



# Spousal concordance in joint and separate households: Survey evidence from Nepal

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## ABSTRACT

In household surveys, husbands and wives who are asked the same set of survey questions often provide different responses. The levels of concordance in responses to questions about who owns assets and makes decisions in a household may hold valuable information about household dynamics and women's well-being. These relationships may be especially indicative in the South Asian context where couples often reside in joint households with the husbands' parents, resulting in different power structures. Using data from Nepal, we study patterns of concordance between spouses on survey questions regarding household asset ownership and decision making. We analyze these patterns separately for couples that reside with the husband's parents and those that do not. We consider concordance regarding both the asset ownership and decision making of wives and individuals other than the respondent couple. We find that discordance regarding wives' asset ownership and decision making is both substantial and systematic. Wives are much more likely than husbands to report their own participation in asset ownership and decision making, in both joint and separate households. Regarding the involvement of others, the modal response in joint households is concordance that others own assets and make decisions; however, wives are more likely than husbands to acknowledge this. Spousal concordance that wives own assets or make decisions, and discordance in which wives report that they own assets or make decisions, are both correlated with some improved measures of wives' well-being. In households with in-laws present, concordance that others are involved is correlated with worse outcomes for wives. These results highlight that spousal concordance is not necessarily indicative of wives' well-being, especially in joint households.

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## 1. Introduction

Husbands and wives often provide different responses when asked the same questions in a household survey. The extent of their concordance in responses may provide important information about intrahousehold dynamics, beyond what we can learn from their individual responses. In particular, it may provide insights into women's well-being (Ambler, Doss, Kieran, & Passarelli, 2021). Yet most research on concordance has focused

exclusively on the couple, ignoring the broader structure of the households in which couples live. This obscures the potential significance of other adults who may play a role in household decision making. Particularly in the Global South, many households may have more than two adults. Globally, over a third of the population lives in extended family households, with rates of 45% in the Asia-Pacific region (Pew Research Center, 2019).

In this paper, we build upon the conceptual framework developed in Ambler et al. (2021) to understand how the concordance of husbands' and wives' responses to questions regarding their asset ownership and decision making is related to the household structures in which they live. We focus on responses to these questions because a growing body of evidence demonstrates the importance of women's ownership of and control over assets and decision making as being related to their well-being and that of their children (Allendorf, 2007a; Beegle, Frankenberg, & Thomas, 2001; Doss, 2006; Duflo, 2003; Quisumbing & Maluccio, 2003;

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Reggio, 2011). Using data from Nepal, we analyze the patterns of concordance separately for two of the most common household types; those in which the couple lives with the husband's parents (a joint household) and those in which they have formed a separate household. We then extend this analysis to consider how these patterns of concordance are associated with a set of outcomes for wives.

Asking the same questions to multiple household members generates a wealth of information, but it also creates the challenge of determining how to analyze multiple—and sometimes contradictory—answers to the same question. Frequently, studies find that husbands and wives provide different answers when asked the same survey questions about assets (Ambler et al., 2021; Deere & Twyman, 2012), household decisions (Ambler et al., 2021; Anderson, Reynolds, and Gugerty, 2017; Deere & Twyman, 2012; Becker, Fonseca-Becker, & Schenck-Yglesias, 2006; Hillesland et al., 2020), and women's autonomy (Allendorf, 2007b; Ghuman, Lee, & Smith, 2006; Jejeebhoy, 2002). In most of these studies, however, husbands' and wives' responses are included separately in econometric analyses rather than explicitly analyzed based on their concordance.

The analysis in this paper is an extension of the ideas developed in Ambler et al. (2021), in which the authors examine responses regarding wives' asset ownership and decision making in Bangladesh and develop a framework to investigate potential drivers of any observed discordance. Their framework indicates that random measurement error leads to discordance that is balanced between men and women, while asymmetric measurement error (for example, differential understanding of survey questions across genders) leads to discordance that is unbalanced across men and women but constant across asset types and decisions. Any variation across types of assets and decisions is indicative of asymmetric information in asset ownership and decision making. Their findings suggest that while measurement error likely accounts for some portion of discordance, asymmetric information in the form of hidden assets or decisions also contributes to the patterns in the data. Analyzing responses about income and expenditures, Chen and Collins (2014) similarly argue that the lack of concordance indicates information asymmetries.

Other studies have adopted varying approaches to conceptualizing spousal concordance. Anderson et al. (2017) study “intra-household accord,” which is conceptualized as whether the husband and wife have the same understandings as to who has decision-making authority. They predict intrahousehold accord based on wife's assets, relative spousal attributes, household characteristics, and the type of decision and find that the patterns vary across decisions. Annan, Donald, Goldstein, Gonzalez Martinez, & Koolwal (2021) conceptualize disagreement over the wife's involvement in decision making as women “taking power” or men “giving power” depending on the direction of the discordance. They relate patterns of discordance in the wife's role in decision making in Sub-Saharan Africa to theories of power, arguing that women claiming power is an important element of empowerment.

We extend the analysis in Ambler et al. (2021), applying it to the Nepalese context and considering how the presence of others, specifically the husband's parents, can change the patterns of concordance. We examine concordance in two dimensions: whether the wife owns assets and makes decisions and whether others own assets and make decisions. We then analyze these patterns of concordance separately for households that include the husband's parents and those that do not. Finally, our analysis considers how concordance is correlated with outcomes related to wives' well-being.

The presence of additional adults complicates the understanding of asset ownership and decision making and is of particular interest in this context due to the well-documented influence that

in-laws have in South Asian households. In Nepal, the structure of the household and a woman's social location within it influences how she is able to exercise her property rights (Pradhan, Meinzen-Dick, & Theis, 2019) and whether she has any say in household decisions. There is an extensive literature on intergenerational struggles and the low status of daughters-in-law within households in South Asia (see Gram et al., 2018 for a review). For example, Self (2015) shows that a husband is likely to perceive his wife to be less autonomous when his mother is in the home. Doss, Meinzen-Dick, Pereira, and Pradhan (2020) find that when couples live with the husband's parents, wives are less empowered when their husbands have migrated. Perhaps the most significant component of this literature focuses on fertility and decisions related to antenatal care. Anukriti et al. (2020) find that mobility constraints imposed by mothers-in-law can reduce contraceptive use among women, while Simkhada, Porter, & Van Teijlingen (2010) find that mothers-in-law can restrict access to antenatal care during pregnancy.

To analyze spousal concordance, we use responses to survey questions about asset ownership and decision making. These questions were asked as part of a survey designed to capture two components of the Women's Empowerment in Agriculture Index (WEAI). The WEAI is a measure of empowerment, agency, and inclusion of women in the agriculture sector (Alkire et al., 2013). In our treatment of concordance, we follow the typology used in Ambler et al. (2021) and focus on whether or not wives and husbands report the same information regarding wives' asset ownership and decision making. We also adapt this typology to examine husbands' and wives' reports regarding the role of individuals other than the respondent couple.

We find that discordance regarding the wife's asset ownership and decision making is both substantial and systematic; wives' asset ownership and decision making are much more likely to be reported by wives themselves than by their husbands. The amount of discordance varies across assets and decisions, suggesting that information asymmetry is present. The qualitative pattern of discordance is similar across household types, but the levels are different. In particular, concordance (usually that the wife is not involved) is higher in households with in-laws, suggesting less scope for information asymmetries between couples. Regarding the role of others, the modal response in households with in-laws is concordance that others own assets and make decisions. We also find that wives are more likely than husbands to acknowledge the role of others, again suggesting that there are information asymmetries between the husband and wife, likely regarding the role of the mother-in-law in asset ownership and decision making.

Finally, we examine how these measures of concordance are correlated with measures of the wife's well-being. Spousal concordance that wives own assets or make decisions is correlated with higher measures of well-being for wives. The same is true of one form of discordance: when wives report owning assets or making decisions while their husbands do not acknowledge wives' involvement. In households with in-laws present, concordance that others are involved is correlated with worse outcomes for wives, relative to concordance that others are not involved. Additionally, when only the wife reports that others are involved in decision making, the negative correlations with measures of the wife's well-being are even stronger. In other words, the involvement of others is associated with worse outcomes for wives, especially when the husband is unaware of this involvement.

These results suggest that analyzing concordance in the context of multi-generational households is both feasible and informative. Patterns of concordance can be highly revealing of the intrahousehold dynamics facing those couples who live in multi-generational households. However, to our knowledge, no studies have analyzed how a couple's position within the household is related to the con-

cordance of their responses. In part, this may be because surveys with multiple respondents typically interview the household head and spouse. In joint households, this often leads to older couples (e.g., grandparents) being interviewed rather than younger couples. As a result, we systematically lack information on intrahousehold dynamics in these settings. This, in turn, means that much of what we currently know about intrahousehold dynamics ignores those couples who have selected into living with their elders. As we show in this paper, there are important differences between these households and the households in which young couples live on their own.

In the remainder of this paper, we explore these points in greater detail. [Section 2](#) presents a conceptual discussion of spousal concordance. [Section 3](#) discusses the context and data. [Section 4](#) provides a description of the extent of concordance and discordance in the data. [Section 5](#) examines whether concordance on wives' or others' asset ownership and decision making are correlated with wives' outcomes. [Section 6](#) discusses the results and [Section 7](#) highlights the policy implications and concludes.

## 2. Conceptual framework

In this section, we describe the framework we use to understand what spousal concordance tells us about household behavior, and whether that concordance may be correlated with positive outcomes for wives. We define spousal concordance as a situation in which a husband and wife separately provide the same information in response to privately asked household survey questions.<sup>4</sup>

### 2.1. The drivers of discordance

In this paper we apply a framework of information asymmetry based on [Ambler et al. \(2021\)](#) to understand our results. In that model, discordance over wives' asset ownership and decision making can arise from several sources. One is random measurement error in surveys, which will give rise to apparent discordance. A second source is asymmetric measurement error, driven by differences in the way husbands and wives understand the survey questions. The third source of discordance in this framework is information asymmetry in the form of hidden assets or decisions. In other words, husbands and wives report differently about wives' involvement because the husband is unaware of assets owned or decisions made by the wife. This model leads to the following conclusions: (1) when discordance is caused by random measurement error, wives' responses should not systematically differ from husbands' responses; (2) when discordance is caused by asymmetric measurement error, responses can differ across genders on average, but should not vary across assets or decisions; and (3) if discordance is not constant across assets and decisions, then information asymmetry in the form of hidden assets or decisions is present.<sup>5</sup> This last conclusion is based on the fact that certain types of assets and decisions are easier to hide. For example, land ownership is relatively well understood, but wives may own small animals or make day-to-day decisions without their husband's knowledge.

This framework and these predictions regarding wives' involvement in asset ownership and decision making are the same in households with in-laws and without. However, the empirical patterns and levels of discordance may be different. The presence of in-laws may influence spousal concordance in several ways, with ambiguous overall effects. First, households with in-laws tend to

own more assets, make more decisions, and have more adults who could potentially own assets and make decisions—all of which increase the scope for measurement error-driven discordance. However, concordance that the wife is not involved may increase because it is understood that the in-laws own assets and make decisions, reducing measurement error. More complicated family dynamics may increase the likelihood that wives seek to hide assets or decisions, leading to stronger evidence of discordance driven by information asymmetries. On the other hand, monitoring by more household members such as mothers-in-law may decrease information asymmetries between spouses. Finally, husbands and wives in a joint household may need to work together more closely to protect their own interests and thus share information with each other.

This discussion focuses on concordance regarding the role of the wife in asset ownership and decision making. The same framework can be applied to consider concordance regarding whether *others* own assets or make decisions. The predictions are similar to when the role of the wife is considered; (1) when discordance is caused by random measurement error, husbands' and wives' responses will be the same on average; (2) when discordance is caused by systematic measurement error total discordance should not vary across assets and decisions, and (3) discordance that varies across assets and decisions is evidence of information asymmetries regarding the role of others. In this case asymmetries would concern differences in husbands' and wives' knowledge regarding the extent to which the husbands' parents own assets and make decisions. For example, husbands may not understand the role of their mothers in household management because they do not witness the day-to-day decisions.

### 2.2. Concordance and well-being

The second component of our analysis examines how these patterns of concordance correlate with measures of women's well-being and agency. Qualitative literature from a range of countries indicates that family harmony is often highly valued and may be correlated with better outcomes for women ([Meinzen-Dick, Rubin, Elias, Mulema, & Myers, 2019](#)), suggesting a positive association between concordance and measures of women's well-being. However, concordance related to asset ownership and decision making could instead indicate high levels of male power or monitoring by a suspicious spouse.<sup>6</sup> Both [Ambler et al. \(2021\)](#) and [Annan et al. \(2021\)](#) find that wives' reporting that they are involved in decision making, even when their husbands disagree, is associated with better outcomes for wives. The association is even stronger when there is concordance that wives are involved in decision making.<sup>7</sup>

The analysis in this paper will provide further evidence on how concordance and discordance regarding wives' asset ownership and decision making are related to their agency and well-being. Based on previous findings, we expect a wife's well-being to be positively associated with the case in which she and her husband agree that she owns assets and makes decisions. But good outcomes may also be associated with the case when only the wife asserts that she owns assets and/or makes decisions. While the *levels* of a wife's involvement, concordance, and information asymmetries may vary by household structure, there is no *a priori* reason to predict that the *associations* between concordance regarding wives' involvement and wives' well-being would also vary.

<sup>6</sup> Evidence from a lab-in-the-field experiment suggests that, among individuals who exploit private information in the lab, perfect information about their spouse's income or expenditures is likely the result of monitoring ([Hoel, 2015](#)).

<sup>7</sup> Other related evidence includes [Story & Burgard \(2012\)](#) who focus on concordant responses and find that joint decision making is related to higher levels of maternal health care in Bangladesh. Additionally, when spouses agree on women's autonomy in Nepal, women are more likely to use health care services ([Allendorf, 2007b](#)).

<sup>4</sup> While every effort was made to ensure that other household members were not present during each respondent's interview, we cannot guarantee that all interviews were conducted in private.

<sup>5</sup> For a full description of this model and its associated equations, see [Ambler et al. \(2021\)](#).

We do not expect that concordance between the husband and wife that others own assets and make decisions will necessarily be positively associated with the wife's well-being. Unlike concordance regarding the wife's asset ownership and decision making, there are no existing studies that analyze the association between concordance on others' involvement and the wife's well-being. In joint households, concordance may reflect a shared understanding that wives do not own assets or make decisions, which would be disempowering for wives. As the framework described above suggests, spousal discordance regarding whether others own assets and make decisions may be further evidence of information asymmetries and reflect that they do not have a shared understanding of the power structures within the extended household. For example, husbands may not understand the large role that their mothers play in household decision making, with potentially detrimental impacts on the wife's well-being.

### 3. Context and data

We analyze the Nepal Suaahara Baseline Survey, which includes the Women's Empowerment in Agriculture (WEAL) modules (Kadiyala et al., 2020). This survey is designed to evaluate Suaahara, a five-year USAID funded initiative to improve nutritional status among young children and their mothers in Nepal. The baseline survey was administered to households with at least one child under five years of age. The survey covered 16 districts spanning the three agroecological zones of mountains, hills, and the Terai lowlands. Enumerators administered a questionnaire to the mother of the index child (a randomly selected child under five) and a separate questionnaire to her husband, who is generally the father of the index child. Thus, we have answers to the same questions from the husband and wife. Because married men often live with their parents in Nepal, almost 30% of the couples in the sample are the son and daughter-in-law of the household head.<sup>8</sup> We restrict the sample to the 1,660 cases where both members of a married couple responded to the individual questionnaire, excluding 34% of the surveyed households for which only a woman responded.<sup>9</sup> We conduct the analysis separately for households with and without the husband's parents. For simplicity, we refer throughout the paper to the respondent couple as the husband and wife.

#### 3.1. Context

Although the current Constitution in Nepal decrees equality for all, and reforms have promoted gender equality over the last several decades, discriminatory practices and patriarchal norms persist (ADB, 2010). Until recently, daughters only had a claim to a share of their father's property if they were not married and they traditionally relinquished their claims to other heirs if they married after inheriting property. The passage of the Gender Equality Act in 2006 granted married women the legal right to keep inherited property and gave women the right to use property without a male family member's consent. Despite these efforts, women are much less likely than men to own property. According to the 2016 Demographic and Health Survey (DHS) in

Nepal, just 8% of women own a house alone or jointly as compared to 19% of men. Similarly, 11% of women own land alone or jointly while 23% of men do (Ministry of Health, Nepal, New ERA, & ICF, 2017).

Findings from the DHS also suggest that women's participation in household decision making in Nepal is limited. For example, 42% of currently married women ages 15–49 say that they do not decide, either alone or jointly with their husbands, about their own health care. The comparable number for men is <15%. And notably, about one-fourth of women indicate that they do not decide, whether alone or jointly, how to use their *pewa*, the inherited assets they receive before marriage (Ministry of Health, Nepal et al., 2017; Pradhan et al., 2019).

In Nepal, the social locations of women within households play a key role in determining women's property rights and involvement in decision making (Allendorf, 2007a; Singh, 2016; Pradhan et al., 2019). When a woman marries, she generally moves into a joint household with her parents-in-law. Daughters-in-law in joint households typically have weak rights and little to no decision-making authority over joint property of the household. While the rights of daughters-in-law over personal property are stronger than their rights to joint property, even these rights are not guaranteed (Pradhan et al., 2019). The couple may eventually split off from the joint household to form a separate household, which may expand when their sons marry.

#### 3.2. Description of variables and methods

Our analysis begins by assessing spousal concordance and discordance using two indicators of women's empowerment: ownership of productive assets and decision making on household activities. The wording of these questions is important for understanding what is being measured (see Doss, Kieran, & Kilic (2020) for a review on measuring intrahousehold ownership, control, and use of assets; see Anderson et al. (2017) or Annan et al. (2021) for reviews on measuring intrahousehold decision making). We assess asset ownership using the survey question: "Who would you say owns most of the [productive capital]?" and allow for multiple people to be indicated as participating in the process.<sup>10</sup> Norms regarding what "ownership" means vary across contexts, but "ownership" typically includes rights of alienation. The categories of productive capital include agricultural land, other land not used for agriculture, large livestock (e.g., cattle, horse), small livestock (e.g., goats, pigs, sheep, chickens), fish pond or fishing equipment, non-mechanized farm equipment, mechanized farm equipment, non-farm business equipment, house (and other structures), large consumer durables (e.g., fridge, TV, sofa), small consumer durables (e.g., radio, cookware), mobile phone, and transportation (e.g., bicycle, motorcycle, car, rickshaw, horse cart).

For decision making, we consider the question, "Who normally takes the decision regarding [activity]?"<sup>11</sup> The activities include agricultural production (what to grow and types of crops to plant), taking crops to market, livestock raising, non-farm business activ-

<sup>10</sup> The surveys also include the following questions on this topic: who can decide whether to sell [productive capital] most of the time; who can decide whether to give away [productive capital] most of the time; who can decide to mortgage or rent out [productive capital] most of the time; and who contributes most to decisions regarding a new purchase of [productive capital]. Our preliminary analyses showed that responses were similar across questions of who owns assets and the various rights of alienation. For simplicity, we chose to focus on asset ownership questions as representative of the responses found in this module.

<sup>11</sup> These questions do not focus on either who has the final say or measures of relative decision-making authority. For example, the approach used by Anderson et al. (2017) is to ask each spouse to allocate beans to indicate the husband and wife's relative decision-making authority.

<sup>8</sup> Less than one percent of couples in the sample lived with the wife's parents.

<sup>9</sup> Malapit et al. (2015) explain that the high proportion of households with no male respondents is due to high levels of male outmigration. Thus, our findings are not necessarily representative of households in which spouses live apart. A different survey methodology would be needed to address issues in households with migrant husbands.



ity, major household expenditures (e.g., refrigerator, TV), minor household expenditures (e.g., food for daily consumption or other necessities), use of family planning products, and children's health care.<sup>12</sup>

For all of these questions, the response options include self; spouse; self and spouse jointly; other male household member; other female household member; self and other household member(s); spouse and other household member(s); self, spouse, and other household member(s); someone (or group of people) outside the household; self and other outside people; spouse and other outside people; and self, spouse, and other outside people.

Since the combinations of all possible responses of husbands and wives would be too numerous to effectively analyze, we collapse responses into a smaller number of categories. We are particularly interested in whether there is concordance in responses about the wife's asset ownership and decision making. Following Ambler et al. (2021), we thus analyze the following categories: (1) neither spouse says the wife owns or decides; (2) both spouses say the wife owns or decides; (3) the wife says she owns or decides, but the husband reports that she does not; and (4) the husband says the wife owns or decides, but she reports that she does not. The first two categories represent measures of concordance, and the latter two represent discordance. Concordance does not necessarily mean that spouses provided exactly the same responses, but rather that they agreed on the wife's involvement in ownership and decision making, either solely or jointly. By simplifying the categories, this approach focuses on meaningful variation and reduces measurement error.

In addition to analyzing concordance on responses regarding wives' ownership and involvement in decision making, we also analyze concordance on responses regarding the involvement of others – those other than the couple, whether inside or outside the household – as owners or decision makers. Similar to our approach for concordance regarding the wife's involvement, we define four additional categories of concordance regarding whether other individuals own assets or make decisions. These include: (1) neither spouse says that others own or decide; (2) both spouses say that others own or decide; (3) the wife says that others own or decide, but the husband says they do not; and (4) the husband says that others own or decide, but the wife says they do not.

The questions regarding who owns assets and makes decisions were skipped when the respondent said that no one in the household possessed the asset or engaged in the activity. Thus, we occasionally have responses from only one spouse. In this situation, we use the information from the spouse who provided the information and assign a response of "wife or husband doesn't own or make decision" to the other spouse per the approach of Ambler et al. (2021). We code the responses on whether others own or decide similarly.

Although we analyze patterns of discordance across the different types of assets and decisions in the survey, given the large number of these categories, we follow the approach used in Ambler et al. (2021) to create a set of aggregate measures for use in regression analysis. For household asset ownership, we aggregate the data on assets. This allows us to compute a measure of the proportion of the household's assets for which the couple

agrees on the wife's [others] ownership. We create similar measures for household decision making.<sup>13</sup>

The final dimension of our analysis is to consider the relationship between these various indicators of concordance within the household and a set of outcome measures. These outcomes have all been identified in the literature as related to women's empowerment or bargaining power. The outcomes include the number of groups in which the wife is an active member (Alkire et al., 2013; Narayan, 2002), current use of any method to delay or avoid pregnancy (Schuler, Hashemi, & Riley, 1997), number of antenatal visits during her last pregnancy (Beegle et al., 2001), satisfaction with leisure time<sup>14</sup> (Brown, 2009), and the proportion of decisions made in which she participates (Hou & Ma, 2013). Importantly, since all of the wives who responded to the survey are mothers of children under five, questions regarding antenatal visits and methods to delay or avoid pregnancy are relevant for all women respondents. Questions regarding antenatal visits require respondents to recall events that took place within the previous five years and nine months. All of these outcomes are collected only from wives.

Group membership, participation in decision making, and satisfaction with leisure time are chosen as outcomes because they are the best available measures, within the survey, of individual well-being and agency. Use of birth control and access to antenatal care are included because the literature suggests that the presence of her mother-in-law limits a woman's access to both of these services. In general, our analysis is meant to identify general patterns about well-being across outcomes, rather than ascribing specific interpretations to each variable.

We conduct OLS regressions to examine the correlations between concordance (on both asset ownership and decision making) and wives' well-being, clustering standard errors at the level of the primary sampling unit. While we present these regressions separately for households with and without in-laws, we also run a pooled regression with an interaction term for the household type in order to test whether differences between joint and separate households are statistically significant. We control for demographic and income/wealth variables, including the wife's age, the difference between her age and her husband's age, her education level, the difference between her education level and that of her husband, her height, whether the household has a woman head,<sup>15</sup> household size and composition based on age and sex, whether the household is Hindu, region, acres of cultivable land, whether the household has access to electricity, and roof material. In addition, we control for the number of assets that the household owns or the number of activities for which the household makes decisions.

Although this approach is motivated by our conceptual framework, our goal is not to prove causality. While the control variables will address some differences between the two types of households, the results are ultimately descriptive. Our analysis focuses on patterns of correlation, which are meaningful in themselves, but we do not suggest that spousal concordance should be a target for interventions.

<sup>12</sup> We exclude activities that refer to personal rather than household decisions because they are not the same question across husband and wife. These include the following activities: your own (singular) wage or salary employment, your health and nutrition, how to keep yourself from domestic violence, and whether to go to your mother's or friend's house. Moreover, only women are asked about decisions regarding the last two activities. We also exclude decisions about feeding children because they are highly correlated with decisions about children's health care.

<sup>13</sup> Not surprisingly, households with in-laws have slightly more assets and make more decisions than households without in-laws, but the difference is not so large as to affect our conclusions. Most households own between 6 and 9 assets and make 5 to 8 decisions. The standard deviation for assets in households without in-laws is 1.4 and 1.2 for households with in-laws. The standard deviation for decisions is 1.2 in households without in-laws and 1.1 in households with in-laws.

<sup>14</sup> Our measure ranges from 1 for very unsatisfied to 5 for very satisfied.

<sup>15</sup> The couple may be living in a household with just the mother-in-law who may be considered the head.

**Table 1**  
Summary Statistics.

VARIABLES	Households with in-laws		Households without in-laws	
	(1) Mean	(2) Standard deviation	(3) Mean	(4) Standard deviation
<b>Outcome variables</b>				
Number of groups in which wife is active member	0.23	0.61	0.21	0.55
Current use of method to delay or avoid pregnancy	0.49	0.50	0.53	0.50
Number of antenatal visits during last pregnancy	3.70	2.02	3.06	2.05
Wife's satisfaction with leisure time	3.60	1.10	3.57	1.13
Proportion of decisions made in which wife participates	0.55	0.25	0.76	0.25
<b>Demographic variables</b>				
Age of husband	29.15	6.56	35.15	8.92
Age of wife	25.68	5.73	29.88	6.87
Age difference (husband-wife)	3.46	3.58	5.26	5.56
Years of education for husband	7.26	3.66	5.46	4.12
Years of education for wife	5.92	5.01	4.97	5.40
Difference in years of education (husband-wife)	1.33	4.66	0.49	5.55
Wife's height (in cm)	151.79	5.53	151.22	5.87
Proportion of woman-headed households	0.12	0.33	0.00	0.07
Household size	7.39	2.50	5.14	1.66
Number of women in household ages 16+	2.40	0.87	1.15	0.41
Number of men in household ages 16+	2.09	0.94	1.13	0.42
Proportion of girls in household, ages 0–15	0.20	0.14	0.29	0.19
Proportion of women in household, ages 16+	0.34	0.09	0.24	0.07
Proportion of boys in household, ages 0–15	0.18	0.13	0.24	0.17
Proportion of men in household, ages 16+	0.29	0.10	0.23	0.08
Hindu	0.91	0.29	0.88	0.32
Mountain region	0.30	0.46	0.30	0.46
Hill region	0.37	0.48	0.43	0.50
Terai region	0.33	0.47	0.27	0.44
Acres of cultivable land	0.61	0.88	0.29	0.34
Access to electricity	0.86	0.35	0.80	0.40
Improved roof	0.79	0.41	0.72	0.45
Number of assets owned by household (out of 12)	8.11	1.24	7.14	1.42
Number of decision categories made by household (out of 8)	6.24	1.12	5.84	1.20
N	730		913	

Note: In households with in-laws, current use of method to delay or avoid pregnancy has 665 observations and wife's satisfaction with leisure time and years of education for husband have 729 observations each. For households without in-laws, current use of method to delay or avoid pregnancy has 856 observations, number of antenatal visits during last pregnancy has 911 observations, and age of husband, age difference, and the proportion of girls, women, boys, and men have 912 observations each.

### 3.3. Summary statistics

In Table 1, we present summary statistics on wives' outcome and the control variables included in the subsequent analyses. We disaggregate all results by whether or not the couple lives with the husband's parents. All outcome variables are coded positively, so that a higher value is associated with greater well-being. Across the two types of household structures (with and without in-laws), we find similar average values for several outcome variables: wives' participation in groups; the use of contraceptive methods; and satisfaction with leisure time. By contrast, the number of antenatal visits during the wife's last pregnancy is higher in households with in-laws (3.7) than in households without (3.1), and wives' participation in decision making is lower in households with in-laws (55%) than in those without (76%).<sup>16</sup>

Husbands are, on average, older and more educated than their wives. The age gap is larger in households without in-laws while the education gap is larger in households with in-laws. Not surprisingly, households with in-laws also have more land, a greater probability of access to electricity and finished roofing, more adults, more total household members, and more assets than households without in-laws.

<sup>16</sup> Using Welch's unequal variance *t*-test, we find that the difference in means between households with and without in-laws is statistically significant for all variables except for the following: the number of groups in which the wife is active member, current use of method to delay or avoid pregnancy, wife's satisfaction with leisure time, whether the household head is Hindu, and whether the household is in the Mountain region. We do not present these tests in Table 1.

## 4. Spousal concordance

In this section, we assess spousal concordance on four issues: whether the wife owns assets; whether she makes decisions; and whether others own assets and make decisions.

### 4.1. Concordance on wives' asset ownership and decision making

The patterns of concordance regarding the assets owned by the wife are presented in Table 2, disaggregated by household structure. Each asset is listed in a separate row, with each column representing one of the four response categories. We first show the proportion of couples who agree that the wife does not own each asset type and the proportion who agree that she does. We then present the proportion of couples in which the wife reports that she owns the asset, but her husband does not, followed by the proportion of couples in which the husband reports that his wife owns the asset, but she does not. Finally, we sum the first two columns to present total concordance. The number of observations represents households where at least one spouse reports that the household owns the asset. Following the same structure, Table 3 displays information regarding the wife's involvement in decision making.

Overall, there are high levels of concordance in responses. For all assets and decisions, there is concordance among at least 50% of couples, with particularly high rates for the ownership of land (both agricultural and non-agricultural), housing, and means of travel. For most assets and decisions, levels of concordance about

**Table 2**  
Concordance and discordance regarding wife's asset ownership.

	<b>Panel A: Households with in-laws</b>						<b>Panel B: Households without in-laws</b>					
	Concordance		Discordance		<i>Total concordance</i>	<i>Number of observations</i>	Concordance		Discordance		<i>Total concordance</i>	<i>Number of observations</i>
	Wife does not own	Wife owns	Wife says wife owns, husband does not	Husband says wife owns, wife does not			Wife does not own	Wife owns	Wife says wife owns, husband does not	Husband says wife owns, wife does not		
Agricultural land	0.84	0.12	0.04	0.01	0.96	713	0.68	0.19	0.08	0.04	0.88	833
Non-agricultural land	0.87	0.07	0.05	0.01	0.94	329	0.74	0.13	0.08	0.04	0.87	365
Large livestock	0.49	0.16	0.30	0.05	0.65	657	0.24	0.34	0.34	0.07	0.59	629
Small livestock	0.43	0.19	0.31	0.07	0.62	623	0.24	0.38	0.29	0.08	0.62	637
Fish pond or fishing equipment	0.47	0.13	0.30	0.11	0.59	64	0.64	0.06	0.10	0.20	0.70	50
Farm equipment (non mechanized)	0.32	0.23	0.39	0.06	0.54	724	0.22	0.41	0.29	0.08	0.63	874
Farm equipment (mechanized)	0.83	0.08	0.04	0.04	0.92	24	0.44	0.11	0.33	0.11	0.56	9
Non-farm business equipment	0.68	0.11	0.15	0.06	0.79	80	0.50	0.18	0.21	0.11	0.68	84
House	0.75	0.16	0.06	0.02	0.92	727	0.63	0.17	0.12	0.08	0.79	874
Large durables	0.41	0.19	0.32	0.08	0.59	395	0.27	0.30	0.32	0.11	0.57	371
Small durables	0.31	0.23	0.36	0.11	0.54	722	0.22	0.43	0.23	0.12	0.65	899
Mobile phone	0.47	0.13	0.35	0.05	0.60	639	0.47	0.23	0.22	0.08	0.70	682
Means of transportation	0.63	0.20	0.12	0.05	0.83	223	0.75	0.06	0.16	0.04	0.80	216

**Notes:** We sum the first two columns of each panel to present total concordance. The number of observations represents households where at least one spouse reports that the household owns the asset.

**Table 3**  
Concordance and discordance regarding wife's decision making.

	<b>Panel A: Households with in-laws</b>						<b>Panel B: Households without in-laws</b>					
	Concordance		Discordance		<i>Total concordance</i>	<i>Number of observations</i>	Concordance		Discordance		<i>Total concordance</i>	<i>Number of observations</i>
	Wife does not decide	Wife decides	Wife says wife decides, husband does not	Husband says wife decides, wife does not			Wife does not decide	Wife decides	Wife says wife decides, husband does not	Husband says wife decides, wife does not		
Agricultural production	0.57	0.21	0.20	0.02	0.78	706	0.34	0.23	0.40	0.02	0.57	803
Taking crops to market	0.74	0.13	0.11	0.03	0.86	262	0.54	0.10	0.28	0.08	0.64	249
Livestock raising	0.51	0.21	0.24	0.04	0.72	701	0.27	0.26	0.41	0.05	0.54	753
Non-farm business activity	0.70	0.12	0.16	0.02	0.82	396	0.63	0.07	0.25	0.04	0.71	502
Major household expenditures	0.58	0.18	0.20	0.04	0.76	420	0.42	0.18	0.36	0.05	0.59	443
Minor household expenditures	0.49	0.23	0.23	0.05	0.72	730	0.34	0.23	0.36	0.07	0.58	913
Use of family planning	0.20	0.30	0.42	0.08	0.50	610	0.21	0.37	0.34	0.08	0.58	753
Health care of children	0.28	0.27	0.44	0.02	0.55	730	0.37	0.38	0.23	0.02	0.75	913

**Notes:** We sum the first two columns of each panel to present total concordance. The number of observations represents households where at least one spouse reports that the household makes the decision

the wife's role in ownership and decision making are higher in households with in-laws than in households without in-laws. This is driven by high levels of concordance that the wife does not own assets or make decisions when in-laws are present, presumably because other household members play a role in ownership and decision making.

Conversely, there is more concordance that wives own assets when in-laws are not present, suggesting that wives have stronger property rights when there is less competition from their parents-in-law. The only exceptions are fish ponds/fishing equipment and means of transportation. Similarly, there is more concordance that wives make decisions when in-laws are not present. The exceptions are taking crops to market and non-business farm activities. For both minor and major household expenditures, the proportion of couples who agree that the wife decides is approximately the same across household types.

Only in households without in-laws do we ever see that the most common response is concordance that the wife owns assets. Even here, this holds only for relatively minor assets: small livestock, non-mechanized farm equipment, and small durables. This suggests that even if wives own some small assets, husbands are unlikely to acknowledge their ownership if they live in a joint household.

Discordance is also frequent and systematic. Across both household types, the most common form of discordance is for the wife to say that she owns the assets or makes the decisions, but her husband says that she does not. In line with the framework discussed in Section 2, the systematic nature of this discordance indicates that it is not due only to random measurement error.<sup>17</sup> There is also substantial variation in levels of discordance across types of assets and activities, indicating that asymmetric measurement error also cannot completely explain the observed patterns.<sup>18</sup> In general, we observe suggestive evidence that discordance is higher for assets and decisions that are easier to hide. These discordance patterns are consistent with the empirical evidence presented in Ambler et al. (2021) from Bangladesh, which found that discordance is likely a function of both measurement error and the presence of asymmetric information in the household.

Although the *patterns* of discordance are similar across household type, the *levels* do vary. In general, discordance is higher in households without in-laws than households with in-laws—possibly because wives' lack of asset ownership and decision making is well understood when in-laws are present. Wives are also, in general, more likely to report that they own assets or participate in decisions when in-laws are not present. Across both types of households, total concordance is high for large assets such as land and houses and decisions such as taking crops to market and non-farm business activities, which are difficult to hide. In households with in-laws, concordance is low for assets such as non-mechanized farm equipment and small durables and for decisions such as use of family planning and the health care of children. In households without in-laws, on the other hand, concordance is low for mechanized farm equipment and

large durables as well as agricultural production and livestock raising. Overall, these patterns likely indicate both the strong property rights and agency of the in-laws themselves as well as reduced scope for information asymmetries regarding wives' roles in asset ownership and decision making because she is monitored by her mother-in-law.

#### 4.2. Concordance on the asset ownership and decision making of others in the household

Table 4 presents spousal concordance regarding the asset ownership of other individuals, while Table 5 focuses on others' role in decision making. The patterns of concordance differ dramatically across households with and without in-laws. In households with in-laws, others play a large role in asset ownership, and the most common response is concordance that others own assets. The exceptions are for non-farm business equipment, mobile phones, and means of transportation. The most common response regarding decision making in households with in-laws is concordance that others decide on agricultural production, taking crops to market, raising livestock, and minor household expenditures, and concordance that others do not decide on non-farm business activities, major household expenditures, use of family planning, and child health care. Concordance is far from universal, with rates ranging from near 60 percent to 90 percent across assets and activities.

By contrast, and as is to be expected, households without in-laws generally agree that others do not own assets and do not make decisions. It is occasionally reported that others own the land and house, but in more than 80 percent of cases there is concordance that others do not own assets. In general, concordance that others do not participate in decision making is over 90 percent. This is because these households typically do not have other adults living in them. However, it also indicates a level of independence from extended family; couples that are not living in the joint family home do not have others involved in their decisions.

Given the high rates of concordance on the role of others in households without in-laws, the analysis of the patterns of discordance is most interesting in household with in-laws. We find that discordance is systematic: when there is discordance regarding asset ownership and decision making by others, it is more common for the wife to say that others own the asset or make the decision, but the husband does not. This suggests that random measurement error does not fully describe these results. There is also variation across assets and decisions, indicating that asymmetric measurement error is not fully driving these patterns.<sup>19</sup> As such, this pattern could be further evidence of asymmetric information in the household, possibly indicating that the husband is not aware of the extent to which his mother owns assets or makes decisions.<sup>20</sup>

The one interesting exception to this pattern is regarding the health care of children. In 29% of households with in-laws, the husband says that others are involved in these decisions, but only 8% of wives report others being involved. This could be evidence that husbands believe others are taking on a larger role in child health care than they actually are. Qualitative research from rural Nepal suggests that daughters-in-law feel especially worried about convincing their in-laws to pay health care expenses (Gram et al.,

<sup>17</sup> In order to test whether random measurement error explains all of the discordance between couples, we assess whether the percent of couples where the wife reports she is involved in ownership or decision making and the husband does not equals the percent of couples where the husband reports the wife is involved but she does not. Across household types, for all decisions and almost all assets, we reject the null hypothesis that the two types of disagreement occur with equal probability. The only exceptions are mechanized farm equipment for both household types and fish ponds or fishing equipment for households without in-laws. Very few households own these assets and only a handful disagree on who owns them. These tests are available upon request.

<sup>18</sup> While not presented here, we test whether asymmetric measurement error explains all of the discordance. For the majority of cases, we reject the null hypotheses that discordance rates are equal across assets and activities.

<sup>19</sup> We run the tests described above to assess whether random or asymmetric measurement error can fully explain the patterns regarding others' ownership and decision making. As we observed with wives' ownership and decision making, we reject the null hypotheses that the two types of discordance occur with equal probability and that discordance is equal across assets and activities.

<sup>20</sup> Given that wives interact frequently with their mothers-in-law and that the norms in joint households stipulate that daughters-in-law ask their mothers-in-law whenever they need anything such as cash for small purchases (Gram et al., 2018), a pattern where the wife better understands the role of the mother-in-law than the husband is sensible.



**Table 4**

Concordance and discordance regarding others' asset ownership.

	<b>Panel A: Households with in-laws</b>						<b>Panel B: Households without in-laws</b>					
	Concordance		Discordance		<i>Total concordance</i>	<i>Number of observations</i>	Concordance		Discordance		<i>Total concordance</i>	<i>Number of observations</i>
	Others do not own	Others own	Wife says others own, husband does not	Husband says others own, wife does not			Others do not own	Others own	Wife says others own, husband does not	Husband says others own, wife does not		
Agricultural land	0.09	0.81	0.08	0.02	0.90	713	0.46	0.39	0.11	0.05	0.85	833
Non-agricultural land	0.13	0.61	0.16	0.11	0.74	329	0.54	0.27	0.12	0.07	0.80	365
Large livestock	0.11	0.74	0.10	0.06	0.84	657	0.86	0.04	0.07	0.03	0.90	629
Small livestock	0.13	0.65	0.14	0.09	0.77	623	0.88	0.03	0.06	0.04	0.90	637
Fish pond or fishing equipment	0.27	0.36	0.25	0.13	0.63	64	0.92	0.00	0.02	0.06	0.92	50
Farm equipment (non mechanized)	0.09	0.75	0.11	0.04	0.85	724	0.84	0.04	0.08	0.04	0.88	874
Farm equipment (mechanized)	0.08	0.50	0.25	0.17	0.58	24	0.67	0.11	0.11	0.11	0.78	9
Non-farm Business Equipment	0.46	0.21	0.15	0.18	0.68	80	0.89	0.02	0.04	0.05	0.92	84
House	0.10	0.78	0.09	0.03	0.88	727	0.57	0.26	0.10	0.07	0.83	874
Large durables	0.24	0.43	0.18	0.15	0.67	395	0.86	0.02	0.06	0.05	0.88	371
Small durables	0.11	0.66	0.13	0.10	0.77	722	0.86	0.03	0.05	0.06	0.89	899
Mobile phone	0.44	0.30	0.13	0.13	0.74	639	0.87	0.05	0.04	0.04	0.92	682
Means of Transportation	0.48	0.18	0.19	0.15	0.66	223	0.91	0.02	0.03	0.05	0.93	216

**Notes:** We sum the first two columns of each panel to present total concordance. The number of observations represents households where at least one spouse reports that the household owns the asset.**Table 5**

Concordance and discordance regarding others' decision making.

	<b>Panel A: Households with in-laws</b>						<b>Panel B: Households without in-laws</b>					
	Concordance		Discordance		<i>Total concordance</i>	<i>Number of observations</i>	Concordance		Discordance		<i>Total concordance</i>	<i>Number of observations</i>
	Others do not decide	Others decide	Wife says others decide, husband does not	Husband says others decide, wife does not			Others do not decide	Others decide	Wife says others decide, husband does not	Husband says others decide, wife does not		
Agricultural production	0.21	0.62	0.12	0.04	0.84	706	0.92	0.02	0.03	0.02	0.94	803
Taking crops to market	0.26	0.43	0.19	0.13	0.68	262	0.95	0.00	0.02	0.02	0.96	249
Livestock raising	0.20	0.61	0.13	0.06	0.82	701	0.94	0.01	0.03	0.02	0.95	753
Non-farm business activity	0.60	0.17	0.13	0.10	0.77	396	0.96	0.01	0.02	0.02	0.96	502
Major household expenditures	0.40	0.27	0.21	0.12	0.67	420	0.96	0.00	0.02	0.01	0.96	443
Minor household expenditures	0.30	0.46	0.14	0.10	0.76	730	0.96	0.01	0.01	0.02	0.97	913
Use of family planning	0.99	0.00	0.00	0.01	0.99	610	1.00	0.00	0.00	0.00	1.00	753
Health care of children	0.53	0.10	0.08	0.29	0.63	730	0.97	0.00	0.01	0.03	0.97	913

**Notes:** We sum the first two columns of each panel to present total discordance. The number of observations represents households where at least one spouse reports that the household makes the decision.

**Table 6**

Correlation of concordance on wives' and others' asset ownership with wives' outcomes.

	<b>Panel A: Households with in-laws</b>						<b>Panel B: Households without in-laws</b>					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	<i>Mean percent of assets</i>	<i>Group participation</i>	<i>Current use of birth control</i>	<i>Antenatal visits during last pregnancy</i>	<i>Satisfied with leisure time</i>	<i>Participation in decisions</i>	<i>Mean percent of assets</i>	<i>Group participation</i>	<i>Current use of birth control</i>	<i>Antenatal visits during last pregnancy</i>	<i>Satisfied with leisure time</i>	<i>Participation in decisions</i>
<b>Concordance on wives' ownership</b>												
Both: Wife does not own (omitted)	54						42					
Both: Wife owns	17	0.140 (0.152)	−0.157 (0.111)	−0.003 (0.428)	−0.187 (0.273)	0.203*** (0.063)	29	0.007 (0.079)	0.076 (0.086)	−0.051 (0.281)	0.055 (0.165)	0.357*** (0.034)
W: Wife owns	24	0.199* (0.104)	0.063 (0.087)	−0.214 (0.361)	−0.036 (0.230)	0.400*** (0.049)	21	−0.072 (0.079)	0.064 (0.086)	0.400 (0.353)	−0.116 (0.210)	0.267*** (0.042)
H: Wife does not own												
W: Wife does not own	5	0.153 (0.167)	−0.016 (0.183)	−0.104 (0.651)	−0.477 (0.408)	0.237*** (0.081)	8	−0.136 (0.125)	0.030 (0.122)	−0.930* (0.509)	−0.240 (0.284)	0.047 (0.063)
H: Wife owns												
<b>Concordance on others' ownership</b>												
Both: Others do not own (omitted)	18						76					
Both: Others own	62	0.136 (0.111)	−0.194** (0.096)	−0.068 (0.378)	−0.355* (0.205)	−0.096* (0.055)	12	−0.168 (0.134)	−0.006 (0.105)	0.046 (0.367)	−0.260 (0.249)	0.023 (0.050)
W: Others own	12	0.187 (0.151)	−0.147 (0.131)	−0.185 (0.534)	0.053 (0.262)	−0.050 (0.074)	7	−0.054 (0.118)	−0.197* (0.118)	0.106 (0.440)	−0.194 (0.262)	−0.116* (0.060)
H: Others do not own												
W: Others do not own	8	0.250 (0.212)	−0.091 (0.167)	−0.184 (0.653)	−0.679* (0.360)	−0.010 (0.092)	5	0.286 (0.214)	0.057 (0.176)	−0.268 (0.564)	−0.765* (0.392)	−0.017 (0.072)
H: Others own												
R-squared		0.100	0.089	0.230	0.068	0.317		0.087	0.029	0.208	0.064	0.229
Observations		729	664	729	728	729		911	854	909	911	911
DV mean		0.23	0.49	3.69	3.60	0.48		0.21	0.53	3.06	3.57	0.76

Notes: Robust standard errors in parentheses are clustered at the PSU level. All regressions include the controls described in section 3.2. \*\*\* p &lt; 0.01, \*\* p &lt; 0.05, \* p &lt; 0.1.

**Table 7**

Correlation of concordance on wives' and others' decision making with wives' outcomes.

Panel A: Households with in-laws						Panel B: Households without in-laws					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	Mean percent of decisions	Group participation	Current use of birth control	Antenatal visits during last pregnancy	Satisfied with leisure time	Mean percent of decisions	Group participation	Current use of birth control	Antenatal visits during last pregnancy	Satisfied with leisure time	
Concordance on wives' decision making											
Both: Wife does not decide (omitted)	47					36					
Both: Wife decides	22	0.195	0.209*	−0.327	0.282	26	0.169*	0.381***	0.220	0.264	
		(0.133)	(0.110)	(0.386)	(0.250)		(0.097)	(0.075)	(0.321)	(0.195)	
W: Wife decides	27	0.237**	0.184*	−0.753**	0.065	33	0.206**	0.098	−0.269	−0.099	
H: Wife does not decide		(0.120)	(0.095)	(0.336)	(0.214)		(0.087)	(0.078)	(0.310)	(0.199)	
W: Wife does not decide	4	0.139	−0.128	−0.246	−0.010	5	0.237	0.027	−0.430	−0.592	
H: Wife decides		(0.218)	(0.192)	(0.787)	(0.485)		(0.197)	(0.177)	(0.831)	(0.462)	
Concordance on others' decision making											
Both: Others do not decide (omitted)	44					96					
Both: Others decide	35	−0.037	−0.175**	−0.051	−0.443**	1					
		(0.112)	(0.088)	(0.342)	(0.216)						
W: Others decide	12	−0.328**	−0.394***	−0.354	−0.212	2					
H: Others do not decide		(0.141)	(0.121)	(0.432)	(0.266)						
W: Others do not decide	10	−0.084	−0.049	−0.578	−0.374	2					
H: Others decide		(0.145)	(0.137)	(0.541)	(0.320)						
R-squared		0.106	0.125	0.255	0.080						
Observations		729	664	729	728		911	854	909	911	
DV mean		0.23	0.49	3.69	3.60		0.21	0.53	3.06	3.57	

Notes: Robust standard errors in parentheses are clustered at the PSU level. All regressions include the controls described in section 3.2. \*\*\* p &lt; 0.01, \*\* p &lt; 0.05, \* p &lt; 0.1.

2018). To deal with this concern, it is possible that some wives privately save some cash to ensure that they can cover their children's health care costs without involving their in-laws.

## 5. Is concordance related to outcomes?

The previous section demonstrated that although spouses often give the same answers to questions regarding who owns assets and who makes decisions, they do not always do so. In addition, the levels of concordance differ based on whether the couple lives with their in-laws. In this section, we consider whether the patterns of concordance are correlated with measures of the wife's well-being.

We conduct OLS regressions to examine the correlations of concordance on asset ownership or decision making with wives' well-being, controlling for a set of demographic and income/wealth variables described in Section 3.2. We include the two sets of categorical measures of concordance on wives' and others' involvement (as described in Section 3.2) in each regression, with concordance that the wife is not involved and concordance that others are not involved as the omitted categories. In each table, Panel A displays results for households with in-laws while Panel B displays results for households without in-laws. Table 6 addresses asset ownership while Table 7 presents the same information for decision making. In this section, we describe the results from this analysis and provide further discussion in Section 6. In order to test differences across household types, we also run a pooled model in which we interact all independent variables with the presence of parents-in-law. Appendix Tables 1 and 2 present the p-values for the interaction terms of interest.

### 5.1. Is concordance on wives' asset ownership correlated with wives' outcomes?

In Table 6, we first consider the association between the concordance of responses on the wife's asset ownership and her outcomes. Wives reporting that they own more types of assets is positively correlated with their participation in decision making, both when her husband agrees and when he does not. This is true whether or not in-laws are present in the household, but the magnitude of the coefficient varies across household type (see Appendix Table 1). In households with in-laws present, either spouse reporting that the wife owns assets is correlated with the wife's participation in decision making (see Panel A).

Only the wife reporting asset ownership in households with in-laws present is positively correlated with her group participation (see Panel A), and the difference across household type is statistically significant (see Appendix Table 1). While we do not observe a significant correlation between concordance and current use of birth control in households with or without in-laws, the relationship does vary across household type (see Appendix Table 1). The one surprising finding is that in households without in-laws, only the husband reporting that the wife owns assets is negatively correlated with antenatal visits (see Panel B).<sup>21</sup>

<sup>21</sup> Appendix Table 3 presents separate OLS regressions in which only the wife's responses are the explanatory variables of interest and only the husband's responses are the explanatory variables of interest. In general, adding the husband's responses regarding his wife's asset ownership does not significantly alter the coefficients on the wife's responses. The only exception is that the wife reporting that she owns assets is statistically significantly correlated with her use of birth control, but the statistical significance of this coefficient no longer holds when we include the husband's responses.

### 5.2. Is concordance on others' asset ownership correlated with wives' outcomes?

Table 6 also presents correlations between the concordance of responses on others' asset ownership and the wife's outcomes. In joint households, concordance that others own assets is negatively correlated with outcomes, including current use of birth control, satisfaction with leisure time, and participation in decisions (see Panel A). In separate households, concordance that others own assets is not correlated with wives' outcomes. It is only in households without in-laws that there is any relationship between wives' outcomes and discordance in which only wives report others' asset ownership (see Panel B). Discordance in this instance is associated with decreased use of birth control and less participation in decisions. Across household types, when only the husband claims that others own assets, wives are less satisfied with the time available for leisure activities. However, most of the differences across household types are not statistically significant (see Appendix Table 1).

### 5.3. Is concordance on wives' decision making correlated with wives' outcomes?

Table 7 reveals that concordance that the wife participates in decisions is associated with greater use of birth control, in both types of households (see Panels A and B). For households without in-laws, the coefficient on group participation is also statistically significant (see Panel B). In households with in-laws, only the wife reporting that she decides is positively correlated with both current use of birth control and group membership but is negatively correlated with the number of antenatal visits (see Panel A). In households without in-laws, only the wife reporting that she decides is similarly correlated with increased group membership (see Panel B). Only the husband reporting that his wife decides is not significantly correlated with any outcomes for wives in either type of household.<sup>22</sup> These differences across household types are not statistically significant (see Appendix Table 2).

### 5.4. Is concordance on others' decision making correlated with wives' outcomes?

Finally, we examine the relationship between the concordance of spouses' responses regarding others' involvement in decision making and wives' outcomes. Table 7 demonstrates that the difference between joint and separate households is also evident in the proportion of decisions made by others. Couples in households with in-laws are in concordance that others do not decide for 44 percent of the household decision categories. When in-laws are not present, there is concordance that others are not involved in 96 percent of the decisions, on average. Thus, we do not analyze households without in-laws.

In households with in-laws, concordance that others decide is negatively correlated with current use of birth control and satisfaction with leisure time. Only wives claiming that others decide is negatively correlated with group participation and use of birth control (see Panel A).

<sup>22</sup> Appendix Table 4 presents separate OLS regressions in which only the wife's responses are the explanatory variables of interest and only the husband's responses are the explanatory variables of interest. Similar to asset ownership, adding the husband's responses regarding his wife's decision making does not significantly alter the coefficients on wives' responses, suggesting that it does not add information beyond that provided by the wife.

## 6. Discussion

Our results demonstrate several patterns related to couples' concordance and discordance on who owns assets and makes decisions, how couples' responses are related to the presence of in-laws, and how concordance pertains to measures of wives' well-being.

First, although overall concordance between spouses is relatively high in Nepal for both assets and decision making, this often comes from concordance that the wife does not own assets or make decisions; thus, such concordance may be indicative of a wife's disempowerment. Similar to the findings from Ambler et al. (2021) in Bangladesh, responses that wives own assets and make decisions are more common from wives than from husbands in Nepal. This, combined with the observation that these patterns differ across assets and decisions, supports the framework of Ambler et al. (2021) that suggests these patterns of discordance are partly driven by information asymmetries in the form of hidden or invisible assets and decisions.

Second, we observe different levels of concordance regarding asset ownership and decision making based on the presence or absence of the husband's parents. The levels of concordance are higher in households with in-laws, primarily driven by higher levels of concordance that the wife does not own assets or make decisions; again, concordance coexists with disempowerment. Wives are much more likely to report asset ownership and decision making in separate households, which could indicate a higher level of empowerment and bargaining power. Close monitoring by mothers-in-law may also provide fewer opportunities for wives to hide assets and decisions in joint households. Additionally, it may also be true that wives residing in households without in-laws are inherently more empowered; for example, wives with higher bargaining power are better able to form an independent household with their husbands. Young married couples in Nepal often cooperate with one another to hide income from their in-laws in order to gain sufficient financial autonomy to form a separate household (Gram et al., 2018). However, once the intergenerational power struggle is resolved, husbands typically manage money for their households, so wives may have incentives to hide information from him.

In households without in-laws, very few decisions are made by people other than the husband or wife. This suggests that when couples form their own households, they are relatively independent and decisions are not made by in-laws or other family members. We also find that, among joint households, the division of labor is one in which the in-laws are responsible for agricultural decisions, similar to previous findings (Pradhan et al., 2019).

Third, when observing the associations between concordance and wives' well-being, we see stronger relationships with concordance about decision making compared to asset ownership, consistent with the findings in Ambler et al. (2021). We find that, in general, responses indicating that the wife owns an asset or makes a decision are positively associated with her well-being. In contrast with past work (Ambler et al., 2021; Annan et al., 2021), our results do not indicate that the correlation with wives' well-being is stronger for concordance that wives are involved than for discordance in which only the wife says she is involved. However, we lack the statistical power to draw definitive comparisons.

Concordance on others making decisions is negatively associated with current use of birth control and satisfaction with leisure time in joint households. Social norms put pressure on wives to have sons as soon as possible after marriage (Gram et al., 2018) and wives who fail to do so in the first few years of their marriage may be abandoned by their husband's family (Clarke et al., 2014). Since wives who live with their in-laws are younger than those liv-



ing in separate households, they may feel a higher sense of reproductive pressure. In addition, the expectations of their domestic responsibilities in joint households may prevent them from having leisure time. A study in Nepal found that wives in couples who separated from the joint household frequently described how this separation allowed them to make autonomous decisions about their leisure time (Gram et al., 2018).

While patterns of concordance have differential levels of associations with women's well-being depending on the household structure, in pooled analyses we most often do not observe statistically significant differences in these relationships based on household type. This is most likely because we lack power to detect differences. While spouses' agreement on others' involvement could indicate a more cooperative and efficient household, which in turn could lead to improved outcomes for wives, we do not observe this pattern. Wives living with their in-laws are generally worse off when they report that others decide, regardless of whether their husband agrees. Recall that women were more likely than men to report that others owned assets or were involved in decision making, suggesting that women are interacting with their mothers-in-law in ways that are unobserved by their husbands. The regression analysis suggests that women may be worse off when this occurs. This is broadly consistent with findings from a recent study in Nepal that in joint households, wives are more empowered when their husbands have not migrated, suggesting that having one's husband in residence protects wives from being disempowered by their mother-in-law (Doss et al., 2020).

## 7. Conclusion and policy implications

Concordance between spouses is not necessarily correlated with better outcomes for women, particularly when the point of agreement is that the wife does not own assets or make household decisions. The data show clearly that patterns of concordance vary depending on whether the couple lives in a joint or separate household. The relationship of concordance with outcomes of women's well-being also varies depending on the structure of the household. These key findings have a number of implications for both data collection and policy.

First, these findings reinforce the message that collecting data from both the husband and the wife can be highly informative and that indicators of concordance have value for assessing women's well-being. Typically, survey modules on asset ownership and agricultural production only interview the household head, usually a man. In contrast, survey modules on decision making about consumption, health, nutrition and women's empowerment issues often interview only a woman. When both spouses are interviewed on the same topics, we find evidence of information asymmetries. This suggests that analysis may be biased if only one person is interviewed. Ultimately, the choice of who and how many people to interview will depend on the particular research goals and budget and time constraints. For example, if the goal is to understand women's well-being, our analysis shows that a wife's reports of asset ownership and decision making are more predictive of her well-being than her husband's reports (see Appendix Tables 3 and 4).

Our findings also indicate that, in this context in Nepal, the patterns of concordance are different for young couples who live with the husband's parents and those who do not. This raises important questions for household surveys conducted in other countries. These young couples living in joint households are usually missed in household surveys because the most senior adults would typically be the ones interviewed. Thus, these young couples—often with children—are invisible in analyses of intrahousehold dynamics, and their needs and assets might be missed. Instead, policy rec-

ommendations are based only on data from those young couples who have formed independent households. These two groups of young couples are substantively different in many dimensions.<sup>23</sup>

Finally, these results have implications for policy. Biases in reporting stemming from interviewing only one spouse could result in interventions that are targeted at the wrong individuals within households or at the wrong households altogether. For example, households may score differently on means tests depending on who within a household responds to the asset questions. In a context in which wives hide assets from their husbands, interviewing the husband only will result in underestimates of household asset ownership. As another example, in separate households, responses from husbands suggest that only a quarter of wives make decisions about agricultural production, while almost three quarters of wives report making such decisions. Failing to ask the wife about her involvement may result in targeting agricultural extension services or other agricultural interventions only to men, when wives would also benefit.

Understanding the differences between households with and without in-laws is also important from a policy perspective. First, our results point to reduced information asymmetries regarding the involvement of the wife in joint households, but these reductions may be driven by increased agreement that the wife has no involvement in asset ownership or decision making and monitoring of the wife's activities by her mother-in-law. At the same time, it is clear that in-laws play important roles in asset ownership and decision making in these households. In addition, information asymmetries matter not only for the wife's asset ownership and decision making, but also for that of other individuals. In particular, husbands may not understand the full extent of their mothers' activities. Policy makers must thus make special efforts in these households to ensure that programming and resources reach wives, and carefully consider whether mothers-in-law and husbands should be included in any program-related outreach. This conclusion is supported by our regression analysis: women's well-being is negatively correlated with their perception that other adults in the household take part in decision making and own assets, whether or not their husbands share that perception.

More generally, these results indicate the need for more research on joint households. Whether or not a young couple in a joint household owns assets or makes decisions may affect their ability to form their own household. We need to move beyond looking at the dynamics of couples within nuclear families and also consider more explicitly the relationships among various adults living within joint households.

## CRedit authorship contribution statement

**Kate Ambler:** Conceptualization, Methodology, Writing – review & editing. **Cheryl Doss:** Conceptualization, Methodology, Writing – review & editing. **Caitlin Kieran:** Conceptualization, Methodology, Formal analysis, Writing – original draft, Writing – review & editing. **Simone Passarelli:** Conceptualization, Methodology, Writing – review & editing.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

<sup>23</sup> This study does not speak directly to the tradeoffs regarding which couples to interview in joint households; we would expect different results from interviewing mothers and daughters-in-law. Doss et al. (2020) find that the patterns of empowerment are different for mothers and daughters in law in joint households.

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## Appendix

**Appendix Table 1**

Is correlation of concordance on wives' and others' asset ownership with wives' outcomes equal across household types?

	(1) Group participation	(2) Current use of birth control	(3) Antenatal visits during last pregnancy	(4) Satisfied with leisure time	(5) Participation in decisions
<b>Households with in-laws=Households without in-laws (p-values)</b>					
Both: Wife owns	0.431	0.086	0.920	0.454	0.024
W: Wife owns; H: Wife does not own	0.030	0.994	0.214	0.793	0.035
W: Wife does not own; H: Wife owns	0.160	0.950	0.273	0.643	0.041
Both: Others own	0.072	0.192	0.829	0.757	0.125
W: Others own; H: Others do not own	0.196	0.776	0.680	0.532	0.473
W: Others do not own; H: Others own	0.908	0.566	0.918	0.867	0.955

Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Appendix Table 2**

Is correlation of concordance on wives' and others' decision making with wives' outcomes equal across household types?

	(1) Group participation	(2) Current use of birth control	(3) Antenatal visits during last pregnancy	(4) Satisfied with leisure time
<b>Households with in-laws=Households without in-laws (p-values)</b>				
Both: Wife decides	0.874	0.191	0.226	0.951
W: Wife decides; H: Wife does not decide	0.815	0.462	0.269	0.563
W: Wife decides; H: Wife does not decide	0.717	0.510	0.863	0.365

Notes: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Appendix Table 3**

Correlation of wives' and others' asset ownership with wives' outcomes.

Panel A: Households with in-laws							Panel B: Households without in-laws					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Mean percent of assets	Group participation	Current use of birth control	Antenatal visits during last pregnancy	Satisfaction with leisure time	Participation in decisions	Mean percent of assets	Group participation	Current use of birth control	Antenatal visits during last pregnancy	Satisfaction with leisure time	Participation in decisions
Wives' responses												
Wife owns	35	0.199** (0.087)	0.131* (0.077)	−0.258 (0.312)	0.287 (0.195)	0.453*** (0.038)	53	0.032 (0.074)	0.001 (0.068)	0.295 (0.254)	0.067 (0.161)	0.380*** (0.033)
Others own	77	0.051 (0.100)	−0.178** (0.080)	−0.117 (0.346)	−0.071 (0.176)	−0.084** (0.042)	20	−0.116 (0.095)	−0.066 (0.080)	0.100 (0.272)	−0.195 (0.173)	−0.001 (0.038)
R-squared		0.099	0.089	0.230	0.061	0.379		0.083	0.025	0.201	0.057	0.264
Husbands' responses												
Wife owns	16	0.125 (0.130)	0.071 (0.089)	−0.045 (0.375)	0.150 (0.207)	0.224*** (0.049)	39	0.024 (0.059)	−0.049 (0.063)	−0.439* (0.238)	0.070 (0.136)	0.202*** (0.029)
Others own	71	0.072 (0.084)	−0.098 (0.077)	0.068 (0.267)	−0.344* (0.175)	−0.071* (0.042)	18	−0.020 (0.101)	0.022 (0.083)	−0.009 (0.298)	−0.340 (0.217)	0.061 (0.045)
R-squared		0.094	0.082	0.229	0.064	0.259		0.081	0.026	0.203	0.060	0.167
Observations		729	664	729	728	729		911	854	909	911	911
DV Mean		0.23	0.49	3.69	3.60	0.48		0.21	0.53	3.06	3.57	0.76

Notes: Robust standard errors in parentheses are clustered at the PSU level. All regressions include the controls described in section 3.2. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Appendix Table 4**

Correlation of wives' and others' decision making with wives' outcomes.

	Panel A: Households with in-laws					Panel B: Households without in-laws				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Mean percent of decisions	Group participation	Current use of birth control	Antenatal visits during last pregnancy	Satisfaction with leisure time	Mean percent of decisions	Group participation	Current use of birth control	Antenatal visits during last pregnancy	Satisfaction with leisure time
<b>Wives' responses</b>										
Wife decides	48	0.215** (0.101)	0.212*** (0.077)	−0.764** (0.321)	0.253 (0.189)	76	0.146* (0.076)	0.188*** (0.071)	−0.117 (0.303)	0.067 (0.174)
Others decide	49	−0.092 (0.095)	−0.245*** (0.072)	−0.143 (0.307)	−0.333* (0.177)	3	−0.279* (0.146)	−0.014 (0.153)	−0.317 (0.474)	0.345 (0.331)
R-squared		0.105	0.132	0.254	0.080		0.089	0.061	0.205	0.054
<b>Husbands' responses</b>										
Wife decides	23	0.194 (0.129)	0.201** (0.085)	−0.038 (0.368)	0.380* (0.196)	45	0.054 (0.066)	0.254*** (0.061)	0.181 (0.223)	0.119 (0.135)
Others decide	46	0.016 (0.086)	−0.063 (0.076)	−0.039 (0.277)	−0.371** (0.175)	3	−0.146 (0.165)	−0.051 (0.148)	−0.688 (0.508)	0.176 (0.389)
R-squared		0.099	0.110	0.246	0.084		0.084	0.074	0.206	0.054
Observations		729	664	729	728		911	854	909	911
DV Mean		0.23	0.49	3.69	3.60		0.21	0.53	3.06	3.57

Notes: Robust standard errors in parentheses are clustered at the PSU level. All regressions include the controls described in section 3.2. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

**Appendix A. Supplementary data**

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.worlddev.2021.105744>.

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