Household control and management systems and women decision making within the family in Europe.

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Abstract

This paper aims to analyze the relationship between different household management systems and women intra-household decision-making power in Europe according to the following dimensions: *everyday shopping, purchase of durable goods, borrowing, savings and taking relevant decisions*.

First, we would like to analyze whether there is a gender gap in decision making in Europe and second which are the main determinants of women decision power focusing on two of them: the effect of distributive factors (namely income, economic activity and education) and the effect of a measure of gender norms within the household (namely hidden inequality, such as the difference in perception of freely decide on their own within the couple). We use the special module on intra-household decision-making in the 2010 European Union Survey on Income and Living Conditions (EU-SILC). The sample is organized in relation to the regime of intra-household finances. Differently from other analyses (Pahl, 1989; Ponthieux, 2013), we identify six arrangements (namely full pooling with one earner, full pooling with two earners, partial dictator, partial pooling, full dictator and independent system) depending also on who and how many household components have a personal income in the household. Based on the household control and management systems accepted within the family, results suggest that the biggest gender difference in decision making occurred in partial dictator and full dictator *systems*, where, regardless of the outcome considered, the two predicted probabilities that men and women decide, are always statistically different and bigger than all the others. About the effect of the relevant covariates on the probability that the woman decides, there is evidence of the difference between time consuming/executive decision (i.e. everyday shopping) where efficiency arguments hold (income nor significant or negative associated to the probability of deciding) and control decision where the bargaining arguments holds (i.e. the higher the income the more is the power). Finally the FP1 for executive decision and FD for the strategic decisions showing higher difference, but no distribution factor effects, then depending by social norms, are less modified by policy that modify the distribution of the resource.

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1. Introduction

In this paper we analyze intra-household gender differences, in term of decision power over two classes of family decisions, namely, executive, time consuming choices and strategic, important decisions. We focus on intra-household differences in decision making since it is a significant aspect of gender inequality and any policy would be designed more effectively if account is taken of any intra-household behavioral effects that may impede or help meet its goals (De Henau and Himmelweit, 2013). We take also into account the way couples in the family organize personal and household money, following an 'earner-specific' division among pooling and not-pooling organization schemes. Our main goal is to analyze gender differences in decision making in six different management systems and link this outcome to power relationship and decision making in the household. We also focus on two relevant factors associated to household decision making namely distributive factors (throughout the inclusion of income, education and economic activity) and social norms within the couple (throughout the inclusion of a variable that capture the ability to freely use respirce within the family).

The nature of gender relations of power in the households affects economic outcomes in multiple ways (Agarwal, 1997). As a general finding, it has been shown that the person who controls the income in the household directly affects decisions and outcomes, for instance in terms of child health, education and expenditures in goods and services (Lundberg et al. 1997; Phipps and Burton, 1998; Duflo, 2003). According to the literature on management systems and power, the decision to pool all money together or to choose the partial or full independent money management, affects the degree of individualization and the way the relationship has carried out (Ludwig Mayerhofer et al. 2011; Hamplová, Le Bourdais 2009; Cheal 1993). Even though most authors agree that the choice between pooling or not-pooling has some implications for decision making and power relationship, there is, however, little agreement about which allocation system produces more equality. Pooling systems are not always expression of altruism and gender equality, rather, for some authors, they are unequal arrangements obscuring hidden poverty and concealing unequal access to resources (Bennett et al. 2010). However, others maintain that money pooling represents the ideal of equality and that the independent money management increases the inequality between partners, to the extent to couple's incomes significantly differ (Pahl 2005; Elizabeth 2001).

We argue, following Phillips (1991), that household allocation system, as a decision process outcome itself, implies an underlying power distribution not always expression of the formal management agreement. For instance, when wives manage money, according to Rottman (1996)

they do so as managers accountable to breadwinners who still exercise overall strategic control. On the other hand, husbands, have a greater control over money when they manage it, and their position approach to one such a benevolent dictator. This bread winner status it is shaped by social norms and, when effective, make formal equality an empty structure useful only to legitimate the initial inequality (Phillips, 1991). According to the resource theory of power (Blood and Wolfe, 1960), individual resources determine the power they exercise in relationships (Nyman and Dema, 2007). One well-established finding in these economic models is that women's bargaining power is related to their share of earnings in household income. Moreover, it has been shown that the specific way money is distributed within the relationship can affect the degree of power and have impact on inequality (Vogler, 1998; Lukes, 1974). In contrast to the resource theory, sociology of gender shows that the ways in which couples organize money within the household has an independent effect on power, over and above the resource each partner contributes (Vogler, 1994; Vogler and Pahl ,1993,1994). As a further improvement of this finding, research stressed out the importance of the relationship between specific allocation systems and the control exerted by family members.

Thus, the aim of this paper is twofold: first we attempt to disentangle the effect of different household management systems on intra-household gender differences in decision-making in 25 European countries, we consider five type of outcomes, namely: *everyday shopping, purchase of durable goods, borrowing, savings and taking important decisions*. Second, we aim to sort out the role of two determinants of household decision making, namely distributive factors (income, education and economic activity) and social norms within the couple. We make use of special module on intra-household decision-making in the 2010 European Union Survey on Income and Living Conditions (EU-SILC), the five outcomes considered are related to different aspects of decision making within the family. In our view, different forms of direction and control inside the family may reflect specific gender relation of power. Moreover, different extent of each partner responsibility for the management of household expenditure will probably affects the influence of the determinants of power decision making and the decision making itself. We organize the sample according to the regime of intra-household finances. Differently from other analyses (Pahl, 1989; Ponthieux, 2013), we identify six arrangements, depending also on how many household components have a personal income in the household. We, therefore, define "Full pooling system with 1 earner"; "Full pooling with 2 earners"; "Partial Pooling (two earners)"; "Partial Dictator (one earner)"; "Full Dictator (one earner)" and "Independent system (two earners)". We estimate an ordered probit model for different type of household decisions made within the family separately for the six household management systems. We consider as control variables all the relevant socio-demographic characteristics used in the empirical literature.

The paper is organized as follows. The next section describes the theoretical and empirical background. Section 3 describes the data. Section 4 discusses descriptive statistics, Section 5 presents empirical strategy while in section 6 are provided the corresponding results. Concluding remarks are presented in Section 7.

2. Theoretical and Empirical Background

Recently, there has been a growing academic interest in the study of the household decision-making process. Family decisions are driven by power distribution amongst components and depend on many factors. The economic and sociological literature have addressed the topic focusing on the exchange theory (Rodman, 1972; Emerson, 1972; Blood and Wolfe, 1960), the financial decision-making theories (Pahl, 1989), the gender theory (West and Zimmerman, 1987) and the economic unitary, bargaining and collective models (Becker, 1981; Lundberg & Pollak, 1993; Chiappori, 1988).

Within the economic framework, decision making within households has been analyzed following three broad categories of models that recognize the conflicting interests of family members' preferences on the final destination of common resources. The first type of approach, called *Unitary Model,* assumes the family to act as a single decision making unit under the hypothesis of *income pooling*. The household's problem consists in the maximization of a single utility function subject to a household budget constraint. According to this approach, family members' utility functions can be systematically aggregated, individual budget constraints can be combined and household production can be unified. Such aggregation it is possible only if household members have homogenous preferences, or have an altruistic household head that has all the power within the household (Becker, 1981; McElroy, 1997; Zeyu Xu, 2007). The income-pooling assumption implies that any redistribution from one member to another (without changing the family budget) should have no impact on the composition of household expenditure. Distribution factors that do not shape preferences and prices should have no influence on the allocation of money within the household since the allocation of family income within the household depends only on its marginal social utility (Alderman et al., 1995). According to some authors, the income pooling assumption does not imply 'equal sharing' (Elsas, 2013). In other words, the partner whose preferences shape decisions more frequently gains more from the pooled income. If the decisions equally satisfy the needs and desires of both partners, they share equally (Elsas, 2013). The second class of models, *Strategic Models*, use

non-cooperative game theory to analyze the bargaining process that take place, within the households, among members whose preferences differ. Non-cooperative bargaining models focus on self-enforcing agreements that correspond to member strategies. Household members make decisions about their individual expenditures, taking their partners behavior as given and decisions are determined by Nash equilibrium with the equilibrium not necessarily Pareto efficient (Chen and Wooley, 2001). A third category of models has been defined as the most general one, the so-called *Collective Models* (Apps & Rees, 1988; Bourguignon, Browning, Chiappori, & Lechene, 1993; Browning & Chiappori, 1998; Chiappori, 1988, 1992). In cooperative bargaining models, included in the more general collective models, household members have their own utility function and negotiate with one another to achieve a Pareto-efficient outcome. The eventual outcome depends on relative bargaining power, which is determined by members' utilities at the threat point (i.e., the utility level that each individual would achieve if cooperation breaks down) (Lundberg & Pollak, 1993; Manser & Brown, 1980; McElroy & Horney, 1981; Pollak, 2005). Bargaining power models allow analyzing gender roles and their effect on decision-making process because gender specialization (household division of labor) usually does not result from bargaining but constitutes the threat point on which the process depends (Schneebaum and Mader, 2013). According to some authors, cooperative household bargaining models treat family members symmetrically with respect to their "voice" (the right and ability to enter into the household bargaining process) and "exit" (the socially and economically constructed alternatives facing household members in the absence of a cooperative solution), and say little about the actual processes that lead to household resource allocation decisions (Katz, 1997). In the more general Collective model the potential outcome is the result of maximizing a function that is a weighted sum of all members' utility functions subject to their household's total budget constraint. The weights, known as Pareto weights, can be thought of as representing the respective power of each member over the outcome of household decisions.

Some critics about economic models of household decision making come from the sociological literature and are based on the problem of gender inequality and its effect on bargaining power. In particular, gender norms may not only affect Pareto weight in the collective models and the threat point in bargaining models, but also may limit what is bargaining over (Agarwal, 1997). In many cases, social norms prevent women from bargaining on their own behalf because of gendered perceptions of contributions (Sen, 1990). In addition, similarly to Sen (1990), it has been argued that the value of money earned by family members differs depending on the social norms and ideologies (Volger, 1998). Therefore, perceptions about different contributions to

household resources and the social meaning of money have to be taken into consideration to correctly evaluate bargaining power in the family (Himmelweit and Santos, 2009)[1]. For instance, even though it has generally been found by empirical analyzes that as a woman's earnings rise her share of housework decreases (Rizavi and Sofer 2010), it has also been found that if women earnings rise beyond the point where they equal the man's, women reverse their behavior (Sevilla-Sanz, Gimenez-Nadal, and Fernandez, 2010; Bennett, 2013). This pattern has been explained by the concept of "doing gender" (Bittman, England, Folbre, Sayer, and Matheson 2003; Brines 1994). When men earn less than their wives do, a gender norm violation occurs and one of both members may revert to more traditional behavior to neutralize this deviance (i.e., gender neutralization). In the literature on intra-household economics, only a few authors explicitly observe the importance of social norms and incorporate them into their research models. When social norms are considered, some treat them as exogenous (Lundberg and Pollak, 1993), while a few recognize the possibility of their being endogenous (e.g., Agarwal, 1994; Folbre, 1995, 1997; Hart, 1993; Katz, 1996).

This result underlines that control and management of money in the family are often gendered are endogenous determined. For instance, in the financial decision-making literature, some researchers analyzed the relationship between gender and type of financial control providing evidence that women typically engage in the instrumental management of household resources while the overall allocative control and decision-making power rests with males (Pahl, 1989; Wilson, 1987; Lauer and Yodanis, 2011). Pahl (1989) classifies household management processes in four systems of money arrangements. These systems are differentiated by the extent of each partner's access to household resources and the extent of each partner's responsibility for the management of household expenditure. In the first system, defined as *the whole-wage system*, one partner is responsible both for the allocation of resources and the management of expenditure (he or she has control on the whole income) (Pahl, 1989; Rake and Jayatilaka, 2002; Wilson, 1987). In the *housekeeping allowance system*, one partner gives the other a specific sum for daily housekeeping expenses and deals with the rest of the finances him or herself (gendered division of responsibilities), (Edgell, 1980; Vogler, 1994). The *pooling system* involves the couple sharing all income, with both partners having access to it and spending from the common

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[1] For instance, Diaz, Dema, and Ibanez (2007) show that, due to status hierarchies of different 'incomes', even when all family earnings is pulled together, this may be used by men and women differently. Moreover, women may perceive as a personal spending, money invested for the family and for the household, and, on the other hand, men personal spending can be justified as family needs (Fleming, 1997; Land and Rose, 1985; Bisdee et al., 2013; Goode et al.,1998; Nyman, 1999).

pool (common ownership and responsibility). This system is typical of higher income households, where there is less pressure to manage strictly (Morris, 1990) or in dual-earner couples (Vogler, 1994). In the *independent management system*, both partners have their own source of income, and neither has access to all the household budget (individual financial autonomy). A variation of this system is a situation with a partial pooling of income, with partners keep some money under their personal control while contributing to a common pool. This system requires that the couple reached an agreement on how to handle the household resources (Pahl, 2004). The first two systems are often associated with more traditional gender roles. In the first system, one of the partner acts as the so called 'breadwinner' whereas, the second it is characterized by a sort of gender division of responsibilities. The other two systems are usually associated with an increasing individualization, first through a common ownership and responsibility and then by the individual financial autonomy of each partner (Pahl, 1989; Fleming, 1997; Bennett et al., 2010; Vogler 1998; Iversen, 2003). Gendered spending roles, with women responsible for daily items and men for bills, can also mean that, given the budget, the pressures to fulfill family needs fall on women in particular. In addition, men and women may see women's greater responsibility for making the household's money balanced (as well as doing the housework) as a ''fair'' tradeoff for their lower earning power (Stocks, Diaz, and Hallerod, 2007).

However, some researchers found that control of money could also operate independently of allocation systems (Fleming, 1997). In turn, intra-household distribution of resources may be influenced by a combination of different factors, including employment, marital status, ideologies and gendered perceptions of consumption, access to credit, previous relationships, women or men (partial) economic dependence, ethnicity (Fleming, 1997). The political and cultural context, the welfare regimes in different countries may affect the meanings of money and can also shape gender differences (Nyman et al., 2013).

Household distribution and decision making have been studied by means of data set obtained from quantitative surveys or qualitative interviews affected by problems of lack of or conflicting answers (Cantillon, 2013; Nyman et al. 2013; Bennett, De Henau, & Sung, 2010; Vogler, Brockmann, and Wiggins 2008). Several empirical studies consider that the comparative resources like income, education, health conditions, family size, age gap, and occupational status of spouses/partners play a significant role in the balance of power (see for instance Bertocchi et al., 2012). Further measures of bargaining power explored in the literature refer to the socio-economic environment, since social norms, cultural beliefs, and economic conditions

are estimated to be relevant distribution factor in the household decision-making framework. Other studies underline that for women the degree of power in managing household's decisions is positively correlated with their level of education and their status in the labor market (Lührmann and Maurer, 2007; Elder and Rudolph, 2003). Woolley (2003) finds that the spouse/partner with the higher income is the one taking decisions in the household. A well-documented result is that economic variables, especially measured in terms of differences in the level of income and occupational status, are key factors in determining the most powerful partner. According to Sen (1990), two main factors have to be taken into consideration in analyzing bargaining power, endowments and exchange possibilities

The ability to make decisions within the household may also be seen as a measure of women's empowerment. In the literature, bargaining power has been mainly measured by individual's resources. In particular, current assets, assets brought to marriage and expected assets upon divorce are commonly used (Quisumbing and Maluccio, 1999; Doss, 1997; Beegles et al., 2000). Therefore, "earned income" is a measure that we would expect to be clearly related to women's bargaining power. If women control the money that they earn then they have the ability to directly influence outcomes that require expenditures. Moreover, it has been shown also that assets brought to marriage solve the causal relationship problem between current asset and bargaining power (Thomas et al., 2002). The literature finds evidence of an increase in women's bargaining power as a result of an increase in the hours of work and wage levels (Blumberg and Coleman 1989). But an increase in a woman's bargaining power due to an increase in labor income is conditional on how and why the increase in labor income has occurred (Carter and Katz, 1992; Elson, 1998; Pollak, 2005; Agarwal, 1994; Zohir, Paul and Majumder 1996, Endeley 2001). Women who work outside of their home may learn social and other skills needed to navigate the work environment. However, work itself may be empowering or disempowering. Working to earn an income may give women the bargaining power to affect household decisions and may translate in new information, which may also increase their bargaining power. On the other hand, working may also increase their overall labor load and may put them in unsafe or difficult situations. In response to the concerns about using earned income to understand bargaining power within households, some researchers have used unearned income. Unearned income should be less related to labor supply (Schultz, 1990). Moreover, non-labor income, positively associated with women's education, and in turn her level of education relative to her husband's, are used as a bargaining power indicators and independence from prohibiting traditional norms (Thomas, 1990; Schultz, 1990; Malhotra and Mather, 1997). Also social context indicators, such as religion, wife's age, marital duration and

children have been considered by the empirical literature (Malhotra and Mather 1997, Gupta 1995, Morgan and Niraula 1996, and Schuler et al. 1996)[2].

3. Data and definition of variables

3.1 Household decision making (dependent variables).

We make use of the 2010 European Union Survey on Income and Living Conditions (EU-SILC) as it provides a module on the list of target secondary variables relating to intra- household sharing of resources. The data are based on a standardized questionnaire filled by individuals and households in several European countries and on several issues. It contains information on demographic characteristics, personal income, housing conditions, employment and other variables, at household and individual's level. Each family component aged 16 and over is eligible to answer the questionnaire. Chiefly, we focus on five variables related to five different aspects of decision making within the family. We define those variables as follows: the first concerns *EverydayShopping*, the related question is: "Thinking of you and your spouse or partner, who is more likely to take decisions on everyday shopping?" All expenses on everyday shopping are to be covered, including expenses made by the respondent for himself or herself.

The second variable is named *Durable* as it concerns decision on durable goods, the associated question is the following: "Thinking of you and your spouse or partner, who is more likely to take decisions on expensive purchases of consumer durables and furniture?". Durable consumption includes one-off purchases of items such as white goods (fridges, washing-machines), larger pieces of furniture, electrical appliances, and so on, acquired by households for final consumption (i.e. those that are not used by households as stores of value or by unincorporated enterprises owned by households for purposes of production). These items may be used for purposes of consumption repeatedly or continuously over a period of a year or more (source OECD). The third variable is about *Borrowing* money; partners are asked to answer the following question: "Thinking of you and your spouse or partner, who is more likely to take decisions on borrowing money?". The respondent has to include the decisions on mortgages and loans, too. The fourth variable is about *Savings*, and couples are asked to answer the following

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[2] An increase in a woman's age is associated with increase in a cumulative bargaining power (Gupta 1995). Likewise, sons are also associated with increasing her bargaining position and are important in specific welfare outcomes such as a reduction in domestic violence within marriage (Schuler et al. 1996).

questions: "Thinking of you and your spouse or partner, who is more likely to take decisions on the use of savings?".

The final variable is related to *ImportantDecision*. The associated question is the following: "Thinking of you and your spouse or partner who is, on the whole, more likely to have the last word when taking important decisions?"

The mentioned questions are addressed to the same target population i.e. persons aged 16 and over living in a household with at least a partner living in the household. They reflect different aspect of decision making grades from the less important (first variable) to the most important (fifth variable). Moreover, different questions reveal different types of decision making authority, in particular, according to Vogler and Pahl (1994), it is plausible to distinguish between strategic control (i.e. important and infrequent decision such as decisions on borrowing money and savings) and executive management (i.e. decision that are time consuming such as shopping on everyday expensive and durable goods decisions.

The variables are coded as follows: (i) 1 More me (i.e. I decide), (ii) 2 Balanced (i.e. we both decide), (iii) 3 More my partner (i.e. my partner decides) (see Table 1). Variables Borrowings (2) and Savings (3), have additional values in the responses, for the first there is an additional code defined as the decision has never arisen, and for the variable 3 an additional one defined as "we do not have common savings". However, those values are filled by a small number of individuals (less than 1%)for this reason, we include them in the missing category.

Our dependent variables are collected at individual level, each partner answers individually to the proposed questions and in some cases this may lead to a sort of disagreement within the couple. Inconsistency emerges when the partners in the couple provide different answers to the same question (e.g., both partners in the household answer that they are more likely to take decisions on a specific subject).

As a general result, women tend to misperceive or undervalue their power in the family.[3] Roth (2001) found that wives tend to under-report the household decision-making power. In addition, Sen (1990) argued that social norms prevent women from bargaining on their own behalf, partly as a result of social coercion but more often through a deeply rooted belief that they are not entitled to make such claims. Thus, we analyze the determinants of women power considering only men perception on partner role in the decision making process of the family.

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[3] Results are not reported for the sake of brevity but are available upon request.

Table 1. Definition of the dependent variables, percentage for each answer and total sample size.

Question/items	Code	Typology	% of Answer	Sample size
Thinking of you and your spouse or partner, who is more likely to take decisions on everyday shopping?	*Everyday shopping*	Executive management	7% Men decide 45% Both decide 48% Women decide	118,226
Thinking of you and your spouse or partner, who is more likely to take decisions on expensive purchases of consumer durables and furniture?	*Durable*	Executive management	6% Men decide 85% Both decide 8% Women decide	111,578
Thinking of you and your spouse or partner, who is more likely to take decisions on borrowing money?	*Borrowing*	Strategic control	10% Men decide 86% Both decide 4% Women decide	91,004
Thinking of you and your spouse or partner, who is more likely to take decisions on saving money?	*Saving*	Strategic control	7% Men decide 88% Both decide 5% Women decide	99,524
Thinking of you and your spouse or partner who is, on the whole, more likely to have the last word when taking important decisions?	*Important Decision*	Strategic control	11% Men decide 80% Both decide 9% Women decide	117,942

3.2 Household management systems

As we stated above, control and management system are often gendered and endogenous determined. To separate the effect of different process of strategic control and executive management we divide the sample in six different systems. In order to identify them we use two different variables: the first one concerns regime of household finances, the second describe the number of earners within the family.

The regime of intra-household finances derives by the household level question (HA010) in the special module ofEU-SILC[4]. The proposed responses reflect Pahl (1989) classification of household resource management systems with some differences alighted below. Most current studies distinguish only the broader pooling/non-pooling categories (Hamplová and Le Bourdais, 2009; Heimdal and Houseknecht, 2003; Treas, 1993; Lyngstad et al., 2011), we identify six arrangements, depending also on personal income differences in the household. Specifically, the full pooling system (FP), (where individuals treat all income as common resources), can be divided in "full pooling system with one earner" (FP1) where only one partner in the family has income from labour and/or pension, and the "full pooling system with two earners" (FP2), where both partners have personal incomes and they pool them together. The partial pooling system where family members treat some income as common resources and the rest as private, can be divided in partial pooling two earners (PP) with both partners having income from labour and/or pension and partial dictator system (PD) where only one of the partners has income from labour and/or pension. Finally we define, the full dictator system (FD) that gathers individuals who treat all income as private resources and only one member of the family has personal income. and the independent management system (IM) that groups individuals who treat all income as private resources of the person receiving it and both partners have personal income.

Our choice to separate systems according to the 'one earner'/'two earners' status, depends on the definition of income pooling we adopted. We do not follow the income pooling definition a là Becker (1981), where sharing is independent of who (and how many household components) actually brings the income into the household (Bonke and Browning, 2009). We believe that household members may agree to pool income but spending from it may depend on who (and how many household components) is earning the money, thus it is the relative position within the couple that counts. Table 2 summarizes the six allocation systems by the variables that define them.

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[4] The question used to identify the six systems refers to the current situation and to the household respondent's self-assessment of the household regime with regard to finances. It is important to underline that common resources do not necessarily imply putting money physically in one pot, thus it can be interpreted when all the adult members of the family (earner or not earner) can freely take and use money when they want; on the contrary, private resources means that the household member feels that the incomes are for him or her to decide what to do with them. See European Union Survey of Income and Living Conditions (EU-SILC), 2010, special module on Intra-household sharing of resources for examples.

Table 2. Definition of systems of management and control within the household

Regime of household finances	Number of earner between partners	Systems	Code
All incomes as common resources	1	*FULL POOLING 1 earner*	*FP1*
All incomes as common resources	2	*FULL POOLING 2 earner*	*FP2*
Some incomes as common resources and the rest as private resources	1	*PARTIAL DICTATOR*	*PD*
Some incomes as common resources and the rest as private resources	2	*PARTIAL POOLING*	*PP*
All incomes as private resources of the person receiving it	1	*FULL DICTATOR*	*FD*
All incomes as private resources of the person receiving it	2	*INDEPENDENT MANAGMENT*	*IM*

Financial allocation systems can provide some insight into differences within the couple in the way they are related to power over financial decision-making. However, it must be noted that the choice between joint and separate finances cannot be fully attributed only to the collectivistic versus individualistic households. The decision to pool or not to pool money may also depend on which type of intra-household economy is more efficient (Hamplová et al, 2014). Many factors may incur into the formation of these six arrangements. Income (as one of the measure of distributive factors) and the perception of freedom within the household (as a measure of social norms within the couple) are two of them. In low-income households, the allocation system implies budgeting rather than managing, thus, even in a dictator arrangement, we expect to find more women decision making power than the male partner. This result implies that in low income family, control of budgets does not indicate power but more responsibility (Pahl, 1989). By considering different kinds of decisions we also try to capture the difference between power and responsibility. For instance, we expect high level of women decision making power in everyday shopping in each system for low-income household. The second factor is the perception of freedom within the household,it is an indicator that measures the extent of household inequality following the definition in Ponthieux (2013) as "the differences in the same household about perception a person has of her autonomy in deciding

for herself". Borrowing from Ponthieux (2013), by means of responses to the individual level question (ability to decide about expenses for own personal consumption, leisure activities and hobbies), we compare answer of both husband and wives and we identify households where one partner feels more (or less) free than the other, as opposed to households where all share the same feeling (either able or not to decide on his/hers own). We define it '*hidden inequality*' within the couple. Table 3 shows the proportion of couples that have differences in perception about the autonomy of choice for each system. We can immediately recognize that the two full pooling systems are very close to each other (regardless there is one or two earners) in terms of perception of inequality between partners but they are different from the other typology of systems. They have the lowest proportion of hidden inequality (in particular in FP1 only the 27% of individuals feels more (or less) free than the other partner to decide about expenses). The partial systems are in an intermediate level, and the highest levels refer to the IM and FD. Thus, in systems characterized by full common resource (FP1 and FP2) we should expect less differences in term of decision making power between members of the couple.

Table 3 Proportion of couples who declare that they feel more (or less) free than the other to decide about expenses for own personal consumption, leisure activities and hobbies (*hidden inequality*)

Household Management Systems	Hidden inequality	[95% Conf. Interval]	
FULL POOLING one earner (FP1)	26.9%	0.2631	0.2743
FULL POOLING dual-earners (FP2)	28.6%	0.2827	0.2897
PARTIAL DICTATOR (PD) one earner	32.3%	0.3098	0.3367
PARTIAL POOLING (PP) dual-earners	33.0%	0.3236	0.3372
FULL DICTATOR (FD) one earner	34.8%	0.3220	0.3740
INDEPENDENT MANAGEMENT (IM) dual-earners	34.6%	0.3328	0.3588

3.3 Hypothesis

As we discussed above, two main aspects play a role in decision making namely distributive factors as well as a proxy of social norms within the couple, however differences in predicted probabilities may be a result of sample composition and of the effect of the variables included in the estimates.

The effect of distributional factors can shed light on which theoretical model prevails. According to Browning et al. (2006), there is no agreement on which economic model is appropriate to describe decision process in the households. It may be that different models are relevant in different contexts.

In particular, different decision procedures can be used for important decisions instead than less important decisions such how to spend the weekly budget. However, it may also be difficult to clearly identify which of them can be linked to pooling or partial pooling systems. Browing et al. (2006) classify collective and unitary models in four categories depending on their independence from distributive factors (DF), (and on the characteristics of the demand function resulting from the decision process), such as education, personal income or economic activity. Income pooling is not satisfied when the model is dependent from DF whether is a pure general collective models (where the utility positively depends on DF, i.e. the power index increase with income or other indicators of women's bargaining power in the family such as employment and education[5]) or a not pure unitary model (where income is negatively related to decision making). On the contrary, income pooling is satisfied when the model are independent from DF whether is a collective model (where Pareto weights do not depend on income) or a pure unitary model.

Given the above classification, our first hypothesis is that management systems where all the resources, or part of them are private (i.e. PP, PD, FD and IM) should be characterized by dependency from DF. On the other hand, systems where all the resource are pooled together (FP1 and FP2) should be characterized by independency from DF. However, we divide decisions in executive and strategic one, considering the possibility that different processes can be captured by different economic models.

Second, if the models are dependent on DFs, we would expect that a positive relation between DF and the probability that the woman decide implies a bargaining approach (strategic model that is a limit case of the pure general collective model). On the contrary a negative relation should imply an efficiency argument that is the in line with the unitary model.

Finally, observed differences in decision making can be associated to those factors capturing the economic status of each partner (such as income, education, economic activity and so on). We can have gender difference reduction depending on the effect that DFs have on decision making in executive and strategic decisions. In other words, in executive decisions, where gender differences are mainly due to a higher level of women decisions with respect to men, if the effect of income on the probability that women decides is negative, then, an increase in income reduce gender differences. In strategic decisions the reverse happens, the effect of income is positive related to decision making power of the women, then, a higher income reduces gender differences given it increases the power of the woman. In general, we expect that, higher (women) income decreases her

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[5] Income can be considered also as potential income that depends on education and profession. An additional measure can also be considered such as the economic status of each individual (Doss, 2011).

power in executive decision (reducing gender differences) while it increases her power in strategic decisions (reducing gender differences as well).

As regard to the second relevant variable we expect that Hidden Inequality (one partner feels more (or less) free than the other) is positively related to the probability that women decide in executive decisions or in systems where equal sharing of family income is not present or where women do not have any personal earnings. We also expect that Hidden inequality is negatively related to the probability that women decide in strategic decisions, since, as we observed, gender differences are on men favour in this class of decisions. We expect that, in systems where partners have the same perception of freedom in decision making with respect to his/her partner (where hidden inequality is not high), gender differences are lower (as observed in FP systems in Table 1).

4 Descriptive statistics

The next table provide basic information about the dependent variables of interest using simple descriptive statistics: table 4a provides proportion of men answering on who decides on executive management decisions (i.e. everyday shopping and shopping for durable goods). Tables 4b provides proportion of men answering on who decides on strategic and control decisions (i.e. whether borrowing, saving and who has the final word on important decision). Six allocation systems have been displayed, according to the classification alighted above. In each table proportion are presented along with standard errors (s.e.) and confidence interval (CI) at 95% for each answer and by management systems. Then we can summarize these results accounting for the gender differences (rows differences) or the system differences (column differences).

When asked about everyday shopping, only from 36% to 47% of the respondent men declare to decide together, meanwhile when important strategic and less frequent decisions are considered (Vogler, e Pahl 1994), such as durable goods, borrowing or savings, the percentage of common decision range from 70% up to 90%. This result highlights an interesting characteristic: cooperation is higher for strategic decisions (investments, borrowing). Moreover when asked about *last word in important decision* , we see a decrease in cooperation compared to durable and borrowing decision's items. We interpret this result considering important decision as deriving from unplanned events, which required quick decision. As a general result, regardless the type of decision, in the *full dictator* systemthe cooperation is the lowest.

A third characteristic that emerges from the analysis of the six systems reflects a stereotypical women pattern within couples. In particular, women appear focused on everyday shopping, meanwhile, men exert decision power mostly on the other issues. Everyday shopping decisions can be considered as non-strategic issues, time consuming/executive activities and a burden for the

person who takes such responsibility. We can see that for *shopping on every day* and *durable goods* the power of women is higher than men, while for strategic decisions the percentage of women is lower than the one for men.

Table 4a: Proportion of men answering on who decide on executive management decisions.

	Men			Both			Women		
Systems	Proportion	95% CI		Proportion	95% CI		Proportion	95% CI	
				Everyday shopping					
FP1	6.80%	0.065	0.071	40.20%	0.396	0.408	53.00%	0.523	0.536
FP2	6.80%	0.066	0.07	47.40%	0.471	0.478	45.70%	0.453	0.461
PD	8.00%	0.073	0.088	35.70%	0.344	0.371	56.30%	0.548	0.577
PP	7.20%	0.068	0.076	43.40%	0.427	0.441	49.40%	0.486	0.501
FD	9.40%	0.079	0.111	40.70%	0.38	0.434	50.00%	0.472	0.527
IM	10.40%	0.096	0.113	46.10%	0.448	0.475	43.50%	0.421	0.448
				Durables goods					
FP1	6.70%	0.064	0.071	83.80%	0.833	0.843	9.40%	0.091	0.098
FP2	5.10%	0.049	0.053	87.70%	0.874	0.879	7.20%	0.07	0.075
PD	9.20%	0.083	0.101	79.20%	0.78	0.804	11.60%	0.107	0.126
PP	8.10%	0.077	0.085	82.70%	0.821	0.832	9.20%	0.088	0.097
FD	13.30%	0.115	0.154	74.70%	0.722	0.771	11.90%	0.102	0.139
IM	11.80%	0.109	0.127	77.60%	0.764	0.787	10.60%	0.098	0.115

Table 4b: Percentage of men answering on who decide on strategic control decisions.

|	*Men*			*Both*			*Women*		
Systems	*Proportion*	*95% CI*		*Proportion*	*95% CI*		*Proportion*	*95% CI*	
				Borrowing					
FP1	10.60%	0.102	0.11	85.40%	0.849	0.859	4.00%	0.037	0.043
FP2	7.70%	0.075	0.08	88.70%	0.884	0.89	3.60%	0.034	0.037
PD	15.40%	0.142	0.166	79.20%	0.778	0.805	5.40%	0.047	0.062
PP	11.70%	0.112	0.122	83.40%	0.828	0.84	4.90%	0.045	0.052
FD	20.90%	0.184	0.236	72.30%	0.693	0.75	6.90%	0.054	0.087
IM	19.10%	0.179	0.204	75.60%	0.742	0.77	5.20%	0.046	0.06
				Savings					
FP1	8.10%	0.078	0.085	86.00%	0.855	0.865	5.80%	0.055	0.062
FP2	5.60%	0.054	0.058	89.60%	0.893	0.898	4.80%	0.047	0.05
PD	11.50%	0.105	0.126	81.60%	0.803	0.828	6.90%	0.061	0.078
PP	7.40%	0.07	0.078	86.70%	0.861	0.872	5.90%	0.056	0.063
FD	15.50%	0.134	0.18	74.50%	0.717	0.772	9.90%	0.082	0.12
IM	13.00%	0.12	0.141	80.30%	0.79	0.815	6.70%	0.059	0.076
				Final word on important decision					
FP1	11.90%	0.115	0.123	79.80%	0.793	0.803	8.30%	0.079	0.086
FP2	9.40%	0.091	0.096	81.70%	0.814	0.82	9.00%	0.087	0.092
PD	14.80%	0.138	0.158	75.20%	0.739	0.764	10.10%	0.092	0.11
PP	11.40%	0.109	0.118	77.70%	0.771	0.783	10.90%	0.105	0.114
FD	18.10%	0.161	0.203	70.20%	0.676	0.726	11.70%	0.101	0.136

| **IM** | 15.00% | 0.141 | 0.16 | 71.70% | 0.705 | 0.729 | 13.30% | 0.124 | 0.142 |

Figure 2 plots the differences between men and women percentage shown in tables 4a and 4b. Difference are calculating as the proportion of men minus the proportion of women. We can first notice that in everyday shopping the gap between man and women is more pronounced and women is always more likely to decide than men and this is confirmed for each management system. With regards to the differences among system if we look to the women power for *every day shopping it* is highest in the partial dictator one earner (PD) system while the lowest is for the independence system (IM), where is highest also the decision of men. We can think that in the former the role of the women is more segregate in the *everyday decision* while when the distribution of the resources between spouses are independent from each other, the woman reduces her burden for the daily activities and the division of power's decision about executives and time consuming decision is less different.

On the other hand, there are almost no differences between men and women with regards to durable.

For each strategic and control decision we do find a trend: the lowest differences is among full pooling with two earners (FP2) and partial pooling with two earners (PP), meaning that in these systems men and women are more likely to decide together compare to the other systems. For strategic decision the independent system (for borrowing and saving) and the full dictator system (for final word) show the biggest positive (i.e. in favor of men) difference.

Figure 1: Differences in proportion between men and women, by decisions and household management systems
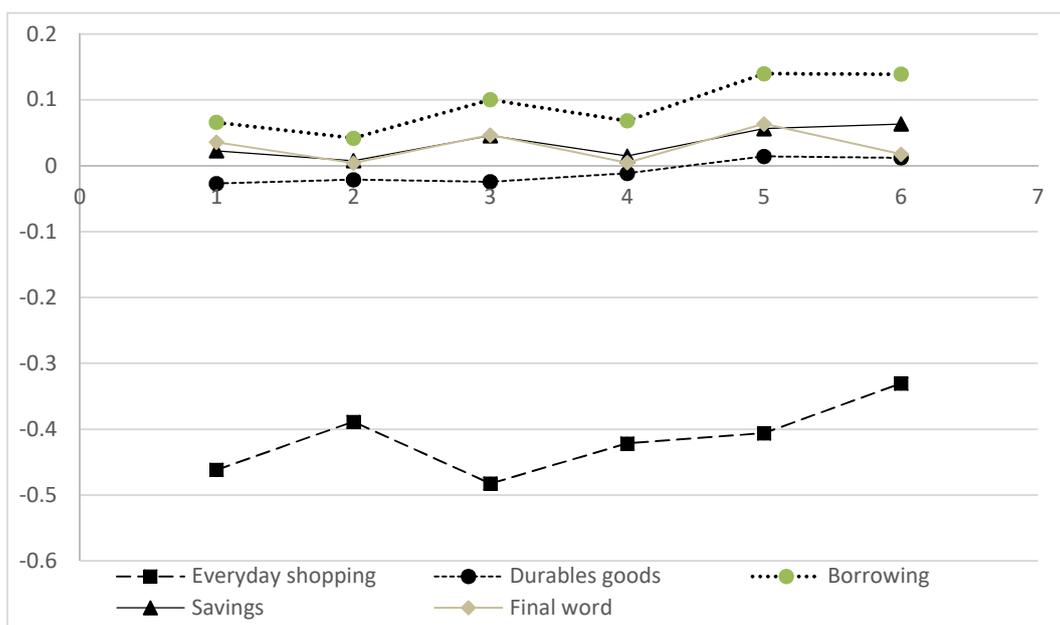
18

5. Empirical strategy

As described in Section 2, several aspects play a role in the household decision-making. To investigate which of them has the most important role we estimate an ordered probit model for each of the five aspect of household decision making distinguishing between control and management systems. We discuss estimates on the sample restricted to men given we consider only the men perception of the spouse role in the decision making process.

The power indicator for women i is D_{ijs}^{*k} and it increases with higher value of the code j in the answer. For j=0, D_{i1s}^{k} is the probability that the man takes the decision in systems s (thus the woman has no power); for j=1, D_{i2s}^{k} is the probability that both partners take the decision in systems s (thus the woman has some power) and for j=2, D_{i3s}^{k} is the probability that woman has the total power to decide in systems s. Take into consideration five types of decisions identified by k and six type of systems defined by s, we estimate an ordered probit on questions answered by men, for k questions and s systems:

$$D_{ijs}^{*k} = \alpha_1\text{'DF} + \alpha_2\text{'HI} + \alpha_3\text{'X} + + \alpha_4\text{'C} \ u_i \ (1)$$
$$D_{ijs}^{k} = j \ if \ a_{J-1} < D_{ijs}^{*k} < J \ for \ J=0,1,2$$
$$With \ k=1,\ldots,5; \ s=1,\ldots,6 \ ; \ i=1,\ldots, N$$

DF are the variables included to disentangle the effect of the distribution factors such as differences in income, age and education expressed with the following variable: whether woman's income (age and education) is higher than man's income (age and education), whether woman age (and education) is the same as man's age (and education), economic status of both husbands and wives. HI is the variable that aim to capture social norms within the couple that is the hidden inequality i.e. households where one partner feels more (or less) free than the other, as opposed to households where all share the same feeling (either able or not to decide on his/hers own). Finally X are the variable concerning men and couple characteristics (i.e. control varialbes), such as age, health, income, education whether the couple is cohabiting, family components lower than 15 years old.To take into account country variation (C) we use the Gdp by country and year as well as an index of Generalized Gender Gap (GGG) by country and years.

To analyze the effect of each system on gender gap (in decision making), we estimate the predicted probabilities both of woman and men decision for each model as well as the marginal effect of each

variable to disentangle the effect of each characteristics on the probability that the women take decisions.

As we said, all the dependent variables considered have three different values going from 0 to 2 suggesting that at the higher value is associated a greater female's power. Consequently, the dependent variable has to be interpreted as a measure of women's power in taking decisions. The interpretation of a negative (positive) coefficient on a particular covariates means that the wife is less (more) likely to decide. We remind to the reader that the coding of the answer is the following: 0 if man takes the decision, 1 if both spouses/partners take the decision and 2 if female decides. Each model is run separately for each system of control and management.

6. Results and discussion

The following section present and discuss results for the two aims of the paper. First, we discuss results on gender gap i.e. difference in predicted probabilities estimated from the model described above. In the rest of the section results on the main variable are presented. In order to look at the effect of the two main groups of variables on executive and strategic decision we focus the attention on two of the five decisions analysed above that is the everyday shopping and the borrowing decision. This two are characterized by two different underlining phenomenon, the first one it may be considered a time consuming activity and the descriptive statistics have shown that it is more a matter of women, the second one is a control-strategic decision and it may be considered as a power within the couple and the descriptive statistics have shown that it is more a prerogative of men.

Figure 1 plots predicted probabilities for two outcomes of the regression. In particular, the probability that the woman decides (triangles) and the probability that the man decides (dots). Figure 2 plots differences in those probabilities in absolute values. The more consistent difference between those probabilities is on every day shopping where about 50% of women decides while less than 10% of men takes such decision. On the contrary, decisions on durable goods and saving show the lowest gender gap. However, we do find difference across CMSs.

If we consider executive management decision, we have a clear result only on everyday shopping choices for each system. Women's power is always greater than men but the biggest difference is shown in FP1 and PD. The lowest differences between women and man power are in FP2 and in IM.

If we consider the difference in the probability to take decisions between man and women about strategic-control choices (borrowing, savings and important decisions) we found that Full pooling system with two earners (FP2) and Partial pooling with two earners (PP) show the lowest gap. In important decision also the independent management system (IM) shows a low difference in decision making power between partners.

On the other hand, we found greater difference between partner's decision making power in the following systems: full pooling with one earner (FP1), partial dictator (PD), full dictator (FD) and independent management (IM).

Figure 2: Predicted probabilities that men (circle) and women (triangle) take decisions by household management systems (with 95% confidence interval).
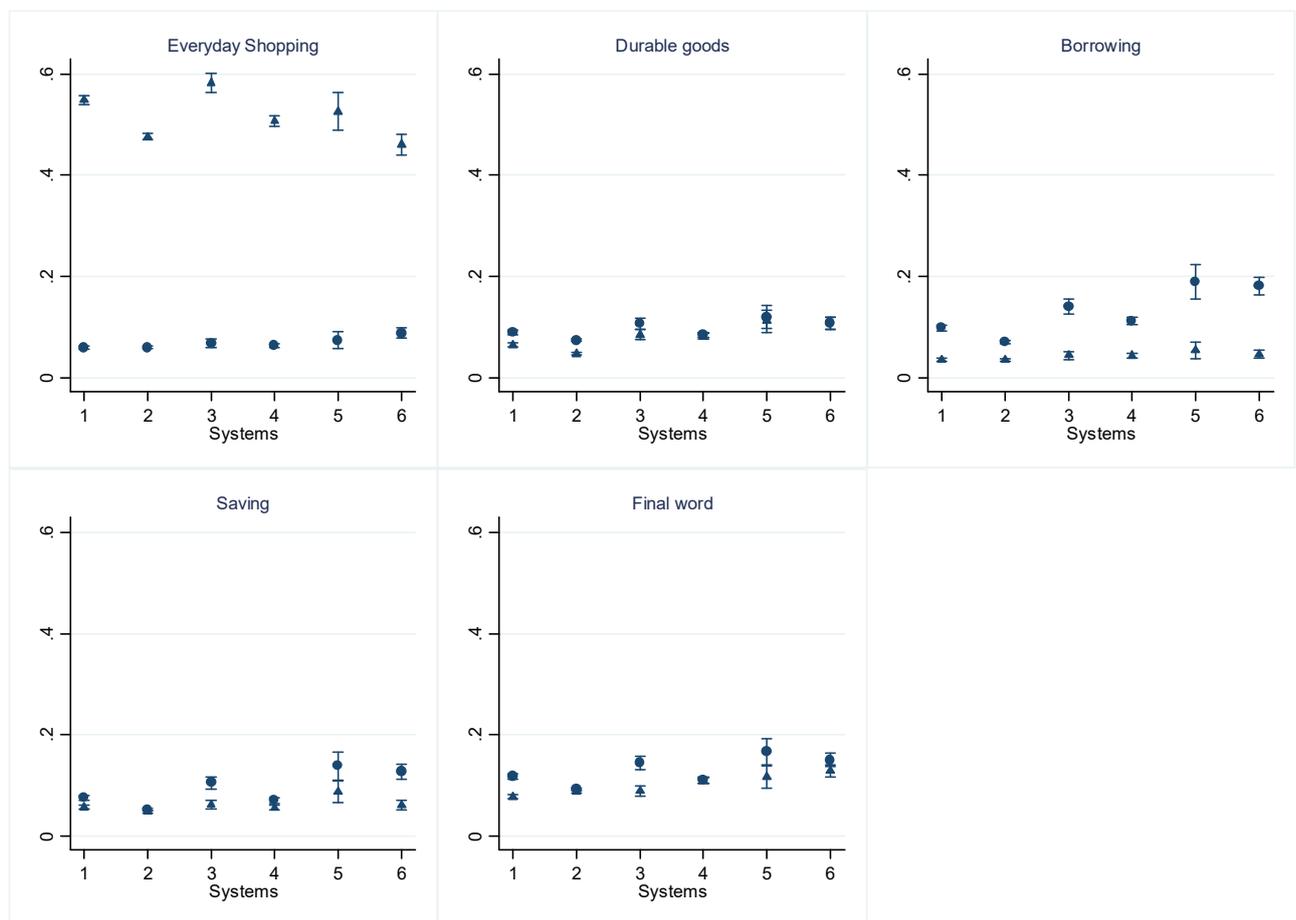
Note: System are classified as follows, 1 stands for full pooling with one earner, 2 stands for full pooling with two earners, 3 stands for partial dictator, 4 stands for partial pooling, 5 stands for full dictator and 6 stands for independent system.

Figure 3: Differences in predicted probabilities between men and women, by decisions and household management systems (absolute values)
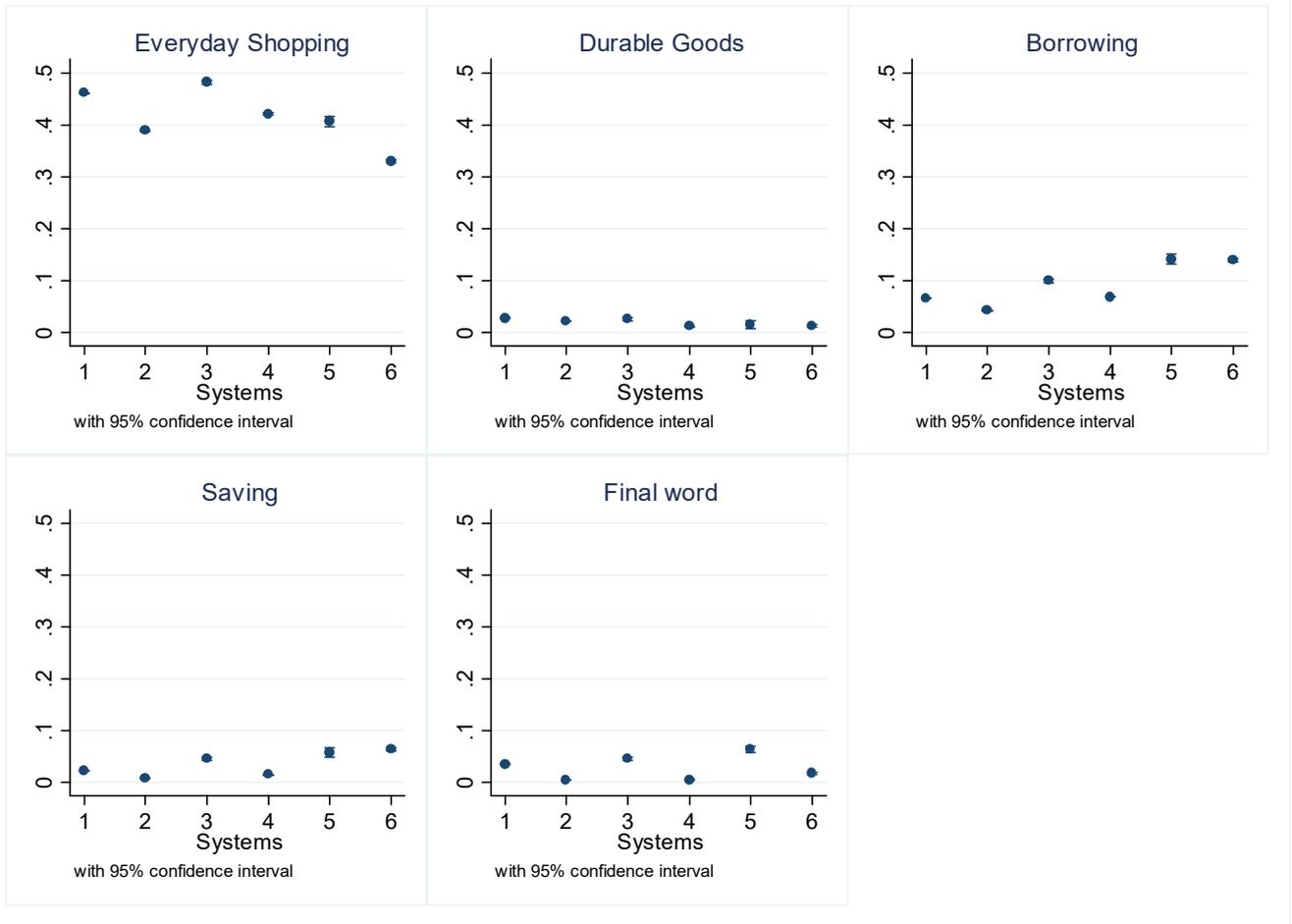
Note: Systems are classified as follows, 1 stands for full pooling with one earner, 2 stands for full pooling with two earners, 3 stands for partial dictator, 4 stands for partial pooling, 5 stands for full dictator and 6 stands for independent system.

In order to explain such predicted differences, we need to analyze the effect of covariates on the probability that the woman decide. Tables 5 and 6 provide estimation results for men, we considered only men-side data in order to analyze women decision making power in the household. Results show differences among the effects of covariates on the five decisions considered. There are also differences across control and management systems.

In order to check validity of our hypothesis on the link between the systems and the models on decision making (unitary, collective or strategic model) we analyzed the sign of differences in income, education and the economic condition of both partners. When we look at the effect of the difference in income we find differences between executive management and strategic control decisions.

For time consuming activity the differences in income is always not statistically significant. Except for FP2, where we find a negative and significant relation between both higher education and higher income of women respect the man and the probability to decide in the Everyday shopping. Another important variable that affects female's power is the economic activity of both partners: we do not find any difference among the six systems analyzed, however the hypothesis of efficiency still holds for everyday shopping. Husbands not employed as full time worker (either employed part time, unemployed, inactive or retired) decrease the probability their wives to decide. At the same way when the woman is not employed full time she is more likely to decide (maybe given she has more time to devote to this activity).

For strategic decisions, it seems that, in each system analyzed, unemployment play the most important role: unemployed men leave women to take decisions; on the contrary inactive woman and housewives, have less power to decide on such items. At the same time, in each system considered (except for PD) higher women's income (and education) increases the probability that she decides.

These results confirm an important difference between time consuming/executive decision (i.e. everyday shopping) where efficiency arguments hold (i.e. the income is either not significant or negative related to the probability of decide), and control decision where the bargaining arguments holds (i.e. the higher income or education the more is the power).

With regards to household management systems we can summarize and point out the main results as follows:

The full pooling with one earner (FP1) is intended to capture the breadwinner status since we have only one earner. In this system where, a free use (for all the members) of the resources it should be implied, the dependency from DFs should increases gender differences. Executive and strategic decision making processes are captured by two different models. In particular, executive decision do not follow the distribution of income or education in the couple and gender difference is explained by the incidence of social norms independently from the income/education. On the other hand, for strategic decision income is a key factor in explaining decision making power and produce a positive effect.

The Full pooling system with two earners show one of the lowest average level of inequality perception within the couple and the lowest level of gender differences in decision making. The decision power depends on income; thus we can link this model to the not pure unitary models dependent from DF. The bargaining arguments holds for strategic decisions.

With regard to partial pooling systems we define partial dictator (PD) and partial pooling (PP) systems. In the PD system, the presence of only one earner exacerbate the gender difference in decision making by means of gender norms and the breadwinner status. If we do not find significant correlation between decision power and distribution factors (i.e. income) in executive decision, we may expect a fair sharing of the common pool (belonging to the partial dictator). On the contrary, we do find a positive effect of economic activity and above all education thus policy that foster women education may effect women decision power. In the PP2, with the presence of two earners, the result depends on the relative contribution to the pool by the two partners above all in strategic decision where the decision power is income dependent.

Finally, considering the system where income pooling is not present, we define an Independent management (IM) and full dictator (FD). In those systems we find the biggest gender gap for strategic decision and the lowest gap in decision making for executive decisions, in the independent system (IM), we found no correlation between decision power over this class of decisions and income. We explain this result by assuming that couple choosing this type of arrangement are less affected by traditional gender norms and also by the fact that women belonging to this system are more economically independent. This decision process may be captured by a DFI collective model. On the other hand, the strategic decision process is better described by a non-cooperative bargaining process, given that income is positively correlated with decision power. Income distribution may explain gender differences in this class of decisions. Finally in FD system income is not related with decision power in the executive decisions. On the other hand, for strategic decision the more income the woman has (and more educated also) the more she decides. This model is captured by a non-altruistic unitary model.

With regards to the second main variable, the so called hidden inequality, we would expect that more equal opportunity (no hidden inequality) within the couple should increase the power. In fact, we find a negative and significant effect for both decisions meaning that inequality reduce the women power in everyday shopping as well as in borrowing.

Table 5 Order probit for the probability that the woman decides, estimates for Everyday Shopping.

	FP (1)	FP (2)	PD (1)	PD (2)	FD (1)	IM (2)
Distributive Factors						
EdW>EdM	-0.022	-0.065***	-0.146**	-0.070**	0.217	0.097
EdW=EdM	0.008	-0.031**	-0.017	-0.040	0.155	0.023
IncW>IncM	0.008	-0.043***	0.077	-0.030	0.282	-0.013
Man's Economic Activity #						
Employed Part-time	-0.122**	-0.230***	-0.127	-0.128***	0.327	-0.078
Unemployed	-0.086***	-0.090***	-0.047	-0.173***	0.040	-0.117
Retired	-0.118***	-0.237***	-0.164***	-0.268***	-0.138	-0.259***
House-hasband	-0.571***	-0.478***	-0.651***	-0.183	-0.457	0.333
Other	-0.090**	-0.143***	-0.012	-0.309***	-0.359**	-0.103
Woman's Economic Activity #						
Employed Part	0.116***	0.136***	-0.025	0.073***	-0.277	0.122***
Unemployed	0.050	0.119***	0.129	0.080	-0.295	0.017
Retired	0.037	0.185***	0.023	0.080**	-0.217	0.249***
Housewife	0.153***	0.178***	0.106	0.079	-0.102	0.125
Other	0.010	-0.036	-0.046	-0.035	-0.374**	-0.120
Social Norms						
Hidden Inequality	-0.170***	-0.060***	-0.237***	-0.068***	-0.175**	-0.043
Control variables (Man)						
Income						
Fraction 2	0.021	0.032	0.110	-0.050	0.202	-0.141**
Fraction 3	0.022	0.019	0.049	-0.113***	0.100	-0.104
Fraction 4	0.122***	0.025	0.112	-0.099***	0.227	-0.172***
Education						
Secondary	0.023	0.106***	0.159***	0.180***	-0.163	0.043
Compulsory	0.048	0.120***	0.238***	0.172***	-0.099	0.122**
Age	0.027***	0.022***	0.032***	0.022***	0.044***	0.032***
Age squared	-0.000***	-0.000***	-0.000***	-0.000***	-0.000**	-0.000***
Fair Health	-0.107***	-0.157***	-0.023	-0.105***	-0.317***	-0.062
Good Health	-0.073***	-0.149***	0.008	-0.117***	-0.157	-0.085
Cohabiting	-0.083***	-0.148***	-0.207***	-0.190***	-0.142	-0.136***
N.of comp<15years	0.023**	0.020***	0.021	0.032***	0.025	0.096***
AgeW>AgeM	0.065***	-0.070***	0.065	-0.011	0.007	0.033
AgeW=AgeM	0.019	-0.065***	0.018	-0.049	-0.009	-0.040
Country Variables						

GDP	-0.000***	-0.000	-0.000***	-0.000***	-0.000	-0.000
GGG	1.335***	-0.479***	2.136***	-0.667***	1.553	0.677
Cut 1	0.052	-1.468***	0.806	-1.682***	0.757	-0.210
Cut 2	1.490***	0.146	2.089***	-0.177	2.140***	1.238***
Observations	24316	64456	4654	18355	1293	5152

(1) Stands for one earnes, (2) stands for two earners, # Reference category full time employed.

Table 6 Order probit for the probability that the woman decides, estimates for Borrowing.

	FP (1)	FP (2)	PD (1)	PD (2)	FD (1)	IM (2)
Distributive Factors						
edW>edM	0.130***	0.138***	0.248***	0.247***	0.253	0.160**
edW=edM	0.121***	0.071***	0.233***	0.157***	0.099	0.141**
incW>incM	0.220***	0.122***	0.159	0.160***	0.436**	0.264***
Man's Economic Activity						
Employed Part-time	-0.049	-0.035	0.132	0.016	0.216	0.304***
Unemployed	0.239***	0.205***	0.345***	0.211***	0.359**	0.341**
Retired	0.003	0.036	-0.022	0.063	-0.086	0.185
House-hasband	0.490***	0.339**	0.177	0.181	0.382	0.230
Other	0.169***	0.144**	0.158	0.107	0.132	0.391***
Woman's Economic Activity						
Employed Part	-0.103	-0.125***	-0.454***	-0.160***	-0.531***	-0.231***
Unemployed	-0.071	-0.108***	-0.099	-0.241***	-0.345	-0.239
Retired	-0.081	-0.023	-0.135	-0.065	0.155	-0.142
Housewife	-0.155***	-0.192***	-0.298***	-0.095	-0.382**	-0.169
Other	-0.075	-0.253***	-0.157	-0.247***	-0.492***	-0.374***
Social Norms						
Hidden Inequality	-0.213***	-0.087***	-0.283***	-0.067**	-0.127	-0.146***
Control variables (Man)						
Income						
Fraction 2	0.042	0.071***	-0.008	0.004	0.200	0.133
Fraction 3	0.080	0.058**	-0.023	-0.031	0.326	0.082
Fraction 4	0.002	-0.051	-0.022	-0.155***	0.207	0.048
Education						
Secondary	0.135***	0.077***	0.164**	0.033	0.236	0.038
Compulsory	0.116***	0.107***	0.095	0.011	0.412***	0.123
Age	0.004	0.011***	0.003	-0.003	-0.001	-0.003
Age squared	-0.000	-0.000***	0.000	0.000	-0.000	-0.000
Fair Health	-0.224***	-0.244***	-0.103	-0.135***	-0.188	-0.304***
Good Health	-0.230***	-0.271***	-0.139	-0.183***	-0.191	-0.360***
ageW>ageM	0.046	-0.012	0.051	0.054	0.004	0.077
ageW=ageM	0.015	0.010	0.012	-0.049	0.048	0.051
Cohabiting	-0.035	0.013	-0.109	0.002	-0.104	-0.168***
N.of comp<15years	-0.010	-0.030***	-0.016	-0.012	-0.162***	-0.018
Country Variables						
GDP	-0.000***	-0.000***	-0.000***	-0.000***	0.000	0.000

GGG	0.793***	-0.453**	2.286***	-0.708**	-0.506	-0.091
Cut 1	-0.759***	-1.780***	0.382	-2.009***	-1.197	-1.263***
Cut 2	2.340***	1.509***	3.167***	0.917***	1.294	1.330***
Observations	19028	49709	3505	14031	930	3801

Fig 4 and 5 plot the gender differences in predicted probabilities in absolute values, (i.e. the absolute value of the predicted probability that men decide minus the predicted probability that the woman decide). All the coovarites are fixed to their mean value except the two main ones. In particular Fig. 4 distinguish between couple in with there is hidden inequality and couple where there is not hidden inequality. Fig. 5 distinguish couple in which the woman's income is higher than men's and the other way around.

Results show that for executive (time consuming) activities, hidden inequality reduce the gende gap, while in strategic decision the hidden inequality in the family increase the gender differences in decision making (Fig.1).

With regards to income, while in the executive decision the income difference has no effect for FP1 and IM2 (difference in predicted probabilities not statistically different from zero), higher woman's income reduces gender gap in the FP2 while increase the gender difference in PD1 and FD1. For strategic decision there are no differences among management systems given that higher womn's income compare to men reduce the gender differences (Fig.1).
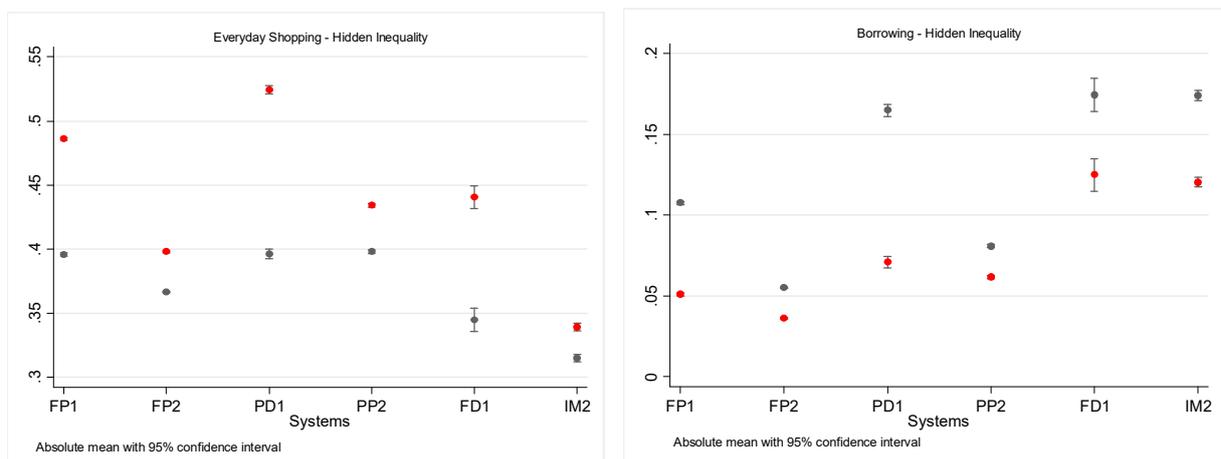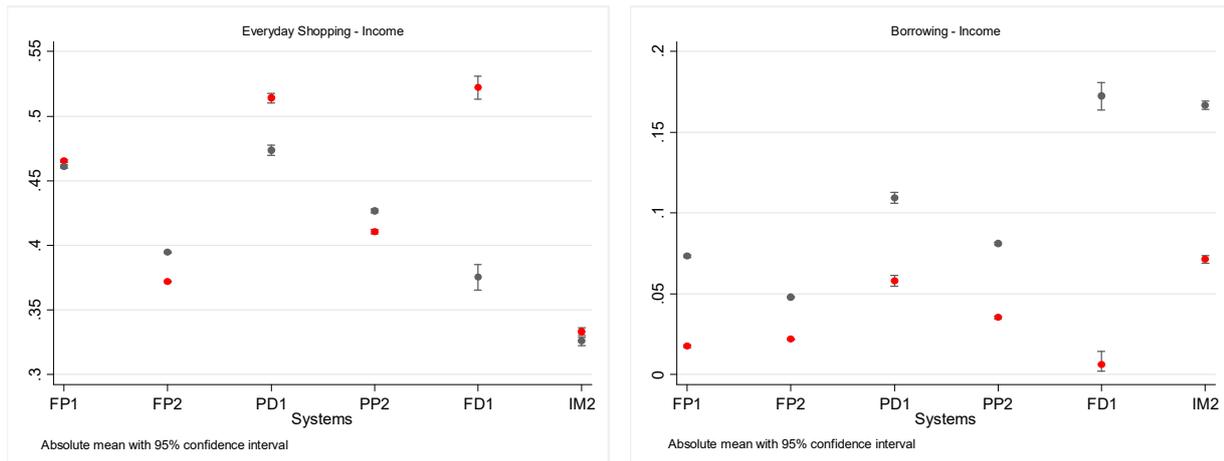
Fig. 4 Gender Differences in Predicted Probabilities (absolute values) for Everyday Shopping and Borrowing. Red dots are the gender difference considering couple with "not" hidden inequality, black dots couple with hidden inequality.

Fig. 2 Gender Differences in Predicted Probabilities (absolute values) for Everyday Shopping and Borrowing. Red dots are the gender difference considering couple with women with an income higher than men, black dots are couple with women with an income not higher than men.

Everyday Shopping - Income

Borrowing - Income

Absolute mean with 95% confidence interval

Absolute mean with 95% confidence interval

7. Conclusions

In this paper we analyzed intra-household gender inequality, in term of decision power over two classes of family decisions, namely, executive/time consuming choices and strategic/important decisions.Our main goal has been to disentangle the effect of different household management systems on intra-household inequality in decision-making power perception in European countries with respect to several outcomes, namely: everyday shopping, purchase of durable goods, borrowing, savings and taking important decisions. We used these five variables drawn from the special module on intra-household decision-making in the 2010 European Union Survey on Income and Living Conditions (EU-SILC) since they are related to different aspects of decision making within the family. We identify six arrangements, depending also on personal income differences in the household. Specifically, the full pooling system (FP), (where individuals treat all income as common resources), can be divided in "full pooling system with one earner" (FP1) where only one partner in the family has income from labour and/or pension, and the "full pooling system with two earners" (FP2), where both partners have personal incomes and they pool them together. The partial pooling system (PP) gathers family members who treat some income as common resources and the rest as private and both partners have income from labour and/or pension. To the full dictator system (FD) belong individuals who treat all income as private resources and only one member of the family has person income. The partial dictator system (PD) clusters individuals who treat some income as common resources and the rest as private and only one of the partners has income from labour and/or pension. Finally, the independent management system (IM) groups individuals who treat all income as private resources of the person receiving it and both partners have personal income.

We divided executive decisions from strategic one in order to capture the difference in decision making processes (and theoretical model explaining them) and the resulting gender inequality. In order to control for the social norms, we include an indicator that measures the extent of household inequality following the definition in Ponthieux (2013) as "the differences in the same household about perception a person has of her autonomy in deciding for herself".Our first hypothesis was that management systems where all the resources, or part of them are private (i.e. PP, PD, FD and IM) should be characterized by dependency from DF. On the other hand, systems where all the resource are pooled together (FP1 and FP2) should be characterized by independency from DF.We find mixed results: *In pooling systems*, FP1 for executive decisions is DFI, for strategic decisions is FD. FP2 is DF for both class of decisions; *In partial pooling systems*, PD and PP2 are DF (for economic activity PD, for income PP2) for both class of decisions*; In non-pooling systems*, IM is DFI for executive and DF for strategic (as in FP1), FD is DFI for executive and DF for strategic (as in IM and FP1).To sum up, it seems that for executive decisions both pooling and non-pooling (with an exception for FP2) systems are DFI then describing by means of pure or not pure unitary models. That means the decision power is more related to gender norms or other factors than the difference in income. In FP2 gender differences are the lowest but the decision process depends on distributional factors, we can explain this result as if gender norms in this kind of system are less effective.Strategic decisions are mainly explained by pure or not pure collective models since the decision process is DF. We find a special result for partial pooling systems since time consuming decision in that case are DF.

Second, we expected that if the models are dependent on DFs, a positive relation between DF and the probability that the woman decide implies a bargaining approach (strategic model that is a limit case of the pure general collective model). On the contrary a negative relation should imply an efficiency argument that is the in line with the unitary model. In general, we expected that, higher (women) income decreases her power in executive decision (reducing gender differences) while it increases her power in strategic decisions (reducing gender differences as well). Results confirm an important difference between time consuming/executive decision (i.e. everyday shopping) where efficiency arguments hold (i.e. the income is either not significant or negative related to the probability of decide), and control decision where the bargaining arguments holds (i.e. the higher income or education the more is the power).

Finally, we expected that Hidden Inequality (one partner feels more (or less) free than the other) is positively related to the probability that women decide in executive decisions or in systems where equal sharing of family income is not present or where women do not have any personal earnings. We also expected that Hidden inequality is negatively related to the probability that women decide

in strategic decisions, since, as we observed, gender differences are on men favour in this class of decisions. We expected that, in systems where partners have the same perception of freedom in decision making with respect to his/her partner (where hidden inequality is not high), gender differences are lower.

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