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Gastón P. Fernández

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Gastón P. Fernández*
KU Leuven

Abstract

This paper examines whether personality influences the allocation of resources within households. To do so, I model households as couples that make Pareto-efficient allocations and divide resources according to a distribution function. Using a sample of Dutch couples from the LISS survey with detailed information on consumption, labor supply, and personality traits at the individual level, I find that personality affects intrahousehold allocations through two channels. Firstly, the *level* of these traits act as preference factors that shape individual tastes for consumed goods and leisure time. Secondly, by testing distribution factor proportionality and the exclusion restriction of a conditional demand system, I observe that *differences* in personality between spouses act as distribution factors. Specifically, these differences in personality impact the allocation of resources by affecting the bargaining process within households. For example, women who are relatively more conscientious and engage more cognitively than their male partners receive a larger share of intrafamily resources.

JEL Classification Numbers: D1, J12, J22, J24

Keywords: Collective Household Model, Distribution Factors, Personality Traits.

*Ph.D. student at KU Leuven, Department of Economics, Naamsestraat 69, box 3565, 3000 Leuven (e-mail: gfernandez@kuleuven.be). I deeply appreciate the invaluable guidance of my advisors Laurens Cherchye and Frederic Vermeulen. I would also like to thank Wietse Leleu and all participants at the Conference of the European Association of Labour Economists (EALE) in Prague, the Congress of the European Economic Association (EEA-ESEM) in Barcelona, the Conference of the European Society for Population Economics (ESPE) in Belgrade, the Trans-Atlantic Doctoral Conference (TADC) in London, the Public-Labor-Health Seminar, the Household Economics Gathering, and the ECORES Summer School in Leuven for their helpful comments. All errors are on my own.

1. Introduction

There is increasing evidence that personality traits matter for relevant life outcomes (Heckman, Jagelka, & Kautz, 2021). For instance, personality is associated with the formation of future cognitive skills (Cunha, Heckman, & Schennach, 2010), with educational choices over the life cycle (Todd & Zhang, 2020), and labor market outcomes (Flinn, Todd, & Zhang, 2020). Personality is also correlated with the probability of marriage and divorce (Lundberg, 2012) and is a relevant attribute on which individuals sort into the marriage market (Dupuy & Galichon, 2014). Nevertheless, much less is currently known about personality's impact on intrahousehold consumption patterns. For example, do personality traits affect the allocation of resources through their impact on individual preferences over goods? Or are there other mechanisms by which personality might shape the way couples decide over total resources? Is personality related to the distribution of power within households?

In this paper, I aim to empirically investigate the questions mentioned above by structurally testing the role of personality traits in resource allocation within households. Families are modeled as couples that make static decisions regarding private and public consumption and also allocate their time to the labor market. As a starting point, I assume that each adult household member has his or her own rational preferences. Additionally, I assume that couples make Pareto-efficient allocations and distribute resources among household members through an intrahousehold decision process (Chiappori, 1988, 1992). By adopting this framework, I can test the concept of collective rationality, which refers to the collective model, using observed household allocations. This approach allows me to uncover relevant information underlying the consumption process. The main focus of this paper is to explore the hypothesis that personality traits may partially determine how couples divide resources. To investigate this, I test various theoretical restrictions of the collective model as formalized by Bourguignon, Browning, and Chiappori (2009). The collective framework not only enables the characterization of couples in terms of rational decisions but also allows for the integration of individual personality into a model of household consumption and labor supply. I show that personality traits play a significant role in shaping the distribution of resources within established households.

This article contributes theory-based evidence about new channels that may explain consumption inequality within households. In the collective model, couples maximize a weighted sum of individual utilities, where the weights are referred to as Pareto weights. When examining the impact of a specific variable on household behavior, a distinction is made between two channels: *preference* and *distribution* factors. Preference factors typically influence individual preferences for consumed commodities, while distribution factors specifically affect the decision-making process within the household through changes in the Pareto weights. In this sense, the *level* of a specific

variable (e.g., years of schooling) is often considered as a preference factor and the *relative* amount of it (e.g., differences in education between partners) as a distribution factor (Browning, Chiappori, & Weiss, 2014). I leverage this notion, to formally introduce the level of an individual's personality as a taste shifter and within-household differences in traits that are commonly known to be relevant for labor market outcomes (e.g., wage offers or job performance) as distribution factors. The testable restrictions of the collective model, allow me to structurally relate personality and intrahousehold behavior. I test both distribution factor proportionality and the exclusion restriction of a conditional demand system, two theoretical restrictions associated with the collective approach in our setting, and find no evidence to reject that differences in personality between spouses influence the bargaining process. The results also suggest that personality directly influences preferences for consumed commodities. Furthermore, I demonstrate that differences in certain traits, such as differences in conscientiousness or cognitive engagement between spouses, are strongly associated with consumption inequality within the household. These findings provide valuable insights into the role of personality traits in shaping intrahousehold resource allocation dynamics.

Distribution factors, which influence household decisions without directly impacting preferences, have been extensively studied in the collective literature. These factors encompass a wide range of variables, including relative wages among spouses and the presence of divorce laws in relevant matching markets. For instance, Browning, Bourguignon, Chiappori, and Lechene (1994) demonstrate that the intrahousehold allocation of resources is related to factors such as relative ages and relative incomes in consumption models. Chiappori, Fortin, and Lacroix (2002) extend earlier versions of the collective model and test their implications by introducing the local sex ratio and divorce laws as distribution factors in a labor supply model. In a nonparametric setting, Cherchye, De Rock, and Vermeulen (2011) examine the relationship between the intrahousehold share of income and differences in age and educational level between spouses. Furthermore, exploiting exogenous variation from a randomized cash transfer program in Mexico, several studies have constructed distribution factors and tested the theoretical restrictions of the collective model (see Bobonis (2009); Attanasio and Lechene (2014); De Rock, Potoms, and Tommasi (2022)).[1]

Building upon the collective framework and the existing applied research on the impact of personality, this paper contributes novel evidence suggesting that both intrahousehold rational behavior and consumption inequality are linked to the personality types of household members. While recent advancements in personality research have been extensively reviewed (see John, Robins, and Pervin (2010)), the detailed examination of its role within family dynamics is still relatively unexplored. In a related study, Flinn, Todd, and Zhang (2018) develop a model of household behavior and apply it to Australian data to investigate how personality traits influence cooperative and

[1]See Browning et al. (2014) for a comprehensive review.

non-cooperative interactions within households, as well as members' labor supply and wage rates. Their findings demonstrate that personality affects intrahousehold behavior and individual wages. The approach taken in the present paper differs from Flinn et al. (2018). Instead of applying a behavioral model to the data, the present study leverages a set of testable restrictions derived from Bourguignon et al. (2009), which serve as necessary and sufficient conditions for the collective model. By adopting this approach, I can structurally test the extent to which personality traits determine the allocation of resources between partners by influencing their preferences and respective bargaining positions within the household.

The rest of the paper unfolds as follows. Section 2 provides an introduction to the notation used and presents a collective model of household consumption and labor supply. This section also outlines the testable restrictions of the model based on observed household behavior, specifically focusing on distribution factor proportionality and the exclusion restriction of a conditional demand system. In Section 3, the sample used in the analysis is described, along with the available measures of personality traits. Section 4 outlines the empirical strategy employed in the study. It presents the functional form for the household demand functions and explains how tests of the collective model are derived from these functions. Section 5 presents the results obtained from estimating the demand system and testing the restrictions of the collective model. This section also provides evidence about the relationship between intrahousehold consumption inequality and personality traits. Finally, Section 7 concludes the paper.

2. Theory

The analysis considers households consisting of two adult members: the wife (f) and the husband (m). These individuals jointly make consumption decisions involving a Hicksian public good ($C \in \mathbb{R}_+$), private Hicksian assignable goods for each member ($c^i \in \mathbb{R}_+$), and individual leisure time ($\ell^i = T - L^i$), where $\ell^i \in \mathbb{R}_+$ represents the amount of leisure time, T is the time endowment for each individual, and L is the time supplied to labor ($i = m, f$). It is assumed that children do not have any bargaining power within the household, but some portion of the household budget may still be allocated to expenditures related to children. The prices of all Hicksian goods are normalized to one and wages ($w^i \in \mathbb{R}_{++}$) represent the prices of individual leisure. Observed heterogeneity in preferences (i.e., taste shifters) is represented by the vector ξ. The preferences of household members are captured by well-behaved utility functions. Each individual has an egoistic utility function denoted as $u^i = \upsilon^i(c^i, \ell^i, C; \xi^i)$.

In the collective model of Chiappori (1988, 1992), any Pareto-efficient intrahousehold allocation can be characterized as the solution of the following optimization program:

$$\begin{aligned} \max_{c^m, c^f, \ell^m, \ell^f, C} & \left[\upsilon^m(c^m, \ell^m, C; \xi^m) + \mu(w^m, w^f, y, \mathbf{z}) \upsilon^f(c^f, \ell^f, C; \xi^f) \right] \\ \text{s.t.} \quad & c^m + c^f + C + w^m \ell^m + w^f \ell^f \leq y, \\ & c^i \geq 0, \\ & C \geq 0, \\ & T \geq \ell^i \geq 0, \end{aligned} \tag{P1}$$

where y is household full income defined by $y = w^m T + w^f T + x$ with $x \in \mathbb{R}_+$ the household nonlabor income, and $\mu \in]0, 1[$ in the objective function is the Pareto weight that depends on (exogenous) wages, income, and distribution factors ($\mathbf{z}$). A variation on elements of $\mathbf{z}$ could impact outside options of household members and thus their intrahousehold bargaining power (see Vermeulen (2002)).[2] I take both household composition and intrafamily allocation of power as exogenously given. The solution to (P1) implies a set of differentiable household demand functions for goods and leisure that depend on prices, full income, observed heterogeneity, and the distribution function:

$$\mathbf{q} = \mathbf{g}\left[w^m, w^f, y, \mu(w^m, w^f, y, \mathbf{z}); \xi \right] \qquad \forall \ \mathbf{q} \in \{\mathbf{c}, \ell, C\}. \tag{1}$$

Distribution factor proportionality. As explained by Bourguignon et al. (2009), in a setting with no price variation distribution factor proportionality is necessary and sufficient for the collective model.[3] Assuming the existence of at least two distribution factors, this condition entails testing a set of cross-equation restrictions based on the estimation of the household demand system (1):

$$\frac{\partial c^m / \partial z_1}{\partial c^m / \partial z_k} = \frac{\partial c^f / \partial z_1}{\partial c^f / \partial z_k} = \frac{\partial \ell^m / \partial z_1}{\partial \ell^m / \partial z_k} = \frac{\partial \ell^f / \partial z_1}{\partial \ell^f / \partial z_k} = \frac{\partial C / \partial z_1}{\partial C / \partial z_k} \qquad \forall \ k = 2, \ldots, K. \tag{2}$$

The intuition of equation (2) is that distribution factors ($\mathbf{z}$) only affect the intrahousehold allocation of consumption and leisure through their impact on the distribution function (μ). To see this, take the marginal change in distribution factor z_k on the

[2] In axiomatic bargaining models, variables that are only applicable for threat points of the bargaining process can be potential distribution factors. See the discussion about extrahousehold environmental parameters in McElroy (1990) and bargaining models in Browning et al. (2014).

[3] The first notions of the proportionality condition with only private consumption are introduced in Bourguignon, Browning, Chiappori, and Lechene (1993) and Browning et al. (1994). Bourguignon et al. (2009) extend these results for public goods and externalities in consumption.

household demand for commodity j:

$$\frac{\partial g_j}{\partial z_k} = \frac{\partial g_j}{\partial \mu}\frac{\partial \mu}{\partial z_k}. \tag{3}$$

Comparing the effect of two distribution factors, z_k and z_l, we get:

$$\frac{\partial g_j/\partial z_k}{\partial g_j/\partial z_l} = \frac{\partial \mu/\partial z_k}{\partial \mu/\partial z_l}, \tag{4}$$

where the right-hand-side term in equation (4) is independent of the demand for good j.

z-conditional demand system. An alternative demand system is the z-conditional system coined by Bourguignon et al. (2009). Under the assumption that distribution factor z_1, say, is strictly monotonic on commodity ℓ^m, say, it is possible to invert the demand function for such good on this (continuous) factor:

$$z_1 = \nu(w^m, w^f, y, \ell^m, \mathbf{z}_{-1}; \xi), \tag{5}$$

where $\mathbf{z}_{-1}$ is equal to $\mathbf{z}$ but excluding the first element.[4] Substituting (5) into the demand for the remaining goods $\Phi(\cdot)$, we get the z-conditional demand system for $\tilde{\mathbf{q}}$ with $\tilde{\mathbf{q}} \in \{\mathbf{c}, \ell^f, C\}$:

$$\begin{aligned}\tilde{\mathbf{q}} &= \Phi(w^m, w^f, y, \mathbf{z}; \xi),\\ &= \Phi\left[w^m, w^f, y, \nu(w^m, w^f, y, \ell^m, \mathbf{z}_{-1}; \xi), \mathbf{z}_{-1}; \xi\right],\\ &= \tilde{\mathbf{g}}(w^m, w^f, y, \ell^m, \mathbf{z}_{-1}; \xi).\end{aligned} \tag{6}$$

The restriction of the collective model based on the estimation of the (conditional) demand system in equation (6) states that subject to the conditioning good (ℓ^m), the demand for the remaining commodities should be independent of all other distribution factors. This translates into the following testable implication:

$$\frac{\partial \tilde{\mathbf{g}}(w^m, w^f, y, \ell^m, \mathbf{z}_{-1}; \xi)}{\partial z_k} = 0 \qquad \forall\ k = 2, \ldots, K. \tag{7}$$

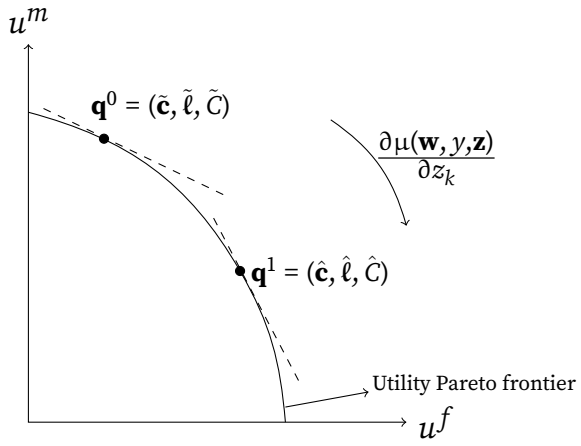
The restriction described in equation (7) implies that, conditional on the commodity used to invert z_1, additional distribution factors should not provide any meaningful

[4] Appendix B provides evidence that supports monotonicity between male leisure time and one of the distribution factors presented in Section 4.

additional information about the intrahousehold behavior. It is important to note that for this restriction to have empirical significance, it requires at least two distribution factors and at least two demand functions.

Although the testable implication in equation (7) is empirically more powerful than implication (2), which is used as a robustness check in the empirical application, both restrictions capture the same underlying mechanism.[5] The intuition behind these restrictions is illustrated in Figure 1. Suppose we observe an optimal household demand function that is relatively more representative of m's preferences, such as $\mathbf{q}^0$. Now, assume that we want to reallocate intrahousehold resources in a manner that is more favorable to the wife's (f) preferences, resulting in household decisions represented by $\mathbf{q}^1$. The testable restrictions of the collective model inform us that variations in the distribution factors $\mathbf{z}$ would only impact such a reallocation of resources by shifting the individual bargaining weights (μ). In other words, distribution factors do not alter the Pareto frontier since they do not directly affect preferences or the budget constraint.

Figure 1: The collective effect



Source: Based on Browning et al. (2014).

3. Data

I use a sample of Dutch households obtained from the Dutch Longitudinal Internet Studies for the Social sciences (LISS) panel gathered by CentERdata. This dataset provides rich information on economic and sociodemographic variables. Crucially, it also collects detailed data on individual consumption and a set of member-specific personality scales.

The sample selection criteria for this study are as follows, similar to those used in other studies such as Cherchye, Demuynck, De Rock, and Vermeulen (2017) and Cherchye, De Rock, and Vermeulen (2012). Couples included in the sample must have

[5] See Proposition 2 in Bourguignon et al. (2009) and the discussion thereof.

both adults between the ages of 25 and 65. Both adults in the couple must participate in the labor market for at least 10 hours per week, as wage information is required. Couples with at least one self-employed adult are excluded from the sample. This is because obtaining wage information for self-employed individuals is more complex compared to salaried workers. The sample includes only couples with no additional household members apart from children residing in the household. For example, couples living with friends or parents are excluded. Due to significant imbalance issues in the panel structure of the data, I do not make use of the panel structure and treat the data as a pooled cross-section. Overall, the sample consists of 1016 couples pooled from five different years, ranging from 2009 to 2015.

Table 1 provides summary statistics for the main variables used in the analysis. All economic variables are in weekly real terms. Full income is defined as the sum of spouses' wages multiplied by the total time available (i.e., 112) plus any non-labor income of the household. Leisure for each partner is derived by subtracting the hours worked by each individual from the total available time. The dataset includes information on assignable consumption for each household member. This refers to individual expenditures on various goods such as food, tobacco, or clothing. In the empirical analysis, these individual expenditures are treated as a Hicksian aggregate commodity. Total household private consumption represents the sum of both spouses' total private consumption, including their individual assignable consumption. Household consumption is calculated as the sum of public consumption and assignable private consumption. Public expenses, such as mortgage payments, are considered as a Hicksian aggregate commodity. As shown in Table 1, females work fewer hours and have lower wages compared to males. In terms of assignable consumption, females spend slightly more per week than males. The majority of total household consumption comes from public expenses. Females allocate more time to leisure activities than males, although a detailed breakdown of non-labor time is not available.[6] Demographically, males are slightly older and have a higher educational level compared to females.

The spouses' personality traits in this study are measured using three different sources. The first source is Rosenberg's Self-Esteem Scale (Rosenberg, 1965), which assesses individuals' perceptions of their self-worth. The second source is the Need For Cognition Scale (Cacioppo & Petty, 1982), which serves as a proxy for an individual's inclination to engage in intellectual activities. The third source is the Big Five Personality Traits questionnaire (Goldberg, 1990, 1992), which captures personalities based on five overarching dimensions.[7] Out of the total of 1016 couples in the sample, valid information on personality traits is available for 519 couples. For households with missing personality information, the values are imputed by averaging observed

[6] Data about the individual time allocated to household chores is only available in three waves.

[7] To construct each personality measure, I consider items with high loading values from exploratory factor analysis as in Flinn et al. (2018) and Todd and Zhang (2020). These personality measures demonstrate high internal consistency, as indicated by Cronbach's alphas exceeding 0.7.

individual personality scores from other waves. This imputation approach takes into account the stability of personality traits over time, which has been suggested by several studies.[8] I test various imputation methods, such as using the median value, but the main results remain robust. Looking at the bottom of Table 1, on average, males tend to have higher values than females in measures of self-esteem, extraversion, and cognitive engagement. In contrast, females tend to score higher than males in conscientiousness, neuroticism, and agreeableness. Both males and females exhibit similar levels of openness. These gender differences in personality traits align with findings from previous studies conducted on Dutch samples (see, e.g., Nyhus and Pons (2005) or Dupuy and Galichon (2014)). Importantly, the gender differences in personality traits observed in the sample remain virtually unchanged even after the imputation of missing personality traits.

4. Empirical strategy

In this section, I discuss the measures of *relative* personality traits that are employed to examine the restrictions of the collective model outlined in Section 2. These relative measures capture differences between spouses in personality traits that are relevant for labor market outcomes. The functional form for the household demand functions is also introduced. From these demand functions, several testable implications can be derived to assess the validity of the collective model.

Personality and labor market outcomes. Several studies have demonstrated that labor market outcomes, such as wage offers and job performance, depend significantly on an individual's agreeableness, conscientiousness, neuroticism, and cognitive level. Based on this evidence, I create a relative measure of this subset of traits between spouses. I hypothesize that the relative distribution of these traits may influence an individual's bargaining power within the household. Better scores in any of these traits could enhance an individual's attractiveness in the labor market, *ceteris paribus*, subsequently improving their intrahousehold position relative to their partner's.[9]

To construct the relative measure of personalities that are attractive to the labor

[8] See, e.g., Cobb-Clark and Schurer (2012), Todd and Zhang (2020) or Fitzenberger, Mena, Nimczik, and Sunde (2022). See Appendix A for the stability of personality traits in the current sample.

[9] Almlund, Duckworth, Heckman, and Kautz (2011) show that conscientiousness, agreeableness, and neuroticism have a crucial role in determining job performance and wages by influencing occupational choices and job search, incentive scheme selection, absenteeism, and turnover. For instance, under a job search approach, Flinn et al. (2020) show that higher levels of conscientiousness and lower levels of agreeableness and neuroticism increase hourly wages and promote greater job stability. See Heckman et al. (2021) for a recent revision. On top of psychological traits, cognition has also a relevant role in labor market outcomes (Heckman, Stixrud, and Urzua (2006)). For example, in a dynamic model of schooling and occupational choices, Todd and Zhang (2020) show that individuals with higher cognitive skills tend to work in the white-collar sector. There is suggestive evidence that our measure of cognitive engagement (i.e., the NFC scale) highly relates to an individual's cognitive level and intelligence (Fleischhauer et al. (2010) and Strobel, Behnke, Gärtner, and Strobel (2019)).

Table 1: Summary statistics.

	Mean	Std. dev.	Min	Max
A. Economic variables:				
Male wage rate	13.74	3.74	6.88	29.90
Female wage rate	12.18	3.13	4.26	21.80
Male weekly hours worked	37.40	4.91	12	60
Female weekly hours worked	26.29	7.95	10	48
Full income	2844.60	577.74	1357.20	4770.11
Household private consumption	2260.55	472.31	1142.50	4089.12
Assig. male private consumption	91.04	52.54	15	453.72
Assig. female private consumption	96.07	53.86	19.96	507.66
Public consumption	584.05	231.20	102.96	1898.35
Total household consumption	771.17	258.11	173.21	2284.98
Male weekly leisure	74.59	4.91	52	100
Female weekly leisure	85.70	7.95	64	102
B. Demographic variables:				
Male age	47.51	9.75	25	65
Female age	45.57	9.85	25	65
Number of children	1.14	1.10	0	5
Male dummy low education	0.19	0.39	0	1
Female dummy low education	0.43	0.49	0	1
Male dummy middle education	0.37	0.48	0	1
Female dummy middle education	0.22	0.41	0	1
Male dummy high education	0.43	0.49	0	1
Female dummy high education	0.34	0.47	0	1
C. Personality traits:				
Male Openness	3.06	0.26	1.37	3.87
Female Openness	3.07	0.28	1.87	3.87
Male Extraversion	3.19	0.50	1.50	4.50
Female Extraversion	3.13	0.51	1.33	4.50
Male Agreeableness	3.08	0.23	2.00	3.75
Female Agreeableness	3.17	0.18	2.37	3.62
Male Neuroticism	2.29	0.56	1.11	4.22
Female Neuroticism	2.57	0.58	1.05	4.33
Male Conscientiousness	2.79	0.25	1.88	3.66
Female Conscientiousness	2.86	0.23	1.77	3.55
Male Self-esteem	5.99	0.64	3.80	7.00
Female Self-esteem	5.85	0.72	3.70	7.00
Male Cognitive engagement	4.79	0.83	2.66	7.00
Female Cognitive engagement	4.45	0.80	2.41	6.75

Notes: Sample size of 1016 couples. LISS waves 2009, 2010, 2012, 2015, and 2017 pooled up. All economic variables are in weekly 2015 euros.

market, I employ principal component analysis (PCA). This method addresses potential issues of multicollinearity between personality traits and identifies the principal components, which are linearly uncorrelated factors, that explain the majority of the variance in the observed data. I applied the PCA to the entire sample, which includes both women and men. This approach allows for a more precise estimation of the effects of personality traits on intrahousehold consumption behavior (Jolliffe, 2002).

Table 2 presents the correlations between the principal components (PCs) and the individual personality traits, as well as the eigenvalues and the share of observed variance explained by each PC. The results indicate that the two principal components capture distinct aspects of personality traits. PC1 is associated with higher agreeable-

ness, higher conscientiousness, and higher neuroticism. On the other hand, PC2 is mainly characterized by lower levels of neuroticism and higher cognitive engagement. The eigenvalues and the proportion of observed variance explained by each PC reflect their relative importance in explaining the variability in the original personality traits.

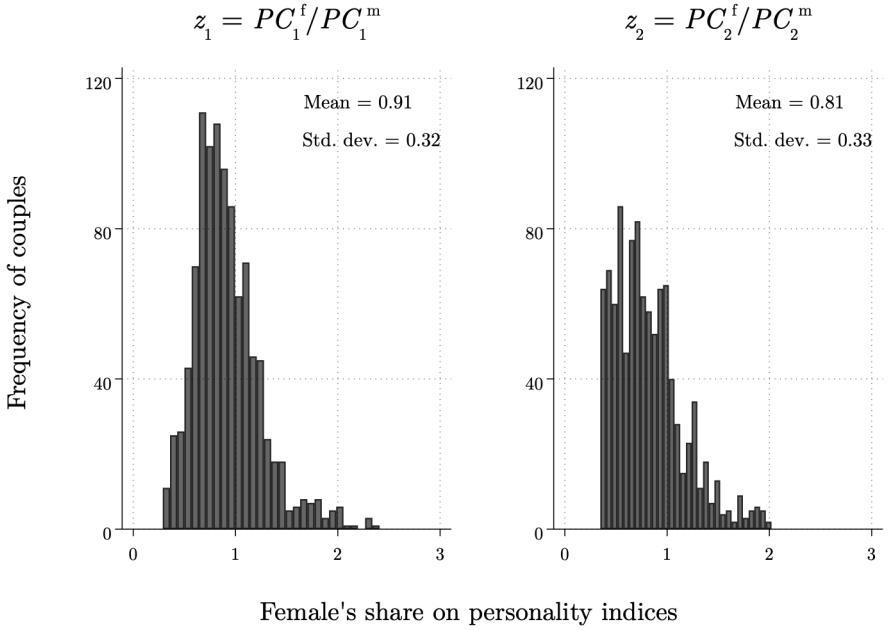
For each couple in the sample, the relative endowment of personality traits between partners is calculated by constructing the ratio of spouses' principal components. These ratios represent how attractive to the labor market the personalities of a spouse are relative to her partner. In our empirical application, these ratios are treated as continuous measures and tested as distribution factors in the collective consumption model presented in Section 2. To facilitate comparison and analysis, the PCs are scaled from 1 to 100, considering that they can take negative values. Figure 2 displays the distribution of these ratios. On average, women tend to have lower values in both personality factors.

Table 2. Principal components

Personality:	**PC1**	**PC2**
1. Agreeableness	0.56	0.48
2. Conscientiousness	0.73	0.30
3. Neuroticism	0.66	-0.48
4. Cognitive engagement	-0.20	0.80
Eigenvalue	1.14	1.09
Variance share	33.04%	29.90%

Notes: Explained share of the observed variance: 62.95%. The table indicates the loadings of each personality trait on each component.

Figure 2. Within-couple differences in personality traits



Parametrization of unconditional demand functions. To test the restrictions of the collective model, a functional form for the household demand functions needs to be specified. I follow Bobonis (2009) and parametrize the unconditional demand functions $\mathbf{q} \in \{\mathbf{c}, \ell, C\}$ in budget share form as:

$$\begin{aligned} \omega_j \;=\; \alpha_j \;+\; \ln(\mathbf{z}')\boldsymbol{\beta} \;+\; a_j(y) + b_j(y^2) \;+\; \ln(\mathbf{w}')\boldsymbol{\lambda} \\ +\; \mathbf{x}'\boldsymbol{\gamma} \;+\; \mathbf{e}'\boldsymbol{\delta} \;+\; \mathbf{m}'\boldsymbol{\psi} \;+\; \boldsymbol{\tau}_j \;+\; \varepsilon_j, \end{aligned} \tag{8}$$

where for each couple in the sample, ω is the budget share on good j, a and b are functions of full income and its square, $\mathbf{w}$ is a vector of partners' wages, $\mathbf{x}$ is a vector of standard demographic variables, $\boldsymbol{\tau}$ are time dummies capturing heterogeneity over time, and ε is unobserved heterogeneity.[10] Prices of composite goods, which are normalized to one, are assumed to enter through $\boldsymbol{\tau}$. The vector $\mathbf{z}$ includes the relative endowment of personality traits that are attractive to the labor market, i.e., ratios of PCs between partners of a household. The additional controls $\mathbf{e}$ and $\mathbf{m}$ are detailed below.[11]

One potential source of endogeneity in equation (8) is the endogenous selection of couples in the marriage market, wherein individuals may form couples based on their respective personality traits. Despite the limitations of the current dataset, I address this potential issue in two ways.[12] First, the vector of taste shifters ($\mathbf{e}$) includes, among other explanatory variables, the *level* of the seven personality traits of each spouse and their squares. I include the squares to accommodate for potential nonlinearity in the influence of personality on preferences over commodities, as suggested in the analysis of Borghans, Duckworth, Heckman, and Ter Weel (2008). The introduction of personality traits through the vector $\mathbf{e}$, allows me to test whether personality impacts intrahousehold behavior by changing preferences over consumed commodities. Second, in all specifications, I incorporate the vector $\mathbf{m}$ to account for marriage market conditions with respect to personality, as discussed in Dupuy and Galichon (2014). This vector incorporates the weighted ratios of the number of husbands and wives who are of similar age and educational level and who have the same score in a given personality trait as the husband or wife of each household, divided by the corresponding number of husbands or wives. These ratios, referred to as *marriage market personality ratios*, are akin to the sex ratio concept in Chiappori et al. (2002) and serve to control for the underlying structure of the marriage market in the sample with respect to personality traits.

[10] Potential sources of endogeneity for full income are measurement error in nonlabor income, taste shocks to total consumption that could be correlated to unobserved heterogeneity in the budget shares equations, or saving decisions that may be driving changes in nonlabor income.

[11] The assumption of a linear-log functional form allows for a straightforward interpretation of the coefficient estimates in the empirical model. Additionally, the empirical results remain consistent regardless of the specific functional form assumption chosen (results can be provided upon request).

[12] Fully addressing selection in personality traits, such as through the estimation of a structural matching model, is beyond the scope of this paper.

The proportionality restriction imposed by collective rationality (as expressed in equation (2)) on the system of unconditional demand functions can be formulated as follows:

$$\begin{aligned} \frac{\partial \omega_j / \partial \ln(z_1)}{\partial \omega_j / \partial \ln(z_2)} &= \frac{\partial \omega_s / \partial \ln(z_1)}{\partial \omega_s / \partial \ln(z_2)}, \\ \frac{\beta_{j1}}{\beta_{j2}} &= \frac{\beta_{s1}}{\beta_{s2}} \end{aligned} \tag{9}$$

for all goods j, s, with $j \neq s$. If condition (9) is satisfied, it implies that there is no evidence to reject the hypothesis that the effects of *differences* in personality traits between partners on resource allocation occur solely through their influence on the household's distribution function.

To test the nonlinear cross-equation restrictions presented in equation (9), the model is estimated as a system, allowing for correlation between the error terms across the budget shares equations. The cross-equation hypotheses are then examined using Wald test formulations. It is important to note that these formulations may be subject to statistical issues. For instance, in OLS systems, Wald tests tend to overreject the null hypothesis, and they are not invariant to the definition of the null hypothesis (see Greene (2003)). To address these concerns, this study adopts a similar approach to that of Bobonis (2009). Firstly, the Wald tests are conducted using the bootstrap distribution with 200 replications. Secondly, as a robustness check of the main results, linear Wald tests are computed based on the estimation of the z-conditional demand system proposed by Bourguignon et al. (2009).

Parametrization of the z-conditional demand system. Under the additional assumption that one distribution factor is strictly monotone in one good, we can derive the demand for that good as a function of the distribution factor. In my analysis, I find suggestive evidence indicating the presence of a monotonic correlation between factor $z_1 = PC_1^f / PC_1^m$ and male leisure time (ℓ^m).[13]

In budget share form, the demand for male leisure consumption (ℓ^m) inverted on z_1 is given by:

$$\begin{aligned} \ln(z_1) = \frac{1}{\beta_{\ell m 1}} \Big[& \omega_{\ell m} - \alpha_{\ell m} - \beta_{\ell m 2} \ln(z_2) - a_{\ell m}(y) - b_{\ell m}(y^2) \\ & - \ln(\mathbf{w}')\boldsymbol{\lambda}_{\ell m} - \mathbf{x}'\boldsymbol{\gamma}_{\ell m} - \mathbf{e}'\boldsymbol{\delta}_{\ell m} - \mathbf{m}'\boldsymbol{\psi}_{\ell m} - \boldsymbol{\tau}_{\ell m} - \varepsilon_{\ell m} \Big]. \end{aligned} \tag{10}$$

Substituting equation (10) in $\tilde{\mathbf{g}}(w^m, w^f, y, \ell^m, \mathbf{z}_{-1}; \xi)$, the demand for the remaining

[13] Refer to appendix B for detailed evidence on the monotonicity assumption. It is important to note that for the collective test based on the conditional demand system presented in this section, z_1 needs to be both continuous and statistically significant. For further discussion on this topic, see De Rock et al. (2022).

goods, we obtain the z-conditional demand system:

$$\begin{aligned}\omega_s &= \varphi_s + \theta_s \ln(z_2) + a_s(y) + b_s(y^2) + \frac{\beta_{s1}}{\beta_{\ell^m 1}}\omega_{\ell^m} \\ &-\frac{\beta_{s1}}{\beta_{\ell^m 1}}\left[a_{\ell^m}(y) + a_{\ell^m}(y^2) + \ln(\mathbf{w}')\boldsymbol{\lambda}_{\ell^m} + \mathbf{x}'\boldsymbol{\gamma}_{\ell^m} + \mathbf{e}'\boldsymbol{\delta}_{\ell^m} + \mathbf{m}'\boldsymbol{\psi}_{\ell^m} + \boldsymbol{\tau}_{\ell^m}\right] + \zeta_s,\end{aligned} \tag{11}$$

where

$$\begin{aligned}\varphi_s &= \alpha_s - \frac{\alpha_{\ell^m}\beta_{s1}}{\beta_{\ell^m 1}}, \\ \theta_s &= \beta_{s2} - \frac{\beta_{\ell^m 2}\beta_{s1}}{\beta_{\ell^m 1}}, \\ \zeta_s &= \frac{\beta_{s1}}{\beta_{\ell^m 1}}\varepsilon_{\ell^m} + \varepsilon_s\end{aligned}$$

for all goods $s \neq \ell^m$. One important source of endogeneity that arises from the estimation of (11), is the fact that the share of male leisure time is not independent of the new compound error term ζ_s. A natural instrument for men's leisure is z_1 which satisfies the standard requirements for being a relevant and valid instrumental variable. It is worth noting that equation (10) demonstrates the correlation between ω_{ℓ^m} and z_1, while the latter is excluded from equation (11). To mitigate this endogeneity problem, I employ a control function approach by incorporating the residuals from the first stage of the conditioning good into the estimation of equation (11).[14]

The exclusion restriction imposed by the collective model, as inferred from the estimation of the z-conditional demand system in equation (11), can be stated as follows:

$$\frac{\partial \omega_s}{\partial \ln(z_2)} = \theta_s = 0 \qquad \forall \; s \neq \ell^m. \tag{12}$$

For each budget share equation in the system (11), a linear test is conducted to assess the significance of the parameter estimate of the relative personality factor. Restriction (12) indicates that once we condition the demand for the remaining goods on the demand for ℓ^m, which is monotonically related to z_1, the additional variation provided by z_2 does not play a significant role in determining the household equilibrium. This condition is equivalent to the requirement of distribution factor proportionality, as discussed in Bourguignon et al. (2009). The exclusion restriction stated in equation (12) carries greater empirical power compared to the cross-equation restrictions presented in (9). This observation further strengthens the robustness of the estimation results obtained for the unconditional demand system.

[14]Control functions for testing collective rationality are also used by Bobonis (2009); Attanasio and Lechene (2014); De Rock et al. (2022).

5. Empirical results

In this section, I delve into the mechanisms through which personality traits influence household behavior, specifically by directly affecting individual preferences and by altering the bargaining weights of spouses. I present the estimates of both the unconditional demand system and the z-conditional demand system introduced earlier. Towards the conclusion of this section, I provide suggestive evidence regarding the connection between personality and intrahousehold consumption inequality.

Personality and preferences. To study the role of personality traits in preferences for consumed commodities, I estimate the unconditional demand system in equation (8) using ordinary least squares (OLS). To account for heteroskedasticity, I use robust standard errors and cluster the standard errors at the household level. The specifications include the following control variables: a linear control function for full income and its square instrumented with household potential income; the log of spouses' wages and the interaction between them; the square of husband's wage; husband's age and its square; husband's educational level; spouses' wage ratio; spouses' age ratio; spouses' educational level ratio; the number of children the couple has; and the marriage market personality ratios. Moreover, the personality traits of each spouse enter the unconditional demand system in levels and squared, and through the vector of distribution factors.[15]

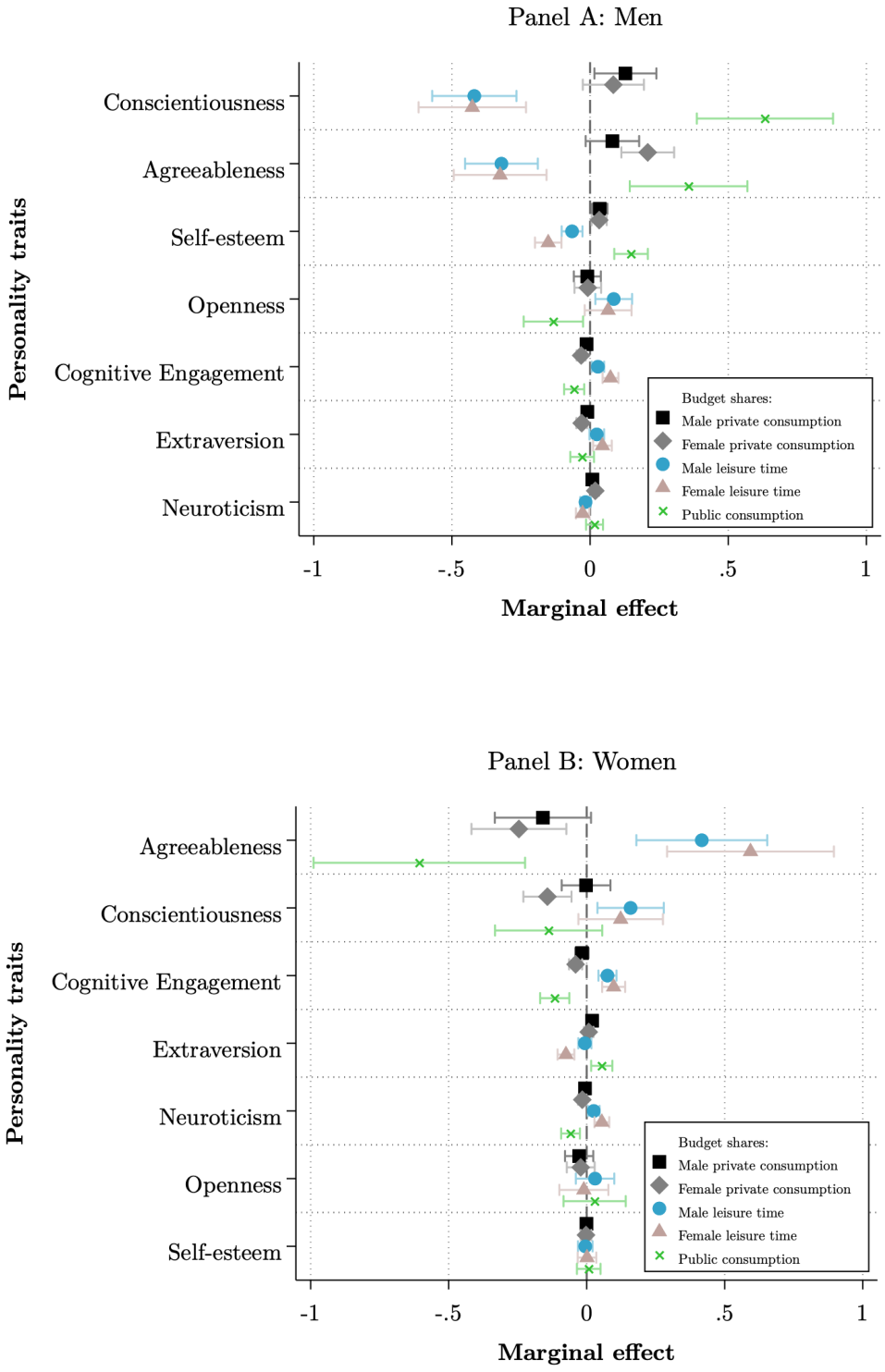
Figure 3 illustrates the influence of personality traits in *levels* on budget shares, with the estimates sorted by magnitude. In general, personality traits have a direct impact on preferences regarding consumed commodities, and this impact varies across genders. Firstly, it is evident that not all personality traits have a significant impact, and the effects vary in magnitude. Secondly, there is a consistently significant effect of conscientiousness and agreeableness, which is relatively large. Thirdly, certain personality traits, such as self-esteem, are relevant for male preferences but not female preferences. Finally, in most instances, the direction of the estimates differs between men and women, indicating contrasting effects.

Personality and bargaining weights. Next, I explore the role that personality has in the bargaining process within households. Table 3 presents the estimates of the unconditional demand system for *relative* personalities between spouses that are attractive to the labor market.[16] Firstly, it is observed that the relative endowments of personality between spouses have a significant impact on all commodities except male private consumption. Both personality factors positively affect female private consumption

[15] Wife's age and educational level are not included in the specifications due to multicollinearity issues, as there is a significant positive assortative mating in age and education in the sample. However, the results remain robust when using the wife's characteristics as controls instead.

[16] For completeness, appendix C presents the estimates of Table 3 together with the estimates and standard errors of Figure 3.

Figure 3. OLS estimates of the effect of personality traits on preferences over consumed commodities. System of unconditional demand functions.



Notes: Estimated OLS coefficients of the system of unconditional demand functions in equation (8). Estimates are sorted by size. Sample size: 1016 couples. Panel A: personality traits of the man. Panel B: personality traits of the woman. Additional controls: control variables: a linear control function for full income and its square instrumented with household potential income; the log of spouses' wages and the interaction between them; the square of husband's wage; husband's age and its square; husband's educational level; spouses' wage ratio; spouses' age ratio; spouses' educational level ratio; the number of children the couple has; and the marriage market personality ratios. Robust standard errors clustered at the household level are in parentheses. Confidence intervals constructed at 90% of confidence.

and public expenditures, but negatively influence the allocation of leisure. Secondly, both distribution factors have a relatively similar average effect across goods. Thirdly, the ratios of the estimated coefficients of the distribution factors across commodities, as indicated in equation (9), are 0.38 for c^m, 1.56 for c^f, 0.79 for l^m, 0.85 for l^f, and 0.68 for C. These proportional average effects across commodities are supported by the results of the (bootstrapped) proportionality test presented at the bottom of Table 3. This evidence suggests that relative personality influences an individual's consumption within a partnership, but solely through its impact on the distribution of power within the household. As a way to compare, Table 3 also shows the estimates of commonly used distribution factors, namely, the wage ratio between spouses as well as the age and education ratios (see Browning et al. (2014) for a review). The direction of the estimates is consistent across all five distribution factors. Interestingly, after accounting for differences in personality, the educational gap between spouses has a smaller and, in most cases, insignificant effect on household behavior.[17]

Table 3. OLS estimates of the effect of relative personality on household consumption. System of unconditional demand functions.

	Dependent variable: budget share				
	ω_{cm}	ω_{cf}	$\omega_{\ell m}$	$\omega_{\ell f}$	ω_C
$\ln(\frac{PC1^f}{PC1^m})$	0.006	0.041$^+$	-0.050$^+$	-0.057$^+$	0.059$^+$
	(0.012)	(0.011)	(0.019)	(0.028)	(0.032)
$\ln(\frac{PC2^f}{PC2^m})$	0.018	0.026$^+$	-0.062$^+$	-0.067$^+$	0.085$^+$
	(0.012)	(0.011)	(0.021)	(0.025)	(0.030)
$\ln(\frac{wage^f}{wage^m})$	0.297	0.464$^+$	-1.327$^+$	-0.901$^+$	1.465$^+$
	(0.204)	(0.203)	(0.404)	(0.401)	(0.529)
$\ln(\frac{age^f}{age^m})$	0.031$^+$	0.025$^+$	-0.024$^+$	-0.035$^+$	0.003
	(0.007)	(0.008)	(0.013)	(0.017)	(0.019)
$\ln(\frac{education^f}{education^m})$	0.002	0.002	-0.004	-0.017$^+$	0.017$^+$
	(0.001)	(0.001)	(0.003)	(0.005)	(0.006)
Additional covariates	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes
Proportionality test	$\chi^2(4) = 2.128$ (p–value = 0.716)				

Notes: Sample size of 1016 couples. Robust standard errors clustered at the household level are in parentheses. *PC*: principal component. I estimate the proportionality test's p–value on its bootstrap distribution over 200 replications. Additional covariates: linear control function for full income and its square instrumented with household potential income; the log of spouses' wages and the interaction between them; the square of husband's wage; husband's age and its square; husband's educational level; spouses' wage ratio; spouses' age ratio; spouses' educational level ratio; the number of children the couple has; the log of spouses' personality traits in levels and their squares; and marriage market personality ratios.
$^+$: Significant with at least 90% of confidence.

Table 4 presents the estimates of the z-conditional demand functions based on equation (11), estimated using a control function approach. In the control function

[17] Appendix D presents several goodness-of-fit measures to assess the quality of the model presented in this section. I compare the model with an alternative version where all seven personalities are considered to construct the distribution factors (instead of considering the subset of four personalities that are attractive to the labor market for which we have consistent evidence).

approach, I incorporate the residuals obtained from a first-stage regression of male leisure time into the demand for the other commodities. The same control variables are used as in the unconditional demand equations. It should be noted that the conditioning good is ℓ^m, and the relative level of PC1 is employed to invert the demand for this good. Importantly, both personality factors have a significant impact on the budget share equation of ℓ^m. The most compelling evidence is obtained from estimations where the budget share equation is responsive to both factors (De Rock et al., 2022). Additionally, the relative levels of PC1 and PC2 are statistically significant in four out of five budget share equations (see Table 3). However, in the z-conditional demand system (Table 4), the relative level of PC2 is not significant in any case and the magnitude of the estimates is close to zero. This evidence suggests that the impact of relative personality is indeed one-dimensional, meaning that relevant information regarding the intrahousehold allocation of resources is *completely* summarized by the share of male leisure time. Crucially, this finding is confirmed by the result of the collective test at the bottom of Table 4.

Table 4. OLS estimates of the effect of relative personality on household consumption. System of z-conditional demand functions.

	Dependent variable: budget share			
	ω_{cm}	ω_{cf}	$\omega_{\ell f}$	ω_C
$\ln(\frac{PC2^f}{PC2^m})$	0.009	-0.018	-0.006	0.015
	(0.014)	(0.012)	(0.027)	(0.027)
Additional covariates	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes
Collective test	$\chi^2(4) = 5.870$ (p–value = 0.335)			

Notes: Sample size of 1016 couples. Robust standard errors clustered at the household level are in parentheses. *PC*: principal component. The conditioning good is ℓ^m. I estimate the collective test's p–value on its bootstrap distribution over 200 replications. Additional covariates: linear control function for full income and its square instrumented with household potential income; the log of spouses' wages and the interaction between them; the square of husband's wage; husband's age and its square; husband's educational level; spouses' wage ratio; spouses' age ratio; spouses' educational level ratio; the number of children the couple has; the log of spouses' personality traits in levels and their squares; and marriage market personality ratios.
$^+$: Significant with at least 90% of confidence.

Personality and intrahousehold consumption inequality. After providing theory-based evidence that (relative) personality affects the bargaining weights of household members, it is important to explore the relationship between personality and within-family inequality. Following the approach of Cherchye, De Rock, Surana, and Vermeulen (2020), I analyze intrahousehold consumption inequality using the women and men relative individual cost of equivalent bundle (RICEB). For a given couple, these bundles are defined as follows:

$$\text{RICEB}^i = \frac{c^i + w^i \ell^i + C}{y} \qquad \text{with} \;\; i \in \{m, f\}. \tag{13}$$

Member-specific RICEBs describe how household members allocate consumption relative to the household's full income, taking into account both scale economies and the intrahousehold division of resources, thus providing an assessment of individual welfare.[18] In this study, intrahousehold consumption inequality is proxied by the difference between partners' RICEBs, specifically RICEB^f minus RICEB^m.

Next, I define a female personality fraction (r_p) for the observed score in personality $p \in \{1, \ldots, 4\}$ as $r_p = p^f/(p^f + p^m)$. I examine the distribution of intrahousehold consumption inequality for three categories of couples based on r_p: (a) households where the female fraction of a specific personality trait is *above* the 80th percentile of the distribution of all female fractions; (b) households where the female fraction of a specific personality trait is *between* the 45th and 55th percentiles of the distribution of all female fractions; and (c) households where the female fraction of a specific personality trait is *below* the 20th percentile of the distribution of all female fractions. I consider only the subset of four personalities relevant to the labor market that were used to construct both distribution factors (i.e., agreeableness, conscientiousness, neuroticism, and cognitive engagement). This categorization of couples allows for a comparison between households where the within-household female personality fraction is either high, moderate or relatively low.[19]

Figure 4 illustrates how intrahousehold consumption inequality varies with the *relative* amount of personality within couples, comparing the three types of households mentioned above. First, it can be observed that couples with a *moderate* within-family difference in personality tend to exhibit, on average, a smaller degree of intrahousehold consumption inequality (indicated by the red dashed lines, which are more concentrated around zero on the horizontal axis). Second, for almost all personalities (with the exception of neuroticism), the black solid line is consistently positioned to the right of the blue dash-dotted line. This implies that a larger fraction of a woman's personality relative to her partner is associated with a greater allocation of intrahousehold resources towards her. This pattern is particularly pronounced for conscientiousness and cognitive engagement (and to a lesser extent in agreeableness). Indeed, in the case of conscientiousness and cognitive engagement, as demonstrated in Panel A of Table 5, I strongly reject the null hypothesis of equal means between couples with a *large* and *small* female personality fraction (referring to the black and blue distributions in Figure 4). In Panel B of Table 5, I present the difference in average intrahousehold consumption inequality between households with *large* and *small* personality fractions in the sample. For instance, in couples where women exhibit higher levels of conscien-

[18] It is worth noting that while the concept of RICEBs is related to the sharing rule concept in the collective literature, the RICEBs evaluate public expenditures at market prices instead of Lindahl prices. Bostyn, Cherchye, De Rock, and Vermeulen (2022) utilize RICEBs to analyze individual welfare in a collective model that incorporates marriage market restrictions.

[19] Appendix E provides a detailed overview of the distribution of these female personality fractions as well as the RICEB measures. The results are robust to the choice of different cut-off values for the female personality fractions.

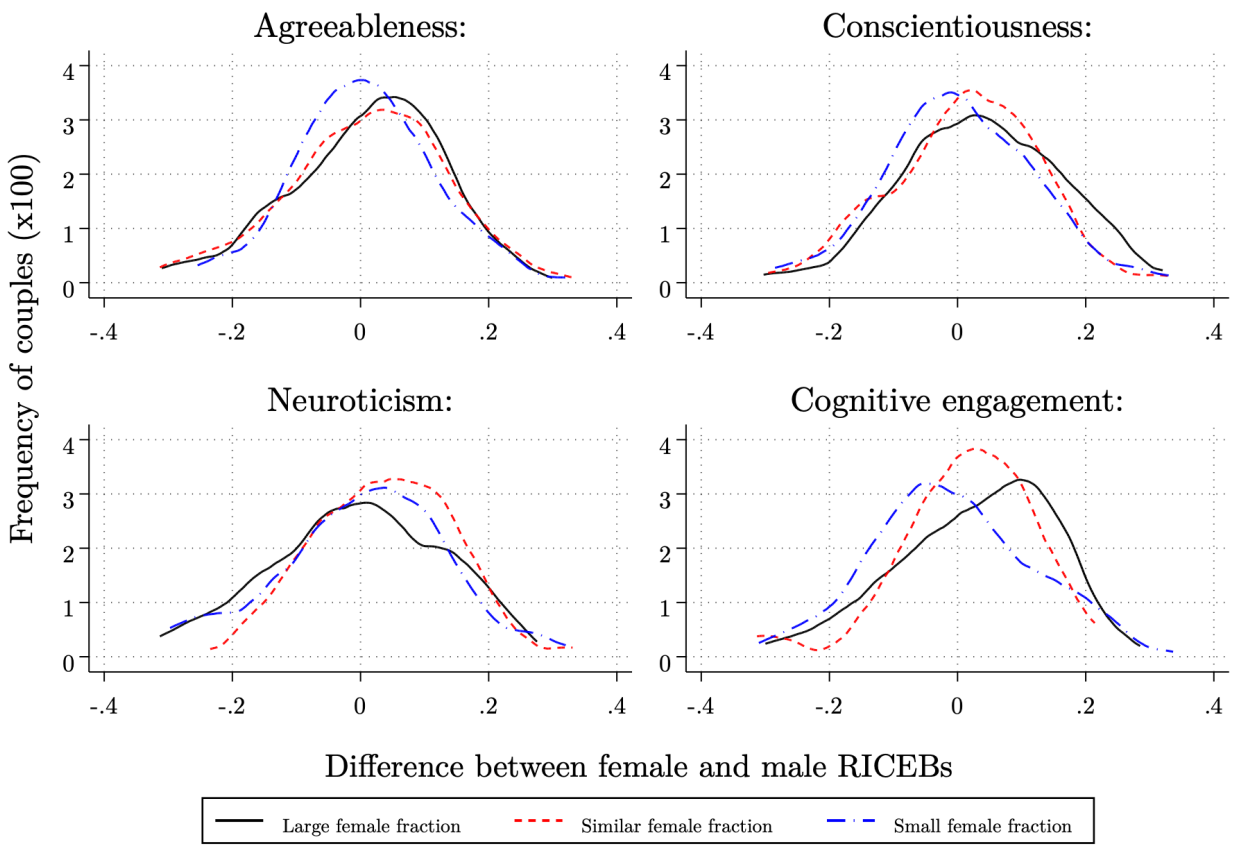
tiousness than their male partners, there is an average of 3.709% more intrahousehold resources allocated to them compared to couples where men are more conscientious.

Table 5. Panel A: Test of equal mean in intrahousehold inequality between couples with *large* and *small* female personality fractions. Panel B: Difference in average intrahousehold inequality between couples with *large* and *small* female personality fractions.

	Panel A: Bootstrap statistics		**Panel B: Difference in inequality**
	t-statistic	*p*-value	
Agreeableness	-0.276	0.489	1.081%
Conscientiousness	-2.901^{+}	0.040	3.709%
Neuroticism	0.628	0.455	-0.653%
Cognitive engagement	-3.122^{+}	0.027	2.864%

Notes: Panel A shows the results of a bootstrapped *t*-test of equal mean between the black and blue distributions shown in Figure 4. I estimate both the *t*-statistic and *p*-value on their bootstrap distribution over 200 replications. Panel B shows the difference in the average intrahousehold inequality between black and blue distributions shown in Figure 4.
$^{+}$ Significant with at least 90% of confidence.

Figure 4. Intrahousehold consumption inequality and relative personality



Notes: This figure shows kernel density plots of intrahousehold inequality (i.e., RICEB^f minus RICEB^m) by couples with different within-couple female personality fractions (r_p).

6. Conclusion

This paper presents compelling evidence, based on theoretical foundations, regarding the role of personality in resource allocation within households when assuming Pareto-efficient decision-making. By examining variations in personality traits among Dutch couples, this study tests for distribution factor proportionality and the exclusion restriction utilizing a conditional demand system estimation. The findings do not allow for the rejection of the hypothesis that (relative) personality influences the bargaining process within households. Notably, women who exhibit higher levels of conscientiousness and cognitive engagement relative to their male partners tend to receive a larger proportion of intrafamily resources. To address potential selection bias in personality, the budget share equations are conditioned on the level of personality and additional explanatory variables that capture the structure of the marriage market in relation to personality traits within the sample. The results also indicate that personality directly influences preferences for consumed commodities.

The findings presented in this paper provide strong support for conducting a more comprehensive and structural analysis to explore the significance of personality traits

within the family context, as well as the underlying mechanisms through which these traits exert their influence. Firstly, employing a model with a more robust structure for preferences and the sharing rule, similar to approaches utilized by Browning, Chiappori, and Lewbel (2013) or Cherchye et al. (2017), would offer deeper insights into the welfare implications of personality traits. Such an approach could enhance our understanding of how these traits affect individual well-being. Secondly, it is worth noting that several studies have demonstrated the importance of personality traits within marriage market dynamics (Lundberg (2012) or Dupuy and Galichon (2014)). Therefore, it would be valuable to estimate a matching model and examine the complete structure of the marriage market as a potential driver of power dynamics. This would allow for a comprehensive assessment of how personality traits shape partner selection and subsequent resource allocation within households. Lastly, the current paper's framework overlooks intertemporal aspects that are relevant to household consumption, such as the influence of personality on occupational or educational choices (Todd and Zhang (2020)). Considering these factors in future research would enhance the richness and applicability of the analysis.

Appendix

A. Stability of personality traits

This section illustrates the evolution of personality over time for women and men in our sample. Figures A1 and A2 show the average score by age for each personality measure. I consider all waves together.

Figure A1. Female average personality scores by age.

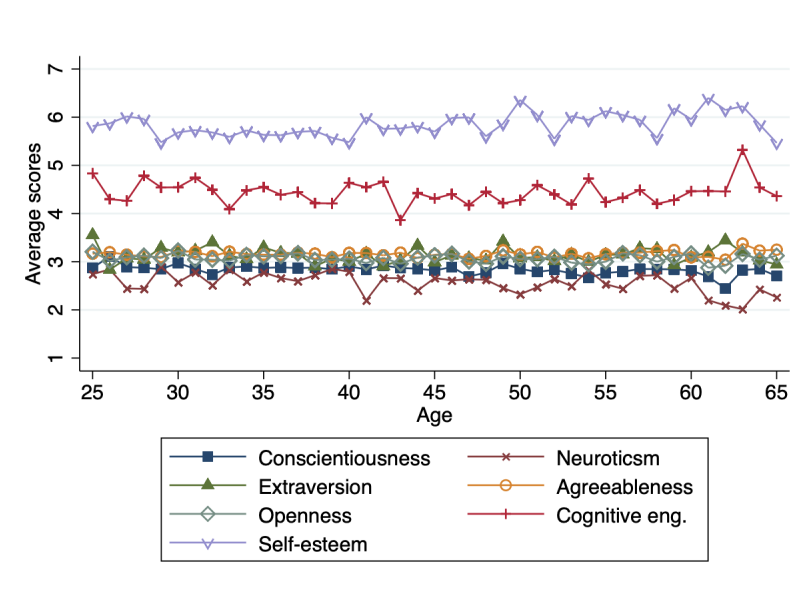
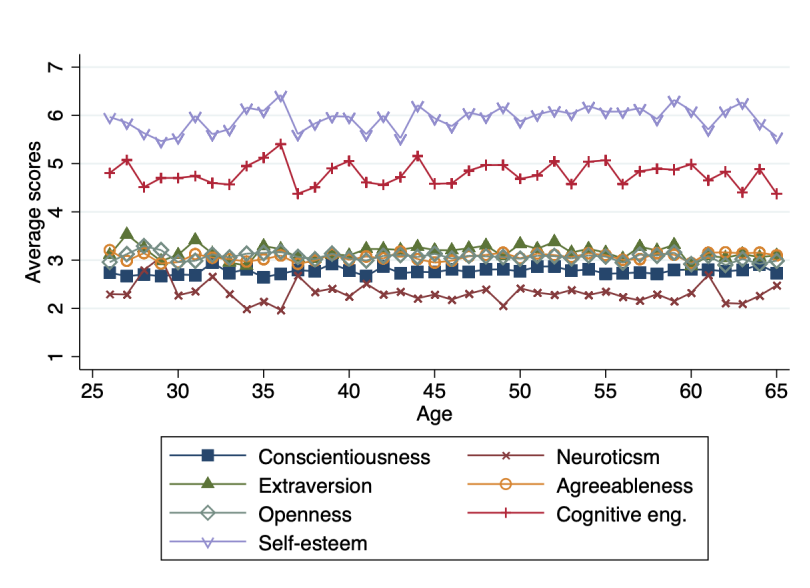


Figure A2. Male average personality scores by age.



B. Monotonic relationship between z_1 and male leisure time ($\omega_{\ell m}$)

Following Attanasio and Lechene (2014), I study the relationship between the first distribution factor ($z_1 = \ln(\frac{PC1^f}{PC1^m})$) and the share of male leisure consumption ($\omega_{\ell m}$) by looking at the point estimates of different polynomials. The direction of the point estimates implies an increasing relationship between the share of men's leisure time and the first measure of relative personality within households. This information, together with the fact that both distribution factors influence significantly $\omega_{\ell m}$ (see Table 3), supports the choice of men's leisure time as the conditioning good in the z-conditional demand system.

Table B1. Effect of distribution factors on consumption shares.

	Dependent variable: budget share				
	ω_{cm}	ω_{cf}	$\omega_{\ell m}$	$\omega_{\ell f}$	ω_C
$\ln(\frac{PC1^f}{PC1^m})$	0.000	0.047$^+$	-0.054$^+$	-0.061$^+$	0.067$^+$
	(0.015)	(0.014)	(0.021)	(0.032)	(0.037)
$[\ln(\frac{PC1^f}{PC1^m})]^2$	0.001	0.005	-0.007	0.009	-0.009
	(0.004)	(0.004)	(0.007)	(0.010)	(0.012)
$[\ln(\frac{PC1^f}{PC1^m})]^3$	0.005	-0.001	-0.001	0.012	-0.013
	(0.005)	(0.005)	(0.009)	(0.011)	(0.013)
$\ln(\frac{PC2^f}{PC2^m})$	0.017	0.031$^+$	-0.064$^+$	-0.080$^+$	0.096$^+$
	(0.015)	(0.012)	(0.023)	(0.026)	(0.032)
$[\ln(\frac{PC2^f}{PC2^m})]^2$	0.000	-0.001	0.004	0.013	-0.015
	(0.006)	(0.008)	(0.010)	(0.014)	(0.018)
$[\ln(\frac{PC2^f}{PC2^m})]^3$	0.000	-0.007	0.007	0.021	-0.020
	(0.007)	(0.009)	(0.012)	(0.015)	(0.019)
Additional covariates	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes

Notes: Sample size of 1016 couples. Robust standard errors clustered at the household level are in parentheses. *PC*: principal component. Additional covariates: linear control function for full income and its square instrumented with household potential income; the log of spouses' wages and the interaction between them; the square of husband's wage; husband's age and its square; husband's educational level; spouses' wage ratio; spouses' age ratio; spouses' educational level ratio; the number of children the couple has; the log of spouses' personality traits in levels and their squares; and marriage market personality ratios.
$^+$: Significant with at least 90% of confidence.

C. Estimates of the unconditional demand system

Table C1. OLS estimates of the effect of personality on household consumption. System of unconditional demand functions.

	Dependent variable: budget share				
	ω_{cm}	ω_{cf}	$\omega_{\ell m}$	$\omega_{\ell f}$	ω_C
Male personality:					
Agreeableness	0.080	0.208$^+$	-0.320$^+$	-0.325	0.356$^+$
	(0.055)	(0.052)	(0.088)	(0.123)	(0.148)
Conscientiousness	0.127$^+$	0.084	-0.418$^+$	-0.426$^+$	0.632$^+$
	(0.065)	(0.076)	(0.117)	(0.143)	(0.183)
Openness	-0.009	-0.008	0.085$^+$	0.065	-0.132
	(0.025)	(0.027)	(0.037)	(0.102)	(0.088)
Extraversion	-0.001	-0.030$^+$	0.024	0.044	-0.028
	(0.011)	(0.012)	(0.018)	(0.031)	(0.033)
Neuroticism	0.008	0.018$^+$	-0.016	-0.026	0.016
	(0.008)	(0.007)	(0.013)	(0.019)	(0.025)
Self-Esteem	0.035$^+$	0.033$^+$	-0.065$^+$	-0.151$^+$	0.148$^+$
	(0.016)	(0.016)	(0.027)	(0.036)	(0.043)
Cognitive Engagement	-0.012	-0.032$^+$	0.028	0.073$^+$	-0.057$^+$
	(0.009)	(0.010)	(0.021)	(0.022)	(0.029)
Female personality:					
Agreeableness	-0.158	-0.245$^+$	0.417$^+$	0.593$^+$	-0.606$^+$
	(0.103)	(0.107)	(0.175)	(0.217)	(0.268)
Conscientiousness	-0.002	-0.142$^+$	0.159$^+$	0.123	-0.137
	(0.048)	(0.046)	(0.087)	(0.120)	(0.139)
Openness	-0.027	-0.021	0.030	-0.010	0.028
	(0.026)	(0.025)	(0.057)	(0.061)	(0.077)
Extraversion	0.019$^+$	0.007	-0.006	-0.075$^+$	0.054$^+$
	(0.010)	(0.010)	(0.021)	(0.027)	(0.026)
Neuroticism	-0.006	-0.015$^+$	0.025$^+$	0.054$^+$	-0.058$^+$
	(0.008)	(0.009)	(0.015)	(0.019)	(0.025)
Self-Esteem	-0.001	-0.002	-0.005	0.001	0.007
	(0.013)	(0.011)	(0.018)	(0.026)	(0.029)
Cognitive Engagement	-0.017	-0.040$^+$	0.075$^+$	0.097$^+$	-0.115$^+$
	(0.015)	(0.013)	(0.026)	(0.034)	(0.040)
Distribution factors:					
$\ln(\frac{PC1^f}{PC1^m})$	0.006	0.041$^+$	-0.050$^+$	-0.057$^+$	0.059$^+$
	(0.012)	(0.011)	(0.019)	(0.028)	(0.032)
$\ln(\frac{PC2^f}{PC2^m})$	0.018	0.026$^+$	-0.062$^+$	-0.067$^+$	0.085$^+$
	(0.012)	(0.011)	(0.021)	(0.025)	(0.030)
Additional covariates	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes

Notes: Sample size of 1016 couples. Robust standard errors clustered at the household level are in parentheses. This table puts together the results presented in Figure 3 and Table 3. *PC*: principal component. Additional covariates: linear control function for full income and its square instrumented with household potential income; the log of spouses' wages and the interaction between them; the square of husband's wage; husband's age and its square; husband's educational level; spouses' wage ratio; spouses' age ratio; spouses' educational level ratio; the number of children the couple has; the log of spouses' personality traits in levels and their squares; and marriage market personality ratios.
$^+$: Significant with at least 90% of confidence.

D. Goodness-of-fit measures across models

Overall, as shown in Table D1, the original model has a better fit than the alternative model. The original model has a larger proportion of the variance in all five budget shares equations that is explained by the set of independent variables. When we adjust for the number of predictors, only the budget share equation for male consumption presents a slight decrease in the fit. Finally, the original model has a smaller prediction error than the alternative model, as described by the Root Mean Squared Error (RMSE).[20]

Table D1. Goodness-of-fit measures comparing the estimation of the unconditional demand system under two models.

	Dependent variable: budget share				
	ω_{cm}	ω_{cf}	$\omega_{\ell m}$	$\omega_{\ell f}$	ω_{C}
Original model					
R^2	0.215	0.265	0.901	0.847	0.655
Adj–R^2	0.157	0.210	0.894	0.835	0.629
RSME	0.016	0.016	0.022	0.029	0.036
Alternative model					
R^2	0.202	0.238	0.897	0.831	0.628
Adj–R^2	0.163	0.200	0.892	0.822	0.610
RSME	0.016	0.016	0.023	0.030	0.037

Notes: Sample size of 1016 couples. Goodness-of-fit measures comparing the estimation of equation (8) under two models. R^2: R-squared. Adj-R^2: adjusted R-squared. RSME: Root Mean Squared Error. The original model refers to the model presented throughout the paper, where distribution factors are constructed using a subset of four personality traits. The alternative model includes all seven measures to construct the distribution factors.

[20]The full set of estimates of the alternative model are available upon request.

E. Distribution of female personality fractions and RICEBs

Table E1. Summary statistics for female personality fractions (r_p) and RICEBs measures (N = 1016 couples)

	Mean	Std. Dev.	Min	p25	Median	p75	Max
RICEB^f	0.606	0.070	0.273	0.563	0.609	0.653	0.802
RICEB^m	0.598	0.072	0.323	0.551	0.595	0.644	0.839
Female fractions (r_p):							
Neuroticism	0.529	0.073	0.309	0.476	0.530	0.577	0.773
Agreeableness	0.508	0.025	0.413	0.491	0.509	0.521	0.636
Conscientiousness	0.506	0.032	0.356	0.489	0.507	0.528	0.612
Cognitive Engagement	0.482	0.058	0.330	0.440	0.481	0.519	0.630

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