	-0.118	-0.633**	-0.814***	-0.396	-0.891***	-1.728***
	(0.228)	(0.231)	(0.228)	(0.222)	(0.246)	(0.311)	(0.243)	(0.321)	(0.374)
Observations	5,024	5,024	5,024	5,024	5,024	4,811	5,024	5,024	5,024

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A.17   Determinants of women autonomy in decision making (*SC Arisan* instrumented with *Arisan 2000*) (2)

VARIABLES	W. family	M. family	Gifts	Arisan	Savings	M. free time	W. free time	Work	Contraception
SC household	-0.041	-0.018	0.013	-0.030	0.002	-0.009	0.012	0.023	0.045
	(0.037)	(0.041)	(0.032)	(0.030)	(0.034)	(0.036)	(0.024)	(0.038)	(0.027)
SC non coresident family	-0.072*	-0.069*	-0.066**	-0.050	-0.044	-0.010	-0.008	-0.063	-0.010
	(0.037)	(0.042)	(0.033)	(0.030)	(0.035)	(0.037)	(0.025)	(0.040)	(0.028)
SC job	0.035	-0.012	-0.010	0.026	0.080**	0.089***	-0.010	-0.033	0.019
	(0.036)	(0.040)	(0.031)	(0.028)	(0.032)	(0.034)	(0.023)	(0.037)	(0.026)
SC Arisan	0.279	0.408*	0.396**	0.544***	0.388**	-0.468**	-0.015	0.021	0.167
	(0.189)	(0.209)	(0.165)	(0.150)	(0.175)	(0.188)	(0.124)	(0.202)	(0.140)
SC religion	-0.034	-0.050	0.018	0.002	-0.079**	-0.030	0.002	-0.047	-0.021
	(0.039)	(0.045)	(0.036)	(0.032)	(0.036)	(0.039)	(0.027)	(0.042)	(0.030)
SC village	0.012	0.012	-0.060	-0.011	0.001	0.100**	-0.005	0.038	-0.023
	(0.043)	(0.047)	(0.038)	(0.035)	(0.040)	(0.043)	(0.029)	(0.046)	(0.033)
Age	0.007	0.016***	0.007*	0.007*	-0.006	0.003	0.003	0.006	-0.011***
	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)	(0.003)	(0.005)	(0.004)
Education	-0.149***	-0.169***	-0.118***	-0.026	-0.048	0.014	-0.052	-0.068	-0.077**
	(0.050)	(0.057)	(0.044)	(0.039)	(0.045)	(0.048)	(0.032)	(0.053)	(0.036)
HH assets per adult (log)	-0.048*	-0.058**	-0.042*	-0.023	0.016	0.000	-0.012	-0.028	-0.038**
	(0.026)	(0.029)	(0.023)	(0.021)	(0.025)	(0.025)	(0.017)	(0.027)	(0.019)
N. of children	0.051	0.081	-0.015	-0.065	-0.022	-0.029	-0.003	0.095	-0.011
	(0.061)	(0.069)	(0.054)	(0.050)	(0.057)	(0.060)	(0.040)	(0.062)	(0.045)
N. of adult woman	0.017	0.011	-0.028	-0.042	-0.018	0.081*	-0.025	-0.050	0.068*
	(0.048)	(0.053)	(0.044)	(0.040)	(0.046)	(0.048)	(0.033)	(0.054)	(0.036)
Age difference	-0.008	-0.005	-0.010*	0.006	-0.008	0.002	0.002	-0.008	0.004
	(0.006)	(0.007)	(0.005)	(0.005)	(0.006)	(0.006)	(0.004)	(0.006)	(0.005)
Education difference	0.113***	0.110**	0.091***	0.016	0.037	0.035	-0.001	0.004	0.031
	(0.040)	(0.045)	(0.035)	(0.031)	(0.036)	(0.038)	(0.026)	(0.041)	(0.029)
Spouse is economic active (d)	-0.250**	-0.223*	-0.196*	-0.004	-0.071	0.150	-0.101	-0.322***	-0.021

VARIABLES	W. family	M. family	Gifts	Arisan	Savings	M. free time	W. free time	Work	Contraception
	(0.112)	(0.123)	(0.104)	(0.102)	(0.113)	(0.126)	(0.083)	(0.113)	(0.093)
02. Sundanese	0.106	-0.064	0.176	0.209**	0.039	0.129	-0.164*	-0.242*	-0.113
	(0.135)	(0.146)	(0.112)	(0.104)	(0.123)	(0.125)	(0.085)	(0.131)	(0.090)
03. Bali	0.481	0.880*	0.159	0.257	0.201	0.108	-0.515**	0.473	-0.028
	(0.395)	(0.488)	(0.337)	(0.330)	(0.329)	(0.327)	(0.241)	(0.344)	(0.261)
04. Batak	0.493**	0.444*	0.033	0.299	0.035	0.073	0.157	-0.514**	-0.162
	(0.219)	(0.270)	(0.210)	(0.189)	(0.207)	(0.240)	(0.150)	(0.241)	(0.196)
05. Bugis	-0.014	0.466*	0.096	0.109	0.367	-0.007	-0.168	0.663**	-0.074
	(0.248)	(0.276)	(0.218)	(0.213)	(0.226)	(0.268)	(0.170)	(0.264)	(0.191)
07. Maduranese	-0.558**	-0.506**	-0.678***	-0.805***	-0.367**	-0.158	0.179	-0.216	-0.085
	(0.223)	(0.246)	(0.218)	(0.168)	(0.177)	(0.202)	(0.122)	(0.217)	(0.130)
08. Sasak	0.728	0.000	0.000	0.396	0.578	0.151	-0.070	0.556	-0.098
	(0.881)	(0.000)	(0.000)	(0.483)	(0.591)	(0.422)	(0.252)	(0.552)	(0.292)
09. Minang	-0.028	-0.006	0.038	0.476**	0.281	0.580**	0.434**	0.471*	-0.086
	(0.250)	(0.307)	(0.221)	(0.229)	(0.262)	(0.282)	(0.177)	(0.264)	(0.223)
10. Banjar	-0.255	-0.300	-0.229	0.167	0.249	0.471	-0.416**	0.355	-0.139
	(0.288)	(0.393)	(0.223)	(0.224)	(0.342)	(0.317)	(0.175)	(0.493)	(0.217)
11. Bima-Dompu	0.279	0.000	0.459	0.453	0.357	-0.248	0.279	0.064	-0.111
	(0.622)	(0.000)	(0.505)	(0.458)	(0.537)	(0.449)	(0.252)	(0.579)	(0.297)
12. Makasar	0.400	0.648**	0.471*	0.600**	0.107	0.055	0.182	0.696**	0.032
	(0.279)	(0.310)	(0.256)	(0.245)	(0.270)	(0.357)	(0.213)	(0.337)	(0.232)
17. Betawi	0.057	0.061	0.066	0.226	0.102	0.137	0.133	-0.025	0.157
	(0.181)	(0.201)	(0.154)	(0.143)	(0.162)	(0.187)	(0.124)	(0.176)	(0.129)
25. Other Southern Sumatrans	-0.076	-0.030	-0.002	-0.110	-0.155	0.122	0.045	-0.117	-0.033
	(0.208)	(0.224)	(0.180)	(0.173)	(0.208)	(0.192)	(0.137)	(0.197)	(0.146)
27. Cirebon	-0.181	-0.422	-0.262	0.137	-0.122	-0.190	-0.702***	-0.501*	-1.543***
	(0.257)	(0.283)	(0.208)	(0.171)	(0.218)	(0.242)	(0.163)	(0.268)	(0.258)
Other ethnicities	0.009	0.083	0.210	0.233*	0.089	0.049	0.233**	0.262*	-0.002
	(0.175)	(0.194)	(0.145)	(0.137)	(0.161)	(0.169)	(0.111)	(0.156)	(0.124)

VARIABLES	W. family	M. family	Gifts	Arisan	Savings	M. free time	W. free time	Work	Contraception
North Sumatra (d)	-0.022	-0.472*	-0.103	-0.110	0.055	-0.272	-0.231*	0.197	-0.864***
	(0.217)	(0.264)	(0.181)	(0.168)	(0.182)	(0.197)	(0.126)	(0.172)	(0.156)
West Sumatra (d)	0.474**	-0.057	0.220	-0.545**	-0.361	-0.763***	-0.691***	-0.632**	-0.913***
	(0.234)	(0.279)	(0.205)	(0.225)	(0.259)	(0.279)	(0.167)	(0.262)	(0.203)
South Sumatra	0.234	-0.007	0.167	0.063	0.042	0.178	-0.351**	0.148	-0.135
	(0.204)	(0.215)	(0.173)	(0.164)	(0.193)	(0.193)	(0.137)	(0.185)	(0.141)
Lampung	0.060	-0.105	-0.290*	0.114	-0.053	-0.366**	-0.054	-0.286	-0.758***
	(0.181)	(0.194)	(0.166)	(0.134)	(0.167)	(0.175)	(0.106)	(0.183)	(0.129)
Jakarta	0.490***	-0.064	0.532***	0.347***	0.404***	0.100	0.061	0.328**	-0.057
	(0.145)	(0.166)	(0.123)	(0.116)	(0.131)	(0.147)	(0.101)	(0.140)	(0.107)
Central Java	-0.010	-0.239	-0.280	-0.367**	-0.222	0.117	-0.278**	-0.119	-0.775***
	(0.201)	(0.214)	(0.171)	(0.157)	(0.181)	(0.195)	(0.128)	(0.201)	(0.143)
Yogyakarta	-0.296	-0.731**	-0.311	-0.222	-0.309	0.966***	0.161	-0.505	-0.844***
	(0.297)	(0.328)	(0.246)	(0.219)	(0.257)	(0.271)	(0.185)	(0.325)	(0.213)
East Java	0.265	-0.078	-0.104	0.369***	0.231	0.389**	0.397***	-0.062	-0.056
	(0.180)	(0.193)	(0.155)	(0.138)	(0.159)	(0.172)	(0.114)	(0.179)	(0.124)
Bali	-0.109	-0.937*	0.024	-0.308	-0.298	0.035	0.060	-0.460	-0.447*
	(0.408)	(0.498)	(0.342)	(0.334)	(0.336)	(0.331)	(0.242)	(0.349)	(0.263)
West Nusa Tenggara	-1.555*	0.000	-1.174**	-1.094**	-1.125**	-0.346	-0.204	-1.010*	-0.351
	(0.857)	(0.000)	(0.531)	(0.451)	(0.557)	(0.400)	(0.236)	(0.526)	(0.274)
South Kalimantan	0.114	-0.424	0.198	-0.248	-0.819**	-0.297	1.006***	-1.269***	-0.655***
	(0.266)	(0.318)	(0.214)	(0.217)	(0.323)	(0.314)	(0.173)	(0.461)	(0.202)
South Sulawesi	0.510*	-0.138	0.163	0.249	0.231	-0.066	0.428**	-0.779**	-0.108
	(0.274)	(0.305)	(0.242)	(0.228)	(0.246)	(0.297)	(0.188)	(0.303)	(0.207)
Constant	-1.097***	-1.243***	-0.863***	-1.144***	-1.192***	-1.804***	-0.203	-1.090***	0.301
	(0.352)	(0.398)	(0.313)	(0.284)	(0.328)	(0.350)	(0.232)	(0.369)	(0.259)
Observations	5,024	4,655	4,811	5,024	5,024	5,024	5,024	5,024	5,024

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

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