Intra Household Decision Making:

New Evidence from the Innovation Sample of the German Socioeconomic Panel

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Abstract

Using data from a new survey we designed for the Innovation Sample of the German Socioeconomic Panel (GSOEP), we document the relationship between marital sorting and intra-household decision-making, with a focus on consumption allocations and employment changes due to having children. Our first main finding is that most households in our sample (72%) split private consumption equally between partners, but a household is more likely to allocate more private consumption to the female partner when she is at least as educated as the male partner. Second, our data indicates there is a substantial gender discrepancy in career disruption due to childbearing: more than 50% of women experience a career disruption around the time of childbirth, compared to only 5% of men. However, women are significantly less likely to experience a disruption when they are more educated than their male partners. We establish a link between both facts, suggesting that women with a higher labor market attachment after having children are also more likely to benefit from a higher share of household resources later on. Our results suggest that marriage market sorting shapes intra-household decision making in important ways.

Keywords. Intra-Household Decision Making, Intra-Household Consumption, Career Disruption, Gender Gap, Marriage Market Sorting.

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1 Introduction

While the recent rise in between-household inequality across the developed world has received a lot of attention, *within*-household inequality is often overlooked. One of the main reasons is that it is difficult to measure. Income data of spouses is available in many national household surveys, but intra-household *consumption*—which due to some degree of income pooling is the most accurate measure of intra-household inequality—is rarely assessed. We developed a novel survey as part of the German Socio Economic Panel (GSOEP) that enables us to study intra-household consumption choices in greater depth. And we explore how these consumption choices are linked to another key decision made by households: the labor market responses to the arrival of a child to the household.

The intra-household allocation of consumption: One branch of Family Economics aims to identify the intra-household allocation of consumption and its determinants (Chiappori, 1992; Blundell, Chiappori, and Meghir, 2005; Lise and Seitz, 2011; Voena, 2015; Chiappori, Dias, and Meghir, 2018). Most of this research relies on survey data, but there are only a handful of cases in which these surveys contain information on how consumption is split *between* household members (particularly spouses).[1] Therefore, the identification of how total consumption (which is sometimes observed) is shared among household members requires strong assumptions about households' choices, based on observed behavior such as the labor supply of each spouse.

A better understanding of the intra-household decision making process is critical to assess the welfare implications of policies aiming to benefit certain groups (such as children or women) and the impact of negative shocks (such as unemployment) on intra-household risk-sharing. For example, if a tax policy was redesigned to encourage the labor supply of secondary earners, a comprehensive evaluation should consider not only the labor supply responses of the household members, but also how these responses translate into changes in the intra-household allocation of resources.

We use new data from the Innovation Sample of the GSOEP collected in 2019/20 to provide novel evidence on the intra-household consumption allocation in Germany. This data is unique in that it allows us to observe who within couples receives more consumption overall as well as across different categories of goods. Moreover, it allows us to study how different types of couples make different choices regarding the intra-household allocation of resources, so that we can analyze the link between marriage market sorting and the consumption sharing rule.

We find that most households (72%) split private consumption equally between partners, but that

[1] Information on the intra-household allocation of consumption in Denmark was collected in a supplement to the Danish Household Expenditure Survey between 1999 and 2005, but it does not have longitudinal character (Bonke and Browning, 2009). The Dutch Longitudinal Internet Studies for the Social Sciences Panel collects information on private consumption of every household member, but only for a pre-determined set of categories; other categories are assumed to be public consumption of the household. The Japanese Panel Survey of Consumers (used e.g. by Lise and Yamada, 2018 and Chiappori, Meghir, and Okuyama, 2021) collects information on consumption expenditure for different household members, but only for aggregate expenditures. Other widely used surveys such as the British Household Panel Survey or the U.S. Panel Study of Income Dynamics and—up to now—the German Socio Economic Panel do *not* collect consumption information at the household level.

households are more likely to allocate more private consumption to women when they have at least the same education level as their male spouses.

The Role of Family in Career Choices: A key factor affecting the career choices of spouses—with potentially persistent effects on gender inequality in the labor market as well as intra-household consumption inequality—is the arrival of a child to the household.

It is well known that there is a large motherhood penalty, with persistent gender gaps in the labor market after arrival of the first child (Angelov, Johansson, and Lindahl, 2016; Kleven, Landais, and Søgaard, 2019; Cortés and Pan, 2020; Berniell, Berniell, de la Mata, Edo, and Marchionni, 2021). However, less is known about the specific dimensions in which men and women adapt their labor market behavior in response to parenthood. For example, we usually observe hours of work, but we do not observe in the data whether an altered job arrangement provides more flexibility to balance family life with work.

Our recently collected data fills this gap, providing a more complete picture of the changes in labor market behavior of parents, and the differences across genders. Understanding this is particularly relevant in Germany, where women still take most of the burden of reconciling work and family responsibilities (Adda, Dustmann, and Stevens, 2017). We document that more than 50% of women experience a career disruption around the time of childbirth (compared to only 5% of men), mainly explained by temporarily leaving the labor force or reducing the number of hours. Moreover, we study the interaction between marriage market sorting and the career choices around the birth of a child. We find that women are significantly less likely to experience a disruption after childbirth when they are more educated than their male partners.

The Link between Intra-Household Consumption and Career Disruptions: Since childbirth is a key determinant behind gender gaps in labor market choices and outcomes, it likely also plays a role in shaping the intra-household allocation of resources. We combine data from our two sub-modules to explore the relationship between the impact of fertility on career choices and the consumption split across partners. Our findings suggest that women with a higher labor market attachment after having children are also more likely to benefit from a higher share of household resources, even many years after childbirth.

Ours is one of the first datasets that allows to look at this link directly, since we have specific information on the sharing rule of household resources, as well as detailed information on the nature of the career changes and disruptions experienced by parents after the arrival of children.

2 Data and Sample Description

In this section, we describe the data underlying our analysis and the characteristics of our sample.

2.1 New Survey Data

Our analysis is based on two sub-modules we designed for the Innovation Sample (IS) of the German Socioeconomic Panel: "The Intra-Household Allocation of Consumption" and "The Role of Family in Career Choices".

The core study of the GSOEP started in 1984 and collects information on a sample of about 25,000 individuals, living in 15,000 households (German Socio-Economic Panel, 2020). These households are interviewed every year, and supplemental samples have been added over time to keep the GSOEP representative of the German population.

Starting in 2011, the IS was introduced to accommodate the inclusion of specific modules to the GSOEP. The initial sample was drawn from the core GSOEP, and additional samples were added later, until reaching 5,000 respondents. Every year, there is a call for new modules, which undergo a peer-review process. [2] Our two sub-modules were included as part of the IS in 2019.

The intra-household allocation of consumption: Our first sub-module consists of *four questions* related to how households allocate consumption among their members (particularly spouses). When available, both partners living in a household answer the consumption questions separately. In Question 1, we ask each respondent how they allocate intra-household consumption across a large set of consumption categories. The information obtained from this question is qualitative in nature, since we only ask whether the male partner or the female partner receives a larger share of the total resources allocated to a certain consumption category. We also allow individuals to respond that both spouses consume about the same amount. In Question 2, we follow up by asking which partner gets a larger share of the overall consumption expenditures.

In the next two questions (Question 3 and 4), we aim to get quantitative information. We ask for the total amount in Euros that the household spent on frequent consumption categories over the past month, and on infrequent consumption categories over the past year. We also ask individuals which share of the total consumption was allocated to the male partner, to the female partner, to any children, and to all members of the household jointly.

The complete set of questions for this sub-module can be found in Appendix A.1.

The Role of Family in Career Choices: Our second sub-module consists of *three questions*. These are answered by every individual who reports being married or having children. Question 5 and 6 aim to understand whether the labor market choices of individuals were affected by changes in marital status (particularly, by getting married or starting to cohabit with their partners) or by the arrival of children to the household, respectively. In both cases, we start with a general question to assess whether there were any career changes or not, and we follow-up by asking about the specific nature of such changes.

Question 7 assesses whether an individual's current job is a good match along several dimensions

[2] For additional details about the SOEP data and the SOEP-IS data please refer to Goebel, Grabka, Liebig, Kroh, Richter, Schröder, and Schupp (2019) and Richter and Schupp (2012).

(professional goals, education, family responsibilities). As a follow-up question, we ask about the main causes of mismatch for those who indicated their jobs are not a good fit in terms of skills or career goals.

The complete set of questions for this sub-module can be found in Appendix A.2.

2.2 Sample Restrictions

Our survey is asked of 1,408 individuals classified as household heads or spouses/partners in the Innovation Sample. We first ask in Question 0 for details about a respondent's household composition (i.e. whether a partner or children are present). Table 1 indicates the total number of respondents in each category.

Table 1: Innovation Sample Household Composition

	Individuals
Partner, children	421
Partner, no children	283
No partner, children	214
No partner, no children	490
Total Respondents	**1,408**

Since our analysis is concerned with household consumption allocations and the impact of having children on career choices, we restrict our main sample to include respondents who either report living with a partner or report having children, or both. This produces a sample of 918 individual respondents. However, since only certain subsets of this sample answer particular survey questions, the number of respondents included in our analysis varies depending on the topic. [3]

In order to match individuals in couples, we use data on marital linkages from the core sample of the GSOEP. We match married or cohabiting individuals in our 918-person sample into 348 unique couples.[4] There are also 109 individuals who report living with a partner in our module, but whose partner is not identified in the main GSOEP data.

The core GSOEP also provides demographic information on region and education for our sample.[5] We categorize individuals into three educations bins according to maximum education attained: high

[3] For example, since the intra-household consumption information is elicited only from respondents who report that they live with a partner, the analysis in Section 3 includes only the households of these 704 respondents. Similarly, only respondents who have children answer questions about career changes due to having children, so the relevant sub-sample for the analysis in Section 4 consists of 635 individuals. Additionally, to examine the relationships between marital sorting, fertility-related career disruptions, and intra-household consumption as in Figures 3, 4, 7, and 8 and Section 5, we restrict our attention to only the set of individuals whom we can match in couples or who report living with both a partner and children.

[4] For 31 of these couples, only one partner is in our main sample because the other spouse responded to Question 0 that he or she does not live with a partner and does not have children.

[5] There are 12 individuals in our 918-person main sample who do not merge to the main GSOEP, so this information is missing for them, and another subset of 20 individuals have missing education information.

school or lower secondary, vocational or technical school, and college plus. The core GSOEP data also provides information on whether a respondent lives in East or West Germany. Summary statistics of our main sample, as well as for the partly overlapping sub-samples of individuals with partners and with children, are presented in Table 2.

Our widest sample for the consumption analysis in 3 consists of 430 households in which at least one individual reports living with a partner and responds to the consumption-related survey questions.[6] For 274 households in which we have consumption information from both partners separately, we take the female's partner response as the default. However, if her answer to Question 2 (which asks who gets more consumption overall) is inconsistent with her response to Questions 3 and 4 (which asks for total expenditure and percentages going to each partner for frequent and infrequent household purchases), but the answers of the male partner are consistent, we take his answers instead.

Table 2: Summary Statistics for Main Sample

	Full Sample	**With Partner**	**With Children**
Male	0.47	0.50	0.45
	(0.50)	(0.50)	(0.50)
Age in 2020 (years)	56.2	56.1	55.2
	(16.12)	(16.30)	(15.41)
West Germany	0.77	0.79	0.74
	(0.42)	(0.41)	(0.44)
Young cohort (born after 1963)	0.51	0.51	0.56
	(0.50)	(0.50)	(0.50)
HS or lower secondary	0.58	0.56	0.59
	(0.49)	(0.50)	(0.49)
Vocational/technical	0.18	0.19	0.18
	(0.39)	(0.39)	(0.39)
College plus	0.23	0.25	0.23
	(0.42)	(0.43)	(0.42)
Employed	0.50	0.50	0.53
	(0.50)	(0.50)	(0.50)
Receiving pension	0.36	0.36	0.31
	(0.48)	(0.48)	(0.46)
Sample Size	**918**	**704**	**635**

Notes: Mean values reported with standard deviations in parenthesis.

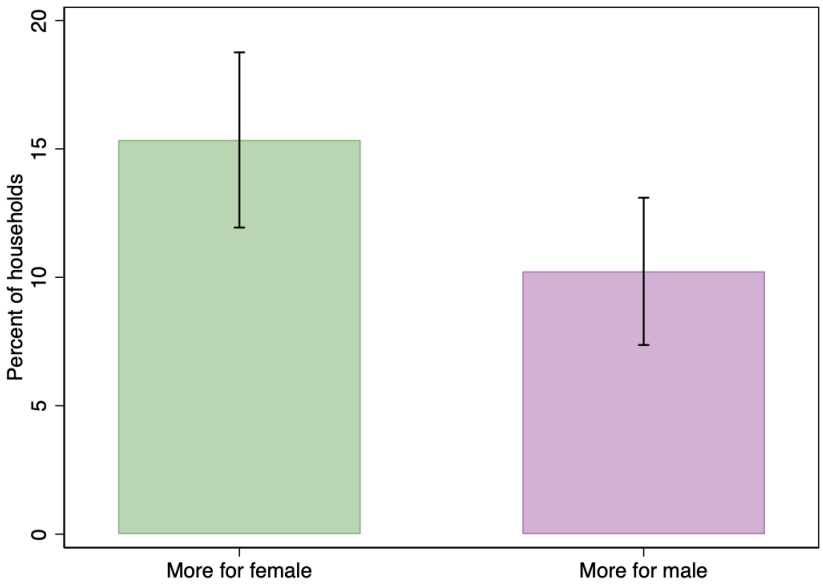
[6] For 47 households, we have consumption information from only one partner.

3 Intra-Household Consumption

In this section we use data on the sub-module "Intra-Household Allocation of Consumption" to document the patterns of intra-household consumption for our main sample, and how it varies across sub-samples and types of households.

In Figure 1, we look at the allocation of the overall consumption within the household. Our sample consists of all households in which at least one individual reported that they live with a partner, regardless of whether we could identify the partner in the main GSOEP. We find that most of the households in our sample (72.6%) report that consumption is split equally among the partners. Moreover, while 15% of households report that women receive a higher allocation of consumption, only about 10% of households report that men receive a higher share of the household consumption.

Figure 1: Overall Intra-Household Allocation of Consumption



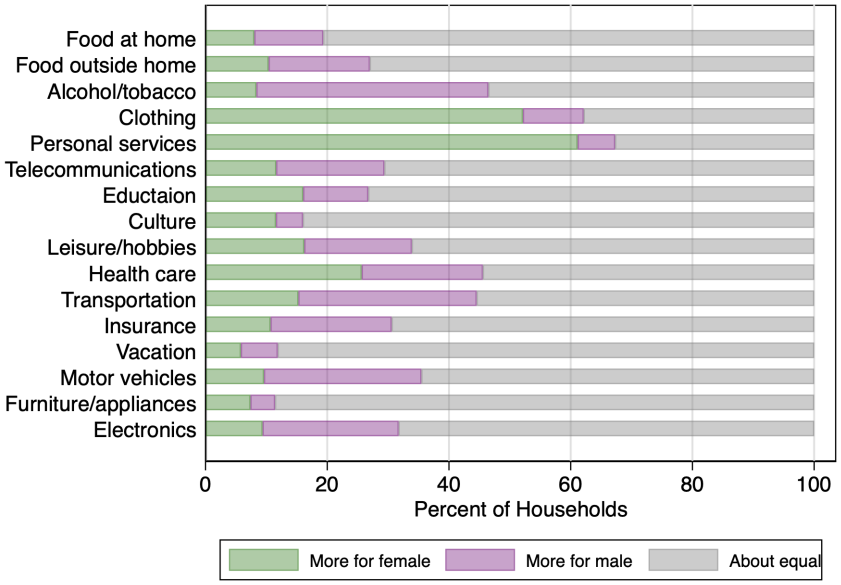
Notes: 72.6% of our sample of 430 household reports that consumption is about the same for both partners. The black error bars denote the 95% confidence interval.

Figure 2 exhibits the intra-household consumer patterns across different categories of goods, reflecting the richness of our data. First, and in line with our finding above, for the majority of the categories, more than half of the households report that consumption is equally allocated between the partners. Second, there are large gender differences in the allocation of private consumption for some key categories: While men spend relatively more on *Electronics*, *Motor Vehicles*, and *Alcohol and Tobacco*, women spend relatively more on *Cultural Activities*, *Clothing*, and *Personal Services*.

Next, we explore how the intra-household allocation of consumption relates to marriage market sorting. Restricting our sample to matched couples where at least one partner answers the consumption questions, we split our sample into couples in which the male partner is more educated, couples in which

the female partner is more educated, and couples in which both partners have the same education level. Figures 3 shows an interesting pattern: Women who have at least the same education level as their male partners receive on average a larger share of the private consumption of household. In turn, when men are more educated, private consumption is more likely to be equally allocated among the partners.

Figure 2: Intra-Household Allocation by Consumption Categories



Notes: Each category includes between 421 and 430 non-missing respondents.

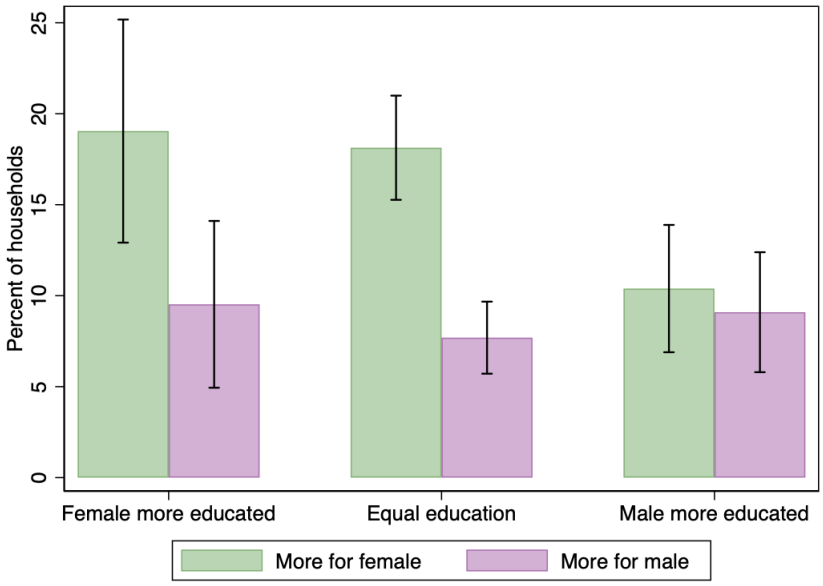
Finally, we look at how the allocation of consumption differs across different samples in Figure 4. First, we split our sample by region. We find that women in East Germany are slightly more likely to receive a larger share of household resources than women in West Germany, while the opposite holds true for men. This might reflect differences in gender norms between the East and the West, or differences in labor market attachment of women that translate into higher female income shares in the East.[7]

Second, we split our sample in two approximately equal-sized cohorts: A young cohort including those individuals born after 1963, and an old-cohort including those born before that year.[8] We find that women in the old cohort are more likely to receive a larger share of the household consumption than women in the younger cohort, while the opposite is true for men. This could be explained by differences in the consumption patterns of the different cohorts, with the younger cohort spending a larger share of their budget on children. Indeed, while the young cohort spends 16% of their budget on children, this share is only 3% for the older cohort. Naturally, younger kids who live with their parents are more expensive and our analysis suggests that this eats into female consumption.

[7] Note that in East Germany, in 43% of our households, the female partner earns about the same or more than the male partner, while this is the case in only 25% of West German households.

[8] We classify couples as part of the young cohort if both partners were born after 1963, and as part of the old cohort if at least one of the spouses was born before that year.

Figure 3: Marriage Market Sorting and Intra-Household Allocation of Consumption



Notes: There are 42 households in which the female partner is more educated, 182 households in which the partners are equally educated, and 77 households in which the male partner is more educated. We define an individual's level of education in three bins, (1) high school or lower secondary, (2) vocational or technical, and (3) college +, where (3) is considered most educated and (2) is considered more educated than (1). The black error bars denote the 95% confidence interval.

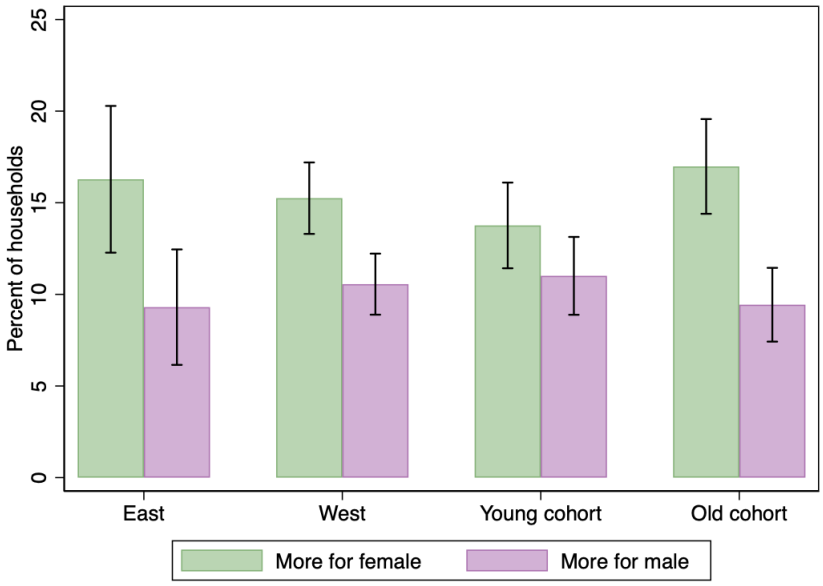
As discussed in Section 2, for couples in which both partners answered the consumption questions, we used the female answers as the default. To make sure that the consumption patterns observed do not depend on which partner's responses are used, we replicated our main figures using the male answers instead. The same overall patterns on intra-household consumption emerge regardless of whose responses we take as the default, although the difference between the household propensities to allocate more resources to females and to allocate more resources to males is slightly smaller when we use the male responses. Figure 10 in Appendix B is analogous to Figure 3, but uses the male responses as the default within couples.

4 The Role of Family in Career Choices

In this section we use data on our sub-module "The Role of Family in Career Choices" to document the impact of childbirth on labor market choices, and how the effects vary by gender and type of couple.[9]

[9] We also asked respondents whether they made career choices based on changes to their partnership status (particularly, becoming married or starting a cohabitation). We find that in most cases careers choices were not affected by that change in partnership status. We find no differences between men and women, or across different types of couples (results are available upon request). Moreover, we do not collect information on how other changes in marital status (such as divorce) might affect labor market choices.

Figure 4: Intra-Household Allocation of Consumption: Different Samples



Notes: The sample consists of 86 households in East Germany, 341 households in West Germany, 218 households in the young cohort (both partners born after 1963), and 212 households in the old cohort. The black error bars denote the 95% confidence interval.

We use our data to define an indicator of whether an individual experienced a career disruption upon the arrival of a child to the household.[10] Clearly, this question only applies to the survey respondents who report having a child. In Figure 5 we document large differences across gender in the likelihood of having a career disruption after childbirth. While 55% of women report that they experienced a career disruption, around 5% of men's careers were negatively affected by becoming fathers.

We next take advantage of our detailed data to explore the nature of the career changes. We present our findings in Figure 6. First, men were not only less likely to experience a career disruption, but they were more likely than women to have a career advancement, after the arrival of a child. In particular, 85% of men reported that they stayed on the same job, compared to less than 40% of women. On top of that, men were more likely than women to report a promotion or a wage increase. Second, for about 50% of women, childbirth was a associated with a temporary or permanent work interruption (while this is the case only for 5% of men). Moreover, fertility affects women's careers in multiple other ways, including a cut in work hours, the reduction in commuting time and increased flexibility. These changes are consistent with women taking on most of the burden of childcare and household chores in Germany, and hence adjusting their careers to achieve the required balance between work and family responsibilities.[11]

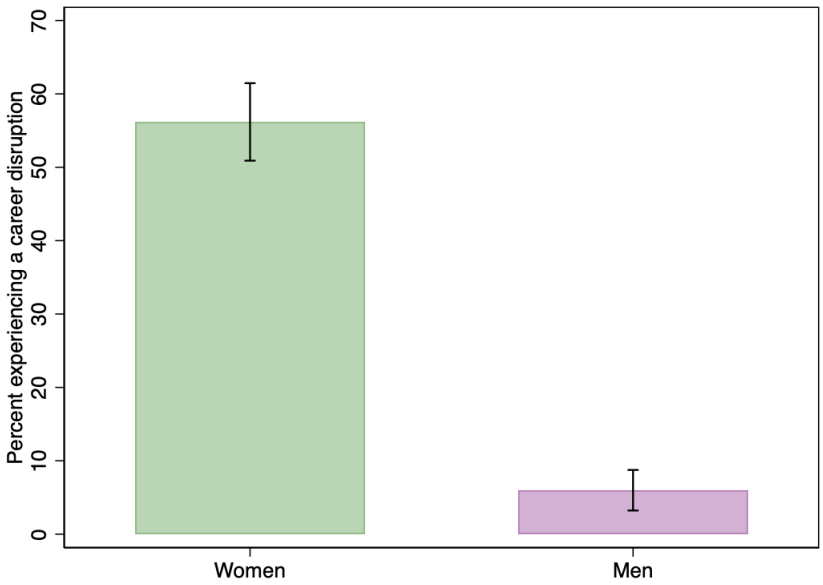
[10] To construct this indicator we use data from Question 6A in Appendix A.2. Our indicator of career disruption takes value 1 when the individual reports one of the following career changes around the time of childbirth: temporarily stopped work, permanently quit work, or stayed out of work.

[11] German women living in couples spend on average 20 hours more in home production per week than their male spouses, and 12.5 hours less working on the labor market (Calvo, Lindenlaub, and Reynoso, 2021).

We next explore how marriage market sorting affects the likelihood that women experience a career disruption upon becoming mothers. Figure 7 suggests that women who are more educated than their male partners are about 30 percentage points less likely to make changes that negatively affect their careers, compared to women with the same or lower education than their spouses. For men, marriage market sorting impacts career choices in qualitatively similar ways but, compared to women, male career disruptions vary much less across couple types.[12]

This analysis suggests an important link between marriage market sorting and intra-household decisions about how to balance family and career, with women stepping back from the labor market unless they are more educated than their spouses.

Figure 5: Gender Differences in Career Disruptions



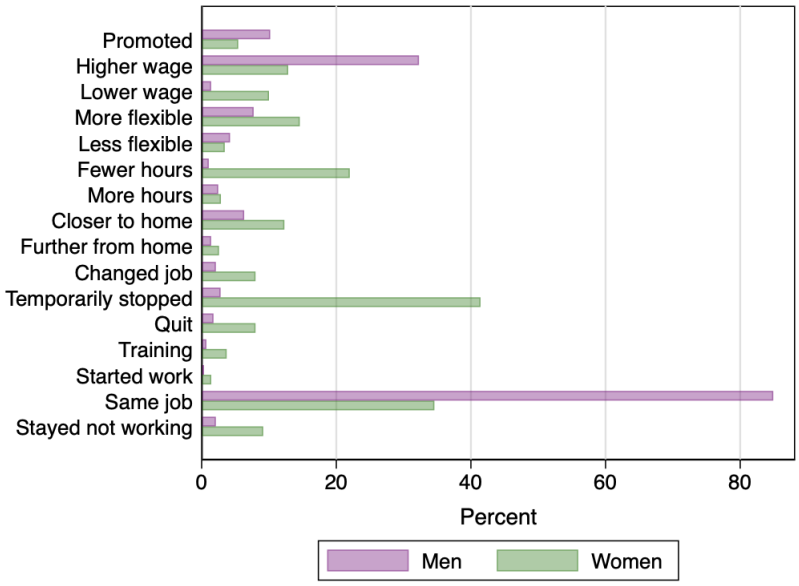
Notes: Our sample consist of 340 women and 284 men who report having children. We dropped from our sample 1 man and 10 women who provided inconsistent responses and hence could not be classified as experiencing a career disruption or not. The black error bars denote the 95% confidence interval.

Finally, we split our sample into the same sub-samples we used in Figure 4. We show in Figure 8 that women in East Germany are less likely to experience a career disruption after childbirth. In line with our discussion above, social norms in East Germany are less supportive of traditional gender roles, with women being more likely to have a stronger labor market attachment (Boelmann, Raute, and Schönberg, 2020). Moreover, the institutions of East Germany might have facilitated this, for example, through more availability of childcare for young children.[13]

[12] About 7% of men experience a disruption when the female is more educated, versus about 5% when they are equally educated and about 4% when the male is more educated.

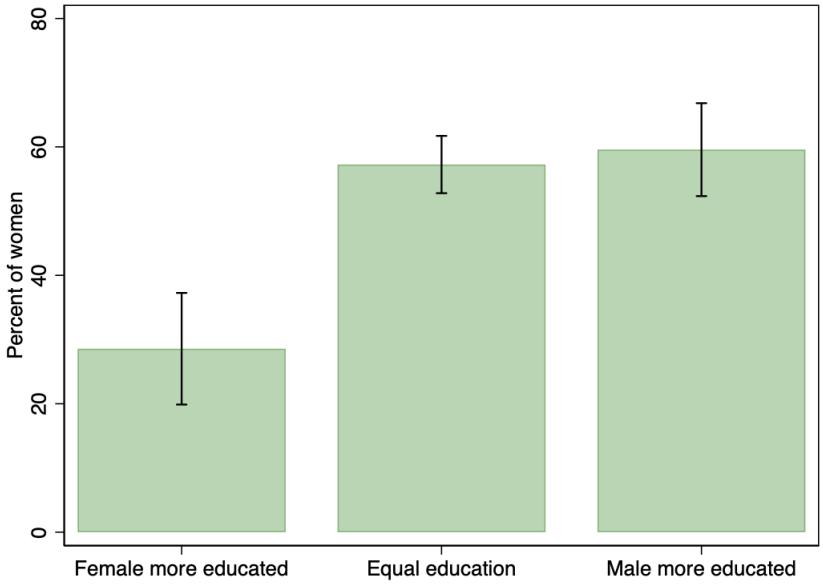
[13] Childcare coverage for children under 3 was 40% in East and 8% in West Germany in 2006. In the last 15 years, Germany implemented policies aiming to reach universal childcare coverage for children in this age group. While the expansion was larger in the West, significant differences persist (52% in the East and 28% in the West in 2016)(Mätzke, 2019).

Figure 6: The Nature of Career Disruptions



Notes: Our sample consist of 285 men and 350 women who report having children.

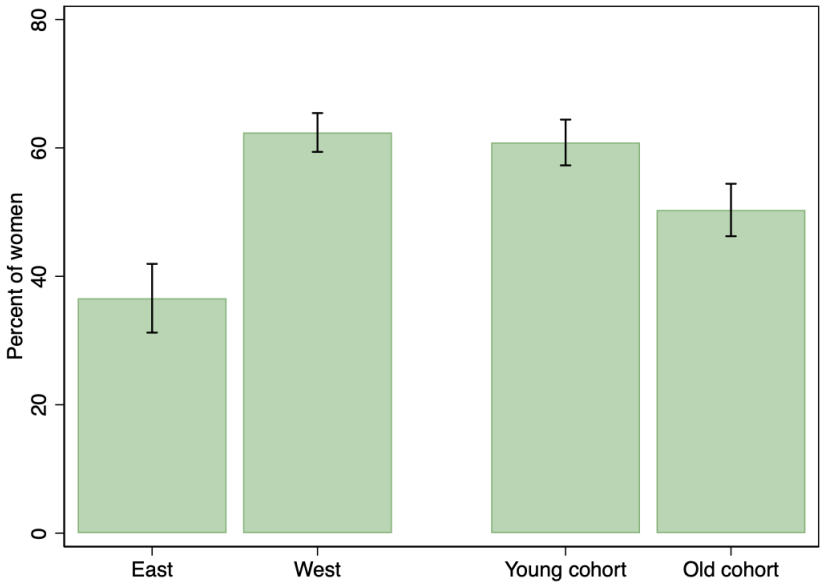
Figure 7: Marriage Market Sorting and Female Career Disruptions



Notes: We define maximal educational attainment bins in increasing order as: (1) high school and lower secondary, (2) vocational and technical school, and (3) college plus. The sample consists of 28 couples in which the female is more educated than the male partner, 124 couples in which the partners have equal educational attainment, and 47 couples in which the male is more educated than the female partner.

The second set of bars in Figure 8 suggests that women from the younger cohort experienced more career disruptions upon childbirth than relatively older women.

Figure 8: Female Career Disruptions: Different Samples



Notes: Our sample consist of 82 women in East and 258 women in West Germany. When we split our sample by cohorts, we have 189 women in the younger cohort and 151 in the older cohort.

5 Linking Intra-Household Consumption and Career Disruptions

In this section, we explore whether there exists link between our findings in Sections 3 and 4. We investigate the association between experiencing a career disruption around childbirth and the (persistent) intra-household allocation of resources.[14]

Figure 9 presents our main finding, which is based on the sample of households in which the female partner reports having a child. In households, in which women suffered a career disruption around the time of childbirth, men and women are almost equally likely to receive a larger share of the household consumption resources. However, women who did *not* experience a disruption after having a child are significantly more likely than men to get a larger consumption share. As a result, in households in which women do not suffer a career disruption at the time of having children, couples are more likely to allocate a greater consumption share to the female partner than to the male partner.[15] Figure 12 in Appendix

[14] One caveat of our data is that while career disruptions refer to the time around childbirth, our consumption data refers to the present period. Between the women who report having children, the median lag between the year of the first birth and the year in which they answer our questions is 26 years. We cautiously interpret our results as suggesting a *persistent* impact on the intra-household allocation of consumption of the choices made around childbirth. Our results could also reflect differences in gender norms across households (Goussé, Jacquemet, and Robin, 2017), which affect both the labor market decisions they make after having a child, and the sharing rule over the life cycle.

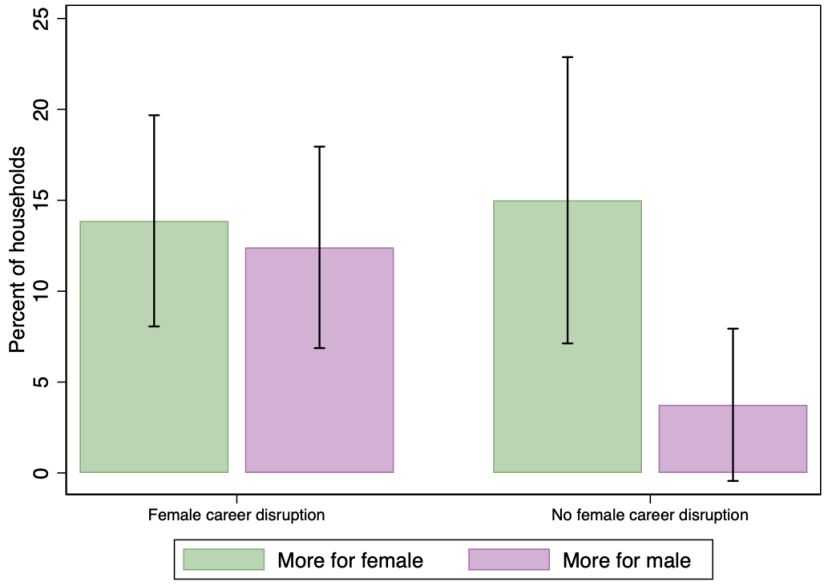
[15] One potential concern is that this finding is driven by the older cohort who report experiencing less career disruptions around the time of childbirth (Figure 8) and receiving a larger share of the household resources (Figure 4). To make sure this is not the case, we replicate Figure 9 using only data from the young cohort. The same pattern emerges and it is even more striking, as we show in Figure 11 in Appendix B. However, the sample size is small preventing us from drawing further conclusions.

B replicates this analysis using the male response as the default, and the same pattern emerges.

In Table 3 we provide further evidence that supports this relationship. Column 1 in Table 3 suggests that households in which women experience a career disruption are 10 percentage points more likely to allocate a strictly larger share of total consumption to the male partner. Column 2 suggests that men are more likely to have strictly more consumption in a larger number of consumption categories when the female partner experienced a career disruption around childbirth. In particular, our coefficient of interest indicates that when the female partner experiences a career disruption her male counterpart receives a strictly larger share of total consumption in 1 extra category.

Next we explore which particular categories of career disruptions are associated with the observed differences in intra-household consumption. In Table 4 we regress the same dependent variables we used in Table 3 on indicators for the five most common career changes experienced by women in Figure 6. The results are consistent with the relationship between female career disruption and intra-household consumption showed in Figure 9. In particular, column 1 shows that men are more likely to receive strictly more consumption than their female partners when women temporarily stopped work after childbirth. Conversely, when the female partner maintained greater labor force attachment by staying in the same job after having children, households report *significantly fewer* categories on which the male partner gets strictly more consumption in, as shown in column 2.

Figure 9: Career Disruptions and the Intra-Household Allocation of Resources



Notes: Our sample is split between 137 households in which women report a disruption around the time of childbirth, and 80 households in which they did not.

Table 3: Female career disruption and household consumption allocated to male partner

	Indicator	Number of categories
	(1)	(2)
Female career disruption	0.107**	1.078***
	(0.043)	(0.409)
Demographic Controls	Yes	Yes
Dep. var. mean	0.080	2.640
No. households	176	176

We control for the education bin of each partner, region, and cohort.

Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Specific female career changes and household consumption allocated to male partner

	Indicator	Number of categories
	(1)	(2)
Kept same job	-0.022	-1.581***
	(0.055)	(0.481)
Temporarily stopped work	0.116**	-0.740
	(0.056)	(0.490)
More flexible work	-0.029	0.082
	(0.055)	(0.488)
Fewer hours worked	-0.056	0.609
	(0.048)	(0.420)
Earned higher wage	-0.022	-0.048
	(0.061)	(0.538)
Constant	0.066	3.242***
	(0.042)	(0.366)
Dep. var. mean	0.090	2.550
No. households	221	221

Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Our results in this section suggest that there is a link between career disruptions of women around

childbirth and disadvantages in the intra-household allocation of resources. This relation appears to be long-lasting as differences in intra-household consumption remain in place even years after childbirth and the career disruption associated with it. One hypothesis is career disruptions associated with childbirth became persistent, with women being side-tracked in the labor market and contributing less to households' income ever since, resulting in their lower consumption shares. Another hypothesis is that both the career disruption of the female partner and the male advantage in the intra-household consumption split reflect underlying bargaining weights in the couple. As the male partner has more bargaining power, women are more likely to disrupt their careers around the time of childbirth, while the male partner is more likely to receive a higher consumption share. The data currently available to us does not allow us to determine whether the link we uncovered is causal. Nevertheless, our evidence suggests that household responses to childbirth may have long term implications for the allocation of resources, and in turn, on intra-household inequality, with negative consequences for women.

6 Conclusion

In this note, we use novel data from two modules we designed for the Innovation Sample of the German Socioeconomic Panel to document patterns on the intra-household allocation of consumption, gender differences in career disruptions around the time of childbirth, and the link between both.

Our main findings suggest that women are more likely to receive a larger share of the household's private consumption when they have at least the same education than their male spouses. Moreover, we document large differences across gender in career disruptions around the time of childbirth, with negative changes for women's careers in more than half of the cases (compared to only 5% of men). But we find that women are significantly less likely to experience a career disruption when they are more educated than their male spouses. Finally, we establish a link between both facts: women who have a higher labor market attachment after they have children are also more likely to receive a larger share of the household resources. Heterogeneity in marriage market matching patterns might play a role in driving this link.

The inclusion of our consumption sub-module in the SOEP-IS makes it one of the first household surveys which contains information on the intra-household allocation of consumption. This allows us to look directly at how households allocate consumption between households members, without the assumptions usually required in the Family Economics literature, arising from the fact that the sharing rule of private consumption is not observed. The inclusion of our career choices module allows us to explore the exact nature of career changes around the time of childbirth, data which is missing in most household surveys.

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A Proposed Questions for the SOEP Innovation Sample

We present the full set of questions for our two proposed sub-modules in A.1 and A.2.

A.1 Intra-Household Allocation of Consumption

I want to ask you some questions about the consumption behavior of your household.

0. **Please first indicate which family situation applies to you.**
   (a) I do not live with a spouse/partner and I do not have children.
   (b) I do not live with a spouse/partner and I have a child/children.
   (c) I live with my spouse/partner and I do not have children.
   (d) I live with my spouse/partner and I have a child/children.

   If answer is (a) or (b) go to Question 3.
   If answer is (c) or (d) go to Question 1.

1. **In your household, how much is spent on your own personal consumption compared to your spouse/partner's personal consumption (independently of who made the purchase)? For each of the following categories please indicate which statement applies to your household:**
   Examples of your personal consumption include clothes for yourself, your own mobile phone bill, the fee of your gym membership, tickets for cultural activities you enjoy without your spouse/partner (such as movies, theater or concerts), your flight tickets for trips without your partner/family, etc.

	More spent on myself	More spent on partner	Roughly the same spent on both	D/K
Food to eat at home (food for meals, snacks, drinks, etc.)	☐	☐	☐	☐
Food outside of home (such as restaurants, coffee shops, company canteen, etc.)	☐	☐	☐	☐
Alcohol and tobacco (both to consume inside and outside home)	☐	☐	☐	☐
Clothing and Accessories (such as clothes, shoes, purses, jewelry, etc.)	☐	☐	☐	☐
Personal services (such as body care, cosmetic services, hairdresser, etc.)	☐	☐	☐	☐
Telecommunications (such as landline, mobile, internet, WiFi, etc.)	☐	☐	☐	☐
Education, training and re-training (such as tuition fees, books, etc.; excluding hobbies)	☐	☐	☐	☐
Culture (such as theater, cinema, concerts and museums, etc.)	☐	☐	☐	☐
Leisure, hobbies, sports and pets (such as books, gym fees, sports equipment, etc.)	☐	☐	☐	☐
Health care (such as medicines, contact lenses, services not covered by health insurance, etc.)	☐	☐	☐	☐
Transportation (such as gasoline, tolls, parking fees, train, bus and flights, etc.; not for vacation)	☐	☐	☐	☐
Insurance (such as life, private pension, health, car and other insurance)	☐	☐	☐	☐
Vacation (such as transportation, accommodation, etc.; including short and long vacations)	☐	☐	☐	☐
Purchase and repair of motor vehicles (car, motorcycle)	☐	☐	☐	☐
Furniture and home appliances (such as refrigerator, blender, dishes, etc.)	☐	☐	☐	☐
Electronics (such as cellphone, computer, laptop, e-book, tablet, video games, etc.)	☐	☐	☐	☐

2. **When jointly considering all of the categories from Question 1, who gets more personal consumption, you or your spouse/partner (independently of who made the purchase)?**
   (a) More is spent on myself.
   (b) More is spent on my spouse/partner.
   (c) Roughly the same is spent on both of us.
   (d) I don't know.

3. **In a typical month, what is your household's total expenditure on frequent purchases in Euros (€), and what % of it is joint consumption by the family and what % of it is personal consumption by you only, by your spouse/partner only and by your children only? If you do not know the exact amount, please estimate!**
   Examples of frequent purchases are food, clothes, monthly gym member fee, mobile bill etc. Examples of frequent purchases for the family's joint consumption include food you consume together at home, the WiFi service for your home, or tickets for the theater if you went together with your spouse/partner/family. Examples of frequent purchases for your personal consumption include your clothes, your own mobile phone bill, the fee of your gym membership or cultural activities you enjoyed with friends or other people not living in the household. Examples of frequent purchases for your children's consumption include their regular piano lessons, their clothes or toys. Please exclude rent, utilities, home improvement, mortgage installments and financial assets.

Household Consumption in €	% For Family Jointly	% Only for Yourself	% Only for Partner	% Only for Children

4. **In the last year, what was your household's total expenditure on infrequent purchases in Euros (€), and what % of it was joint consumption by the family and what % of it was personal consumption by you only, by your spouse/partner only and by your children only? If you do not know the exact amount, please estimate!**
   Examples of infrequent purchases include vacation, and bigger expenses like a car purchase or repair, furniture, electronics etc. Examples of infrequent purchases for the family's joint consumption include family vacation or furniture or home appliances. Examples of infrequent purchases for your personal consumption include vacation to which you went alone or with friends, electronic devices for your personal use (such as a personal computer, or a mobile phone), or a motorcycle that only you use.

Household Consumption in €	% For Family Jointly	% Only for Yourself	% Only for Partner	% Only for Children

A.2 The Role of Family in Career Choices

Now, I want to ask you about situations related to both family and work decisions that you might have experienced.

If answer to Question 0 was (c) or (d) go to Question 5.A.
If answer to Question 0 was (b), go to Question 6.A.
If answer to Question 0 was (a) go to Question 7.A.

5.A **Did your work situation change because of your cohabitation or marriage?**

Yes ☐
No ☐

If yes, how?

(a) I changed jobs.
(b) I temporarily stopped working.
(c) I permanently quit work.
(d) I entered a training program.
(e) I started working.

If no, what applies to you?

(f) I stayed in the same job.
(g) I had not been working prior to my cohabitation/marriage and stayed out of work.

If answer is (a), (b) or (f) go to Question 5.B.
If answer is (d) or (e) and answer to Question 0 was (d), go to Question 6.A.
If answer is (d) or (e) and answer to Question 0 was (c), go to Question 7.A.
If answer is (c) or (g) questionnaire ends.

5.B **Which of the following statements applied to your work situation after cohabitation/marriage compared to before?**

	Yes	**No**	**N/A**
I got promoted	☐	☐	☐
I earned a higher wage	☐	☐	☐
I earned a lower wage	☐	☐	☐
My (new) job became more aligned with my professional goals	☐	☐	☐
My (new) job became less aligned with my professional goals	☐	☐	☐
My (new) job became more aligned with my skills and training	☐	☐	☐
My (new) job became less aligned with my skills and training	☐	☐	☐
My (new) job provided me with more flexibility to take care of family responsibilities	☐	☐	☐
My (new) job provided me with less flexibility to take care of family responsibilities	☐	☐	☐
In my (new) job I reduced my work hours	☐	☐	☐
In my (new) job I increased my work hours	☐	☐	☐
My (new) job was closer to where I lived	☐	☐	☐
My (new) job was further away from where I lived	☐	☐	☐
I started a new job in the location where my partner lived or worked	☐	☐	☐

If answer in Question 0 was (c), go to Question 7.A.
If answer in Question 0 was (d), go to Question 6.A.

6.A **Did your work situation change because of becoming a parent?**

Yes ☐
No ☐

If yes, how?

(a) I changed jobs.
(b) I temporarily stopped working.
(c) I permanently quit work.
(d) I entered a training program.
(e) I started working.

If no, what applies to you?

(f) I stayed in the same job.
(g) I had not been working prior to becoming a parent and stayed out of work.

If answer is (a), (b) or (f) go to Question 6.B.
If answer is (d) or (e) go to Question 7.A.
If answer is (c) or (g) questionnaire ends.

6.B **Which of the following statements applied to your work situation after becoming a parent compared to before?**

	Yes	No	N/A
I got promoted	☐	☐	☐
I earned a higher wage	☐	☐	☐
I earned a lower wage	☐	☐	☐
My (new) job became more aligned with my professional goals	☐	☐	☐
My (new) job became less aligned with my professional goals	☐	☐	☐
My (new) job became more aligned with my skills and training	☐	☐	☐
My (new) job became less aligned with my skills and training	☐	☐	☐
My (new) job provided me with more flexibility to take care of family responsibilities	☐	☐	☐
My (new) job provided me with less flexibility to take care of family responsibilities	☐	☐	☐
In my (new) job I reduced my work hours	☐	☐	☐
In my (new) job I increased my work hours	☐	☐	☐
My (new) job was closer to where I lived	☐	☐	☐
My (new) job was further away from where I lived	☐	☐	☐
I started a new job in the location where my partner lived or worked	☐	☐	☐

Finally, I want to know more about how well your current job is aligned with your career and family goals.

7.A **For each of the following dimensions, please indicate to what extent your current job is a good match for you.**

	Very much	Somewhat	Not very much	Not at all	N/A
My job is aligned with my professional goals	☐	☐	☐	☐	☐
My job is aligned with my education and training	☐	☐	☐	☐	☐
My job gives me the flexibility I need to take care of family responsibilities	☐	☐	☐	☐	☐
My job allows me to work the number of hours compatible with family responsibilities	☐	☐	☐	☐	☐

If answer is that job is not at all or not very much aligned with education and training or with your professional goals, go to Question 7.B.

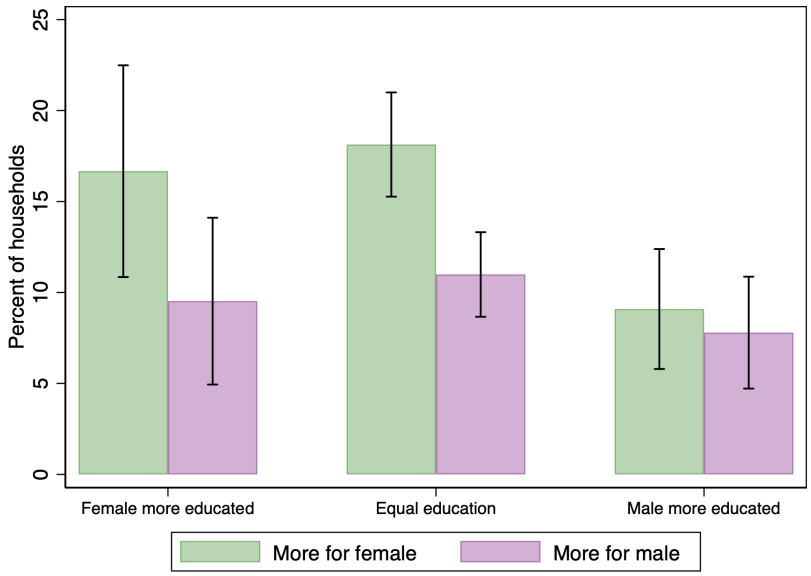
Otherwise, questionnaire ends here.

7.B **You mentioned that your current job is not at all or not very much aligned with your education and training or with your professional goals. What are the reasons why you do not have a job that is a better fit in those dimensions?**

	Yes	No	D/K
I would have to work more hours	☐	☐	☐
I would have to sacrifice flexibility	☐	☐	☐
I would have to find alternative childcare/elderly care/ housework arrangements	☐	☐	☐
I would have to incur a longer commute	☐	☐	☐
I would have to move to a different place	☐	☐	☐
I would have to accept a wage reduction	☐	☐	☐
I have been looking for another job but have not found one yet	☐	☐	☐
Other: _____	☐	☐	☐

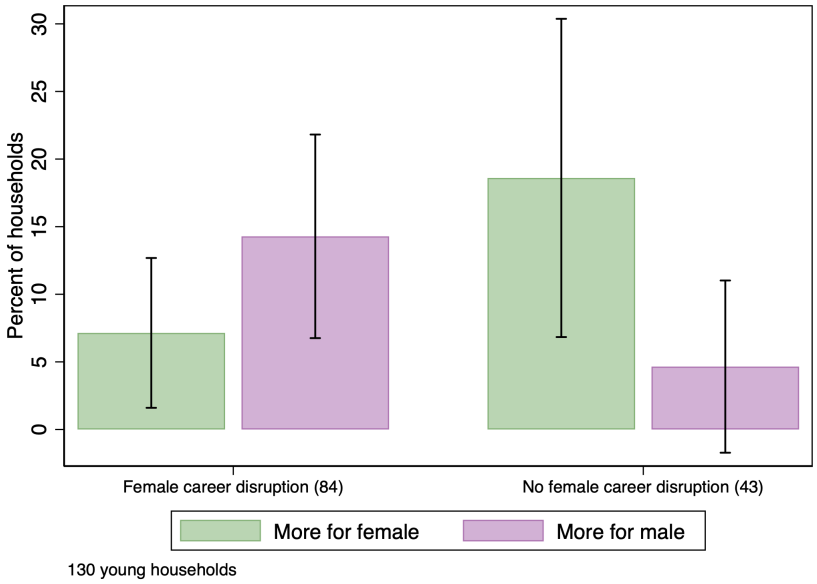
B Additional Figures

Figure 10: Marriage Market Sorting and Intra-Household Allocation of Consumption (Male Responses)



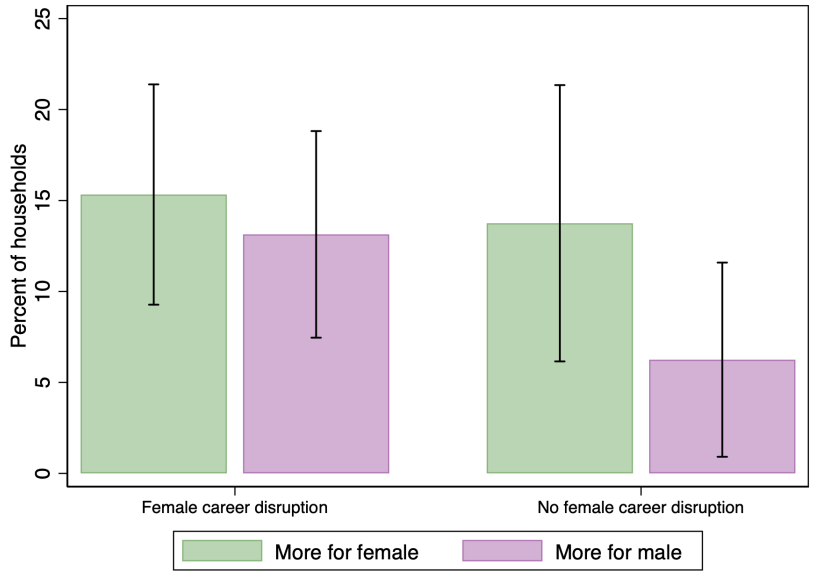
Notes: This figure is analogous to Figure 3, except it uses the male consumption response as a default in couples in which both partners answer Question 2. There are 42 households in which the female partner is more educated, 182 households in which the partners are equally educated, and 77 households in which the male partner is more educated. We define an individual's level of education in three bins, (1) high school or lower secondary, (2) vocational or technical, and (3) college +, where (3) is considered "most educated" and (2) is considered "more educated than (1)". The black error bars denote the 95% confidence interval.

Figure 11: Career Disruptions and the Intra-Household Allocation of Resources (Young Cohort)



Notes: Our sample is split between 84 households in which women report a disruption around the time of childbirth, and 43 households in which they did not.

Figure 12: Career Disruptions and the Intra-Household Allocation of Resources (Male Responses)



Notes: This figure is analogous to Figure 9, except it uses the male consumption response as a default in couples in which both partners answer Question 2. Our sample is split between 137 households in which women report a disruption around the time of childbirth, and 80 households in which they did not.