

MALE MIGRATION AND FAMILY-RELATED OUTCOMES

by

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DEDICATION

I dedicate this thesis to my loving and supportive husband, Kadeem Noray.

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ABSTRACT

I identify the causal relationship between male head of the household migration and reallocation of decision-making power. Furthermore, I look at the effect of this reallocation on children's welfare. Ultimately, my main econometric model is a difference-in-difference where I rely on randomly timed migration spells in order to identify a causal effect. Overall I find that decision-making power shifts towards women during their husbands' migration spells, but there is no corresponding change in child-investments. This does not support the commonly cited idea that women invest more in children than do men. These results are relevant to development programs that target female beneficiaries.

INTRODUCTION

The income benefits of out-migrant work in developing countries are well established. However, much less is known about changes in women’s empowerment that might occur during spousal migration spells. Two main questions motivate this research. First, during a spouse’s absence, does a woman gain more control over household resources? Second, does this shift in power affect children’s welfare, indicating that women have different preferences for children’s welfare than do their husbands? In this paper I identify causally each step in this sequence using unique panel data from rural Nepal, a country known for high rates of male migrant work.

This research makes contributions to two bodies of literature, the first being the migration literature. The majority of the past migration research has been quite narrow in scope, covering mainly how migrant households use remittances.¹ Consequently, any discussion on the benefits of migration often centers on remittances with little regard to other potential sources of economic development. This research is a critical addition to the migration literature, as it unlocks more discussion on the effects of migration holding economic resources constant.

Second, this paper contributes to the intersection between intra-household bargaining and international development literature. Many development programs give cash or in-kind transfers to women in poor families, motivated by the common belief that women spend resources in a more pro-child way than do men. This makes sense theoretically: if household members have unique preferences and bargain over control of household resources, then the effectiveness of a transfer depends on the

¹Clemens and Ogden (2014) give a comprehensive review of this issue in the migration literature. I also cover this issue in the “Contribution to the Literature” section.

recipient's preferences and bargaining power. The common assumption is that women have less bargaining power and stronger preferences for children's welfare than men. Yet the literature on this issue is not as conclusive as this commonly-held belief would suggest². As development programs continue to choose beneficiaries, more research in this area is certainly warranted in order to maximize effectiveness of transfers. Furthermore, we might expect that outcomes vary with local context, perhaps due to cultural differences. Therefore, evaluating this claim in rural Nepal provides useful policy implications for programs focused in rural South-East Asia.

Using 2014-2016 data from Nepal and two difference-in-differences models, I identify causally the relationship between temporary migration of the male head of the household, intra-household decision-making, and children's well-being. There are several unique benefits to using this dataset. First, the data cover a variety of topics including children's nutrition, household expenditures, and intra-household control over expenditures. These data make up the main outcome variables. Second, the panel nature of these data allows for household fixed effects in my first DD model. This is a vital aspect of my identification strategy as fixed effects control for time-constant factors that might cause selection into migration, the main threat to causal inference that I face. In addition, I am able to control for a wide range of control variables such as household composition, income, and education levels. If we assume that there are no unobservable, time-varying omitted variables, I can interpret these estimates as causal. Yet I also specify a more robust DD model that does not require such a strong assumption. The sample includes households with migrants in either, neither, and both periods. In light of this I run a second DD model that compares migrant households to each other, thus relying on the random timing of

²In a literature review of the evidence on cash transfers, Evans and Popova (2014) highlight this inconclusiveness. I expand on this in the "Contribution to the Literature" section and highlight other evidence that speaks to the link between women's empowerment and children's welfare.

migration spells in order to identify a causal effect. This is important because for this model, we only need to assume away unobservable, time-varying factors among migrant households that affect selection into migration spells at particular times.

Results show that women gain decision-making power during their husbands' migration spells. Specifically, there is strong evidence for this shift in control over expenditure decisions. However, there does not appear to be a change in children's welfare, as measured by household expenditures and nutrition. This suggests that the link between women's empowerment and children's welfare might be overstated, at least in the rural Nepal context. These results are robust to different sample specifications.

I begin by describing how this research contributes to the current literature, then I outline my data, theoretical model, and empirical strategy. Finally, I discuss my main results and robustness checks before concluding with ideas for future research.

CONTRIBUTION TO THE LITERATURE

I seek to answer two main questions. First, does control shift from a husband to his wife when he temporarily migrates? Second, if so, what effect does this shift have on children's health and education? This interdisciplinary thesis contributes to the household decision-making literature, the migration literature, and the small intersection of the two topics.

For over 20 years now, economists have been skeptical of household decision-making models that assume common preferences and unitary action among household members (Doss, 1996). Some empirical questions relevant to policy are an outgrowth of this skepticism. If household members have unique preferences, and if household decisions are a result of a bargaining game, then what determines bargaining power between members? Do income-earning household members pool their income or maintain separate spheres of income in order to pursue their own ends? Do household decisions result in Pareto-optimal outcomes for all members? Economists have developed several household decision-making models in the spirit of answering these questions (Lundberg and Pollak, 1994; Phipps and Burton, 1998; Pollak, 2005; Browning et al., 2010).

Most decision-making models are focused on the causes and effects of intra-household bargaining power. These models assume a game theoretic approach to the way husbands and wives arrive at decisions. In general, a spouse has more bargaining power if they have less to lose upon separation. Thus, wealth, earned wage rate, or productivity often determines the bargaining power distribution between spouses (Pollak, 2005; Friedberg and Webb, 2006; Asim, 2009; Swain and Wallentin, 2009; Aboukhsaiwan, 2014). The prevalence of these models might suggest that the only way to vary household decisions is to vary bargaining power. However, as

Ashraf (2009) points out, decision-making might vary with asymmetric information, communication, and other factors that these models often omit or assume away. In other words, these bargaining models are too simple to answer the general question: how do households arrive at decisions and how are members' preferences represented in these decisions?

This question is relevant to international development because many programs give cash or in-kind transfers to poor families. If household members have unique preferences and intra-household decision-making power varies, then the effectiveness of the transfer depends on this variation. Specifically, there is speculation that increasing women's decision-making power in a household results in pro-development outcomes, as some contend that women have stronger pro-child preferences than men do. This motivates many programs to target female beneficiaries. The literature breaks down into several main camps regarding this assertion. First, some results are consistent with the theory that women tend to invest more in children's well-being (Thomas, 1990; Hoddinott and Haddad, 1995; Handa, 1996; Rubalcava et al., 2002; Pitt et al., 2003; Gitter and Barham, 2008; Bobonis, 2009; Dunbar et al., 2013). Other literature confirms that women and men do indeed spend resources differently, but it is not as simple as a differences in child investments overall. Some papers find that women tend to invest more in their daughters than their sons¹ (Thomas, 1990; Thomas, 1994; Duflo, 2003; Rangel, 2006; Emerson and Souza, 2007; Antman, 2012; Chen, 2012; Antman, 2015). In contrast, some empirical evidence suggests that there is no systematic difference in the way that men and women spend resources on children (Akresh et al., 2012; Braido et al., 2012; Cherchye et al., 2012; Benhassine et al., 2013; Haushofer and Shapiro, 2016). In short, there is no obvious conclusion in

¹It is possible that prior to investment, girls are at a disadvantage relative to boys. If this is true, then women might be investing in children in a way that reduces disparities.

the literature about whether or not women spend resources in a more pro-child way than men.²

One possible source of variation in household decision-making that few have studied is the temporary migration of a primary household decision-maker. Migrant spells may introduce asymmetric information and imperfect monitoring between decision-makers, therefore affecting household decisions (Chen, 2006; Ashraf, 2009; Chen, 2012; Chen, 2013). Yet the migration literature has primarily centered on the effects of remittances rather than identifying the effects of migration holding income and wealth constant.³ Most of this literature argues that migration reduces poverty in developing countries or has positive effects on certain development goals such as increasing savings (Adams and Page, 2005; Osili, 2007; Rapoport and Docquier, 2006; Beegle et al., 2011). Specifically, some papers have pointed out that migration-source households tend to spend remittances on education, one particularly important development goal (Edwards and Ureta, 2003; Yang, 2008; Adams and Cuecuecha, 2010). Yet many papers have countered this positive perspective on migration by claiming that migration hurts children's education (Amuedo-Dorantes et al., 2008; De Brauw and Giles, 2008; Antman, 2011; Grigorian and Melkonyan, 2011; McKenzie and Rapoport, 2011; Cortes, 2015). Cortes (2015) reconciles these contradictory results by expressing children's education as a function of remittances and parental input. She argues that while remittances might positively affect education, the lack of parental input due to migration might negatively affect education. Her model and results confirm that holding remittances constant, there are other interesting effects

²These papers rely on evidence from a variety of countries, and their empirical methods are just as varied. It is no wonder that the literature on this issue is inconclusive.

³Clemens and Ogden (2014) point out that the literature lacks breadth as a result of its hyper-focus on remittances.

of migration to study. Perhaps one such effect is shifts in intra-household decision-making.

If this connection between migration spells and decision-making power shifts exists, there might also be variation in household decisions. Thus, spousal migration may provide useful variation that economists can use to evaluate if and how men and women invest differently in children. There is a small literature on this connection between migration spells, shifts in decision-making power, and child-related outcomes. To my knowledge, Chen (2006) is the first to suggest that migration could change intra-household decision-making power. Chen (2013) goes on to investigate this claim empirically in China. She finds results consistent with an asymmetric information model: when a male migrates, he cannot perfectly monitor his spouse's decisions. Thus, the migrant's wife increases her leisure time and increases her children's participation in household work in order to maintain constant household production. Furthermore, children's caloric intake increases while children's Body Mass Index remains constant. Chen theorizes that this is either so the migrant's wife can hide the increase in child labor or because the couple shares common "child quality/health" preferences. Interestingly, Chen sees no changes in human capital and thus assumes that intra-household bargaining power stayed constant. In short, women appear to adjust along margins that their husbands cannot detect during migration spells and otherwise keep household outcomes constant. This matches the predictions from Chen's household decision-making model where information asymmetries exist between spouses during migration spells.

Antman (2015) adds to Chen's work by looking at spousal migration spells in Mexico and expenditure shares between boys and girls. She finds that before migration, expenditure shares are at parity. During migration of the male head of the household, the shares shift in favor of girls; upon his return, they shift in favor of boys.

She also sees an increase in decision-making power over expenditures for the migrants' wives during migration, with a shift back towards the husband when he returns. Unlike Chen, Antman does not rely on a theoretical model of decision-making, nor does she speak to the mechanisms at work behind the shift in decision-making power. It is unclear why decision-making power shifts towards migrant wives—it could be representative of either a shift in bargaining power or wives' non-cooperative behavior due to imperfect monitoring. Furthermore, the evidence for a shift in decision-making power causing expenditure shares to change is only suggestive. Antman's results do not prove the causal chain of events that male migration spells cause wives to increase their control over expenditure decisions, which then causes a change in expenditure shares. Rather, she only proves a “commensurate” change in who makes decisions and what decisions are made. The main conclusion from her research is that mothers tend to favor girls in expenditures and fathers tend to favor boys, so much so that they are willing to overcompensate for any expenditure shift away from boys that happened during the migration spell. Antman argues that the mechanism through which this pattern occurs is shifts in decision-making power.

This research builds on Antman (2015) and Chen (2013), as I look at the same outcome variables and hypothesize about similar mechanisms. In this way, I contribute to the small and growing literature on the effects of migration holding income constant. My research also adds to the body of evidence on differences in the way men and women invest in children. Ultimately, this research yields insight for development policies that target women beneficiaries.

THEORY

While past literature suggests that migration spells of a spouse may induce information asymmetries or shifts in decision-making power, there are few formal theories off of which to build in this research (Ashraf, 2009; Chen, 2013; Antman, 2015). Neither Antman (2015) nor Ashraf (2009) include a theoretical model. On the other hand, Chen (2013) uses an intra-household bargaining model to outline the role of information asymmetries in household division of labor and child quality. She shows that the equilibrium might be non-cooperative during migration spells, which introduces asymmetric information between the couple. I use a simpler and broader model to investigate how migration spells affect decision-making power, and consequently, how a shift in decision-making power might affect investments in children.

First consider each spouses' individual utility maximization problem independently. If his or her spouse is uninvolved in resource allocation decisions, an actor will choose how many of the total resources, R to allocate to either children (C) or other household members (T):

$$\begin{array}{ll} \underset{T,C}{\text{maximize}} & U(T, C) \\ \text{subject to} & T + C = R \end{array}$$

The optimal choices of T and C that result are functions of the only parameter in the problem, R :

$$\bar{T} = f(R) \tag{3.1}$$

$$\bar{C} = g(R) \tag{3.2}$$

Yet in reality, the spouse's preferences affect the actor's decision. One way to incorporate this into the model is by attaching a price to T and C that captures information about the spouse's preferences and their influence. Let the price be p_i , where $i = T, C$:

$$p_i = f(D_{jk}, \bar{i}_{jk}) \tag{3.3}$$

The price thus depends on the actor's (j) and spouse's (k) relative decision-making power (D_{jk}) and their relative utility-maximizing choices of either T or C (\bar{i}_{jk}). Assuming only k migrates, the relative decision-making power is a function of several variables:

$$D_{jk} = f(B_j(M_k), P_j, B_k(M_k), P_k(M_k)) \tag{3.4}$$

If decision-making power is broadly defined as the amount of influence somebody has over a decision, then we see how it can depend on both bargaining power (B) and physical presence (P) as two distinct factors. On the one hand, bargaining power can increase the amount of influence somebody has over a joint decision. On the other hand, physical presence could affect information or communication availability, thus affecting decision-making power. Both of these factors are functions of the spouse's

migration status, M_k . The intra-household bargaining power literature often points towards relative wages being the main source of variation in power between men and women. If this is true, and if a wage premium motivates migration spells, then migration could cause bargaining power to change. It might also be the case that during migration spells of one spouse, the other substitutes time from household production to wage labor, which might also affect bargaining power. Furthermore, migration spells mean that the migrant is physically distant for some amount of time, which could hinder their influence over decisions. For example, migrants might willingly lend decision-making power to their spouses during their absence due to communication costs. It is also possible that spouses left behind act non-cooperatively and gain decision-making power simply because the migrant cannot monitor their actions.

I am interested in identifying the sign of $\frac{\partial D_{jk}}{\partial M_k}$ in order to answer the first research question: how does migration affect decision-making power? The total differential of Equation 3.4 with respect to M_k yields:

$$\frac{\partial D_{jk}}{\partial M_k} = \frac{\partial D_{jk}}{\partial B_j} \frac{dB_j}{dM_k} + \frac{\partial D_{jk}}{\partial B_k} \frac{dB_k}{dM_k} + \frac{\partial D_{jk}}{\partial P_k} \frac{dP_k}{dM_k} \quad (3.5)$$

Thus we see what I can and cannot identify empirically here. For example, if I find that $\frac{\partial D_{jk}}{\partial M_k}$ is positive, then it will be difficult to know why this is the case. It will be unclear whether a change is due to bargaining power or physical presence. However, I will be able to directly identify the sign of $\frac{\partial D_{jk}}{\partial M_k}$ in a reduced-form way.

In order to obtain the second testable hypothesis, I demonstrate how the actor maximizes utility by choosing the resource distribution between children and others

subject to a resource constraint that incorporates p_i from Equation 3.3. The relevant utility-maximization problem is:

$$\begin{array}{ll} \underset{T,C}{\text{maximize}} & U(T, C) \\ \text{subject to} & p_T T + p_C C = R \end{array}$$

In other words, when the spouse migrates, the actor chooses a resource allocation that maximizes utility and satisfies a resource constraint that includes “prices” assigned to T and C . To solve this optimization problem, I begin by normalizing p_T to one. Also, I assume $U(T, C)$ is quasi-concave.¹ These assumptions simplify the utility maximization problem with no loss of generality. The Lagrangian and first-order conditions (FOC) are

$$\mathcal{L} : U(T, C) + \lambda(R - T - p_C C) \tag{3.6}$$

$$\begin{aligned} \mathcal{L}_T : U_T - \lambda &= 0 \\ \mathcal{L}_C : U_C - p_C \lambda &= 0 \\ \mathcal{L}_\lambda : R - T - p_C C &= 0 \end{aligned} \tag{3.7}$$

¹In other words, assume

$$U(\mathbf{x}^t) \geq \min[U(\mathbf{x}^1), U(\mathbf{x}^2)] \text{ for all } t \in [0, 1]$$

where \mathbf{x} is a vector of the choice variables T and C in the function’s domain.

Because $U(T, C)$ is quasi-concave, the second-order conditions are met² and I can solve the FOC for the optimal resource allocation and shadow price in terms of the problem's parameters³:

$$\begin{aligned} C^* &= f(p_C, R) \\ T^* &= f(p_C, R) \\ \lambda^* &= f(p_C, R) \end{aligned} \tag{3.8}$$

Recall that the second research question is: how does the amount of resources allocated to children change due to a shift in decision-making power? Mathematically, this is the comparative static $\frac{\partial C^*}{\partial D_{jk}}$. Recognizing that p_C is a function of D_{jk} and \bar{C}_{jk} , we know that:

$$\frac{\partial C^*}{\partial D_{jk}} = \frac{\partial C^*}{\partial p_C} \frac{\partial p_C}{\partial D_{jk}} \tag{3.9}$$

If we assume that children's resources is a normal good—in other words, that $\frac{\partial C^*}{\partial p_C}$ is negative—then the sign of $\frac{\partial C^*}{\partial D_{jk}}$ relies on the sign of $\frac{\partial p_C}{\partial D_{jk}}$.⁴ Thus the theoretical model informs us that signing $\frac{\partial C^*}{\partial D_{jk}}$ boils down to how the “price” of C changes upon a shift in decision-making power. Empirically, if we see that $\frac{\partial C^*}{\partial D_{jk}}$ is positive, then we know that $\frac{\partial p_C}{\partial D_{jk}}$ is negative; if $\frac{\partial C^*}{\partial D_{jk}}$ is negative, then $\frac{\partial p_C}{\partial D_{jk}}$ must be positive. This shows how this research empirically gets at the hypothesis that women allocate resources in a more pro-child way than men. If we assume that children's resource allocation

²In general, meeting the second-order conditions implies that the implicit function theorem is met, which says an explicit solution exists to this system of equations.

³The shadow price here represents the marginal change in utility with respect to a change in total resources, R .

⁴See Appendix for derivation of $\frac{\partial C^*}{\partial p_C}$.

is a normal good, then how resources change when decision-making power changes depends on women's preferences, which are integrated into p_C . If $\frac{\partial C^*}{\partial D_{jk}}$, we accept this hypothesis and if not we reject.

In short, this research attempts to identify empirically the effect of male migration on decision-making power ($\frac{\partial D_{jk}}{\partial M_k}$) and any subsequent effect on children's welfare ($\frac{\partial C^*}{\partial D_{jk}}$). This section outlined the possible factors at work behind these changes. Also, this theoretical framework is helpful in outlining precisely what I can identify empirically given the data and empirical strategy, which I discuss in the following two sections.

DATA

Data Source

These data are from a Randomized Control Trial evaluating Heifer International's livestock transfer program's impact on development in Nepal and make up a two-period panel (2014-2016). The entire sample includes nearly 3,000 households, and respondents were almost always female decision-makers. After dropping households that only surveyed at baseline and those without a married female respondent in both time periods, my full sample is about 2,400 households.¹

The data contain a variety of household-level information, including household income, expenditures, exposure to idiosyncratic shocks, exposure to the 2015 earthquake and embargo shocks², and members' ages, sex, residency, and education.

This dataset also contains rich information on intra-household distribution of control. In particular, there are data on intra-household ownership of productive assets and decision-making regarding expenditures and livestock. Furthermore, there are data on children's welfare. Regarding education, there is individual-level information on each child's enrollment and recent attendance. The dataset also includes dietary diversity information, an indicator of children's health.

Despite slight differences, these data allow me to look at the same effects as Antman (2015), Chen (2013), and more. Antman's expenditure data (decision-making power and amounts) is broken down by the child's gender; my expenditure data is left general to all children. Also, unlike Chen, I have division of labor data aggregated into gender-age groups of household members; Chen is able to look at

¹I will compare the dropped sample to the final sample in the paper that will come out of this thesis to ensure that survey attrition was effectively random.

²See the following subsection for a brief discussion of these events.

the division of labor across specific household members. Yet she only has data on whether or not each household member participates in a chore. In contrast, my data detail how much of each chore is allocated to the particular gender-age group.

Tables 4.1-4.2 describe household characteristics across several different groups. First, I summarize these statistics for the full sample. Next, I break these statistics down by whether or not the respondent's husband is migrating.³

In general, we see that migrant households have slightly higher incomes, smaller households with more children, are more likely to live in a joint household with parent-in-laws, less likely to live with their daughter-in-law⁴, and are more educated on average.

³Note that I include two different measures of household income. Due to entry error, several households declared their annual income to be zero. (These are probably mistakes and not true zero's; when comparing zero-income households' assets to nonzero-income households', asset ownership looks roughly the same.) This constituted about 17% of the sample. I imputed the median of all-nonzero values to replace the zero's. Even still, the data included several outliers. This is why I include the logged annual household income, which I ultimately use as a control.

⁴In Nepal, most women join their husband's household upon marriage. It is unclear when and why families move out and transition to independent households. This is important because joint households could have unique power structures that affect decision-making. It looks like women with migrant husbands tend to live with their in-laws, while women with husbands residing at home have started independent households where their son(s) might have married recently.

Table 4.1: Household Characteristics: Full Sample

	Mean	Standard Deviation	Minimum	Maximum	Count
Logged Annual Household Income (Rupees)	11.31	1.25	4.57	17.22	4942.00
Annual Household Income (Rupees)	184978.17	739687.29	97.00	30159996.00	4942.00
Number of Residing Males (14+ Years)	0.72	0.85	0.00	6.00	4942.00
Number of Residing Females (14+ Years)	1.92	0.97	0.00	7.00	4942.00
Number of Residing Boys (<14 Years)	0.45	0.67	0.00	4.00	4942.00
Number of Residing Girls (<14 Years)	0.48	0.75	0.00	4.00	4942.00
Number of Residing Household Members	4.31	1.90	1.00	14.00	4942.00
If Mother-in-law Resides in Household	0.25	0.43	0.00	1.00	4942.00
If Father-in-law Resides in Household	0.19	0.39	0.00	1.00	4942.00
If Daughter-in-law Resides in Household	0.17	0.38	0.00	1.00	4942.00
Husband's Education (years)	5.12	4.28	0.00	22.00	4942.00
Respondent's Education (years)	2.59	3.87	0.00	18.00	4942.00
Number of Migrants in Household	1.39	1.82	0.00	17.00	4942.00
If Respondent's Husband is Migrating	0.26	0.44	0.00	1.00	4942.00

Table 4.2: Household Characteristics: Migrant vs. Non-migrant Households

	<u>Not Currently Migrating</u>		<u>Currently Migrating</u>		Diff.
	Mean	SD	Mean	SD	
Logged Annual Household Income (Rupees)	11.21	1.23	11.61	1.26	-0.40***
Annual Household Income (Rupees)	171444	770517	224357	640260	-52912*
Number of Residing Males (14+ Years)	0.73	0.85	0.69	0.83	0.04
Number of Residing Females (14+ Years)	1.93	0.97	1.91	0.96	0.02
Number of Residing Boys (<14 Years)	0.42	0.67	0.54	0.67	-0.12***
Number of Residing Girls (<14 Years)	0.44	0.75	0.57	0.75	-0.13***
Number of Residing Household Members	4.51	1.91	3.71	1.76	0.80***
If Mother-in-law Resides in Household	0.21	0.41	0.38	0.49	-0.17***
If Father-in-law Resides in Household	0.15	0.36	0.29	0.45	-0.14***
If Daughter-in-law Resides in Household	0.22	0.41	0.04	0.21	0.17***
Husband's Education (years)	4.59	4.33	6.67	3.70	-2.08***
Respondent's Education (years)	1.99	3.58	4.32	4.13	-2.33***
Number of Migrants in Household	1.27	1.92	1.74	1.45	-0.47***
If Respondent's Husband is Migrating	0.00	0.00	1.00	0.00	—

2015 Earthquake and Embargo

Given that my data are from the years 2014 and 2016, two historical events are relevant. First, a 7.8-magnitude earthquake hit Nepal on April 25, 2015 (Barry, 2015). This devastating natural disaster and its violent aftershocks heavily impacted two of the districts in our sample—Dhading and Nuwakot. Furthermore, a new, controversial constitution was implemented in September 2015. Many protests erupted through Nepal as a result, including a Indian fuel blockade that took place September 2015-February 2016. Allegedly, a specific ethnic minority from India felt underrepresented in the new constitution, and in protest, blocked off the Indian supply of fuel to Nepal. This caused severe shortages in fuel and as a result, fuel prices rose and became an economic crisis (Haviland, 2015; Pokharel, 2015).

Fortunately, the data contain a variety of measures for both shocks. For example, at the household level, there are data on how the house was physically damaged in the earthquake, if at all. There are also data on how the house coped with any negative effects of the embargo. Furthermore, the data include information from a ward survey that was administered to a prominent community member in each ward. The survey asked respondents to recall prices on a variety of common household goods before, during, and after the embargo. Finally, there is a VDC-level measure of the Mercalli Scale from an outside data source, the USGS Earthquake Hazards Program. While these data are at a more aggregate level, they may be more accurate since they assign Mercalli values to areas based on a ShakeMap rather than peoples' recall testimonies.⁵

While the household-level data are more precise insofar as the data capture between-household variation, the ward- and VDC-level data might give more precise

⁵A ShakeMap measures ground motion that occurs during an earthquake. It has the advantage of better capturing earthquake damage than simple magnitude and distance-from-epicenter measures (See the ShakeMap Manual: <http://usgs.github.io/shakemap/introduction.html>).

measures of the shocks. Coming up with a measure for magnitude at the household-level data would require creating some sort of index based on either categorical or binary data. Thus I use what I believe is most accurate, then use alternative measures as robustness checks.⁶

⁶See Appendix in the paper that comes out of this thesis for these robustness checks.

EMPIRICAL STRATEGY

First consider the ideal experiment. Ideally, I would randomly assign non-migrant male heads of households to migrant work. Given the random assignment and assuming no shocks occur unevenly across the sample, I would measure the causal effect of male migrant work on their spouses' decision-making power and resources allocated to children by simply comparing means between the treatment and control households. This estimate would measure the effect of a first-time migrant's absence on these outcomes.

However, since my data include households at various stages of their migration spells who may or may not have migrated before the panel began, the causal estimate that I obtain speaks to a slightly different effect. In order to motivate this, consider a modified ideal experiment where I would randomly assign migration spells starting and ending at random times to male heads of the household. Data collection after random assignment would catch some households in the middle of and some after their migration spells. Comparing their means to the control group's would yield estimates for the causal effects of a migrant's absence and his return.

This discussion motivates the naive regression. In order to compare households at various stages of their migration spells in a difference-in-difference setting, the specification would look like:

$$Y_{it} = \beta_0 + \beta_1 \text{CurrentMigrant}_{it} + \beta_2 y2016 + \epsilon_{it} \quad (5.1)$$

where Y_{it} is either women's decision-making power in a household (W_{it}) or resources assigned to children (C_{it}) for household i in period t . $\text{CurrentMigrant}_{it}$ is a dummy for if the woman's spouse in household i is migrating in time t , and

y_{2016} is a binary variable for being in the second time period ($t=2$). The control group here is any i where the respondent's husband is not migrating in time t ($CurrentMigrant_{it}=0$), while the treatment group is any i during a migration spell. The difference between the differences of these two groups in Y is β_1 . Note that this is lumping both households who never experience migration and households who are not *currently* experiencing migration into the same control group. Likewise, the treatment group includes households with migration spells only in 2014, only in 2016, and in both time periods. Thus, β_1 averages over those who migrated in just 2014 or just 2016 in comparing their differences over time to the control group.¹ Unlike the modified ideal experiment, this naive regression averages over the magnitude of the return and absence effects.

Equation 5.1 is naive because male migration was not randomly assigned to Nepali households. In fact, they select into migrant work, and furthermore, they select the timing of their migration term. Moreover, Nepali households in the sample may or may not have experienced migrant trips prior to 2014.² Their reasons for making certain decisions can be anything from risk preferences (time-constant) to a response to an economic shock (time-varying). If these reasons are also related to either outcome of interest and are unobserved in the data, then a simple difference-in-difference effect estimate is endogenous.

In the next section I lay out two different empirical strategies that will better identify a causal effect than equation 5.1. In general, both approaches maintain the intuition behind a difference-in-difference model and control for all time-constant sources of endogeneity.

¹The difference in the difference for 2014 migrant households is $-\beta_1$ and for 2016 migrant households is β_1 .

²Unfortunately, there is no reliable data on this.

Specification 1: FE Model

The variable of interest in my first DD approach is the same as 5.1 but with household fixed effects. Recall that the variable of interest is $CurrentMigrant_{it}$, a dummy variable for whether or not the respondent's husband in household i is currently migrating during time t . The equation is:

$$Y_{it} = \beta_0 + \beta_1 CurrentMigrant_{it} + \beta_2 y2016_t + \vec{X}'_{it} \alpha + \delta_i + \epsilon_{it} \quad (5.2)$$

where Y_{it} is either W_{it} or C_{it} . Note that $y2016_t$ is a dummy variable for time, and t equals one for year 2014 and two for year 2016. \vec{X}_{it} is a vector of time-varying controls, and δ_i represent household fixed effects. Controls include variables for household composition³, the natural log of total household income (including remittances)⁴, the number of shocks that the household encountered over the past two years⁵, the respondent's and husband's years of completed education, the household's treatment status from the randomized control trial, a dummy for if the survey

³These variables describe the age and gender breakdown in a household: counts of females and males who are ages 0-5, 6-13, 14-17, 18-64, and 65 or older. (When I look at children's education outcomes, I adjust these age groups to have cut-offs aligned with ages where kids are eligible for school.) Also, because joint households (where young couples live with the husband's parents) are common in Nepal, I include dummy variables for if a mother-, father-, or daughter-in-law lives in the household. Qualitative research revealed that often times joint households are headed first by the father-in-law, his wife, their son, and finally, the son's wife. This is an important control in case households transition from joint to nuclear (or vice-versa) as migration status changes. Also, note that enumerators prioritized interviewing female household decision-makers. This may mean either a mother-in-law or daughter-in-law in a household.

⁴Although other migration literature treats remittances as a special source of income (claiming it is windfall income), I treat remittances as a return on an investment in line with more recent migration literature (Clemens and Ogden, 2014). There is nothing distinct between remittances and other sources of income, and accordingly I control for all income as one variable.

⁵Types of shocks include non-earthquake natural disasters, serious illnesses, deaths of household members, falling agricultural prices, decreases in income, and loss of employment.

respondents were different between the first and second time period⁶, the respondent's age, the Modified Mercalli Scale measure of earthquake intensity,⁷ and the log of oil, sugar, and salt prices as a measure of embargo intensity.⁸ Thus 5.2 is immune to observed time-varying bias and all time-constant bias. As in the naive regression, the control group here is any household i where the respondent's husband is not migrating in time t ($CurrentMigrant_{it}=0$). This includes both households where the husband never migrates and where he migrates in only one time period, t' . The treatment group is any household where the husband migrates in either or both periods. Econometrically, these groups are represented by β_0 and β_1 , respectively. In other words, β_0 is the average Y for for all households where the husband is not currently migrating; β_1 is the change in Y between households where the husband is currently migrating and those where he is not, regardless of the order in which this happens between time periods.⁹

I use a strategy similar to Antmans to show the causal chain of migration on intra-household allocation of control and ownership, and its effect on resources allocated to children (2015). That is, I use 5.2 for both outcome variables. If β_1 is statistically different from zero for both W and C , then like Antman, I can suggest

⁶At endline enumerators interviewed households with the same sampling protocol described in Footnote 3, prioritizing above all the baseline respondent. Sometimes interviewing the baseline respondent was infeasible, so they chose a different female decision-maker. I limit the sample to respondents who are married females in both time periods. This means that if the midline respondent is different from the baseline respondent, she is most likely either the mother-in-law or daughter-in-law of the baseline respondent. As I mentioned previously, I control for household composition, therefore fully accounting for any changes in survey responses due to differing respondents over time.

⁷These data are from the USGS Earthquake Hazards Program and are at the VDC level.

⁸These data came from a separate survey given to a prominent community leader within each ward, as discussed in the Data section. Thus these values vary at the ward level. It is also important to note that some wards were missing data on the prices. Specifically, there were six missing data points for sugar and oil prices. This is not surprising since these were recall data collected in 2016. For these cases, I imputed the Village Development Committee (VDC) mean to the missing wards.

⁹Note that due to the household fixed effects, the variation captured here is that which occurs within each household above its own average over time.

that male migrant work changes W which changes C .¹⁰ Yet this is only suggestive; while I can directly identify $\frac{\partial D_{jk}}{\partial M_k}$ using W as the outcome variable, I cannot directly identify $\frac{\partial C^*}{\partial D_{jk}}$. Instead, when I use C as an outcome variable, I am identifying $\frac{\partial C^*}{\partial M_k}$. If I am holding all other variables constant that could be related to migration and resources allocated to children, such as total household resources, then a coefficient for $\frac{\partial C^*}{\partial M_k}$ is just as informative as $\frac{\partial C^*}{\partial D_{jk}}$.¹¹ Thus, not only are controls essential for omitted variable bias concerns, but also to ensure that variation in C is working through the causal chain outlined in the theoretical model.

There are two potential problems with this FE model that motivate the second empirical strategy. The first is that the FE model does not account for unobserved time-varying omitted variables. In order to interpret β_1 as a causal effect, we ought to be convinced that no unobserved shocks are affecting both the migration decision and either W or C . The most obvious time-varying factor of concern is economic shocks. We fully expect economic shocks to affect migration decisions, as migration could be a coping mechanism for some economic disasters. This is only a problem if these shocks also change women's decision-making power within a household or children's share of household resources and are unobserved in the data. Luckily, my rich controls for non-earthquake or embargo shocks, the earthquake, and the embargo cover most plausible shocks that could affect my sample. Even still, other time-varying factors, such as positive economic shocks, could affect migrant and non-

¹⁰A second way to identify this causal chain would be to create a system of equations where $W = f(\text{migration})$ and $C = g(W)$. Then, much like Acemoglu et al. (2001), I could instrument for W with something that is related to migration and exogenous to children's well-being. One common instrument in the migration literature is migrant networks, for which I do have data. See the Appendix in the paper that comes out of this thesis for a discussion on this method and why I do not include it in my main results.

¹¹I cannot run a regression where resources allocated to children is a function of decision-making power because I would need to ensure that variation in decision-making power was exogenous and related to migration spells.

migrant households differently.¹² If this is the case, and if these positive economic shocks are also correlated with a change in W or C , then a more robust identification strategy is warranted. Furthermore, this specification averages over households with a husband migrating in both periods and in only one period (2014 or 2016). This may overlook interesting effects of migration. For example, if migration spells have a permanent effect on women's decision-making power, we would not see an opposite change in decision-making power for the migrant group that comes home by 2016. This model will overlook any such pattern. Thus, I explore a second identification strategy and empirical model in the proceeding section.

Specification 2: FD Model

In this approach, I compare migrant households to other migrant households, and I rely on the randomness in the timing of migration spells in order to interpret my estimates as causal. The variables of interest here are $Migrant2014_i$ and $Migrant2016_i$, dummy variables for whether or not the respondent's husband in household i migrated during (only) 2014 or (only) 2016. The equation is

$$\Delta Y_i = \beta_0 + \beta_1 Migrant2014_i + \beta_2 Migrant2016_i + \beta_3 MigrantNeither_i + \Delta \vec{X}'_i \pi + u_i \quad (5.3)$$

where Y_i is either W_i or C_i , and $\Delta \vec{X}'_i$ is a vector of controls that vary over time for households. Note that $MigrantNeither_i$ is a dummy variable equal to one if

¹²Note that I do control for income, but positive economic shocks could work through other channels such as gains in household assets. While I have data on types of assets owned, I do not have data on asset value. One way to solve this problem is to create an asset index using principle components analysis. However, in order to do so in a panel data setting, the covariance between assets would need to stay constant between time periods. Given the earthquake and embargo likely changed the relative importance of certain assets, constant covariance is too strong of an assumption.

the respondent's husband in household i migrates in neither 2014 nor 2016. As in Specification 1, I use both W_i and C_i as outcome variables in order to identify the causal chain of migration on intra-household allocation of control and ownership, and subsequently, its effect on children's well-being.¹³

The benefit of this model is that the treatment and control groups here are more similar than in the FE model. This FD model compares differences over time for returned-migrant households ($Migrant2014_i$) and sent-migrant households ($Migrant2016_i$) to households where the migrant was gone in both 2014 and 2016, the dummy variable base-group (β_0). Thus, β_1 represents the change in Y over time for the $Migrant2014$ group relative to the change in Y over time for households where the husband migrated in both time periods. Likewise, β_2 represents the change in Y over time for the $Migrant2016$ group relative to the same base group. The model also controls for households where the husband does not migrate in either period ($MigrantNeither_i$). Presumably, households that migrate in both or either time period are similar to each other—the only difference being the timing of their migration spells. Of course, if they are similar in ways that are time-constant, this model makes no difference; the fixed effects model would have sufficiently controlled for all time-constant factors. However, in light of the discussion on shocks in the previous subsection, perhaps these groups will be similar in their exposure to unobserved shocks. In other words, perhaps the control group here is a better counterfactual than the control group in the FE model, which is in both cases represented by β_0 .

While the FD model is more robust to potential sources of bias, the FE model has the advantage of answering a broad question: if we randomly assign male migration to

¹³As in Footnote 10, I could also approach this specification using a system of equations. Once again, see the Appendix in the paper that comes out of this thesis.

households, do power structures in a household change? If so, do resources allocated to children also change? In contrast, the FD model narrows the population in question to migrant households. Then the question becomes: if we randomly assign male migration spells to migrant households, how do power structures and children’s share of resources change? Unfortunately, this is less relevant to migration policy questions. It also narrows the external validity to migrant households. Furthermore, the model assumes that the difference in outcomes over time for households where the husband migrated in both periods is approximately zero in order for any observed effect to be interpreted with ease. For example, women might gain more decision-making power over expenditures over time rather than instantly as a binary response to a change in their husband’s migration status. If this is the case, then interpreting β_1 and β_2 *relative to the base group*, those who are migrating in both periods, becomes especially important. In this example, a small, positive change in decision-making power for the $Migrant2016_i$ would result in a negative β_2 . While this would not invalidate the identification strategy, it would make interpretation more difficult. Moreover, it would show that the outcome variables might not change in a binary way with migration status, and that my empirical strategy fails to investigate this interesting variation. Unfortunately, I do not have data on the length of migrant terms and therefore cannot explore this possibility further. Finally, while it is interesting to parse out the “return” and “leave” effects of a migrant’s presence here—the magnitudes might be different—it is mostly exploratory. This is because the year 2014 may not be comparable to 2016, so it could be fallacious to interpret differences in magnitudes as demonstrating permanent changes in W or C . Nevertheless, I report results from both the FE and FD models in the next section.

MAIN RESULTS

Recall that outcome variables include both women’s ownership or decision-making power in a household (W) and children’s share of household resources (C). I begin by presenting the first part of the causal chain: the effect of migration on W . Next I discuss the effect of migration on C . In the following section I discuss robustness checks.

I present results from the OLS (5.1), fixed effects (5.2), and first differenced models (5.3) for each outcome variable. (Refer to the previous section for a discussion on the differences between each model.) Before going through the results, it is instructive to look at a table with example results. We can interpret a positive β_1^{FE} and β_2^{FD} as in Table 6.1 as a positive change in the outcome variable attributable to migration spells; after a husband’s migration spell, the outcome variable increased. Specifically, β_1^{FE} is the difference-in-difference between households with and without a husband who is currently migrating. Similarly, β_2^{FD} is the change over time for households where the husband was home in 2014 and left by 2016 relative to the change for households where the husband migrated in both 2014 and 2016. I refer to this as the “leave effect.” On the other hand, β_1^{FD} is the “return effect.” It is the difference over time in the outcome variable for households where the husband was migrating during 2014 but returned by 2016 relative to the difference seen by households where the husband was migrating in both time periods.

In general I find that migration spells cause shifts in power towards women with no clear accompanying shift in children’s share of resources. Statistically significant results on resources allocated to children are sparse and sensitive to model specification.

Table 6.1: Example of Results

	Either W or C		
	OLS	FE	FD
Husband Currently Migrant	$\beta_1^{OLS} > 0$	$\beta_1^{FE} > 0$	
Year is 2016	$\beta_2^{OLS} = 0$	$\beta_2^{FE} = 0$	
Husband Migrated Only in 2014 (Return)			$\beta_1^{FD} < 0$
Husband Migrated Only in 2016 (Leave)			$\beta_2^{FD} > 0$
Husband Home 2014 & 2016			$\beta_3^{FD} = 0$

Women's Decision-making Power

I have data on the spouse's (the potential migrant) and respondent's (the potential migrant's wife) degree of involvement in decisions regarding expenditures on temptation goods (alcohol, tobacco, and pipe-smoking), formal health care, items for ceremonies or celebrations, children's education, children's clothing, and adult women's clothing. I specify W as the fraction of decisions made where either (1) the spouse alone makes the decision, (2) the spouse and respondent make the decision jointly, (3) the respondent alone makes the decision, or (4) the respondent is involved in the decision with somebody other than her spouse.¹ I aggregated the

¹It is important to note that I am not commenting on what is "better" for women in these households. For example, without knowing their preferences, I cannot tell if a woman prefers to be making joint decisions with her spouse (Column 2) or on her own (Column 3). Yet I do not need to know what women prefer; I only need to know which columns consist of more "power." This is so I can evaluate whether or not women are gaining more decision-making power upon their husbands' migration spells. Certainly a woman has more decision-making power if she makes decisions alone than if she does jointly—whether or not she prefers this situation is a different question that I will not attempt to answer.

decision-making indicators in this way in order to observe all interesting variation: upon migration, do decisions made solely by the spouse become joint, or does the respondent gain full responsibility? If joint, does the respondent share power with the migrant spouse or with somebody else in the households? Or do decisions move from joint between the spouse and respondent to solely in the hands of the respondent? Separating the columns like this captures all such changes.

Tables 6.2-6.7 show that the respondent’s decision-making involvement increases during her husband’s migration spells while his involvement decreases. This general pattern is remarkably consistent in all expenditure categories. For example, in the fixed effects model, the fraction of temptation goods expenditure decisions where the respondent alone makes decisions increases by 0.17 when her spouse migrates; this is about 137% of the mean. Effect sizes of the respondent’s gain in decision-making power across categories range from approximately 50% to almost 140%. If we assume away unobserved time-varying omitted variables, we can interpret these changes as causal. Indeed, when men migrate, their wives gain a significant amount of decision-making power in the household. The FD model, which parses out the “return” and “leave” effects, confirms this pattern with minor loss of significance. As discussed previously, this model has several advantages over the FE model. First, identification here relies on randomness in timing of migration spells. With the base group (“control” group) being migrant households where the term lasted during 2014 and 2016, we can be even more confident in these estimates than the FE estimates as it controls for selection into migration in the first place. Furthermore, this model reveals that the change in decision-making power appears to be a temporary shift: when the husband returns, women lose some decision-making power. While there are some differences in magnitude for the “return” and “leave” effects, the p-value for the F-Test $|\beta_1^{FD}| = |\beta_2^{FD}|$ indicates that the difference is not statistically significant.

Most of the movement between columns appears to be between spouse-responder joint and responder alone decision-making—except for temptation goods. Interestingly, temptation goods also appear to be the category where the spouse has the most decision-making power: the average fraction of temptation goods expenditures for which the spouse alone makes decisions is 60%. This is almost three-times as large as every other expenditure category’s average. However, the sample size for temptation goods expenditures is also the smallest—with a sample size about half of the other categories’. This means that more households claimed to “not make decisions” at all regarding temptation goods, in which case there is no decision-making power to distribute between household members.² Regardless, out of the population that did declare some distribution of decision-making power, temptation goods appears to be a category where women have a large “deficit” of involvement. Thus, the decision-making power gain for women in this category is especially significant.

²Respondents answered the question about household decision-making regardless of whether or not they spent money on the good.

Table 6.2: Temptation Goods Expenditures

	Spouse Alone			Spouse and Respondent Jointly			Respondent Alone			Respondent and Other Jointly		
	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD
Husband Currently Migrant	-0.231*** (0.000)	-0.123** (0.018)		-0.027 (0.145)	-0.066* (0.063)		0.225*** (0.000)	0.173*** (0.000)		0.034 (0.137)	0.016 (0.663)	
Year is 2016	-0.173*** (0.003)	-0.148*** (0.008)		0.148** (0.012)	0.178*** (0.001)		0.062 (0.136)	0.038 (0.411)		-0.037 (0.139)	-0.068 (0.117)	
Husband Migrated Only in 2014 (Return)			0.211* (0.062)			0.032 (0.655)			-0.136* (0.065)			-0.107 (0.173)
Husband Migrated Only in 2016 (Leave)			-0.026 (0.815)			-0.129* (0.077)			0.223** (0.026)			-0.068 (0.426)
Husband Home 2014 & 2016			0.084 (0.226)			-0.001 (0.986)			0.024 (0.690)			-0.106* (0.084)
Household Fixed Effects?	NO	YES	-	NO	YES	-	NO	YES	-	NO	YES	-
Mean of Dependent Variable	0.610	0.610	-0.103	0.185	0.185	0.105	0.126	0.126	0.0214	0.0789	0.0789	-0.0230
R-squared	0.0834	0.0734	0.0455	0.0707	0.0824	0.0401	0.0944	0.0823	0.0802	0.0938	0.0543	0.0569
P-Value 2014 vs. 2016	-	-	0.353	-	-	0.446	-	-	0.566	-	-	0.223
N	1998	1998	999	1998	1998	999	1998	1998	999	1998	1998	999

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses. Significance level denoted * p<0.10, ** p<0.05, *** p<0.01.

Table 6.3: Formal Healthcare Expenditures

	Spouse Alone			Spouse and Respondent Jointly			Respondent Alone			Respondent and Other Jointly		
	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD
Husband Currently Migrant	-0.116*** (0.000)	-0.042 (0.176)		-0.211*** (0.000)	-0.156*** (0.000)		0.307*** (0.000)	0.204*** (0.000)		0.020 (0.162)	-0.005 (0.793)	
Year is 2016	-0.070 (0.157)	-0.102* (0.067)		0.079 (0.196)	0.113** (0.034)		0.064** (0.030)	0.066** (0.033)		-0.073*** (0.001)	-0.078** (0.017)	
Husband Migrated Only in 2014 (Return)			0.048 (0.329)			0.178*** (0.004)			-0.228*** (0.000)			0.001 (0.961)
Husband Migrated Only in 2016 (Leave)			-0.030 (0.487)			-0.144** (0.016)			0.182*** (0.002)			-0.008 (0.854)
Husband Home 2014 & 2016			-0.017 (0.608)			0.065** (0.035)			-0.038 (0.299)			-0.010 (0.756)
Household Fixed Effects?	NO	YES	-	NO	YES	-	NO	YES	-	NO	YES	-
Mean of Dependent Variable	0.248	0.248	-0.156	0.434	0.434	0.139	0.164	0.164	0.0322	0.154	0.154	-0.0144
R-squared	0.100	0.102	0.0246	0.103	0.0878	0.0438	0.191	0.0827	0.0786	0.0719	0.0309	0.0300
P-Value 2014 vs. 2016	-	-	0.796	-	-	0.689	-	-	0.584	-	-	0.912
N	4348	4348	2174	4348	4348	2174	4348	4348	2174	4348	4348	2174

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses. Significance level denoted * p<0.10, ** p<0.05, *** p<0.01.

Table 6.4: Ceremonies and Celebrations Expenditures

	Spouse Alone			Spouse and Respondent Jointly			Respondent Alone			Respondent and Other Jointly		
	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD
Husband Currently Migrant	-0.099*** (0.000)	-0.018 (0.400)		-0.161*** (0.000)	-0.142*** (0.000)		0.241*** (0.000)	0.157*** (0.000)		0.019 (0.154)	0.003 (0.866)	
Year is 2016	-0.024 (0.611)	0.009 (0.883)		0.112* (0.058)	0.113* (0.086)		-0.014 (0.713)	-0.022 (0.565)		-0.073*** (0.003)	-0.100*** (0.009)	
Husband Migrated Only in 2014 (Return)			0.047 (0.258)			0.181*** (0.002)			-0.187*** (0.000)			-0.042 (0.211)
Husband Migrated Only in 2016 (Leave)			0.021 (0.630)			-0.117** (0.047)			0.140** (0.011)			-0.045 (0.274)
Husband Home 2014 & 2016			0.006 (0.839)			0.090** (0.015)			-0.079** (0.041)			-0.018 (0.529)
Household Fixed Effects?	NO	YES	-	NO	YES	-	NO	YES	-	NO	YES	-
Mean of Dependent Variable	0.210	0.210	-0.121	0.458	0.458	0.125	0.177	0.177	0.0186	0.155	0.155	-0.0228
R-squared	0.0789	0.0909	0.0417	0.0869	0.0800	0.0472	0.120	0.0634	0.0665	0.0880	0.0359	0.0342
P-Value 2014 vs. 2016	-	-	0.352	-	-	0.461	-	-	0.559	-	-	0.162
N	4518	4518	2259	4518	4518	2259	4518	4518	2259	4518	4518	2259

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses. Significance level denoted * p<0.10, ** p<0.05, *** p<0.01.

Table 6.5: Children's Education Expenditures

	Spouse Alone			Spouse and Respondent Jointly			Respondent Alone			Respondent and Other Jointly		
	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD
Husband Currently Migrant	-0.157*** (0.000)	-0.040 (0.184)		-0.210*** (0.000)	-0.126*** (0.002)		0.358*** (0.000)	0.192*** (0.000)		0.009 (0.486)	-0.026 (0.283)	
Year is 2016	-0.066 (0.243)	-0.111 (0.117)		0.077 (0.224)	0.189*** (0.008)		0.087** (0.012)	0.053 (0.109)		-0.098*** (0.000)	-0.131*** (0.000)	
Husband Migrated Only in 2014 (Return)			-0.002 (0.970)			0.192*** (0.003)			-0.184*** (0.004)			-0.006 (0.885)
Husband Migrated Only in 2016 (Leave)			-0.091* (0.077)			-0.060 (0.288)			0.216*** (0.003)			-0.064 (0.179)
Husband Home 2014 & 2016			-0.024 (0.538)			0.083** (0.023)			-0.042 (0.365)			-0.017 (0.584)
Household Fixed Effects?	NO	YES	-	NO	YES	-	NO	YES	-	NO	YES	-
Mean of Dependent Variable	0.244	0.244	-0.139	0.400	0.400	0.118	0.212	0.212	0.0444	0.145	0.145	-0.0236
R-squared	0.102	0.0955	0.0342	0.103	0.0847	0.0542	0.209	0.0843	0.0796	0.104	0.0412	0.0390
P-Value 2014 vs. 2016	-	-	0.201	-	-	0.144	-	-	0.773	-	-	0.338
N	3182	3182	1591	3182	3182	1591	3182	3182	1591	3182	3182	1591

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses.
Significance level denoted * p<0.10, ** p<0.05, *** p<0.01.

Table 6.6: Children's Clothing

	Spouse Alone			Spouse and Respondent Jointly			Respondent Alone			Respondent and Other Jointly		
	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD
Husband Currently Migrant	-0.115*** (0.000)	-0.035 (0.233)		-0.230*** (0.000)	-0.165*** (0.000)		0.333*** (0.000)	0.199*** (0.000)		0.012 (0.415)	0.002 (0.954)	
Year is 2016	-0.051 (0.367)	-0.096 (0.151)		0.056 (0.368)	0.131* (0.058)		0.090*** (0.009)	0.082** (0.027)		-0.095*** (0.000)	-0.118*** (0.003)	
Husband Migrated Only in 2014 (Return)			-0.003 (0.943)			0.203*** (0.001)			-0.176*** (0.004)			-0.024 (0.557)
Husband Migrated Only in 2016 (Leave)			-0.076 (0.159)			-0.120* (0.071)			0.230*** (0.002)			-0.034 (0.511)
Husband Home 2014 & 2016			-0.039 (0.309)			0.025 (0.548)			0.003 (0.951)			0.011 (0.723)
Household Fixed Effects?	NO	YES	-	NO	YES	-	NO	YES	-	NO	YES	-
Mean of Dependent Variable	0.220	0.220	-0.122	0.407	0.407	0.0970	0.228	0.228	0.0460	0.145	0.145	-0.0214
R-squared	0.0790	0.0817	0.0383	0.0863	0.0660	0.0465	0.173	0.0744	0.0683	0.0922	0.0320	0.0311
P-Value 2014 vs. 2016	-	-	0.292	-	-	0.388	-	-	0.624	-	-	0.440
N	3174	3174	1587	3174	3174	1587	3174	3174	1587	3174	3174	1587

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses. Significance level denoted * p<0.10, ** p<0.05, *** p<0.01.

Table 6.7: Adult Women's Clothing

	Spouse Alone			Spouse and Respondent Jointly			Respondent Alone			Respondent and Other Jointly		
	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD
Husband Currently Migrant	-0.083*** (0.000)	-0.007 (0.776)		-0.206*** (0.000)	-0.146*** (0.000)		0.267*** (0.000)	0.138*** (0.000)		0.022 (0.159)	0.016 (0.532)	
Year is 2016	-0.009 (0.853)	-0.042 (0.440)		0.110** (0.050)	0.150*** (0.005)		-0.001 (0.979)	-0.030 (0.498)		-0.100*** (0.000)	-0.078** (0.034)	
Husband Migrated Only in 2014 (Return)			-0.019 (0.616)			0.156*** (0.006)			-0.093* (0.088)			-0.044 (0.271)
Husband Migrated Only in 2016 (Leave)			-0.033 (0.404)			-0.152*** (0.009)			0.200*** (0.004)			-0.014 (0.776)
Husband Home 2014 & 2016			-0.035 (0.198)			0.065* (0.057)			-0.002 (0.962)			-0.028 (0.368)
Household Fixed Effects?	NO	YES	-	NO	YES	-	NO	YES	-	NO	YES	-
Mean of Dependent Variable	0.187	0.187	-0.127	0.375	0.375	0.0917	0.280	0.280	0.0736	0.157	0.157	-0.0379
R-squared	0.0713	0.0842	0.0321	0.0612	0.0506	0.0347	0.121	0.0686	0.0562	0.0812	0.0390	0.0337
P-Value 2014 vs. 2016	-	-	0.372	-	-	0.955	-	-	0.309	-	-	0.442
N	4648	4648	2324	4648	4648	2324	4648	4648	2324	4648	4648	2324

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses. Significance level denoted * p<0.10, ** p<0.05, *** p<0.01.

Children's Welfare

The data include two important measures of resource allocation to children (C): expenditure amounts as percentages of a yearly budget and meals containing meat or animal-sourced protein.³

Expenditures

Household expenditures on children relative to entire budget is one representation of resource distribution within households. Thus my outcome variables in Tables 6.8 and 6.9 are the amount of money spent on different expenditure categories as a percentage of a yearly budget.⁴ Interestingly, the budget spending on alcohol, tobacco, and smoking decreases by less than half of a percentage point in the FE model (Table 6.8). While this seems like a small magnitude, it is almost 20% of the mean. However, this effect disappears with the FD model. Given that the estimate was only significant at the 10% level and that it disappeared in the FD model, I interpret this result with caution. We see a similar effect with children's clothing budget allocations (Table 6.9), where expenditures allocated to children increases with an effect size of 17%. Yet the effect goes to zero in the FD model. Thus, while we saw that a husband's migration spell increases his wife's decision-making power, there are no clear corresponding significant effects on budget allocations.

³I also have data on household division of labor, children's enrollment rates, and school absences. However, these results are largely uninteresting. They are located in the Appendix in the paper that comes out of this thesis.

⁴Note that the recall period on certain expenditure items only covered one or three months. I extrapolated those items to a 12-month period by multiplying the expenditure amounts by 12 and four. Also, the expenditures module is by no means comprehensive (for example, it does not ask how much a household spends on food). Thus, I use the term "budget" loosely.

Nutrition

Another measure of resources allocated to children is their nutritional intake relative to adults in the household. Specifically, here C equals children's share of meals (1) containing animal-sourced protein over the past three days, (2) meat over the previous three days, and (3) meat over the previous seven days. Table 6.10 show the results for these three different versions of C . From the FE model, we see that during migration spells, children's share of meals with protein over a three-day recall period increases by 0.03 percentage points (about 6% of the mean). However, this effect goes away when I parse out the migrant groups in the FD model. Once again I interpret this result with caution because of this inconsistency. As with expenditures, there is little evidence for a change in children's nutrition resulting from a shift in decision-making power.⁵ Perhaps this what we would expect given that on average, children's share of substantive meals is almost 50%. This is close to parity, and perhaps a larger deviation from parity—a different initial condition—would lead to a change in resources allocated to children. Regardless, there is no support here for the commonly cited idea that women spend resources in a more responsible, pro-child manner than do their husbands. These estimates along with the expenditures results suggest that men and women might have similar preferences for resource allocation in a household.

⁵Unfortunately, I do not have data on intra-household decision-making about nutrition. However, the same theoretical model and assumptions apply here regarding the causal link between migration, decision-making, and in this case, nutrition allocated to children.

Table 6.8: Category Expenditures as Percentages of Yearly Budget (A)

	Temptation Goods			Formal Healthcare			Items for Ceremonies or Celebrations		
	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD
Husband Currently Migrant	-0.025*	-0.034*		-0.014	0.023		0.010	-0.002	
	(0.064)	(0.092)		(0.171)	(0.157)		(0.185)	(0.847)	
Year is 2016	0.001	-0.044*		0.065***	0.008		-0.028*	-0.008	
	(0.979)	(0.063)		(0.007)	(0.734)		(0.085)	(0.633)	
Husband Migrated Only in 2014 (Return)			0.024			-0.025			0.011
			(0.456)			(0.312)			(0.601)
Husband Migrated Only in 2016 (Leave)			-0.047			0.013			0.008
			(0.127)			(0.665)			(0.757)
Husband Home 2014 & 2016			-0.008			0.025			0.005
			(0.629)			(0.117)			(0.762)
Household Fixed Effects?	NO	YES	-	NO	YES	-	NO	YES	-
Mean of Dependent Variable	0.187	0.187	-0.0138	0.229	0.229	0.0351	0.251	0.251	-0.00808
R-squared	0.0843	0.0675	0.0645	0.0429	0.0491	0.0394	0.0337	0.0252	0.0244
P-Value 2014 vs. 2016	-	-	0.639	-	-	0.800	-	-	0.635
N	1998	1998	999	4918	4918	2459	4518	4518	2259

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses.

Significance level denoted * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 6.9: Category Expenditures as Percentages of Yearly Budget (B)

	Children's Education			Children's Clothing			Adult Women's Clothing		
	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD
Husband Currently Migrant	0.008 (0.291)	0.000 (0.982)		0.010*** (0.000)	0.008* (0.083)		0.001 (0.869)	0.007 (0.156)	
Year is 2016	0.004 (0.748)	0.020 (0.223)		0.003 (0.257)	-0.002 (0.619)		0.001 (0.944)	-0.011 (0.218)	
Husband Migrated Only in 2014 (Return)			0.008 (0.695)			-0.005 (0.437)			-0.006 (0.478)
Husband Migrated Only in 2016 (Leave)			0.011 (0.600)			0.014 (0.103)			0.011 (0.315)
Husband Home 2014 & 2016			0.005 (0.695)			-0.005 (0.351)			-0.009 (0.254)
Household Fixed Effects?	NO	YES	-	NO	YES	-	NO	YES	-
Mean of Dependent Variable	0.194	0.194	-0.00569	0.0482	0.0482	0.00288	0.0849	0.0849	0.00456
R-squared	0.0689	0.0343	0.0338	0.133	0.0471	0.0481	0.0488	0.0502	0.0503
P-Value 2014 vs. 2016	-	-	0.577	-	-	0.426	-	-	0.765
N	3182	3182	1591	4918	4918	2459	4918	4918	2459

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses.

Significance level denoted * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 6.10: Children's Share of Substantive Meals in Household

	Protein (3 Days)			Meat (3 Days)			Meat (7 Days)		
	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD
Husband Currently Migrant	0.023*** (0.000)	0.028** (0.010)		0.011 (0.216)	0.013 (0.431)		0.012* (0.085)	0.006 (0.655)	
Year is 2016	0.011 (0.387)	0.010 (0.431)		0.023 (0.102)	-0.005 (0.792)		0.019 (0.143)	0.019 (0.264)	
Husband Migrated Only in 2014 (Return)			-0.024 (0.166)			-0.016 (0.486)			-0.023 (0.250)
Husband Migrated Only in 2016 (Leave)			0.032 (0.136)			0.012 (0.759)			-0.012 (0.569)
Husband Home 2014 & 2016			0.008 (0.570)			-0.010 (0.577)			-0.022 (0.219)
Household Fixed Effects?	NO	YES	-	NO	YES	-	NO	YES	-
Mean of Dependent Variable	0.479	0.479	-0.0000134	0.464	0.464	-0.00374	0.465	0.465	-0.00816
R-squared	0.150	0.0822	0.0825	0.123	0.102	0.102	0.123	0.0723	0.0725
P-Value 2014 vs. 2016	-	-	0.785	-	-	0.935	-	-	0.264
N	2136	2136	1068	1084	1084	542	1540	1540	770

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses.

Significance level denoted * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

ROBUSTNESS CHECKS

Dropping Earthquake-Affected Districts

The districts in the sample most heavily affected by the earthquake are Dhading and Nuwakot. To ensure that these observations are not driving the results, I drop them and run the analysis again. The results remain the same, if not stronger. In particular, the budget share spent on temptation goods does decrease by 5 percentage points (25% of the mean budget share) during migration spells, a larger magnitude and at a stronger significance level than the FE estimate from the main results. However, this effect is weaker in the FD model. We see that the FE estimate of children's share of substantive meals is robust, but remains zero in the FD model. Overall this robustness check reveals that the earthquake may have introduced some heterogeneity between households that hid otherwise existent effects regarding children's well-being. It also reveals that my main results are substantiated without variation due to the earthquake.¹

Dropping Non-Migrant Households

As a second robustness check I drop households where the husband does not migrate in either 2014 or 2016. This robustness check only applies to the FE model, and it helps reveal whether or not effects are sourced from systematic differences between non-migrant and migrant households. This is important since non-migrant households may experience unobserved shocks that are different than migrant households. We see that significant changes in intra-household decision-making remains resilient to this robustness check. However, most changes in

¹I will also try dropping VDC's with a normalized Mercalli Scale measure above one.

resources allocated to children are not. Children's clothing expenditures stay slightly significant, but no other measures of children's share of resources appear significant. This emphasizes the relative sensitivity of my results, and highlights the fact that any changes in children's share of resources we saw earlier are probably not reliable. Overall, this robustness check substantiates the main results.

CONCLUSION

Using data from rural Nepal on migration, I identify the causal relationship between migration spells and intra-household decision-making. Subsequently, I identify the relationship between that shift and a change in resources allocated to children. I find a robust positive effect of male migration spells on women's decision-making power; however, there is no clear corresponding increase in resources allocated to children.

I used two difference-in-difference estimates to get at these relationships. The first estimate required an identifying assumption that there were no unobserved, time-varying differences between households during a husband's migration spell and households where the husband was not currently migrating. The second DD requires a weaker identifying assumption. In order for the second estimate to be interpreted as causal, we must assume that there are no unobserved, time-varying differences between households where the husbands migrate at some point in the sample. This is because the second DD identifies an effect by relying on the quasi-randomness in the timing of migration spells.

Results from both models make it clear that women do indeed gain more control over expenditure decision-making in a household when their husbands migrate. This is remarkably robust to different sample specifications. However, there is only weak evidence for a shift in expenditures on temptation goods towards children's clothing during migration spells. Furthermore, there is weak evidence for children's share of substantive meals increasing during these periods. Yet none of these results hold consistently throughout the robustness checks. Thus it is inconclusive at best whether or not a causal effect on resources allocated to children truly exists. This suggests

that development programs that target women beneficiaries could be misguided about the returns, at least in a rural, Southeast Asian context.¹

This paper builds on a small literature that looks at the effect of migration on decision-making. This literature would benefit from more research, as it is clear that husband migration spells do indeed shift decision-making power. Since this is the case, it may provide a good natural experiment for investigating the claim that women allocate resources towards children more than men in different contexts. The difficulty here will always be controlling for selection into migration in order to obtain a causal estimate. Another difficulty is identifying the specific mechanisms at work. If decision-making power does change during migration spells—as I find here—then future research ought to identify whether this is due to bargaining power or some other mechanism at work. This would benefit theoretical models on decision-making and bargaining power, and it would also give policy-makers a stronger understanding of how to increase women’s decision-making power if that is their goal.

¹Of course, if gender equality is a main goal of these programs, then these results provide little insight.

REFERENCES CITED

- Aboukhsaiwan, O. (2014). Measuring the impact of income-generating projects on women's empowerment outcomes: Evidence from rural Morocco. Working Paper.
- Acemoglu, D., Johnson, S., & Robinson, J. A. (2001). The colonial origins of comparative development: An empirical investigation. *American Economic Review*, *91*(5), 1369–1401.
- Adams, R. H., & Cuecuecha, A. (2010). Remittances, household expenditure and investment in Guatemala. *World Development*, *38*(11), 1626–1641.
- Adams, R. H., & Page, J. (2005). Do international migration and remittances reduce poverty in developing countries? *World development*, *33*(10), 1645–1669.
- Amuedo-Dorantes, C., Georges, A., & Pozo, S. (2010). Migration, remittances, and children's schooling in Haiti. *ANNALS of the American Academy of Political and Social Science*, *630*(1), 224–244.
- Antman, F. M. (2011). The intergenerational effects of paternal migration on schooling and work: What can we learn from children's time allocations? *Journal of Development Economics*, *96*(2), 200–208.
- Antman, F. M. (2012). Gender, educational attainment, and the impact of parental migration on children left behind. *Journal of Population Economics*, *25*(4), 1187–1214.
- Antman, F. M. (2015). Gender discrimination in the allocation of migrant household resources. *Journal of Population Economics*, *28*(3), 565–592.
- Ashraf, N. (2009). Spousal control and intra-household decision making: An experimental study in the Philippines. *American Economic Review*, *99*(4), 1245–1277.
- Asim, S. (2009). Evaluating the impact of microcredit on women's empowerment in Pakistan. Center for Economics and Business Research Working Paper #2-9.
- Barry, E. (2015, April 25). Earthquake devastates Nepal, killing more than 1,900. *New York Times*. Retrieved from <http://nyti.ms/10nQLoS>

- Beegle, K., De Weerd, J., & Dercon, S. (2011). Migration and economic mobility in Tanzania: Evidence from a tracking survey. *Review of Economics and Statistics*, *93*(3), 1010–1033.
- Braido, L. H., Olinto, P., & Perrone, H. (2012). Gender bias in intrahousehold allocation: Evidence from an unintentional experiment. *Review of Economics and Statistics*, *94*(2), 552–565.
- Browning, M., Chiappori, P.-A., & Lechene, V. (2010). Distributional effects in household models: Separate spheres and income pooling. *The Economic Journal*, *120*(545), 786–799.
- Chen, J. J. (2006). Migration and imperfect monitoring: implications for intrahousehold allocation. *American Economic Review*, *96*(2), 227–231.
- Chen, J. J. (2012). Dads, disease, and death: determinants of daughter discrimination. *Journal of Population Economics*, *25*(1), 119–149.
- Chen, J. J. (2013). Identifying non-cooperative behavior among spouses: child outcomes in migrant-sending households. *Journal of Development Economics*, *100*(1), 1–18.
- Cherchye, L., De Rock, B., & Vermeulen, F. (2012). Married with children: A collective labor supply model with detailed time use and intrahousehold expenditure information. *American Economic Review*, *102*(7), 3377–3405.
- Clemens, M. A., & Ogden, T. (2014). Migration as a strategy for household finance: A research agenda on remittances, payments, and development. Center for Global Development Working Paper #354.
- Cortes, P. (2015). The feminization of international migration and its effects on the children left behind: Evidence from the Philippines. *World Development*, *65*, 62–78.
- De Brauw, A., & Giles, J. (2016). Migrant opportunity and the educational attainment of youth in rural China. Forthcoming in the *Journal of Human Resources*.
- Doss, C. R. (1996). Testing among models of intrahousehold resource allocation. *World Development*, *24*(10), 1597–1609.

- Duflo, E. (2003). Grandmothers and granddaughters: old-age pensions and intrahousehold allocation in South Africa. *World Bank Economic Review*, 17(1), 1–25.
- Duflo, E. (2012). Women empowerment and economic development. *Journal of Economic Literature*, 50(4), 1051–1079.
- Duflo, E., & Udry, C. (2004). Intrahousehold resource allocation in Cote d'Ivoire: Social norms, separate accounts and consumption choices. National Bureau of Economic Research Working Paper #10498.
- Dunbar, G. R., Lewbel, A., & Pendakur, K. (2013). Children's resources in collective households: identification, estimation, and an application to child poverty in Malawi. *American Economic Review*, 103(1), 438–471.
- Edwards, A. C., & Ureta, M. (2003). International migration, remittances, and schooling: evidence from El Salvador. *Journal of Development Economics*, 72(2), 429–461.
- Emerson, P. M., & Souza, A. P. (2007). Child labor, school attendance, and intrahousehold gender bias in Brazil. *World Bank Economic Review*, 21(2), 301–316.
- Evans, D. K., & Popova, A. (2014). Cash transfers and temptation goods. World Bank Policy Research Working Paper #6886.
- Friedberg, L., & Webb, A. (2006). Determinants and consequences of bargaining power in households. National Bureau of Economic Research Working Paper #12367.
- Gitter, S. R., & Barham, B. L. (2008). Women's power, conditional cash transfers, and schooling in Nicaragua. *World Bank Economic Review*, 22(2), 271–290.
- Grigorian, D. A., & Melkonyan, T. A. (2011). Destined to receive: The impact of remittances on household decisions in Armenia. *Review of Development Economics*, 15(1), 139–153.
- Handa, S. (1996). Expenditure behavior and children's welfare: An analysis of female headed households in Jamaica. *Journal of Development Economics*, 50(1), 165–187.

- Haushofer, J., & Shapiro, J. (2016). The short-term impact of unconditional cash transfers to the poor: Evidence from Kenya. *Quarterly Journal of Economics*, *131*(4), 1973–2042.
- Haviland, C. (2015, September 19). Why is Nepal’s new constitution controversial? *BBC News*. Retrieved from <http://www.bbc.com/news/world-asia-34280015>
- Lundberg, S., & Pollak, R. A. (1994). Noncooperative bargaining models of marriage. *American Economic Review*, *84*(2), 132–137.
- Lundberg, S. J., Pollak, R. A., & Wales, T. J. (1997). Do husbands and wives pool their resources? evidence from the United Kingdom child benefit. *Journal of Human Resources*, *32*(3), 463–480.
- McKenzie, D., & Rapoport, H. (2011). Can migration reduce educational attainment? evidence from Mexico. *Journal of Population Economics*, *24*(4), 1331–1358.
- Nanda, P. (1999). Women’s participation in rural credit programs in Bangladesh and their demand for formal health care: is there a positive impact? *Health Economics*, *8*(5), 415–428.
- Osili, U. O. (2007). Remittances and savings from international migration: Theory and evidence using a matched sample. *Journal of Development Economics*, *83*(2), 446–465.
- Phipps, S. A., & Burton, P. S. (1998). What’s mine is yours? the influence of male and female incomes on patterns of household expenditure. *Economica*, *65*(260), 599–613.
- Pitt, M. M., Khandker, S. R., Chowdhury, O. H., & Millimet, D. L. (2003). Credit programs for the poor and the health status of children in rural Bangladesh. *International Economic Review*, *44*(1), 87–118.
- Pollak, R. A. (2005). Bargaining power in marriage: Earnings, wage rates and household production. National Bureau of Economic Research Working Paper #11239.
- Rangel, M. A. (2006). Alimony rights and intrahousehold allocation of resources: evidence from Brazil. *Economic Journal*, *116*(513), 627–658.
- Rapoport, H., & Docquier, F. (2006). The economics of migrants’ remittances. *Handbook of the Economics of Giving, Altruism, and Reciprocity*, *2*, 1135–1198.

- Schultz, T. P. (2001). Women's roles in the agricultural household: bargaining and human capital investments. *Handbook of Agricultural Economics*, 1, 383–456.
- Swain, R. B., & Wallentin, F. Y. (2009). Does microfinance empower women? Evidence from self-help groups in India. *International Review of Applied Economics*, 23(5), 541–556.
- Thomas, D. (1990). Intra-household resource allocation: An inferential approach. *Journal of Human Resources*, 25(4), 635–664.
- Thomas, D. (1994). Like father, like son; like mother, like daughter: Parental resources and child height. *Journal of Human Resources*, 29(4), 950–988.
- Yang, D. (2008). International migration, remittances, and household investment: Evidence from Philippine migrants exchange rate shocks. *The Economic Journal*, 118(528), 591–630.

APPENDIX

EXTENSIONS AND SUPPLEMENTARY TABLES

Derivation of C^* with Respect to p_C

In order to obtain $\frac{\partial C^*}{\partial p_C}$, I plug Equations 3.8 into FOC 3.7 and get the following identities:

$$\mathcal{L}_T : U_T(T^*(p_C, R), C^*(p_C, R)) - \lambda^* \equiv 0$$

$$\mathcal{L}_C : U_C(T^*(p_C, R), C^*(p_C, R)) - p_C \lambda^* \equiv 0$$

$$\mathcal{L}_\lambda : R - T^*(p_C, R) - p_C C^*(p_C, R) \equiv 0$$

Next I differentiate both sides with respect to p_C :

$$\mathcal{L}_T : U_{TC} \frac{\partial C^*}{\partial p_C} + U_{TT} \frac{\partial T^*}{\partial p_C} - \frac{\partial \lambda^*}{\partial p_C} \equiv 0$$

$$\mathcal{L}_C : U_{CC} \frac{\partial C^*}{\partial p_C} + U_{CT} \frac{\partial T^*}{\partial p_C} - \lambda^* - p_C \frac{\partial \lambda^*}{\partial p_C} \equiv 0$$

$$\mathcal{L}_\lambda : -\frac{\partial T^*}{\partial p_C} - C^* - p_C \frac{\partial C^*}{\partial p_C} \equiv 0$$

Rearranging the system of equations, I get the following:

$$\begin{bmatrix} U_{TT} & U_{TC} & -1 \\ U_{CT} & U_{CC} & -p_C \\ -1 & -p_C & 0 \end{bmatrix} \begin{bmatrix} \frac{\partial T^*}{\partial p_C} \\ \frac{\partial C^*}{\partial p_C} \\ \frac{\partial \lambda^*}{\partial p_C} \end{bmatrix} = \begin{bmatrix} -\mathcal{L}_{Tp_C} \\ -\mathcal{L}_{Cp_C} \\ -\mathcal{L}_{\lambda p_C} \end{bmatrix}$$

Invoking Cramer's Rule, and noting that

$$\begin{bmatrix} U_{TT} & U_{TC} & -1 \\ U_{CT} & U_{CC} & -p_C \\ -1 & -p_C & 0 \end{bmatrix} \text{ is the bordered}$$

Hessian, \mathbb{H} , I obtain

$$\frac{\partial C^*}{\partial p_C} = \frac{\begin{vmatrix} U_{TT} & -\mathcal{L}_{Tp_C} & -1 \\ U_{CT} & -\mathcal{L}_{Cp_C} & -p_C \\ -1 & -\mathcal{L}_{\lambda p_C} & 0 \end{vmatrix}}{|\mathbb{H}|}$$

which reduces to

$$\frac{\partial C^*}{\partial p_C} = \frac{-p_C U_{TT} \mathcal{L}_{\lambda p_C}}{|\mathbb{H}|} - \frac{-U_{CT} \mathcal{L}_{\lambda p_C}}{|\mathbb{H}|} + \frac{\mathcal{L}_{Cp_C} - p_C \mathcal{L}_{Tp_C}}{|\mathbb{H}|}$$

Combining fractions and plugging in for $\mathcal{L}_{\lambda p_C}$, \mathcal{L}_{Cp_C} , and \mathcal{L}_{Tp_C} , the expression becomes

$$\frac{\partial C^*}{\partial p_C} = \frac{p_C U_{TT} \left(\frac{\partial T^*}{\partial p_C} + C^* + p_C \frac{\partial C^*}{\partial p_C} \right) - U_{CT} \left(\frac{\partial T^*}{\partial p_C} + C^* + p_C \frac{\partial C^*}{\partial p_C} \right) - \lambda^*}{|\mathbb{H}|}$$

After some algebra, we see that the wife's optimal choice of resources allocated to children changes with a p_C according to the following function:

$$\frac{\partial C^*}{\partial p_C} = \frac{\left(\frac{\partial T^*}{\partial p_C} + C^* \right) (p_C U_{TT} - U_{CT}) - \lambda^*}{|\mathbb{H}| - p_C (p_C U_{TT} - U_{CT})} \quad (\text{A.1})$$

We know that $|\mathbb{H}| \geq 0$ from the SOC, and we can safely assume that $C^* > 0$ and $p_C > 0$. Thus, a marginal change in C^* with respect to p_C depends on whether T and C are compliments or substitutes $\left(\frac{\partial T^*}{\partial p_C} \right)$, the weighted difference in the rate of

change of marginal utilities ($p_C U_{TT} - U_{CT}$), and the marginal utility of a change in the total amount of resources (λ^*).

Tables for Robustness Checks

Dropping Earthquake-affected Districts

The following tables correspond the robustness checks. Tables A.1-A.7 show the main results when I drop earthquake-affected districts, while Tables A.8-A.14 correspond to the robustness check where I drop non-migrant households in the OLS and FE models.

Table A.1: Temptation Goods Expenditures

	Spouse Alone			Spouse and Respondent Jointly			Respondent Alone			Respondent and Other Jointly		
	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD
Husband Currently Migrant	-0.238*** (0.000)	-0.115** (0.049)		-0.023 (0.237)	-0.076* (0.052)		0.232*** (0.000)	0.174*** (0.000)		0.028 (0.261)	0.017 (0.679)	
Year is 2016	-0.152*** (0.006)	-0.142** (0.029)		0.131** (0.017)	0.145*** (0.009)		0.062 (0.192)	0.069 (0.160)		-0.042 (0.143)	-0.072 (0.160)	
Husband Migrated Only in 2014 (Return)			0.298** (0.018)			0.040 (0.617)			-0.179** (0.018)			-0.159* (0.071)
Husband Migrated Only in 2016 (Leave)			0.085 (0.451)			-0.125 (0.132)			0.168* (0.085)			-0.128 (0.168)
Husband Home 2014 & 2016			0.171** (0.020)			-0.020 (0.744)			-0.005 (0.941)			-0.146** (0.042)
Household Fixed Effects?	NO	YES	-	NO	YES	-	NO	YES	-	NO	YES	-
Mean of Dependent Variable	0.613	0.613	-0.107	0.172	0.172	0.107	0.137	0.137	0.0257	0.0780	0.0780	-0.0257
R-squared	0.104	0.0839	0.0595	0.0844	0.0981	0.0538	0.104	0.112	0.109	0.104	0.0685	0.0765
P-Value 2014 vs. 2016	-	-	0.0690	-	-	0.558	-	-	0.944	-	-	0.0723
N	1582	1582	791	1582	1582	791	1582	1582	791	1582	1582	791

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses.
Significance level denoted * p<0.10, ** p<0.05, *** p<0.01.

Table A.2: Formal Healthcare Expenditures

	Spouse Alone			Spouse and Respondent Jointly			Respondent Alone			Respondent and Other Jointly		
	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD
Husband Currently Migrant	-0.109*** (0.000)	-0.039 (0.277)		-0.213*** (0.000)	-0.170*** (0.000)		0.307*** (0.000)	0.209*** (0.000)		0.016 (0.322)	0.000 (0.996)	
Year is 2016	-0.034 (0.506)	-0.079 (0.240)		0.035 (0.576)	0.077 (0.206)		0.052 (0.102)	0.066* (0.057)		-0.053** (0.024)	-0.064* (0.092)	
Husband Migrated Only in 2014 (Return)			0.044 (0.435)			0.219*** (0.001)			-0.265*** (0.000)			0.002 (0.959)
Husband Migrated Only in 2016 (Leave)			-0.031 (0.528)			-0.122* (0.058)			0.152** (0.011)			0.001 (0.986)
Husband Home 2014 & 2016			-0.011 (0.760)			0.069** (0.044)			-0.066* (0.097)			0.009 (0.790)
Household Fixed Effects?	NO	YES	-	NO	YES	-	NO	YES	-	NO	YES	-
Mean of Dependent Variable	0.247	0.247	-0.152	0.427	0.427	0.131	0.170	0.170	0.0407	0.156	0.156	-0.0196
R-squared	0.110	0.105	0.0327	0.104	0.0921	0.0527	0.195	0.102	0.0969	0.0767	0.0425	0.0409
P-Value 2014 vs. 2016	-	-	0.866	-	-	0.299	-	-	0.197	-	-	0.970
N	3656	3656	1828	3656	3656	1828	3656	3656	1828	3656	3656	1828

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses. Significance level denoted * p<0.10, ** p<0.05, *** p<0.01.

Table A.3: Ceremonies and Celebrations Expenditures

	Spouse Alone			Spouse and Respondent Jointly			Respondent Alone			Respondent and Other Jointly		
	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD
Husband Currently Migrant	-0.089*** (0.000)	-0.007 (0.775)		-0.158*** (0.000)	-0.140*** (0.001)		0.238*** (0.000)	0.150*** (0.000)		0.009 (0.511)	-0.003 (0.893)	
Year is 2016	-0.006 (0.916)	0.028 (0.695)		0.073 (0.212)	0.059 (0.396)		0.007 (0.848)	0.021 (0.551)		-0.075*** (0.004)	-0.108** (0.012)	
Husband Migrated Only in 2014 (Return)			0.037 (0.423)			0.211*** (0.001)			-0.224*** (0.000)			-0.024 (0.534)
Husband Migrated Only in 2016 (Leave)			0.027 (0.576)			-0.075 (0.201)			0.083 (0.114)			-0.035 (0.387)
Husband Home 2014 & 2016			0.023 (0.491)			0.121*** (0.002)			-0.131*** (0.001)			-0.012 (0.675)
Household Fixed Effects?	NO	YES	-	NO	YES	-	NO	YES	-	NO	YES	-
Mean of Dependent Variable	0.210	0.210	-0.107	0.455	0.455	0.127	0.178	0.178	0.00923	0.156	0.156	-0.0290
R-squared	0.0881	0.0847	0.0465	0.0893	0.0885	0.0577	0.121	0.0738	0.0843	0.0880	0.0479	0.0446
P-Value 2014 vs. 2016	-	-	0.427	-	-	0.144	-	-	0.0717	-	-	0.366
N	3792	3792	1896	3792	3792	1896	3792	3792	1896	3792	3792	1896

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses. Significance level denoted * p<0.10, ** p<0.05, *** p<0.01.

Table A.4: Children's Education Expenditures

	Spouse Alone			Spouse and Respondent Jointly			Respondent Alone			Respondent and Other Jointly		
	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD
Husband Currently Migrant	-0.148*** (0.000)	-0.022 (0.503)		-0.211*** (0.000)	-0.140*** (0.003)		0.353*** (0.000)	0.185*** (0.000)		0.005 (0.708)	-0.023 (0.386)	
Year is 2016	-0.022 (0.708)	-0.094 (0.241)		0.046 (0.484)	0.159** (0.046)		0.053 (0.118)	0.048 (0.210)		-0.077*** (0.001)	-0.113*** (0.001)	
Husband Migrated Only in 2014 (Return)			-0.007 (0.888)			0.238*** (0.001)			-0.238*** (0.000)			0.007 (0.870)
Husband Migrated Only in 2016 (Leave)			-0.055 (0.304)			-0.037 (0.521)			0.135** (0.040)			-0.043 (0.393)
Husband Home 2014 & 2016			-0.013 (0.764)			0.106*** (0.005)			-0.094* (0.052)			0.001 (0.980)
Household Fixed Effects?	NO	YES	-	NO	YES	-	NO	YES	-	NO	YES	-
Mean of Dependent Variable	0.240	0.240	-0.130	0.388	0.388	0.0993	0.227	0.227	0.0578	0.145	0.145	-0.0276
R-squared	0.121	0.0965	0.0434	0.102	0.0741	0.0559	0.215	0.108	0.103	0.115	0.0569	0.0537
P-Value 2014 vs. 2016	-	-	0.419	-	-	0.0351	-	-	0.319	-	-	0.656
N	2612	2612	1306	2612	2612	1306	2612	2612	1306	2612	2612	1306

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses. Significance level denoted * p<0.10, ** p<0.05, *** p<0.01.

Table A.5: Category Expenditures as Percentages of Yearly Budget (A)

	Temptation Goods			Formal Healthcare			Items for Ceremonies or Celebrations		
	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD
Husband Currently Migrant	-0.040*** (0.006)	-0.045** (0.020)		-0.009 (0.374)	0.018 (0.317)		0.011 (0.185)	0.005 (0.642)	
Year is 2016	-0.002 (0.915)	-0.055* (0.050)		0.048** (0.023)	-0.000 (0.987)		-0.024 (0.113)	-0.013 (0.489)	
Husband Migrated Only in 2014 (Return)			0.030 (0.345)			-0.028 (0.276)			0.020 (0.325)
Husband Migrated Only in 2016 (Leave)			-0.058* (0.072)			0.002 (0.945)			0.033 (0.189)
Husband Home 2014 & 2016			-0.017 (0.425)			0.015 (0.369)			0.023 (0.120)
Household Fixed Effects?	NO	YES	–	NO	YES	–	NO	YES	–
Mean of Dependent Variable	0.182	0.182	-0.0102	0.234	0.234	0.0294	0.247	0.247	-0.00705
R-squared	0.0925	0.0723	0.0710	0.0698	0.0681	0.0616	0.0412	0.0295	0.0300
P-Value 2014 vs. 2016	–	–	0.582	–	–	0.572	–	–	0.173
N	1582	1582	791	4108	4108	2054	3792	3792	1896

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses.

Significance level denoted * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.6: Category Expenditures as Percentages of Yearly Budget (B)

	Children's Education			Children's Clothing			Adult Women's Clothing		
	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD
Husband Currently Migrant	0.008 (0.337)	-0.001 (0.947)		0.010*** (0.001)	0.008 (0.129)		-0.000 (0.942)	0.007 (0.189)	
Year is 2016	0.003 (0.850)	0.019 (0.338)		0.003 (0.281)	-0.002 (0.762)		0.001 (0.934)	-0.015 (0.119)	
Husband Migrated Only in 2014 (Return)			0.010 (0.681)			-0.003 (0.645)			-0.010 (0.259)
Husband Migrated Only in 2016 (Leave)			0.009 (0.687)			0.014 (0.113)			0.006 (0.619)
Husband Home 2014 & 2016			0.011 (0.485)			-0.003 (0.612)			-0.010 (0.193)
Household Fixed Effects?	NO	YES	-	NO	YES	-	NO	YES	-
Mean of Dependent Variable	0.199	0.199	0.00602	0.0490	0.0490	0.00373	0.0861	0.0861	0.00942
R-squared	0.0696	0.0250	0.0246	0.137	0.0496	0.0492	0.0530	0.0485	0.0447
P-Value 2014 vs. 2016	-	-	0.618	-	-	0.348	-	-	0.805
N	2612	2612	1306	4108	4108	2054	4108	4108	2054

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses.

Significance level denoted * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.7: Children's Share of Substantive Meals in Household

	Protein (3 Days)			Meat (3 Days)			Meat (7 Days)		
	OLS	FE	FD	OLS	FE	FD	OLS	FE	FD
Husband Currently Migrant	0.022*** (0.000)	0.028** (0.023)		0.012 (0.195)	0.017 (0.348)		0.014* (0.063)	0.012 (0.410)	
Year is 2016	0.016 (0.317)	0.007 (0.610)		0.019 (0.220)	-0.011 (0.528)		0.022 (0.138)	0.026 (0.158)	
Husband Migrated Only in 2014 (Return)			-0.025 (0.210)			-0.021 (0.444)			-0.019 (0.424)
Husband Migrated Only in 2016 (Leave)			0.032 (0.167)			0.013 (0.731)			0.006 (0.766)
Husband Home 2014 & 2016			0.003 (0.839)			-0.008 (0.644)			-0.013 (0.395)
Household Fixed Effects?	NO	YES	-	NO	YES	-	NO	YES	-
Mean of Dependent Variable	0.478	0.478	0.000451	0.462	0.462	-0.00587	0.463	0.463	-0.0100
R-squared	0.156	0.104	0.104	0.132	0.111	0.110	0.132	0.0681	0.0659
P-Value 2014 vs. 2016	-	-	0.824	-	-	0.898	-	-	0.675
N	1810	1810	905	918	918	459	1276	1276	638

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses.

Significance level denoted * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.8: Temptation Goods Expenditures

	Spouse Alone		Spouse and Respondent Jointly		Respondent Alone		Respondent and Other Jointly	
	OLS	FE	OLS	FE	OLS	FE	OLS	FE
Husband Currently Migrant	-0.175*** (0.001)	-0.154** (0.014)	-0.062* (0.062)	-0.061 (0.105)	0.201*** (0.000)	0.166*** (0.000)	0.037 (0.237)	0.049 (0.240)
Year is 2016	-0.091 (0.377)	-0.154* (0.092)	0.130* (0.061)	0.222** (0.011)	0.009 (0.892)	-0.024 (0.745)	-0.049 (0.456)	-0.045 (0.552)
Household Fixed Effects?	NO	YES	NO	YES	NO	YES	NO	YES
Mean of Dependent Variable	0.527	0.527	0.138	0.138	0.204	0.204	0.130	0.130
R-squared	0.163	0.200	0.121	0.202	0.249	0.253	0.107	0.100
N	496	496	496	496	496	496	496	496

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses.

Significance level denoted * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.9: Formal Healthcare Expenditures

	Spouse Alone		Spouse and Respondent Jointly		Respondent Alone		Respondent and Other Jointly	
	OLS	FE	OLS	FE	OLS	FE	OLS	FE
Husband Currently Migrant	-0.063** (0.023)	-0.036 (0.223)	-0.208*** (0.000)	-0.163*** (0.000)	0.253*** (0.000)	0.203*** (0.000)	0.019 (0.354)	-0.004 (0.845)
Year is 2016	-0.096** (0.039)	-0.190*** (0.000)	0.083 (0.132)	0.123** (0.043)	0.055 (0.217)	0.099* (0.071)	-0.043 (0.143)	-0.033 (0.454)
Household Fixed Effects?	NO	YES	NO	YES	NO	YES	NO	YES
Mean of Dependent Variable	0.186	0.186	0.329	0.329	0.316	0.316	0.169	0.169
R-squared	0.141	0.140	0.0830	0.0955	0.188	0.125	0.102	0.0410
N	1532	1532	1532	1532	1532	1532	1532	1532

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses.

Significance level denoted * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.10: Ceremonies and Celebrations Expenditures

	Spouse Alone		Spouse and Respondent Jointly		Respondent Alone		Respondent and Other Jointly	
	OLS	FE	OLS	FE	OLS	FE	OLS	FE
Husband Currently Migrant	-0.035*	-0.012	-0.186***	-0.150***	0.201***	0.167***	0.020	-0.005
	(0.076)	(0.590)	(0.000)	(0.000)	(0.000)	(0.000)	(0.288)	(0.799)
Year is 2016	-0.044	-0.058	0.079	0.107	0.005	0.007	-0.040	-0.056
	(0.350)	(0.342)	(0.203)	(0.156)	(0.919)	(0.912)	(0.253)	(0.291)
Household Fixed Effects?	NO	YES	NO	YES	NO	YES	NO	YES
Mean of Dependent Variable	0.151	0.151	0.382	0.382	0.299	0.299	0.168	0.168
R-squared	0.114	0.124	0.0850	0.102	0.129	0.103	0.125	0.0646
N	1576	1576	1576	1576	1576	1576	1576	1576

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses.

Significance level denoted * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.11: Children's Education Expenditures

	Spouse Alone		Spouse and Respondent Jointly		Respondent Alone		Respondent and Other Jointly	
	OLS	FE	OLS	FE	OLS	FE	OLS	FE
Husband Currently Migrant	-0.075** (0.010)	-0.056* (0.081)	-0.183*** (0.000)	-0.131*** (0.003)	0.254*** (0.000)	0.193*** (0.000)	0.004 (0.837)	-0.005 (0.816)
Year is 2016	-0.127*** (0.007)	-0.186*** (0.002)	0.127** (0.041)	0.231*** (0.001)	0.061 (0.264)	0.065 (0.330)	-0.060* (0.070)	-0.110** (0.030)
Household Fixed Effects?	NO	YES	NO	YES	NO	YES	NO	YES
Mean of Dependent Variable	0.151	0.151	0.313	0.313	0.397	0.397	0.139	0.139
R-squared	0.129	0.148	0.0867	0.0959	0.119	0.112	0.121	0.0603
N	1328	1328	1328	1328	1328	1328	1328	1328

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses.

Significance level denoted * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.12: Category Expenditures as Percentages of Yearly Budget (A)

	Temptation Goods		Formal Healthcare		Items for Ceremonies or Celebrations	
	OLS	FE	OLS	FE	OLS	FE
Husband Currently Migrant	-0.027 (0.174)	-0.035 (0.132)	-0.004 (0.789)	0.015 (0.322)	0.008 (0.497)	-0.002 (0.868)
Year is 2016	-0.035 (0.262)	-0.071* (0.072)	0.055*** (0.005)	0.002 (0.927)	-0.020 (0.345)	-0.012 (0.685)
Household Fixed Effects?	NO	YES	NO	YES	NO	YES
Mean of Dependent Variable	0.168	0.168	0.210	0.210	0.254	0.254
R-squared	0.0775	0.109	0.0512	0.0581	0.0492	0.0535
N	496	496	1718	1718	1576	1576

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses. Significance level denoted * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.13: Category Expenditures as Percentages of Yearly Budget (B)

	Children's Education		Children's Clothing		Adult Women's Clothing	
	OLS	FE	OLS	FE	OLS	FE
Husband Currently Migrant	0.001 (0.933)	0.004 (0.777)	0.010*** (0.002)	0.009* (0.051)	0.003 (0.425)	0.006 (0.271)
Year is 2016	-0.020 (0.278)	-0.013 (0.576)	0.008 (0.188)	-0.000 (0.975)	-0.004 (0.698)	-0.009 (0.482)
Household Fixed Effects?	NO	YES	NO	YES	NO	YES
Mean of Dependent Variable	0.201	0.201	0.0587	0.0587	0.0867	0.0867
R-squared	0.0967	0.0798	0.101	0.0739	0.0918	0.0855
N	1328	1328	1718	1718	1718	1718

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses.
Significance level denoted * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.14: Children's Share of Substantive Meals in Household

	Protein (3 Days)		Meat (3 Days)		Meat (7 Days)	
	OLS	FE	OLS	FE	OLS	FE
Husband Currently Migrant	0.022** (0.026)	0.015 (0.127)	0.005 (0.728)	0.009 (0.560)	0.017 (0.130)	0.001 (0.947)
Year is 2016	0.016 (0.343)	0.000 (0.986)	0.051** (0.025)	0.016 (0.565)	0.040** (0.029)	0.054** (0.023)
Household Fixed Effects?	NO	YES	NO	YES	NO	YES
Mean of Dependent Variable	0.497	0.497	0.466	0.466	0.473	0.473
R-squared	0.116	0.139	0.182	0.230	0.134	0.177
N	890	890	464	464	678	678

Robust standard errors are clustered at the VDC level. All estimates reported are coefficients on binary variables. P-values in parentheses.
Significance level denoted * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.