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Women's Empowerment in Agriculture and Dietary Quality across the Life Course: Evidence from Bangladesh

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ABSTRACT

Using nationally representative survey data from rural Bangladesh, this paper examines the relationship between women's empowerment in agriculture and indicators of individual dietary quality. Our findings suggest that women's empowerment is associated with better dietary quality for individuals within the household, with varying effects across the life course. Women's empowerment is associated with more diverse diets for children younger than five years, but empowerment measures are not consistently associated with increases in nutrient intake for this age group. Women's empowerment is positively and significantly associated with adult men's and women's dietary diversity and nutrient intakes. Different empowerment domains may have different impacts on nutrition, but other characteristics, such as maternal schooling and household socioeconomic status, may play a more important role for younger children. The importance of maternal education in the dietary quality of young children, and the relatively greater importance of women's empowerment for older children and adults, imply that policies designed to empower women and improve nutritional status should be informed by knowledge of which specific domains of women's empowerment matter for particular nutritional outcomes at specific stages of the life course.

Keywords: women's empowerment, agriculture, nutrition, South Asia, Bangladesh

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1. INTRODUCTION

Recognition that sufficient dietary energy does not guarantee the consumption of enough protein and micronutrients to lead an active and healthy life has increased attention to improving dietary quality, particularly within low-income countries that are at risk of widespread food insecurity and micronutrient deficiencies. One such country is Bangladesh, where, despite increases in food production and reduction of child stunting in the past two decades, the rate of wasting (14 percent) remains alarmingly high (NIPORT 2015) and deficiencies in micronutrients such as iron, zinc, iodine, and vitamin A are prevalent, affecting young children and women of reproductive age, who are most vulnerable to the negative effects of micronutrient malnutrition. Anemia (in part due to iron deficiency) is estimated to affect 26 percent of nonpregnant, nonlactating women, whereas 42 percent suffer from iodine deficiency and 5.4 percent from vitamin A deficiency. In preschool-age children, the rates are 33 percent, 40 percent, and 20 percent for anemia, iodine deficiency, and vitamin A deficiency, respectively (ICDDR,B et al. 2013). In Bangladesh, such deficiencies reflect poor diets that are rice dominated and lacking in diversity (Ahmed et al. 2013), together with high infection rates due to poor hygiene and sanitation (UNICEF and WHO 2015). Micronutrient deficiencies are linked to a wide range of adverse health outcomes, such as growth restriction, impaired cognition, and increased morbidity and mortality (Black et al. 2008). Deficiency in vitamin A, a major factor in reducing excess mortality from infectious diseases in developing countries, is the most common cause of preventable childhood blindness. Zinc, together with other micronutrients, has a role in preventing both diarrhea and respiratory diseases (Darnton-Hill et al. 2005). The evidence that individual dietary diversity is strongly linked with nutritional outcomes in women and children (Rah et al. 2010; Ruel and Menon 2002; Arimond and Ruel 2004; Arimond et al. 2010) has led to efforts to increase dietary diversity through the design and implementation of nutrition-sensitive agricultural programs.

A key component of nutrition-sensitive agricultural programs is explicit recognition of women's role in their families' nutrition (Ruel, Alderman, and Maternal and Child Nutrition Study Group 2013). Because women are primarily responsible for food preparation and distribution in the household in rural

Bangladesh, policy interventions targeted toward improving women's status are often expected to contribute to the well-being of all members of the household, including women themselves. Previous studies examining women's role in agriculture in Bangladesh have found that women's education improves household protein intake and dietary diversity (Rashid, Smith, and Rahman 2011) and that women's empowerment in agriculture is associated with greater availability and diversity of food consumed at the household level (Sraboni et al. 2014). However, the relationship between women's empowerment and the dietary quality of individuals has not yet been explored.

Using nationally representative data from the 2011–2012 Bangladesh Integrated Household Survey, or BIHS (Ahmed 2013), this paper examines the relationship between women's empowerment in agriculture and the dietary quality of individuals within the household. Although a number of studies have looked at determinants of dietary quality at the household level (Rashid, Smith, and Rahman 2011; Sraboni et al. 2014) and at under-five child and maternal dietary diversity in Bangladesh (Bhagowalia et al. 2012; Nguyen et al. 2013), this paper is a first attempt to link women's empowerment to the dietary quality of individual household members across the life course. Our indicators of dietary quality are the dietary diversity score (the number of food groups consumed) as well as individual intakes of macronutrients (calories and protein) and micronutrients (iron, zinc, and vitamin A). Because dietary requirements vary across the life cycle, we look at the dietary quality of four age groups: (1) children ages 6 months to 5 years, excluding breastfed children; (2) children between 5 and 10 years of age; (3) adolescents between 11 and 17 years of age; and (4) adults (ages 18 years and older). Given the well-documented patterns of gender disparities in education, asset ownership, incomes, and nutritional status in South Asia (Quisumbing and Maluccio 2003; Ahmed and Maitra 2010; Miller 1981), we also examine whether women's empowerment has a differential impact on the dietary quality of individuals in these age groups according to the sex of the individual.

Our measure of women's empowerment in agriculture is a recently developed survey-based index, the Women's Empowerment in Agriculture Index (WEAI), which assesses women's empowerment in agriculture in five domains: decision making over production, ownership of and decisions over

resources, control over use of income, leadership in the community, and time use (Alkire et al. 2013). The WEAI collects the same information for both the primary male and the primary female decision makers in the household, which can be used to compare the gender gap in empowerment within the household. This paper uses four measures of women's empowerment: the aggregate women's empowerment score, based on the five domains of empowerment in agriculture; two individual indicators in which women are most disempowered in rural Bangladesh—women's participation in groups and women's rights over assets (the extent to which a woman participates in decision making over the purchase, sale, and transfer of assets); and the gender gap in empowerment, that is, the difference between the empowerment scores of the primary male and female decision makers.

Overall, findings suggest that women's empowerment has different effects on dietary diversity and nutrient intakes across the life course. Women's empowerment appears to be weakly correlated with measures of dietary quality in the youngest children, ages 6–59 months, but strongly correlated with the dietary quality of older children, adolescents, and adults. Women's empowerment has differential effects on males and females within the household, with the number of groups to which the primary female belongs having a differential positive association with the dietary diversity of girls ages 5–10 and the nutrient intakes of adult women themselves. The findings indicate that the strength of the association between women's empowerment and the dietary quality of different individuals may vary across the life course, a fact that has implications for the design and targeting of interventions to improve the dietary quality of individuals, particularly women and children, in rural Bangladesh.

2. BACKGROUND

Agriculture is important to rural households as a source of food for own-consumption and as a source of income; moreover, agricultural policies can affect households' purchasing power through their effects on the prices of food and nonfood crops. However, decisions on how and what to produce are mediated by gender roles, and accumulating evidence shows that men and women within households do not always pool their resources nor have the same preferences (Alderman et al. 1995; Haddad, Hoddinott, and Alderman 1997). The nonpooling of agricultural resources within the household creates a gender gap in the control of agricultural inputs, which several empirical studies have identified as a constraint on higher productivity (Kilic, Palacios-Lopez, and Goldstein 2013; Udry et al. 1995).

Unequal control of resources within the household also has implications for the nutritional well-being of household members, particularly in societies with well-documented gender gaps, such as Bangladesh. A woman's ability to choose the appropriate amounts of the right types of food for her family, considering household members' different nutritional needs across the life course, may be constrained by her lack of control of resources as well as her lack of knowledge regarding what constitutes a healthy and diverse diet. A large body of literature documents a strong positive association between women's control over household assets and income, and households' investments in child health, nutrition, and education (Quisumbing and Maluccio 2003; Bhagowalia et al. 2012; Allendorf 2007; Ackerson and Subramanian 2008; Smith et al. 2003; Shroff et al. 2011; Cunningham et al. 2015). Some studies have focused on proxies of empowerment, such as education and health; others have focused on more direct measures, such as decision making (Allendorf 2007; Shroff et al. 2011; Bhagowalia et al. 2012) and domestic violence (Ackerson and Subramanian 2008; Asling-Monemi et al. 2003; Asling-Monemi, Tabassum Naved, and Persson 2008). However, these measures of empowerment are typically confined to the domestic sphere and do not encompass decisions in the productive and economic spheres. Although much of the above-mentioned evidence has emerged from observational studies, a review of programs targeting economic transfers to women—including microcredit, in-kind or asset transfers, and

cash transfers (Yoong, Rabinovich, and Diepeveen 2012)—has found that these programs improve children's well-being, especially through investments in children's health and education, although none of the studies reviewed explored the counterfactual of targeting resources to men. However, whether programs that aim to empower women have a measurable impact on nutritional outcomes is not established. The findings of van den Bold, Quisumbing, and Gillespie's (2013) review of the evidence on three types of programs that aim to empower women—agricultural programs, microcredit programs, and cash transfer programs—did not overwhelmingly point toward positive or negative impacts on women's empowerment or nutrition. The authors identified significant gaps in the research, owing to evaluations that are not well designed and do not pay explicit attention to gender and empowerment, the concentration of studies in specific geographical regions, and the lack of explicit attention to the programs' "pathways of impact."

More recent efforts to examine the relationship between women's empowerment in agriculture and nutritional outcomes draw from two strands of the literature. One strand is the emerging literature on agriculture-nutrition pathways (Kadiyala et al. 2014; Ruel, Alderman, and Maternal and Child Nutrition Study Group 2013), which highlights linkages between agriculture and nutrition as well as the important role of women in agriculture and nutrition, particularly through the effects of women's social status and empowerment on their access to and control over resources, and the impacts of women's participation in agriculture on their time allocation and their own health and nutritional status. The other strand of the literature draws on Kabeer's (1999) definition of empowerment as an expansion of people's ability to make strategic life choices, particularly in contexts in which this ability had been denied to them. The WEAI, inspired by Kabeer's definition, attempts to directly measure women's empowerment in agriculture, emphasizing agency and choice in both the productive and the reproductive spheres, not just control of resources or decision making over household expenditures (Alkire et al. 2013). Several studies have used the WEAI in the context of the agriculture-nutrition pathways to examine the association between women's empowerment in agriculture and household and individual welfare. Malapit and Quisumbing (2015) found that women in rural Ghana were most disempowered in terms of access to and

decision making over credit, and that improvement in this domain was associated with greater dietary diversity for women and female children. In Nepal, overall empowerment of women, their membership in collective action groups, their greater control over income, and their hours worked were significantly associated with both maternal dietary diversity and body mass index. Sraboni and colleagues (2014) found that women's active membership in collective-action groups, their control over agricultural assets, and a narrowing gap in empowerment between men and women within households were positively associated with calorie availability and dietary diversity at the household level. The Ghana and Nepal studies, which analyzed both maternal and child outcomes, suggested that the domains of empowerment that are significant for women's and children's diet and nutrition outcomes may not always overlap, and pointed to the need to examine the impacts of women's empowerment on individuals across the life course.

This paper, by examining the association between various indicators of women's empowerment and the dietary quality of household members, attempts to fill this lacuna in knowledge about how women's agency and choice in the productive and reproductive spheres may influence the nutritional well-being of individuals in their households across the life course. Moreover, we seek to understand whether women's empowerment has a differential impact on the dietary quality of household members in various age groups, according to the sex of the individual, a contribution that is particularly important in the context of countries with well-documented gender disparities in resource allocation.

3. DATA, EMPIRICAL SPECIFICATION, AND VARIABLES

Data

We use data from the first round of the BIHS, conducted by the International Food Policy Research Institute between December 2011 and March 2012 (Ahmed 2013), and nationally representative of rural Bangladesh. The survey includes a wide range of information on household demographics, education, employment, housing and assets, food and nonfood consumption and expenditures, agricultural production, and livestock holdings, well as separate WEAI modules for the self-identified primary male and female decision makers, interviewed separately and in private. The BIHS dataset consists of 1,608 nonfarm and 3,895 farm households; however, because our focus is on women's agency in the agricultural sector, we restrict our analysis to farm households (those that are involved in one or more agricultural activities—growing crops, or raising or engaging with livestock, poultry, or fisheries) to reduce the probability of individuals' being misclassified as disempowered when they do not participate in any agricultural activity. This procedure results in 1,608 observations' being dropped. Additionally, 325 observations are dropped because the primary female respondent was unavailable on the day of the interview, 227 because a female other than the primary female was interviewed, 250 more because of missing values for the empowerment measures, and an additional 197 because of data entry errors in the individual demographic and food consumption data. The final estimation sample consists of 2,896 households with 7,506 adults, 1,786 children ages 11–17 years, 2,015 children ages 5–10 years, and 1,024 children younger than 5 years. Analyses of the empowerment gap between men and women in the same households are conducted for a subsample of 2,851 dual-adult households.

Empirical Specification

To analyze the relationship between measures of individual dietary quality and women's empowerment, we estimate the following equation:

$$D = a_0 + a_1\, female + a_2 empowerment + \boldsymbol{a_3 I} + \boldsymbol{a_4 H} + \varepsilon, \quad (1)$$

where $\boldsymbol{D}$ is a vector of outcomes that capture dietary quality (the dietary diversity score along with intakes of macro- and micronutrients); *female* is a dummy variable indicating whether the individual is female; *empowerment* is a measure of empowerment derived from the WEAI or one of its component indicators; $\boldsymbol{I}$ is a vector of individual characteristics; $\boldsymbol{H}$ is a vector of household characteristics; a_i is the set of parameters to be estimated; and ε is an error term. The key coefficient of interest is a_2, which captures how the primary female's empowerment is correlated with the dietary quality of each individual household member, having controlled for a conventional set of observable individual and household characteristics, including the individual's sex. However, although equation (1) accounts for possible differences owing to the individual's sex, women's empowerment can have differential effects on household members depending on their sex. Other factors—such as household wealth and prices—may also have differential impact by sex, for example, if households with larger sizes of land owned tend to favor males in dietary allocations because agriculture is male dominated in Bangladesh, or if an increase in the price of a "high-status" food induces mothers to offer less of it to girls than to boys.

To test whether the coefficient a2 differs for males and females, we include a dummy variable for the sex of the individual (= 1 if female) and interact this dummy variable with the empowerment variable as well as other household and community characteristics. The resulting equation to be estimated for individual dietary quality (Dd) is given by

$$\boldsymbol{D}_d = b_0 + b_1\, female + b_2\, empowerment + b_3(empowerment \times female) + \boldsymbol{b_4 I} + \boldsymbol{b_5 H} + \boldsymbol{b_6 H} \times \boldsymbol{female} + v, \quad (2)$$

where bi is the set of parameters to be estimated, and v is an error term. For males, the relationship between women's empowerment and dietary quality is given by b2. For females, the relationship is given by (b2 + b3). If b3, the coefficient on the interaction term between empowerment and the female dummy,

is significantly different from 0, this suggests that women's empowerment has differential effects on males and females. The reasoning is analogous for the coefficients on the other household characteristics, $\boldsymbol{b}_5$, and their interaction terms, $\boldsymbol{b}_6$.

One possible source of bias in this analysis is the endogeneity of the empowerment measures, which may be affected by the same factors that influence dietary quality. An instrumental variables technique would have been useful in correcting for endogeneity, but owing to a lack of suitable instruments, we estimate equation (2) using ordinary least squares (OLS) and interpret the results as associations rather than causal relationships. In addition, we estimate (2) with household fixed effects,[1] which control for household-level unobservables that may confound the impact of empowerment on dietary quality outcomes. Estimating (2) with fixed effects does not permit us to directly estimate the impact of women's empowerment on these outcomes, because empowerment is measured for a single woman in the household, the primary female, and does not vary within households. However, because our specification interacts empowerment with the sex of the individual, we are able to estimate the differential impact of empowerment on individual dietary quality insofar as its effects on individuals vary depending on their sex.

Outcome Variables

BIHS is the first nationally representative household survey in Bangladesh that collected data on intrahousehold food consumption. The analysis presented here is based on individual food intake data, collected in the dietary intake module of the household survey, using a combination of 24-hour food recall and food weighing methods to estimate consumption quantities of various food items by individual household members. This information was used to construct the dietary diversity score and individual intakes of the following nutrients: food energy in terms of calories, protein, vitamin A, iron, and zinc.

[1] We choose households with at least 1 child of each sex so that the gender dummies are relevant in the household fixed-effects specification. This choice results in a drop in the sample size so that, for the fixed-effects models, there are 7,433 adults, 531 adolescents, 583 children ages 5–10, and 102 children younger than 5 years.

Appropriate conversion factors were used to calculate quantities of nutrients contained in foods eaten by individual household members.

Dietary Diversity for Four Age Groups

We use individual dietary diversity scores, which aim to reflect the nutrient adequacy of individuals, rather than household dietary diversity measures, which aim to reflect the economic ability of a household to access a variety of food groups (Hoddinott and Yohannes 2002). The individual dietary diversity scores have been validated for several age and sex groups as proxies for macro- and micronutrient adequacies (Hatloy, Torheim, and Oshaug 1998; Kennedy et al. 2007; Arimond et al. 2010), although not all of these scores have been validated for Bangladesh. There is currently no international consensus on which food groups to include in the scores at the individual level for different age or sex groups (Kennedy, Ballard, and Dop 2011). Individual age-specific dietary diversity scores are based on guidelines from the World Health Organization (WHO) and the Food and Agriculture Organization of the United Nations, with a 7-food-group score for children ages 6–59 months and 5–10 years, and a 9-food-group score for children ages 11–17 years and adults age 18 and older. The two different sets of dietary diversity scores reflect the differences in micronutrient requirements across the life course (Ruel, Deitchler, and Arimond 2010; Arimond et al. 2010).

Seven food groups for children ages 5–10 years and 6–59 months.

Following WHO guidelines (WHO 2010), dietary diversity for these two age groups is measured as the number of food groups consumed during the last 24 hours out of 7 food groups: (1) cereals and tubers, (2) legumes and nuts, (3) dairy products, (4) flesh foods, (5) eggs, (6) vitamin A–rich fruits and vegetables, and (7) other fruits and vegetables.

Nine food groups for adults (ages 18 years and older) and children ages 11–17 years.

For adolescents and adults, dietary diversity is measured as the number of food groups consumed, based on 24-hour recall, out of the following 9 food groups: (1) starchy staples, (2) green leafy vegetables, (3)

other vitamin A–rich fruits and vegetables, (4) other fruits and vegetables, (5) organ meat, (6) meat and fish, (7) eggs, (8) legumes and nuts, and (9) milk and milk products (Kennedy, Ballard, and Dop 2011).[2]

Nutrient Intake

Individual nutrient intake measures include (1) food energy in kilocalories, (2) proteins in grams, (3) iron in milligrams, (4) zinc in milligrams, and (5) vitamin A in retinol activity equivalents. Summary statistics for the outcome variables, presented separately for males and females, are in Table 3.1. The low dietary diversity of individuals is noteworthy; for example, female children ages 5–10 years and those less than 5 years of age consume, on average, 3.87 and 3.57 groups, respectively, out of the recommended 7 groups; out of 9 food groups, male adults and all children ages 11–17 consume, on average, 4.18 and 4.23 groups, respectively. Gender differences in nutrient intake increase over the life course. Among children between 6 and 59 months old, there is no significant difference in dietary diversity scores nor in nutrient intakes, except for vitamin A intake, which is higher for boys (but this difference is only weakly significant). Boys and girls also do not differ significantly in terms of age, maternal age, or maternal schooling. Among children 5–10 years of age, despite an insignificant difference in the dietary diversity score, boys have significantly higher intakes of calories ($p < 0.10$), protein ($p < 0.05$), iron ($p < 0.10$), and zinc ($p < 0.05$). Gender differences in allocations between boys and girls become more obvious in adolescence, with boys having significantly higher intakes of calories, protein, iron, and zinc. This may reflect both a combination of higher caloric needs of adolescent boys associated with greater involvement in agricultural labor and social factors discriminating against adolescent girls, who have higher biological needs for iron. Girls have higher vitamin A intakes, and this difference is statistically significant. This finding may be because vegetables, a source of vitamin A, are considered a lower-status food compared with protein and iron sources, such as fish, meat, and eggs, which tend to be preferentially allocated to

[2] We test the robustness of the 9-food-group dietary diversity measure on a subsample of women of reproductive age (15–49 years old) by comparing OLS estimates for the 9-food-group score with those for the recently developed minimum dietary diversity score for women, or MDD-W (FAO and FHI 360 2016). Results using the MDD-W (available on request) are not substantively different from those using the dietary diversity score.

males (Gittelsohn and Vastine 2003; Sudo et al. 2004). Dietary diversity scores, however, are not significantly different between adolescent boys and girls. In contrast, adult men have a significantly more diverse diet than adult women, and men consume significantly more nutrients, across all types of macro- and micronutrients, than women. Although men engaged in farming may have higher energy requirements, women have a greater biological need for micronutrients during their reproductive years. Reflecting typical age differences at marriage, men in the sample are also significantly older than women and have completed more years of schooling.

Table 3.1 Summary statistics for individual outcomes and characteristics

Variable	Male			Female				
	Obs.	Mean	SD	Obs.	Mean	SD	Test of difference between means (*p*-value)	Signif.
Under-5 child outcomes								
Dietary diversity (out of 7 groups)	497	3.608	1.135	527	3.567	1.155	0.574	
Calorie intake (Kcal/day)	497	875.748	471.067	527	842.964	451.351	0.256	
Protein intake (g/day)	497	21.956	12.612	527	21.132	12.247	0.289	
Iron intake (mg/day)	497	3.880	2.625	527	3.653	2.330	0.143	
Zinc intake (mg/day)	497	2.775	1.693	527	2.659	1.593	0.257	
Vitamin A intake (RAE/day)	497	106.876	232.801	527	83.392	181.034	0.071	
Characteristics								
Age (months)	497	33.943	14.326	527	33.703	14.594	0.791	
Child of primary female (= 1 if child of head, 0 otherwise)	497	0.867	0.339	527	0.837	0.369	0.172	
Age of mother	497	27.893	6.454	527	27.757	6.549	0.738	
Education of mother	497	4.541	3.618	527	4.622	3.572	0.718	

Table 3.1 Continued

Variable	Male			Female				
	Obs.	Mean	SD	Obs.	Mean	SD	Test of difference between means (*p*-value)	Signif.
5- to 10-year-old child outcomes								
Dietary diversity (out of 7 groups)	998	3.859	1.056	1,017	3.872	1.046	0.774	
Calorie intake (Kcal/day)	998	1,690.906	515.663	1,017	1,653.514	500.959	0.099	*
Protein intake (g/day)	998	41.490	15.773	1,017	40.006	14.623	0.029	**
Iron intake (mg/day)	998	7.304	3.049	1,017	7.049	2.805	0.051	*
Zinc intake (mg/day)	998	5.261	2.098	1,017	5.036	1.901	0.012	**
Vitamin A intake (RAE/day)	998	148.687	254.291	1,017	153.965	261.698	0.646	
Characteristics								
Age (years)	998	7.610	1.769	1,017	7.689	1.779	0.318	
Child of primary female (= 1 if child of head, 0 otherwise)	998	0.897	0.304	1,017	0.905	0.294	0.557	
11- to 17-year-old child outcomes								
Dietary diversity (out of 9 groups)	917	4.229	1.199	869	4.227	1.211	0.968	
Calorie intake (Kcal/day)	917	2414.094	667.404	869	2173.566	545.101	0.000	***
Protein intake (g/day)	917	58.713	19.969	869	53.531	18.003	0.000	***
Iron intake (mg/day)	917	10.321	3.972	869	9.363	3.352	0.000	***
Zinc intake (mg/day)	917	7.472	2.754	869	6.731	2.235	0.000	***
Vitamin A intake (RAE/day)	917	190.977	283.687	869	195.011	386.438	0.801	***
Characteristics								
Age (years)	917	13.712	1.867	869	13.596	1.812	0.183	
Child of primary female (= 1 if child of head, 0 otherwise)	917	0.932	0.251	869	0.925	0.273	0.555	

Table 3.1 Continued

Variable	Male			Female				
	Obs.	Mean	SD	Obs.	Mean	SD	Test of difference between means (*p*-value)	Signif.
Adult outcomes								
Dietary diversity (out of 9 groups)	3,725	4.182	1.229	3,781	4.099	1.204	0.003	***
Calorie intake (Kcal/day)	3,725	2805.918	723.451	3,781	2387.824	609.323	0.000	***
Protein intake (g/day)	3,725	68.646	23.013	3,781	58.208	19.397	0.000	***
Iron intake (mg/day)	3,725	12.332	5.084	3,781	10.433	4.261	0.000	***
Zinc intake (mg/day)	3,725	8.745	3.113	3,781	7.377	2.484	0.000	***
Vitamin A intake (RAE/day)	3,725	254.708	451.238	3,781	217.264	354.852	0.000	***
Characteristics								
Age (years)	3,725	41.759	16.029	3,781	37.938	14.901	0.000	***
Years of schooling	3,725	3.908	4.157	3,781	3.395	3.716	0.000	***

Source: IFPRI Bangladesh Integrated Household Survey, 2011–2012 (Ahmed 2013).
Note: *** p < 0.01, ** p < 0.05, * p < 0.1. RAE = retinol activity equivalent.

Key Independent Variables

Women's Empowerment in Agriculture Index

Our measure of women's empowerment in agriculture is the WEAI, an aggregate index computed using individual-level data collected from the primary male and female respondents within the same households. The index reflects a person's achievement in 5 domains in agriculture as measured by 10 indicators with their corresponding weights (Table 3.2). Details regarding the construction and validation of the index can be found in Alkire and others (2013). An overall empowerment score is constructed using all 10 indicators, reflecting women's achievements over the 5 domains of empowerment in agriculture, and the decomposability property of the WEAI is used to identify the domains (Figure 3.1) and indicators (Figure 3.2) in which women have the least adequate achievements. Figure 3.1 shows that

the leadership (35.1 percent) and resources (21.6 percent) domains contribute most to women's disempowerment in rural Bangladesh. In terms of the individual indicators (Figure 3.2), Sraboni, Quisumbing and Ahmed (2014) found that group membership (in the leadership domain) and access to and decisions on credit (in the resources domain) are the areas in which Bangladeshi women are the most inadequate. However, subsequent analysis of the indicators used in the resources domain revealed that the credit indicator may be problematic because the survey questions do not distinguish between nonborrowers who are truly credit constrained and those who have sufficient liquidity and therefore choose not to borrow (Sraboni et al. 2014).3 Because of the ambiguous interpretation of the credit domain, we use the second indicator (in the resources domain) in which women have the least adequate achievement: the extent to which women can make their own decisions regarding the purchase, sale, or transfer of assets. Based on this information, we use the following measures of empowerment in our analysis:

Model 1. Aggregate empowerment score of primary female respondent: the empowerment score of the female respondent in the household, defined as the weighted average of her achievements in the 10 indicators that make up the 5 domains of empowerment in agriculture. This measure is increasing in empowerment, ranges from 0 to 1, and reflects overall empowerment in agriculture.

Model 2. Number of groups in which the woman is an active member (leadership domain, group membership indicator): the total number of groups in which the female respondent reports being an active member. Active membership in more groups implies a wider network of social ties and potentially greater empowerment. For example, Sanyal (2009) found that participation in microfinance groups often encouraged Indian women to participate more extensively in collective action such as mobilizing in response to domestic violence against women, annulling underage marriages, or acquiring public goods.

Model 3. Number of sole or joint decisions made by the woman concerning the purchase, sale, or transfer of assets (resources domain, rights over assets indicator): the total number of decisions made

[3] This question has been revised in subsequent versions of the WEAI, and respondents are now explicitly asked whether they would be able to get access to a loan or to borrow money if they wanted to.

solely or jointly by the female respondent, summed over all asset types. For each asset type, the survey asks who can decide whether to sell, give away, mortgage/rent, or purchase the asset. As mentioned earlier, the existing literature has documented extensively that women who have greater control over household assets are more likely to direct resources toward household welfare.

Model 4. Gender parity gap: an indicator of women's relative empowerment within the household. Considerable evidence exists in support of the need to pay attention to intrahousehold gender inequality for attaining development objectives (Alderman et al. 1995; Haddad, Hoddinott, and Alderman 1997). Therefore, the fourth model employs the gender parity gap. According to Alkire and others (2013), a household enjoys parity if the woman's empowerment score is greater than or equal to that of the male in her household. Thus, the gender parity gap is 0 if the household enjoys gender parity. Otherwise, the gap equals the difference between the male and female aggregate empowerment scores. Higher numbers indicate a larger gap between male and female empowerment, favoring males. As mentioned above, Model 4 is estimated only for dual-adult households with valid responses from the primary male and female adults.

Table 3.2 The five domains of empowerment in the Women's Empowerment in Agriculture Index

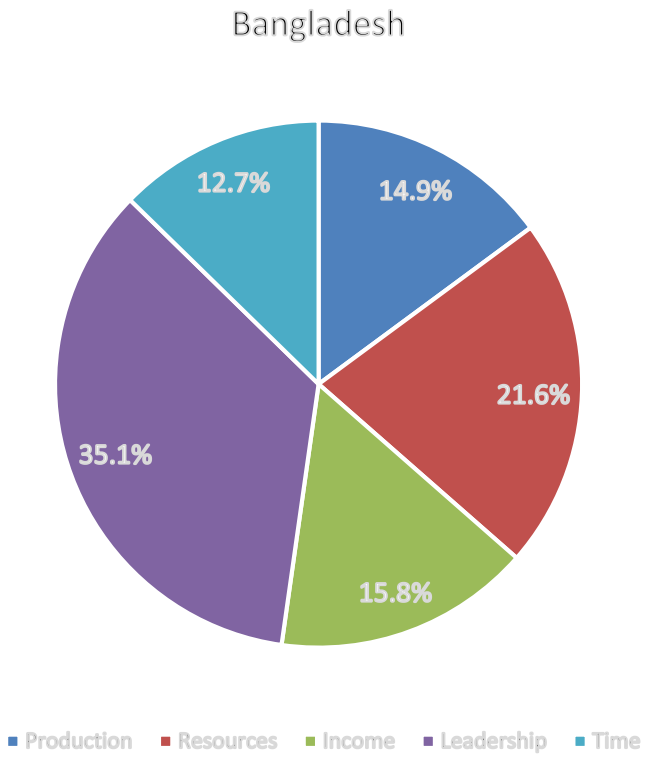
Domain	Indicator	Definition of indicator	Weight
Production	Input in productive decisions	Sole or joint decision making over food and cash-crop farming, livestock, and fisheries	1/10
	Autonomy in production	Autonomy in agricultural production (for example, what inputs to buy, crops to grow, livestock to raise, and so on). Reflects the extent to which the respondent's motivation for decision making reflects his/her values rather than a desire to please others or avoid harm.	1/10
Resources	Ownership of assets	Sole or joint ownership of major household assets	1/15
	Purchase, sale, or transfer of assets	Whether respondent participates in decision to buy, sell, or transfer his/her owned assets	1/15
	Access to and decisions on credit	Access to and participation in decision making concerning credit	1/15
Income	Control over use of income	Sole or joint control over income and expenditures	1/5

Table 3.2 Continued

Domain	Indicator	Definition of indicator	Weight
Leadership	Group membership	Whether respondent is an active member in at least one economic or social group (for example, agricultural marketing, credit, and water users' groups)	1/10
	Speaking in public	Whether the respondent is comfortable speaking in public concerning various issues such as intervening in a family dispute, ensuring proper payment of wages for public work programs, and so on.	1/10
Time	Workload	Allocation of time to productive and domestic tasks	1/10
	Leisure	Satisfaction with the available time for leisure activities	1/10

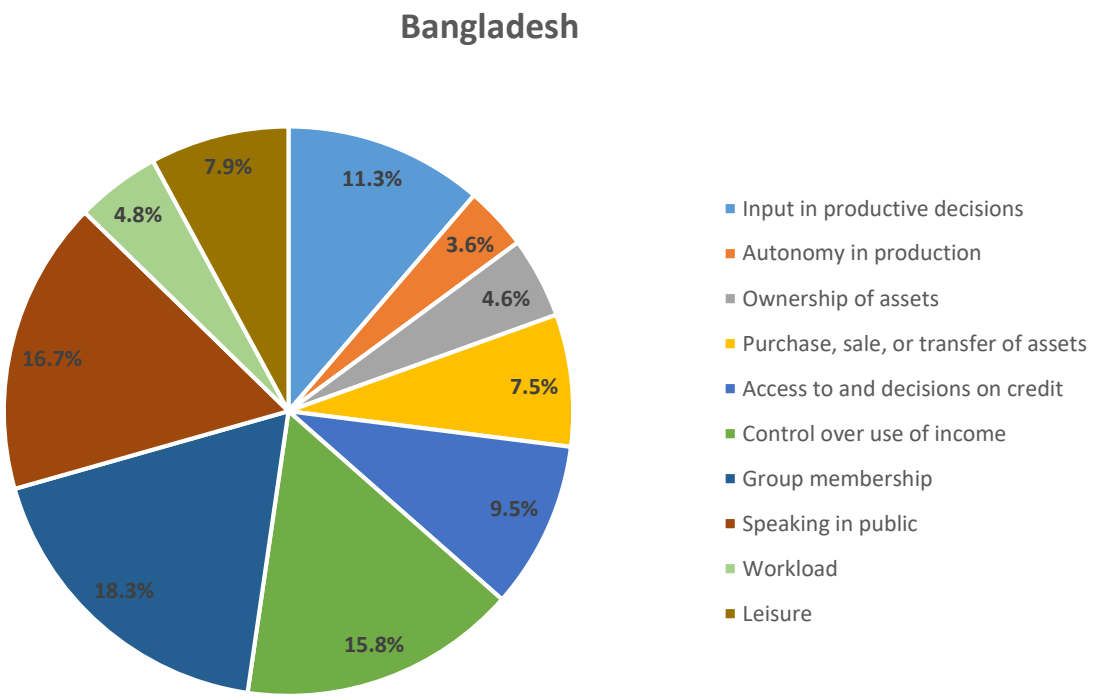
Source: Alkire et al. (2013).

Figure 3.1 Contribution of each of the five domains to the disempowerment of women



Source: Sraboni, Quisumbing, and Ahmed (2014)

Figure 3.2 Contribution of each of the 10 domain indicators to the disempowerment of women



Source: Sraboni, Quisumbing, and Ahmed (2014).

Other Independent Variables

Other independent variables include the household characteristics of household size and dependency ratio. The dependency ratio is defined as the ratio of the number of members between 1 and 10 years old plus those older than 64 to those between ages 10 and 64; a greater number of nonearning individuals in the household might be associated with constraints on food availability for each member. We also include the price of two staple food items, rice and pulses, and three protein sources, chicken, small fish, and large fish, as control variables, because food prices have previously been shown to exert a major influence on the consumption pattern of households and individuals (Rashid, Smith, and Rahman 2011; Villa, Barrett, and Just 2011). Ahmed and others (2013), for example, found that rice accounts for a fifth of all spending and 35 percent of the food expenditure of an average rural household in Bangladesh.

The following variables are used as indicators of the socioeconomic status of the household: the amount, in decimals (100 decimals = 1 acre), of cultivable land owned by the household;[4] the number of dairy cows owned; a dummy for whether the household has access to electricity; and dummies indicating whether it owns a sanitary latrine and a hand-pumped tube well. Individual characteristics include age, age squared, a dummy variable for sex (= 1 if female), and own years of schooling for adults. The survey is unable to link adolescents and children ages 5–10 to their biological mothers, unless they are children of the household head. For these two age groups, we use the primary female respondent's age and education as proxies for their biological mother's characteristics. To control for any differences between children whose parents are more accurately measured (that is, the children of household heads) compared with other children, we use a dummy variable that equals 1 if the child is the offspring of the household head. For children younger than five, who can be matched to their biological mothers, we use their mother's age and years of schooling. We use years of schooling of different individuals in the age group–specific regressions because different decision makers within the household decide on food and nutrition over the life course; this is typically the mother for the youngest children, but for adults, it would be the individual him- or herself. Division dummies for each of the seven administrative divisions in Bangladesh are included to control for location-specific effects. Summary statistics of the household characteristics, including the primary female's empowerment indicators, are presented in Table 3.3.

Table 3.3 Summary statistics for household characteristics

Variable	Obs.	Mean	SD
Household-level characteristics			
Empowerment variables			
Empowerment score of primary female	2,896	0.683	0.227
Number of groups in which primary female is an active member	2,896	0.310	0.486
Number of self/joint decisions over purchase, sale, or transfer of assets made by primary female	2,896	12.042	9.445
Difference in empowerment scores (primary male - primary female)	2,851	0.159	0.195

[4] Examination of a histogram and summary statistics (available on request) shows that landownership is highly skewed in rural Bangladesh. We take a log transformation of the values, after adding 1 to each value (because many households are landless).

Table 3.3 Continued

Variable	Obs.	Mean	SD
Primary female characteristics			
Age of primary female	2896	37.521	11.475
Education level of primary female	2896	3.069	3.444
Household demographics			
Household size	2,896	4.541	1.662
Household dependency ratio	2,896	0.787	0.612
Household wealth			
Number of dairy cows owned	2,896	0.759	1.202
Ln(owned cultivable land + 1)	2,896	0.782	1.629
Access to electricity (= 1, 0 otherwise)	2,896	0.464	0.499
Household owns sanitary latrine (= 1, 0 otherwise)	2,896	0.251	0.434
Household owns hand-pumped tube well (= 1, 0 otherwise)	2,896	0.268	0.443
Food prices			
Price of rice (Bangladeshi taka)	2,896	30.205	3.287
Price of chicken (Bangladeshi taka)	2,896	130.322	11.706
Price of pulse (Bangladeshi taka)	2,896	99.896	9.504
Price of large fish (Bangladeshi taka)	2,896	85.133	28.179
Price of small fish (Bangladeshi taka)	2,896	104.888	39.240
Divisions			
Barisal	2,896	0.075	0.264
Chittagong	2,896	0.099	0.298
Dhaka	2,896	0.331	0.471
Khulna	2,896	0.122	0.328
Rangpur	2,896	0.142	0.349
Rajshahi	2,896	0.111	0.314
Sylhet	2,896	0.119	0.324

Source: IFPRI Bangladesh Integrated Household Survey, 2011–2012 (Ahmed 2013).

4. RESULTS

Women's Empowerment and Dietary Quality

Selected coefficients from levels and fixed-effects estimates for dietary quality outcomes of the four age groups are presented in Tables 4.1 through 4.5; full results for dietary diversity and calorie and iron intakes are presented in Appendix Tables A.1 through A.8 (owing to space constraints, we do not include full results for protein, zinc, and vitamin A in the Appendix; these results are available on request). Each table presents results for one age group, moving from the youngest (children 6–59 months) to the oldest (adults).

Table 4.1 presents summary results on women's empowerment and the dietary quality of children ages 6–59 months. Because we are able to match children in the youngest age group to their mothers, but we have empowerment indicators only for the primary female in the household, Table 4.1 examines the relationship between the empowerment indicators of the primary female (who is, in most cases, the mother of the specific child) and child dietary quality, controlling for child characteristics, the child's mother's characteristics, and a dummy variable indicating whether the child is the biological offspring of the primary female.[5] Recall that the effect of empowerment on boys is given by the coefficient on the empowerment indicator, whereas the effect on girls is the sum of the coefficient on the empowerment indicator and the interaction term between empowerment and the female dummy variable. The interaction term captures whether the empowerment indicator has a differential effect on females.

[5] For comparability with regressions involving adolescents and children ages 5–10, we also estimated the under-5 child regressions with the characteristics of the primary female (results are available on request). Coefficients on the empowerment variables do not change substantively.

Table 4.1 Women's empowerment and dietary quality of children younger than five: Selected coefficients from levels and fixed-effects estimates

Model/variable	Dietary diversity (7 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Model 1: Aggregate empowerment												
(1.a) Girl	-0.041	-2.482	-605.500	1459.000	-20.860	57.880	0.906	21.130	-1.829	11.210	-405.400	-864.000
	(1.767)	(5.093)	(635.100)	(2,148)	(17.760)	(48.650)	(3.552)	(14.470)	(2.378)	(7.738)	(352.500)	(509.900)
(1.b) Empowerment score	0.451**		122.800		2.887		0.593		0.344		-65.470	
	(0.225)		(80.700)		(2.257)		(0.451)		(0.302)		(44.790)	
(1.c) Empowerment score × girl	-0.101	0.424	-36.920	-176.000	-1.742	-2.508	0.182	-0.998	0.021	-0.330	84.780	-153.400**
	(0.307)	(0.682)	(110.400)	(287.700)	(3.088)	(6.516)	(0.618)	(1.938)	(0.413)	(1.036)	(61.290)	(68.290)
Levels estimates:												
Effect of empowerment on girls: (1.b) + (1.c)	0.350		85.880		1.145		0.775		0.365		19.310	
p-*value of* F-*test*: (1.b) + (1.c) = 0	0.097*		0.257		0.589		0.068*		0.198		0.646	
N	1,024	102	1,024	102	1,024	102	1,024	102	1,024	102	1,024	102
R-squared	0.212	0.602	0.373	0.822	0.325	0.846	0.321	0.730	0.307	0.799	0.051	0.820
Model 2: Leadership domain												
(2.a) Girl	-0.052	-2.251	-595.200	1,120.000	-21.340	41.660	1.140	16.260	-1.818	8.511	-372.400	-958.400
	(1.776)	(5.452)	(637.400)	(2,290)	(17.810)	(50.970)	(3.566)	(15.190)	(2.383)	(8.088)	(353.300)	(588.300)
(2.b) Number of groups	0.063		6.464		0.685		0.154		0.190		-24.440	
	(0.107)		(38.230)		(1.068)		(0.214)		(0.143)		(21.190)	
(2.c) Number of groups × girl	-0.066	0.062	0.561	-75.710	-0.484	-3.423	-0.025	-1.037	-0.127	-0.566	16.410	-24.560
	(0.152)	(0.382)	(54.440)	(160.300)	(1.521)	(3.567)	(0.305)	(1.063)	(0.204)	(0.566)	(30.180)	(41.180)

Table 4.1 Continued

Model/variable	Dietary diversity (7 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(2.c) Number of groups × girl	-0.066	0.062	0.561	-75.710	-0.484	-3.423	-0.025	-1.037	-0.127	-0.566	16.410	-24.560
	(0.152)	(0.382)	(54.440)	(160.300)	(1.521)	(3.567)	(0.305)	(1.063)	(0.204)	(0.566)	(30.180)	(41.180)
Levels estimates:												
Effect of empowerment on girls: (2.b) + (2.c)	-0.003		7.025		0.201		0.129		0.063		-8.030	
p-*value of* F-*test*: (2.b) + (2.c) = 0	0.976		0.856		0.853		0.553		0.666		0.709	
N	1,024	102	1,024	102	1,024	102	1,024	102	1,024	102	1,024	102
R-squared	0.207	0.596	0.371	0.821	0.324	0.851	0.318	0.737	0.306	0.806	0.050	0.788
Model 3: Resources domain												
(3.a) Girl	-0.029	-1.561	-598.500	1458.000	-21.150	57.760	1.101	16.730	-1.767	9.762	-381.400	-918.300
	(1.759)	(5.466)	(634.500)	(2,316)	(17.740)	(52.230)	(3.554)	(15.370)	(2.377)	(8.260)	(352.200)	(594.900)
(3.b) Number of asset decisions	0.019***		-2.190		0.049		-0.008		0.002		0.816	
	(0.006)		(2.041)		(0.057)		(0.011)		(0.008)		(1.133)	
(3.c) Number of asset decisions × girl	-0.018**	0.011	0.619	-0.340	-0.042	-0.006	0.004	-0.052	-0.006	-0.017	-0.683	-0.908
	(0.008)	(0.022)	(2.897)	(9.502)	(0.081)	(0.214)	(0.016)	(0.063)	(0.011)	(0.034)	(1.608)	(2.441)
Levels estimates:												
Effect of empowerment on girls: (3.b) + (3.c)	0.002		-1.571		0.007		-0.004		-0.004		0.133	
p-*value of* F-*test*: (3.b) + (3.c) = 0	0.737		0.445		0.910		0.743		0.616		0.907	
N	1,024	102	1,024	102	1,024	102	1,024	102	1,024	102	1,024	102
R-squared	0.216	0.600	0.372	0.819	0.324	0.845	0.318	0.734	0.305	0.800	0.049	0.787

Table 4.1 Continued

Model/variable	Dietary diversity (7 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Model 4: Gender parity												
(4.a) Girl	0.149	-2.805	-489.100	1467.000	-18.530	57.220	1.914	21.780	-1.401	11.240	-356.000	-811.300
	(1.785)	(5.008)	(633.700)	(2,201.000)	(17.790)	(49.360)	(3.567)	(14.56)	(2.386)	(7.880)	(356.500)	(541.400)
(4.b) Gender parity gap	-0.254		-217.900***		-3.627*		-0.565		-0.441*		22.590	
	(0.200)		(70.960)		(1.992)		(0.399)		(0.267)		(39.9200)	
(4.c) Gender parity gap × girl	0.033	0.441	-53.850	64.910	-0.957	1.599	-0.046	-0.752	-0.071	0.218	4.690	-32.540
	(0.115)	(0.388)	(40.720)	(170.50)	(1.143)	(3.823)	(0.229)	(1.128)	(0.153)	(0.610)	(22.910)	(41.940)
Levels estimates:												
Effect of empowerment on girls: (4.b) + (4.c)	-0.221		-271.750		-4.584		-0.611		-0.512		27.280	
p-*value of* F-*test*: (4.b) + (4.c) = 0	0.423		0.056**		0.095*		0.268		0.164		0.620	
N	1,008	100	1,008	100	1,008	100	1,008	100	1,008	100	1,008	100
R-squared	0.205	0.630	0.380	0.816	0.329	0.846	0.323	0.733	0.310	0.798	0.050	0.804

Source: Estimated using data from the IFPRI Bangladesh Integrated Household Survey, 2011–2012 (Ahmed 2013)
Note: Standard errors are in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1. RAE = retinol activity equivalent

Table 4.1 indicates that there is no significant disadvantage for girls ages 6–59 months with respect to various dietary quality indicators, and that the aggregate empowerment score is significantly associated with improved dietary diversity for boys ($p < .05$) and only weakly associated with improved dietary diversity for girls. None of the coefficients using the indicator for women's group membership are significant, but the number of asset decisions is significantly associated with improvements in boys' dietary quality, but not that of girls. The coefficient on the gender parity gap is negative and significant for some outcomes, indicating that a reduction in the gap in empowerment between men and women is associated with improvement in the calorie, protein, and zinc intakes of boys. Reducing the gender parity gap is also associated with a significant increase in the calorie intake of girls ($p < 0.05$) and a weakly significant increase in girls' protein intakes. Intrahousehold differences in the effects of empowerment by sex are mostly insignificant, except for a negative impact of the number of asset decisions on girls in the levels estimates (which is not robust to the inclusion of fixed effects) and a negative association of overall empowerment on boys' vitamin A intake in the fixed-effects estimates.

These results suggest that, for the youngest age group, women's overall empowerment and women's rights over assets are positively and significantly associated with the dietary diversity of all children younger than five years. This finding is consistent with evidence that women's control over assets is important for child outcomes (Shroff et al. 2009). None of the other empowerment indicators have any significant impact on the dietary diversity of younger children, although reducing the gender parity gap improves intakes of calories for both boys and girls, and weakly improves protein and zinc intakes for boys. The literature on infant and young child nutrition may provide a possible explanation for why female empowerment, by itself, may not be sufficient to improve the dietary diversity of children in the younger age groups. Although several studies assert the importance of proper infant and young child feeding (IYCF) practices in improving the dietary diversity of young children (Saha et al. 2008; Zongrone, Winskell, and Menon 2012), the low level of IYCF knowledge and practices among mothers in Bangladesh could underlie the high levels of undernutrition among children (Hackett et al. 2012; Rasheed et al. 2011). IYCF knowledge is not necessarily gained with increased empowerment in agriculture;

hence, empowerment may not, on its own, be sufficient to improve the dietary quality of the youngest members in the household, whose feeding patterns are markedly different from those of adults and older children.

Table 4.2 presents summary results from levels and fixed-effects estimates for children ages 5–10 years. In contrast to the results for younger children, where women's empowerment had few associations with dietary quality outcomes, we see that, in the levels estimates, women's overall empowerment is associated with greater dietary diversity for both boys and girls, and improvements in a range of intake indicators (for calories, protein, iron, and zinc). These improvements are significant for boys, significant at conventional levels ($p < 0.05$) for iron intake for girls, and only weakly significant for calories, protein, and zinc for girls. The primary female's participation in groups is significantly correlated with a higher dietary diversity score for boys. The number of asset decisions made also has a significant positive correlation with both boys' and girls' dietary diversity, as well as girls' protein intake. Finally, a reduction in the gender parity gap improves a range of boys' dietary quality indicators (dietary diversity as well as intakes of calories, protein, iron, and zinc), but improves only the overall dietary diversity score for girls. In terms of differential effects by sex, although levels estimates suggest that the number of groups in which the primary female participates has differential positive associations with girls' calorie and vitamin A intakes, these are not robust to the inclusion of fixed effects. The only interaction term that is significant in the fixed-effects estimates is that on the number of groups, which suggests that the primary female's belonging to more groups has a significant correlation with improved dietary diversity for girls.

Table 4.2 Women's empowerment and dietary quality of children ages 5–10 years: Selected coefficients from levels and fixed-effects estimates

Model/variable	Dietary diversity (7 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Model 1: Aggregate empowerment												
(1.a) Girl	1.547	0.264	-671.500	-186.400	-3.948	-6.603	-0.200	3.619	-1.302	0.068	49.880	125.100
	(1.046)	(0.494)	(500.000)	(529.100)	(15.220)	(12.590)	(3.012)	(2.455)	(2.023)	(1.753)	(278.800)	(153.700)
(1.b) Empowerment score	0.418***		140.300**		5.186**		1.146***		0.874***		23.760	
	(0.140)		(66.950)		(2.038)		(0.403)		(0.271)		(37.330)	
(1.c) Empowerment score × girl	0.053	0.059	-20.230	-56.500	-1.483	-0.218	-0.297	-0.198	-0.343	-0.162	22.580	19.990
	(0.202)	(0.090)	(96.520)	(96.510)	(2.938)	(2.296)	(0.581)	(0.448)	(0.391)	(0.320)	(53.810)	(28.040)
Levels estimates:												
Effect of empowerment on girls: (1.b) + (1.c)	0.471		120.070		3.703		0.849		0.531		46.340	
p-*value of* F-*test*: (1.b) + (1.c) = 0	0.0013***		0.0844*		0.0804*		0.0427**		0.0591*		0.232	
N	2,015	589	2,015	589	2,015	589	2,015	589	2,015	589	2,015	589
R-squared	0.172	0.072	0.194	0.548	0.166	0.544	0.119	0.490	0.149	0.493	0.026	0.160
Model 2: Leadership domain												
(2.a) Girl	1.486	0.356	-743.300	-187.100	-6.566	-5.977	-0.669	3.689	-1.719	0.133	47.600	138.400
	(1.047)	(0.492)	(498.900)	(531.000)	(15.200)	(12.620)	(3.010)	(2.464)	(2.023)	(1.759)	(278.000)	(154.000)
(2.b) Number of groups	0.122*		-38.200		-1.195		-0.009		-0.091		2.302	
	(0.068)		(32.280)		(0.983)		(0.195)		(0.131)		(17.990)	
(2.c) Number of groups × girl	-0.060	0.097**	84.870*	-17.550	2.037	0.470	0.309	0.001	0.243	0.007	14.290	17.400
	(0.095)	(0.044)	(45.000)	(47.010)	(1.371)	(1.118)	(0.272)	(0.218)	(0.183)	(0.156)	(25.070)	(13.630)

Table 4.2 Continued

Model/variable	Dietary diversity (7 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Levels estimates:												
Effect of empowerment on girls: (2.b) + (2.c)	0.062		46.670		0.842		0.300		0.152		16.592	
p-*value of* F-*test*: (2.b) + (2.c) = 0	0.350		0.137		0.379		0.113		0.233		0.343	
N	2,015	589	2,015	589	2,015	589	2,015	589	2,015	589	2,015	589
R-squared	0.166	0.086	0.192	0.548	0.163	0.544	0.114	0.489	0.144	0.492	0.026	0.163
Model 3: Resources domain												
(3.a) Girl	1.550	0.267	-708.900	-211.000	-5.028	-6.777	-0.562	3.536	-1.633	-0.040	66.340	137.200
	(1.039)	(0.496)	(499.300)	(530.300)	(15.190)	(12.620)	(3.010)	(2.462)	(2.023)	(1.756)	(277.700)	(153.900)
(3.b) Number of asset decisions	0.014***		-0.270		0.005		0.014		0.008		-1.524	
	(0.003)		(1.674)		(0.051)		(0.010)		(0.007)		(0.931)	
(3.c) Number of asset decisions × girl	0.001	0.001	1.208	-1.965	0.088	-0.011	-0.004	-0.007	-0.004	-0.007	2.982**	0.844
	(0.005)	(0.002)	(2.351)	(2.326)	(0.072)	(0.055)	(0.014)	(0.011)	(0.009)	(0.008)	(1.307)	(0.675)
Levels estimates:												
Effect of empowerment on girls: (3.b) + (3.c)	0.016		0.938		0.092		0.009		0.004		1.458	
p-*value of* F-*test*: (3.b) + (3.c) = 0	0.000***		0.570		0.066*		0.340		0.526		0.112	
N	2,015	589	2,015	589	2,015	589	2,015	589	2,015	589	2,015	589
R-squared	0.180	0.072	0.191	0.549	0.163	0.544	0.114	0.490	0.144	0.494	0.028	0.163

Table 4.2 Continued

Model/variable	Dietary diversity (7 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Model 4: Gender parity												
(4.a) Girl	1.303	0.312	-653.500	-142.100	-6.353	-4.226	-0.893	3.885	-1.754	0.221	129.300	155.300
	(1.057)	(0.515)	(501.300)	(545.800)	(15.320)	(12.990)	(3.036)	(2.540)	(2.043)	(1.812)	(281.500)	(159.800)
(4.b) Gender parity gap	-0.443***		-167.8**		-5.405**		-1.108**		-0.913***		5.449	
	(0.162)		(76.710)		(2.344)		(0.465)		(0.313)		(43.070)	
(4.c) Gender parity gap × girl	0.050	-0.032	57.020	-19.520	3.162	-1.814	0.570	-0.148	0.518	-0.101	-62.780	-28.500
	(0.236)	(0.103)	(111.900)	(108.700)	(3.420)	(2.587)	(0.678)	(0.506)	(0.456)	(0.361)	(62.860)	(31.840)
Levels estimates:												
Effect of empowerment on girls: (4.b) + (4.c)	-0.393		-110.780		-2.243		-0.538		-0.395		-57.331	
p-*value of* F-*test*: (4.b) + (4.c) = 0	0.022**		0.174		0.368		0.276		0.235		0.211	
N	1,983	583	1,983	583	1,983	583	1,983	583	1,983	583	1,983	583
R-squared	0.170	0.072	0.197	0.549	0.164	0.545	0.114	0.489	0.148	0.493	0.025	0.161

Source: Estimated using data from the IFPRI Bangladesh Integrated Household Survey, 2011–2012 (Ahmed 2013)

Note: Standard errors are in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1. RAE = retinol activity equivalent.

Relationships between women's empowerment indicators and the dietary quality of adolescents suggest the emergence of strong preferences for adolescent boys rather than girls (Table 4.3). The overall women's empowerment score is associated with higher calorie, protein, iron, and zinc intakes for boys, the number of groups is weakly associated with higher iron intake for boys, and a reduction in the gender parity gap is correlated with higher intakes of calories, iron, and zinc for boys. None of the empowerment indicators has a significant association with any measure of girls' dietary quality, as revealed by the F-tests on the sums of coefficients on the empowerment indicator and the interaction term. A closer look at the interaction terms with the sex of the individual in the levels estimates suggests that overall empowerment is weakly associated with lower iron intake for girls, whereas a reduction in the gender parity gap is associated with better protein, iron, and zinc intakes for boys. However, these significant interaction terms seem to be driven by household-level unobservables: the only fixed-effects estimate showing a significant differential association by sex suggests that a reduction in the gender parity gap differentially improves boys' vitamin A intakes. The findings suggesting that women's empowerment may improve adolescent boys'—but not girls'—dietary quality has worrisome implications. Given the prevailing marriage pattern in which girls leave the household to marry during adolescence, the apparent absence of a link between women's empowerment and investment in adolescent girls' nutritional status suggests that a son preference persists, with serious consequences for girls' own health and that of their offspring.

Table 4.3 Women's empowerment and dietary quality of children ages 11–17 years: Selected coefficients from levels and fixed-effects estimates

Model/variable	Dietary diversity (9 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Model 1: Aggregate empowerment												
(1.a) Girl	0.443	0.168	-824.900	-473.100	-12.590	-20.040	1.586	-2.467	-0.227	-2.344	-198.900	167.000
	(1.398)	(0.885)	(723.200)	(919.300)	(22.900)	(23.940)	(4.556)	(4.308)	(3.072)	(3.199)	(430.0000)	(295.900)
(1.b) Empowerment score	0.159		230.000***		5.007*		1.685***		1.190***		51.290	
	(0.169)		(87.220)		(2.762)		(0.549)		(0.370)		(51.860)	
(1.c) Empowerment score × girl	0.084	0.038	-182.600	164.600	-6.022	1.992	-1.400*	0.419	-0.850	0.407	-108.500	-65.810
	(0.241)	(0.132)	(124.900)	(137.000)	(3.954)	(3.568)	(0.787)	(0.642)	(0.530)	(0.477)	(74.240)	(44.090)
Levels estimates:												
Effect of empowerment on girls: (1.b) + (1.c)	0.243		47.400		-1.015		0.285		0.340		-57.210	
p-*value of* F-*test*: (1.b) + (1.c) = 0	0.161		0.595		0.720		0.613		0.371		0.281	
N	1,786	531	1,786	531	1,786	531	1,786	531	1,786	531	1,786	531
R-squared	0.210	0.121	0.208	0.389	0.166	0.347	0.117	0.321	0.143	0.330	0.048	0.066
Model 2: Leadership domain												
(2.a) Girl	0.490	0.098	-885.800	-512.400	-14.360	-21.420	1.309	-2.482	-0.470	-2.380	-224.900	156.200
	(1.397)	(0.885)	(724.100)	(923.500)	(22.900)	(24.0000)	(4.560)	(4.319)	(3.078)	(3.209)	(429.700)	(296.700)
(2.b) Number of groups	0.109		16.660		0.860		0.432*		0.165		29.970	
	(0.075)		(38.810)		(1.227)		(0.244)		(0.165)		(23.030)	
(2.c) Number of groups × girl	-0.076	-0.047	-23.820	15.920	-1.389	-0.551	-0.243	0.110	-0.129	0.089	-44.900	-28.000
	(0.109)	(0.060)	(56.270)	(62.66)	(1.780)	(1.629)	(0.354)	(0.293)	(0.239)	(0.218)	(33.390)	(20.130)

Table 4.3 Continued

Model/variable	Dietary diversity (9 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Levels estimates:												
Effect of empowerment on girls: (2.b) + (2.c)	0.033		-7.160		-0.529		0.189		0.036		-14.930	
p-*value of* F-*test*: (2.b) + (2.c) = 0	0.681		0.860		0.612		0.462		0.835		0.537	
N	1,786	531	1,786	531	1,786	531	1,786	531	1,786	531	1,786	531
R-squared	0.209	0.122	0.208	0.386	0.165	0.347	0.114	0.320	0.138	0.329	0.048	0.065
Model 3: Resources domain												
(3.a) Girl	0.578	0.176	-824.600	-535.600	-13.330	-21.630	1.454	-2.782	-0.329	-2.581	-213.500	182.500
	(1.399)	(0.884)	(724.300)	(921.300)	(22.920)	(23.920)	(4.563)	(4.303)	(3.079)	(3.200)	(430.400)	(296.800)
(3.b) Number of asset decisions	0.006		4.414**		0.135**		0.034***		0.022**		1.838	
	(0.004)		(1.992)		(0.063)		(0.013)		(0.008)		(1.184)	
(3.c) Number of asset decisions × girl	-0.002	0.002	-2.874	-0.298	-0.129	-0.071	-0.029	-0.013	-0.019	-0.007	-1.778	-0.645
	(0.006)	(0.003)	(2.971)	(3.241)	(0.0940)	(0.084)	(0.019)	(0.015)	(0.013)	(0.011)	(1.765)	(1.044)
Levels estimates:												
Effect of empowerment on girls: (3.b) + (3.c)	0.004		1.540		0.006		0.005		0.002		0.060	
p-*value of* F-*test*: (3.b) + (3.c) = 0	0.305		0.485		0.934		0.729		0.803		0.936	
N	1,786	531	1,786	531	1,786	531	1,786	531	1,786	531	1,786	531
R-squared	0.210	0.121	0.205	0.386	0.167	0.348	0.116	0.322	0.141	0.329	0.048	0.060

Table 4.3 Continued

Model/variable	Dietary diversity (9 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Model 4: Gender parity												
(4.a) Girl	0.377	0.474	-1035.000	-481.700	-19.440	-22.660	-0.260	-3.289	-1.264	-2.799	-321.300	-16.710
	(1.411)	(0.907)	(732.400)	(943.900)	(23.160)	(24.450)	(4.576)	(4.299)	(3.083)	(3.181)	(434.900)	(301.300)
(4.b) Gender parity gap	-0.016		-236.300**		-5.186		-1.562**		-1.213***		-34.600	
	(0.198)		(102.700)		(3.247)		(0.642)		(0.432)		(60.980)	
(4.c) Gender parity gap × girl	-0.186	-0.210	146.400	-140.000	8.771*	-1.545	1.937**	-0.248	1.097*	-0.308	125.800	137.100**
	(0.288)	(0.161)	(149.600)	(167.600)	(4.729)	(4.341)	(0.935)	(0.763)	(0.630)	(0.565)	(88.810)	(53.500)
Levels estimates:												
Effect of empowerment on girls: (4.b) + (4.c)	-0.202		-89.900		3.585		0.375		-0.116		91.200	
p-*value of* F-*test*: (4.b) + (4.c) = 0	0.335		0.408		0.297		0.581		0.801		0.157	
N	1,753	524	1,753	524	1,753	524	1,753	524	1753	524	1753	524
R-squared	0.210	0.121	0.208	0.385	0.163	0.340	0.112	0.316	0.142	0.326	0.045	0.086

Source: Estimated using data from the IFPRI Bangladesh Integrated Household Survey, 2011–2012 (Ahmed 2013)
Note: Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. RAE = retinol activity equivalent.

Finally, Table 4.4 presents summary results from levels and fixed-effects estimates of the relationship between measures of women's empowerment and adult dietary quality. We find the strongest evidence of positive relationships between women's empowerment and dietary quality in this age group.[6] All indicators of women's empowerment (the overall empowerment score, the number of groups in which the primary female participates, the number of asset decisions in which she participates, and the gender parity gap) are associated with improvements in both men's and women's dietary quality across almost all dietary quality outcomes in the levels estimates. Examination of the interaction terms reveals that different indicators of empowerment have differential impacts by sex. In the levels estimates, the overall empowerment score is associated with a differential positive effect on men's zinc intakes, but this association is not robust to the inclusion of household fixed effects. In contrast, the fixed-effects estimates suggest a weak positive association between the aggregate women's empowerment score and women's vitamin A intakes. Interaction terms with the number of groups to which the primary female belongs are significant only in the fixed-effects estimates, suggesting that participation in groups has differential positive associations with women's nutrient intakes across macro- and micronutrients. Except for a differential improvement in women's dietary diversity when the gender parity gap is lower, however, interaction terms with the gender parity gap suggest that men's nutrient intakes improve more than women's in households with a lower gender parity gap. Thus, although empowerment in terms of group membership appears to benefit women, it is possible that a reduction in the gender parity gap may involve some trade-offs or accommodations that favor men, for example in terms of their nutrient intakes. The positive association of women's empowerment with adult women's outcomes, but not adolescent girls', is a puzzle that deserves further investigation.

[6] These results are similar to the results of studies using the WEAI in Nepal (Malapit et al. 2015) and Ghana (Malapit and Quisumbing 2015) that find women's aggregate empowerment score to be positively and significantly correlated with women's dietary diversity score. The Nepal study found significant associations with women's outcomes but weaker associations with child outcomes.

Table 4.4 Women's empowerment and dietary quality of adults: Selected coefficients from levels and fixed-effects estimates

Model/variable	Dietary diversity (9 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Model 1: Aggregate empowerment												
(1.a) Woman	0.110	-0.222	-472.200*	-339.800*	-4.609	-3.131	-0.354	0.304	-1.138	-0.563	90.180	17.550
	(0.485)	(0.167)	(280.900)	(174.100)	(8.988)	(4.661)	(2.035)	(0.980)	(1.208)	(0.639)	(179.200)	(55.950)
(1.b) Empowerment score	0.247***		292.700***		6.225***		1.948***		1.417***		-37.030	
	(0.084)		(47.830)		(1.530)		(0.346)		(0.206)		(30.520)	
(1.c) Empowerment score × woman	-0.006	0.058	-110.100	-64.420	-2.906	-0.975	-0.606	-0.105	-0.563*	-0.244	28.850	22.430*
	(0.116)	(0.039)	(67.160)	(41.520)	(2.149)	(1.112)	(0.486)	(0.234)	(0.289)	(0.152)	(42.860)	(13.340)
Levels estimates:												
Effect of empowerment on women: (1.b) + (1.c)	0.241		182.600		3.319		1.342		0.854		-8.180	
p-*value of* F-*test*: (1.b) + (1.c) = 0	0.003***		0.000***		0.028**		0.000***		0.000***		0.786	
N	7,506	7,433	7,506	7,433	7,506	7,433	7506	7,433	7506	7,433	7506	7,433
R-squared	0.195	0.030	0.186	0.373	0.148	0.341	0.085	0.276	0.119	0.315	0.014	0.052
Model 2: Leadership domain												
(2.a) Woman	0.128	-0.185	-542.900*	-391.000**	-6.595	-4.172	-0.762	0.162	-1.489	-0.752	98.330	26.910
	(0.482)	(0.165)	(279.300)	(172.500)	(8.918)	(4.616)	(2.023)	(0.971)	(1.203)	(0.633)	(177.600)	(55.470)
(2.b) Number of groups	0.093**		-44.140**		-1.830**		-0.126		-0.125		-32.900**	
	(0.039)		(22.520)		(0.719)		(0.163)		(0.097)		(14.320)	
(2.c) Number of groups × woman	-0.063	-0.014	41.660	52.370***	1.430	1.734***	0.314	0.291***	0.174	0.185***	27.630	11.560*
	(0.055)	(0.019)	(31.660)	(19.470)	(1.011)	(0.521)	(0.229)	(0.110)	(0.136)	(0.072)	(20.130)	(6.261)

Table 4.4 Continued

Model/variable	Dietary diversity (9 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Levels estimates:												
Effect of empowerment on women: (2.b) + (2.c)	0.030		-2.480		-0.400		0.188		0.049		-5.270	
p-*value of* F-*test*: (2.b) + (2.c) = 0	0.432		0.911		0.574		0.244		0.614		0.710	
N	7,506	7,433	7,506	7,433	7,506	7,433	7,506	7,433	7506	7,433	7506	7,433
R-squared	0.194	0.029	0.181	0.374	0.146	0.343	0.079	0.277	0.111	0.315	0.015	0.052
Model 3: Resources domain												
(3.a) Woman	0.082	-0.208	-521.800*	-380.200**	-5.943	-3.497	-0.580	0.291	-1.375	-0.649	112.000	32.800
	(0.480)	(0.166)	(278.800)	(173.100)	(8.904)	(4.633)	(2.020)	(0.974)	(1.199)	(0.635)	(178.100)	(55.630)
(3.b) Number of asset decisions	0.012***		7.445***		0.233***		0.051***		0.035***		1.107	
	(0.002)		(1.152)		(0.037)		(0.008)		(0.005)		(0.736)	
(3.c) Number of asset decisions × woman	0.001	0.001	-1.366	0.299	-0.040	-0.014	-0.011	-0.003	-0.008	-0.004	-0.517	-0.194
	(0.0028)	(0.0009)	(1.624)	(1.010)	(0.0519)	(0.0270)	(0.0118)	(0.006)	(0.007)	(0.004)	(1.037)	(0.324)
Levels estimates:												
Effect of empowerment on women: (3.b) + (3.c)	0.013		6.079		0.193		0.039		0.027		0.590	
p-*value of* F-*test*: (3.b) + (3.c) = 0	0.000***		0.000***		0.000***		0.000***		0.000***		0.421	
N	7,506	7,433	7,506	7,433	7,506	7,433	7506	7,433	7506	7,433	7506	7,433
R-squared	0.202	0.030	0.188	0.373	0.153	0.341	0.086	0.276	0.121	0.315	0.014	0.051

Table 4.4 Continued

Model/variable	Dietary diversity (9 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Model 4: Gender parity												
(4.a) Woman	0.136	-0.177	-565.200**	-418.300**	-7.209	-4.601	-0.870	0.070	-1.522	-0.833	96.890	29.600
	(0.486)	(0.166)	(281.400)	(174.200)	(9.009)	(4.660)	(2.037)	(0.980)	(1.207)	(0.637)	(180.100)	(56.390)
(4.b) Gender parity gap	-0.220**		-335.900***		-6.626***		-1.908***		-1.329***		9.556	
	(0.096)		(55.510)		(1.777)		-0.402		(0.238)		(35.520)	
(4.c) Gender parity gap × woman	-0.044	-0.077*	159.900**	125.100***	4.384*	2.952**	0.941*	0.444	0.648*	0.449**	9.189	-4.592
	(0.135)	(0.046)	(77.930)	(48.020)	(2.494)	(1.285)	(0.564)	(0.270)	(0.334)	(0.176)	(49.870)	(15.550)
Levels estimates:												
Effect of empowerment on women: (4.b) + (4.c)	-0.263		-176.000		-2.242		-0.967		-0.681		18.745	
p-*value of* F-*test*: (4.b) + (4.c) = 0	0.005***		0.001***		0.200		0.015**		0.004**		0.592	
N	7,389	7,317	7,389	7,317	7,389	7,317	7389	7,317	7389	7,317	7389	7,317
R-squared	0.193	0.030	0.185	0.376	0.147	0.344	0.082	0.278	0.117	0.318	0.014	0.051

Source: Estimated using data from the IFPRI Bangladesh Integrated Household Survey, 2011–2012 (Ahmed 2013)
Note: Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. RAE = retinol activity equivalent.

Other Correlates of Dietary Quality

Table 4.5 presents selected coefficients on indicators of human and physical wealth: schooling, the size of land owned, and the number of dairy cows owned, presented separately for each of the age groups in the regressions. Also included are joint tests of the coefficients on the interaction terms with the individual's sex. This section presents results only for the model having the women's aggregate empowerment score as a control variable; the full set of results for dietary diversity, calorie intake, and iron intake are available in the Appendix (Tables A.1–A.8). As mentioned previously, the full set of results for protein, vitamin A, and zinc are available on request.

Table 4.5 Results summary for education, landownership, and dairy cow ownership and joint tests for coefficients from Model 1 (aggregate empowerment score)

Variable	Dietary diversity (9 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Children 6–59 months												
Schooling												
(1) Maternal schooling	0.042***		3.060		0.169		0.029		-0.004		-0.802	
	(0.015)		(5.524)		(0.154)		(0.031)		(0.021)		(3.066)	
(2) Maternal schooling × girl	0.011	0.058	3.992	-14.600	0.121	-0.213	0.032	-0.070	0.052*	-0.061	0.905	-10.080
	(0.022)	(0.062)	(7.820)	(26.040)	(0.219)	(0.590)	(0.044)	(0.175)	(0.029)	(0.094)	(4.340)	(6.182)
Levels estimates:												
Effect of maternal schooling on girls: (1) + (2)	0.053		7.052		0.290		0.062		0.048		0.103	
p-*value of* F-*test*: (1) + (2) = 0	0.001***		0.207		0.064*		0.050*		0.020**		0.973	
Landownership												
(1) Size of land owned	0.063*		14.130		0.142		0.063		0.009		0.842	
	(0.034)		(12.380)		(0.346)		(0.069)		(0.046)		(6.870)	
(2) Size of land owned × girl	0.000	-0.150	0.433	16.960	0.009	0.154	0.002	-0.028	0.001	0.065	0.067	-2.599
	(0.001)	(0.106)	(0.398)	(44.880)	(0.011)	(1.016)	(0.002)	(0.302)	(0.001)	(0.162)	(0.221)	(10.650)
Levels estimates:												
Effect of landownership on girls: (1) + (2)	0.063		14.563		0.151		0.065		0.010		0.909	
p-*value of* F-*test*: (1) + (2) = 0	0.069*		0.124		0.454		0.345		0.669		0.560	

Table 4.5 Continued

Variable	Dietary diversity (9 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Dairy cow ownership												
(1) Dairy cow	-0.034		12.480		0.306		-0.031		0.035		-6.883	
	(0.047)		(16.700)		(0.467)		(0.093)		(0.063)		(9.269)	
(2) Dairy cow × girl	0.000	-0.165	-0.588	-15.360	-0.013	-1.195	-0.001	0.068	0.001	0.069	0.256	22.620
	(0.002)	(0.169)	(0.604)	(71.290)	(0.017)	(1.615)	(0.003)	(0.480)	(0.002)	(0.257)	(0.335)	(16.920)
Levels estimates:												
Effect of dairy cow ownership on girls: (1) + (2)	-0.034		11.892		0.293		-0.032		0.036		-6.627	
p-*value of* F-*test*: (1) + (2) = 0	0.399		0.983		0.713		0.990		0.347		0.055*	
Joint tests of hypotheses (p-values)												
All gender interactions = 0	0.586	0.845	0.767	0.357	0.494	0.149	0.559	0.353	0.541	0.140	0.621	0.000***
Household demographics × gender interactions = 0	0.931	0.817	0.666	0.159	0.150	0.188	0.387	0.325	0.484	0.147	0.827	0.451
Household wealth × gender effects = 0	0.081*	0.510	0.933	0.784	0.917	0.277	0.990	0.953	0.902	0.455	0.519	0.072*
Prices × gender effects = 0	0.939	0.901	0.201	0.412	0.136	0.536	0.272	0.707	0.179	0.601	0.413	0.004***
Division dummies × gender effects = 0	0.550	0.250	0.548	0.058*	0.949	0.024**	0.869	0.123	0.877	0.018**	0.972	0.000***
Children 5–10 years												
Schooling												
(1) Schooling of primary female	0.048***		4.744		0.271*		0.053*		0.021		2.805	
	(0.011)		(5.037)		(0.153)		(0.030)		(0.020)		(2.809)	
(2) Schooling of primary female × girl	-0.001	0.002	-1.133	-3.030	-0.036	0.017	0.020	0.022	-0.001	0.002	-1.956	-2.692
	(0.015)	(0.007)	(7.091)	(7.245)	(0.216)	(0.172)	(0.043)	(0.034)	(0.029)	(0.024)	(3.954)	(2.105)

Table 4.5 Continued

Variable	Dietary diversity (9 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Levels estimates:												
Effect of schooling on girls: (1) + (2)	0.047		3.611		0.235		0.073		0.020		0.849	
p-*value of* F-*test*: (1) + (2) = 0	0.000***		0.470		0.121		0.015**		0.326		0.761	
Landownership												
(1) Size of land owned	0.049**		20.420**		0.533*		0.116*		0.054		-1.291	
	(0.021)		(10.140)		(0.309)		(0.061)		(0.041)		(5.652)	
(2) Size of land owned × girl	0.007	-0.002	-18.010	6.492	-0.529	0.178	-0.102	0.038	-0.095	0.023	3.470	-4.470
	(0.031)	(0.015)	(14.760)	(17.940)	(0.449)	(0.427)	(0.089)	(0.083)	(0.059)	(0.059)	(8.229)	(5.212)
Levels estimates:												
Effect of landownership on girls: (1) + (2)	0.056		2.410		0.004		0.014		-0.041		2.179	
p-*value of* F-*test*: (1) + (2) = 0	0.013**		0.823		0.991		0.832		0.349		0.716	
Dairy cow ownership												
(1) Dairy cow	0.087***		16.460		0.133		0.049		0.084		-10.220	
	(0.028)		(13.480)		(0.410)		(0.081)		(0.055)		(7.517)	
(2) Dairy cow × girl	-0.055	0.029*	10.130	-21.260	0.070	-0.593	0.021	-0.124	-0.001	-0.092*	9.283	-5.024
	(0.039)	(0.017)	(18.430)	(16.430)	(0.561)	(0.391)	(0.111)	(0.076)	(0.075)	(0.054)	(10.280)	(4.774)
Levels estimates:												
Effect of dairy cow ownership on girls: (1) + (2)	0.032		26.590		0.203		0.070		0.083		-0.937	
p-*value of* F-*test*: (1) + (2)= 0	0.230		0.034**		0.594		0.347		0.104		0.893	

Table 4.5 Continued

Variable	Dietary diversity (9 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Joint tests of hypotheses (p-values)												
All gender interactions = 0	0.318	0.566	0.411	0.218	0.909	0.143	0.824	0.068*	0.635	0.334	0.801	0.056*
Household demographics × gender interactions = 0	0.461	0.536	0.557	0.575	0.425	0.522	0.470	0.440	0.375	0.528	0.359	0.557
Household wealth × gender effects = 0	0.511	0.591	0.581	0.505	0.656	0.505	0.803	0.408	0.549	0.568	0.917	0.319
Prices × gender effects = 0	0.348	0.377	0.580	0.456	0.977	0.205	0.987	0.014	0.958	0.292	0.394	0.006***
Division dummies × gender effects = 0	0.156	0.131	0.073*	0.025**	0.302	0.027**	0.125	0.031**	0.084*	0.068*	0.464	0.352
Adolescents ages 11–17												
Schooling												
(1) Schooling of primary female	0.061***		8.350		0.304		0.067		0.042		-0.855	
	(0.013)		(6.898)		(0.218)		(0.044)		(0.029)		(4.101)	
(2) Schooling of primary female × girl	-0.041**	-0.001	-3.925	10.090	0.064	0.202	-0.006	0.042	-0.008	0.037	-0.958	-5.128
	(0.019)	(0.011)	(9.752)	(11.870)	(0.309)	(0.309)	(0.061)	(0.056)	(0.041)	(0.041)	(5.798)	(3.820)
Levels estimates:												
Effect of schooling on girls: (1) + (2)	0.021		4.425		0.368		0.061		0.034		-1.813	
p-*value of* F-*test*: (1) + (2) = 0	0.119		0.522		0.092*		0.159		0.252		0.659	
Landownership												
(1) Size of land owned	0.038*		31.860***		0.977***		0.228***		0.104**		14.010**	
	(0.022)		(11.610)		(0.368)		(0.073)		(0.049)		(6.906)	

Table 4.5 Continued

Variable	Dietary diversity (9 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(2) Size of land owned × girl	-0.008	0.025	-16.170	13.100	-0.634	0.283	-0.224**	-0.018	-0.101	0.043	1.200	-1.312
	(0.034)	(0.021)	(17.60)	(21.51)	(0.557)	(0.560)	(0.111)	(0.101)	(0.075)	(0.075)	(10.470)	(6.923)
Levels estimates:												
Effect of landownership on girls: (1) + (2)	0.030		15.690		0.343		0.004		0.003		15.210	
p-*value of* F-*test*: (1) + (2) = 0	0.245		0.235		0.412		0.955		0.965		0.053*	
Dairy cow ownership												
(1) Dairy cow	0.037		42.420***		0.568		0.039		0.075		-11.500	
	(0.029)		(15.080)		(0.478)		(0.095)		(0.064)		(8.968)	
(2) Dairy cow × girl	0.044	0.002	18.950	-5.578	0.751	-0.592	0.066	0.016	0.075	0.002	7.577	-3.738
	(0.0411)	(0.023)	(21.260)	(23.790)	(0.673)	(0.620)	(0.134)	(0.111)	(0.090)	(0.083)	(12.640)	(7.658)
Levels estimates:												
Effect of dairy cow ownership on girls: (1) + (2)	0.081		61.370		1.319		0.105		0.150		-3.923	
p-*value of* F-*test*: (1) + (2) = 0	0.005***		0.000***		0.006***		0.263		0.019**		0.660	
Joint tests of hypotheses (p-values)												
All gender interactions = 0	0.958	0.327	0.487	0.784	0.576	0.852	0.557	0.820	0.577	0.884	0.344	0.870
Household demographics × gender interactions = 0	0.980	0.039**	0.089*	0.789	0.443	0.525	0.833	0.411	0.712	0.436	0.729	0.710
Household wealth × gender effects = 0	0.774	0.343	0.631	0.599	0.580	0.589	0.495	0.726	0.658	0.719	0.689	0.365
Prices × gender effects = 0	0.897	0.816	0.409	0.803	0.613	0.803	0.586	0.758	0.489	0.809	0.035**	0.964
Division dummies × gender effects = 0	0.796	0.546	0.719	0.383	0.593	0.323	0.405	0.235	0.650	0.362	0.370	0.993

Table 4.5 Continued

Variable	Dietary diversity (9 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Adults												
Schooling												
Own schooling	0.043***	0.004*	2.251	-1.446	0.279***	0.006	0.069***	0.005	0.025***	-0.004	-0.784	0.199
	(0.003)	(0.002)	(2.238)	(2.197)	(0.072)	(0.059)	(0.016)	(0.012)	(0.009)	(0.008)	(1.428)	(0.706)
Landownership												
(1) Size of land owned	0.033***		7.386		0.320		0.108**		0.017		4.810	
	(0.011)		(6.532)		(0.209)		(0.047)		(0.028)		(4.168)	
(2) Size of land owned × woman	0.010	0.002	-12.280	19.500***	-0.278	0.462***	-0.044	0.104***	-0.0310	0.073***	-4.326	-3.661**
	(0.016)	(0.005)	(9.040)	(5.661)	(0.289)	(0.152)	(0.066)	(0.032)	(0.039)	(0.021)	(5.768)	(1.820)
Levels estimates:												
Effect of landownership on women: (1) + (2)	0.043		-4.894									
p-*value of* F-*test*: (1) + (2) = 0	0.000***		0.444		0.838		0.163		0.616		0.905	
Dairy cow ownership												
(1) Dairy cow	0.054***		41.820***		0.761***		0.023		0.091**		3.866	
	(0.015)		(8.382)		(0.268)		(0.061)		(0.036)		(5.348)	
(2) Dairy cow × woman	-0.017	-0.007	-5.557	-9.956	-0.098	-0.357*	0.022	-0.014	0.002	-0.032	-6.003	-3.365
	(0.021)	(0.007)	(12.040)	(7.474)	(0.385)	(0.200)	(0.087)	(0.042)	(0.052)	(0.027)	(7.682)	(2.402)
Levels estimates:												
Effect of dairy cow ownership on women: (1) + (2)	0.037		36.263		0.663		0.045		0.093		-2.137	
p-*value of* F-*test*: (1) + (2) = 0	0.015**		0.000***		0.017**		0.474		0.013**		0.699	

Table 4.5 Continued

Variable	Dietary diversity (9 groups)		Calorie intake (Kcal/day)		Protein intake (g/day)		Iron intake (mg/day)		Zinc intake (mg/day)		Vitamin A intake (RAE)	
	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects	Levels	Fixed effects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Joint tests of hypotheses (p-values)												
All gender interactions = 0	0.993	0.007***	0.633	0.000***	0.952	0.000***	0.975	0.023**	0.927	0.006***	0.989	0.003***
Household demographics × gender interactions = 0	0.684	0.052*	0.854	0.734	0.762	0.612	0.670	0.494	0.379	0.254	0.893	0.258
Household wealth × gender effects = 0	0.757	0.830	0.387	0.000***	0.804	0.000***	0.842	0.005***	0.888	0.001***	0.903	0.040**
Prices × gender effects = 0	0.998	0.724	0.966	0.869	0.929	0.347	0.858	0.190	0.961	0.679	0.897	0.587
Division dummies × gender effects = 0	0.857	0.005***	0.303	0.003***	0.751	0.016	0.770	0.387	0.822	0.193	0.779	0.009***

Source: Estimated using data from the IFPRI Bangladesh Integrated Household Survey, 2011–2012 (Ahmed 2013)
Note: Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. RAE = retinol activity equivalent.

In contrast to the insignificant associations of women's empowerment with most dietary quality outcomes among girls ages 6–59 months, maternal schooling has significant positive associations with the dietary diversity of both boys and girls, and with girls' intakes of protein, iron, and zinc. However, because the fixed-effects coefficients are not significant, we cannot reject the null hypothesis that the effects of maternal schooling on boys and girls are equal. The size of land owned has a weak positive correlation with the dietary diversity of both boys and girls, whereas the number of dairy cows owned has a weak negative association with the vitamin A intake of girls, but the latter is not robust to the inclusion of fixed effects. Joint tests of the coefficients on the gender interactions show that (1) intakes of vitamin A appear to be correlated with gender-differentiated impacts of household wealth and with prices, and (2) there may be variations in gender norms across divisions that affect intakes of calories, protein, zinc, and vitamin A for the youngest age group.

The schooling of the primary female improves some dietary quality indicators for boys ages 5–10 (dietary diversity, protein, and iron) as well as dietary diversity and iron for girls. None of the interaction terms with child sex are significant, indicating that the primary female's schooling affects boys and girls ages 5–10 similarly. Interestingly, the size of land owned is associated with more diverse diets and increased calorie, protein, and iron intakes for boys, but only greater dietary diversity for girls. There are no differential effects of landownership by sex of the individual. Household ownership of dairy cows improves dietary quality for boys and calorie intake for girls; however, these results are not robust to the inclusion of fixed effects. Fixed-effects estimates suggest compensatory effects: ownership of dairy cows differentially improves girls' dietary diversity score, but also worsens zinc intakes (albeit only at $p < 0.10$). There is some indication that prices have differential effects according to child sex.

Maternal schooling appears to significantly improve the dietary quality of adolescent boys and marginally improve the protein intake of adolescent girls. Maternal schooling appears to differentially favor boys, as shown by the sign of the interaction term, but this result is not robust to the inclusion of fixed effects. Very interestingly, the size of land owned is positively correlated with adolescent boys' dietary diversity and intake of nutrients, but it is significantly correlated with adolescent girls' vitamin A

intakes. Although levels estimates suggest that boys in households with larger sizes of land owned have higher iron intakes, this effect disappears in the fixed-effects estimates. Dairy cow ownership is associated with higher calorie intake for adolescent boys and better dietary diversity and intakes of calories and protein for adolescent girls. None of the household characteristics, prices, or division dummies indicate that differential effects by child sex are jointly significant.

Finally, in the regressions for adults, one's own schooling is associated with better dietary quality outcomes (although not all coefficients are robust to the inclusion of household fixed effects). The levels estimates suggest that the size of land owned is positively correlated with men's dietary diversity and iron intake as well as with women's dietary diversity score. Fixed-effects estimates also suggest that larger land sizes have a differential positive impact on women's nutrient intakes, except for vitamin A. Dairy cow ownership is also associated with improved dietary quality for both men and women.

5. CONCLUSION

Previous studies on associations with women's empowerment in agriculture in rural Bangladesh have documented a positive association with household food security outcomes, such as per capita calorie intake and household dietary diversity (that is, the number of food groups consumed at the household level). Our findings suggest that women's empowerment in agriculture is similarly associated with better dietary quality for individuals within the household, but these effects vary across the life course. Although women's empowerment is associated with better dietary diversity for children younger than five, various measures of empowerment are not consistently associated with increases in macro- or micronutrients for this age group. In contrast, women's empowerment becomes more important as a factor affecting dietary quality—both dietary diversity and intakes of various nutrients—as individuals move through the life course. Women's empowerment, for example, is positively and significantly associated with men's and women's dietary diversity and nutrient intakes. Women's group participation, in particular, appears to have a differential positive association with the dietary quality of girls and of adult women themselves. Our finding that empowerment of the primary female is weakly linked with the dietary quality of the youngest members of the household not only implies that different empowerment domains may have different impacts on nutrition (Kabeer 1999; Bhagowalia et al. 2012) but also that other characteristics, such as maternal schooling and household socioeconomic status, may play a more important role for younger children. Other factors, such as IYCF practices, which have been linked to maternal schooling, may also have a greater role in improving the dietary quality of younger children (Kabir et al. 2012; Beyene, Worku, and Wassie 2015). Alternatively, empowerment could work in a more indirect way, for example, by determining whether a woman can command the resources needed to adopt recommended IYCF practices.

This study has several limitations. First, the analysis is based on 24-hour recall collected during one visit, which may not give as accurate a picture of dietary patterns as would multiple visits. Second, because we are unable to account for endogeneity of empowerment, owing to the lack of suitable

instruments, our conclusions are indicative of associations, not causation. Third, even if household fixed-effects estimates control for household-level unobservables, the reduction in sample size owing to the need to restrict the estimation sample to families with at least one child of each sex could have reduced its statistical power, making our conclusions more conservative than they would be without the restriction.[7] Fourth, we did not explore any other domains beyond those identified as areas where empowerment gaps were largest.

Future research could focus on the association between other indicators that make up the WEAI and dietary quality, and on the pathways through which empowerment may influence dietary quality. The importance of education in the dietary quality of young children, and the relatively greater importance of women's empowerment for older children and adults, suggest that policies designed to empower women and improve nutritional status need to be based on an understanding of which specific domains of women's empowerment matter for particular outcomes at a specific stage of the life course. The strong associations between women's empowerment and adult outcomes suggest that nutrition interventions that target only children, but not adolescents and adult women, may be missing an opportunity to invest in the nutritional status of women prior to conception, which would have implications for the critical 1,000 days between conception and the child's second birthday. The positive correlation between dairy cow ownership and both women's and men's dietary quality also points to the potential of diversifying both agricultural production and diets through the livestock sector. A multipronged approach consisting of appropriate women's empowerment interventions bundled with agricultural interventions and nutrition behavior change communication may be useful in improving dietary quality among household members, not only young children but also adolescent girls and adult women.

[7] Re-estimation with household fixed-effects and without the restriction of having at least one child of each sex increased the sample size, with no substantive change in results. These results are available upon request.

APPENDIX A

Table A.1 Full set of ordinary least squares results for women's empowerment and dietary quality of children younger than five years

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Female	-0.041	-0.052	-0.029	0.149	-605.500	-595.200	-598.500	-489.100	0.906	1.140	1.101	1.914
	(1.767)	(1.776)	(1.759)	(1.785)	(635.100)	(637.400)	(634.500)	(633.700)	(3.552)	(3.566)	(3.554)	(3.567)
Empowerment score of primary female	0.451**				122.800				0.593			
	(0.225)				(80.700)				(0.451)			
Empowerment score × female	-0.101				-36.920				0.182			
	(0.307)				(110.400)				(0.618)			
Number of groups		0.063				6.464				0.154		
		(0.107)				(38.230)				(0.214)		
Number of groups × female		-0.066				0.561				-0.025		
		(0.152)				(54.440)				(0.305)		
Number of asset decisions			0.019***				-2.190				-0.008	
			(0.006)				(2.041)				(0.011)	
Number of asset decisions × female			-0.018**				0.619				0.005	
			(0.008)				(2.897)				(0.016)	
Gender parity gap				-0.254				-217.900***				-0.565
				(0.200)				(70.960)				(0.399)
Gender parity gap × female				0.033				-53.850				-0.046
				(0.115)				(40.720)				(0.229)
Age of child	0.082***	0.082***	0.081***	0.081***	35.850***	35.860***	35.850***	35.620***	0.158***	0.158***	0.158***	0.160***
	(0.012)	(0.012)	(0.012)	(0.012)	(4.240)	(4.248)	(4.243)	(4.268)	(0.024)	(0.024)	(0.024)	(0.024)

Table A.1 Continued

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Age of child, squared	-0.002***	-0.002***	-0.002***	-0.001***	-0.274***	-0.272***	-0.271***	-0.269***	-0.004***	-0.001***	-0.001***	-0.001***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.062)	(0.062)	(0.062)	(0.062)	(0.000)	(0.000)	(0.000)	(0.0009)
Child of primary female (= 1, 0 otherwise)	-0.236*	-0.255*	-0.270**	-0.248*	-41.530	-46.240	-46.580	-57.590	-0.209	-0.243	-0.247	-0.296
	(0.130)	(0.130)	(0.129)	(0.132)	(46.680)	(46.650)	(46.690)	(46.700)	(0.261)	(0.261)	(0.261)	(0.263)
Age of mother	-0.007	-0.001	-0.013	0.006	30.220*	32.220*	34.080*	30.270*	0.127	0.134	0.145	0.130
	(0.049)	(0.049)	(0.049)	(0.050)	(17.890)	(17.900)	(17.902)	(17.870)	(0.100)	(0.100)	(0.100)	(0.101)
Age of mother, squared	0.000	0.0007	0.000	0.000	-0.393	-0.417	-0.439	-0.392	-0.001	-0.002	-0.002	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.273)	(0.274)	(0.274)	(0.273)	(0.002)	(0.002)	(0.002)	(0.002)
Education of mother	0.042***	0.044***	0.036**	0.0434***	3.060	3.477	4.392	3.152	0.029	0.032	0.035	0.031
	(0.015)	(0.015)	(0.016)	(0.016)	(5.524)	(5.527)	(5.589)	(5.500)	(0.031)	(0.031)	(0.031)	(0.031)
Age of mother × female	0.024	0.024	0.036	0.009	-16.050	-17.020	-16.910	-21.310	-0.247*	-0.247*	-0.248*	-0.280*
	(0.074)	(0.074)	(0.074)	(0.075)	(26.440)	(26.510)	(26.570)	(26.520)	(0.148)	(0.148)	(0.149)	(0.149)
Age of mother, squared × female	-0.000	-0.000	-0.001	-0.000	0.196	0.206	0.204	0.283	0.003	0.004	0.003	0.004*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.407)	(0.408)	(0.408)	(0.408)	(0.002)	(0.002)	(0.002)	(0.002)
Education of mother × female	0.011	0.011	0.018	0.013	3.992	3.908	3.619	2.902	0.032	0.033	0.031	0.031
	(0.022)	(0.022)	(0.022)	(0.022)	(7.820)	(7.826)	(7.903)	(7.819)	(0.044)	(0.044)	(0.044)	(0.044)
Household dependency ratio	0.018	0.021	0.016	-0.00 6	49.240	50.050	51.010*	52.200*	0.274	0.276	0.283*	0.300*
	(0.085)	(0.085)	(0.085)	(0.087)	(30.590)	(30.650)	(30.620)	(31.040)	(0.171)	(0.171)	(0.171)	(0.175)
Household size	0.001	-0.004	0.000	0.002	-13.620	-15.030	-15.780	-16.520	-0.106*	-0.114*	-0.117*	-0.122**
	(0.031)	(0.031)	(0.031)	(0.031)	(11.000)	(10.990)	(10.990)	(11.030)	(0.062)	(0.062)	(0.062)	(0.062)

Table A.1 Continued

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Household dependency ratio × female	0.048	0.054	0.062	0.086	-21.950	-20.630	-23.190	-29.270	-0.340	-0.324	-0.336	-0.387
	(0.131)	(0.131)	(0.130)	(0.133)	(46.960)	(47.040)	(47.030)	(47.280)	(0.263)	(0.263)	(0.263)	(0.266)
Household size × female	-0.007	-0.005	-0.011	-0.006	-9.269	-8.637	-8.384	-4.951	0.060	0.061	0.064	0.081
	(0.039)	(0.039)	(0.039)	(0.041)	(14.320)	(14.330)	(14.360)	(14.370)	(0.080)	(0.080)	(0.080)	(0.081)
Household has access to electricity	0.009	0.020	0.001	0.013	-29.050	-25.450	-22.520	-32.160	-0.048	-0.039	-0.019	-0.049
	(0.101)	(0.101)	(0.101)	(0.102)	(36.310)	(36.360)	(36.320)	(36.120)	(0.203)	(0.203)	(0.203)	(0.203)
Household has sanitary latrine	-0.023	-0.009	-0.019	-0.023	38.640	41.800	42.360	39.990	0.014	0.033	0.031	0.031
	(0.116)	(0.117)	(0.116)	(0.118)	(41.820)	(41.880)	(41.820)	(41.810)	(0.234)	(0.234)	(0.234)	(0.235)
Household owns tube well	0.145	0.155	0.179	0.140	-44.610	-39.990	-40.320	-35.630	-0.053	-0.053	-0.031	0.001
	(0.124)	(0.125)	(0.123)	(0.126)	(44.450)	(44.890)	(44.350)	(44.640)	(0.249)	(0.251)	(0.248)	(0.251)
Number of dairy cows	-0.034	-0.029	-0.037	-0.035	12.480	13.420	13.970	15.170	-0.031	-0.025	-0.025	-0.029
	(0.047)	(0.047)	(0.046)	(0.047)	(16.700)	(16.740)	(16.720)	(16.740)	(0.093)	(0.094)	(0.094)	(0.094)
ln(owned cultivable land+1)	0.063*	0.065*	0.049	0.067*	14.130	14.300	15.590	13.930	0.063	0.069	0.069	0.062
	(0.034)	(0.035)	(0.035)	(0.035)	(12.380)	(12.480)	(12.470)	(12.320)	(0.069)	(0.069)	(0.069)	(0.069)
Electricity × female	-0.008	-0.00	-0.008	0.404***	-5.107	-3.908	-3.333	5.805	-0.031	-0.027	-0.023	-0.126
	(0.018)	(0.018)	(0.017)	(0.145)	(6.283)	(6.263)	(6.244)	(51.400)	(0.035)	(0.035)	(0.035)	(0.289)
Sanitary latrine × female	0.005	0.005	0.006	0.081	2.278	2.085	1.961	-71.720	0.009	0.009	0.008	0.052
	(0.005)	(0.005)	(0.005)	(0.167)	(1.841)	(1.840)	(1.841)	(59.390)	(0.010)	(0.010)	(0.010)	(0.334)
Hand-pumped tube well × female	-0.006	-0.006	-0.005	-0.253	-6.076***	-6.159***	-6.324***	1.832	-0.021**	-0.02 1**	-0.022**	-0.139
	(0.006)	(0.006)	(0.006)	(0.170)	(1.889)	(1.892)	(1.895)	(60.270)	(0.011)	(0.011)	(0.011)	(0.339)

Table A.1 Continued

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Number of dairy cows × female	0.0002	0.000	0.000	-0.002	-0.588	-0.641	-0.650	-14.66	-0.001	-0.001	-0.001	0.035
	(0.007)	(0.007)	(0.007)	(0.063)	(0.604)	(0.604)	(0.603)	(22.420)	(0.003)	(0.003)	(0.003)	(0.126)
ln(owned cultivable land + 1) × female	-0.000	-0.000	-0.000	-0.000	0.433	0.478	0.505	3.401	0.002	0.002	0.002	-0.011
	(0.001)	(0.001)	(0.001)	(0.049)	(0.398)	(0.399)	(0.399)	(17.570)	(0.002)	(0.002)	(0.002)	(0.099)
Price of rice	0.394***	0.400***	0.419***	-0.006	0.933	0.848	-2.576	-4.379	-0.163	-0.143	-0.159	-0.022
	(0.143)	(0.143)	(0.142)	(0.018)	(51.440)	(51.440)	(51.370)	(6.260)	(0.288)	(0.288)	(0.288)	(0.035)
Price of chicken	0.101	0.087	0.094	0.005	-57.140	-60.190	-58.420	2.224	0.104	0.091	0.093	0.009
	(0.165)	(0.166)	(0.165)	(0.005)	(59.430)	(59.550)	(59.560)	(1.828)	(0.332)	(0.333)	(0.334)	(0.010)
Price of lentils	-0.244	-0.225	-0.254	-0.007	11.440	13.050	17.690	-6.190***	-0.084	-0.036	-0.033	-0.021*
	(0.168)	(0.169)	(0.167)	(0.005)	(60.340)	(60.580)	(60.110)	(1.894)	(0.337)	(0.339)	(0.337)	(0.011)
Price of small fish	-0.001	-0.005	0.002	0.003	-12.170	-12.820	-12.320	-0.583	0.033	0.029	0.031	-0.001
	(0.062)	(0.063)	(0.062)	(0.002)	(22.400)	(22.450)	(22.480)	(0.603)	(0.125)	(0.126)	(0.126)	(0.003)
Price of large fish	0.000	-0.004	0.013	-0.000	5.145	4.785	3.323	0.430	0.003	-0.007	-0.006	0.002
	(0.049)	(0.049)	(0.049)	(0.001)	(17.610)	(17.750)	(17.680)	(0.396)	(0.099)	(0.099)	(0.099)	(0.002)
Price of rice × female	-0.003	-0.009	-0.005	-0.006	8.593	6.826	5.921	7.853	0.024	0.015	0.009	0.012
	(0.025)	(0.025)	(0.025)	(0.025)	(8.903)	(8.884)	(8.875)	(8.891)	(0.049)	(0.049)	(0.049)	(0.050)
Price of chicken × female	-0.006	-0.005	-0.006	-0.005	1.055	1.224	1.332	1.129	-0.005	-0.004	-0.003	-0.004
	(0.006)	(0.006)	(0.006)	(0.006)	(2.255)	(2.259)	(2.257)	(2.239)	(0.013)	(0.013)	(0.013)	(0.013)
Price of lentils × female	0.003	0.004	0.003	0.0032	6.076**	6.206**	6.311**	5.692**	0.032**	0.032**	0.033**	0.030**
	(0.007)	(0.007)	(0.007)	(0.007)	(2.539)	(2.543)	(2.546)	(2.548)	(0.014)	(0.014)	(0.014)	(0.014)

Table A.1 Continued

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Price of small fish × female	-0.001	-0.001	-0.001	-0.001	0.017	0.074	0.094	0.041	-0.005	-0.004	-0.004	-0.004
	(0.003)	(0.003)	(0.003)	(0.003)	(0.917)	(0.919)	(0.918)	(0.919)	(0.005)	(0.005)	(0.005)	(0.005)
Price of large fish × female	0.000	0.000	0.006	0.005	-0.408	-0.453	-0.420	-0.567	-0.001	-0.002	-0.00 2	-0.003
	(0.002)	(0.002)	(0.002)	(0.002)	(0.640)	(0.642)	(0.644)	(0.647)	(0.004)	(0.004)	(0.003)	(0.004)
Barisal	-0.754***	-0.719***	-0.762***	-0.722***	-97.320	-84.600	-76.400	-111.100	-0.541	-0.519	-0.451	-0.562
	(0.239)	(0.240)	(0.237)	(0.240)	(85.940)	(86.190)	(85.650)	(85.180)	(0.481)	(0.482)	(0.480)	(0.479)
Chittagong	-0.030	-0.063	-0.103	-0.045	-79.350	-86.380	-79.820	-74.620	-0.212	-0.269	-0.222	-0.191
	(0.193)	(0.194)	(0.192)	(0.195)	(69.250)	(69.570)	(69.420)	(69.310)	(0.387)	(0.389)	(0.389)	(0.390)
Dhaka	-0.292*	-0.274*	-0.294**	-0.253*	63.410	70.280	74.820	54.520	0.083	0.093	0.134	0.062
	(0.150)	(0.151)	(0.149)	(0.152)	(54.010)	(54.250)	(53.880)	(53.830)	(0.302)	(0.304)	(0.302)	(0.303)
Khulna	-0.567***	-0.609***	-0.604***	-0.558***	3.229	-3.462	1.666	7.560	-0.092	-0.180	-0.104	-0.116
	(0.210)	(0.215)	(0.209)	(0.213)	(75.340)	(77.310)	(75.410)	(75.530)	(0.421)	(0.433)	(0.422)	(0.425)
Rajshahi	-0.452**	-0.450**	-0.560***	-0.412**	-143.200**	-137.800**	-119.600*	-147.600**	-0.243	-0.273	-0.147	-0.190
	(0.188)	(0.194)	(0.191)	(0.191)	(67.540)	(69.540)	(68.900)	(67.880)	(0.378)	(0.389)	(0.386)	(0.382)
Rangpur	-0.745***	-0.752***	-0.824***	-0.727***	-87.890	-86.490	-74.610	-93.870	-0.566	-0.599	-0.515	-0.572
	(0.185)	(0.189)	(0.187)	(0.187)	(66.640)	(67.710)	(67.330)	(66.430)	(0.373)	(0.379)	(0.377)	(0.374)
Barisal × female	0.382	0.385	0.419	0.351	-84.220	-91.500	-91.460	-80.770	-0.184	-0.187	-0.183	-0.231
	(0.325)	(0.329)	(0.323)	(0.332)	(116.700)	(118.200)	(116.400)	(118.000)	(0.653)	(0.661)	(0.652)	(0.664)
Chittagong × female	-0.037	-0.047	-0.009	-0.048	64.760	60.300	53.850	80.590	0.439	0.383	0.351	0.371
	(0.277)	(0.277)	(0.275)	(0.280)	(99.500)	(99.520)	(99.240)	(99.380)	(0.557)	(0.557)	(0.556)	(0.559)

Table A.1 Continued

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Dhaka × female	0.140	0.144	0.164	0.112	-27.610	-29.900	-34.090	-1.232	0.221	0.245	0.219	0.273
	(0.216)	(0.217)	(0.215)	(0.220)	(77.590)	(77.810)	(77.370)	(78.150)	(0.434)	(0.435)	(0.433)	(0.440)
Khulna × female	0.257	0.295	0.285	0.256	-51.390	-48.810	-49.490	-42.880	-0.238	-0.210	-0.235	-0.225
	(0.290)	(0.298)	(0.290)	(0.296)	(104.400)	(106.900)	(104.500)	(104.900)	(0.584)	(0.598)	(0.585)	(0.591)
Rajshahi × female	-0.222	-0.223	-0.124	-0.251	103.900	96.110	86.770	119.200	0.274	0.262	0.194	0.202
	(0.262)	(0.269)	(0.265)	(0.268)	(94.230)	(96.610)	(95.590)	(95.310)	(0.527)	(0.541)	(0.535)	(0.536)
Rangpur × female	0.009	0.001	0.066	-0.013	-50.710	-57.800	-64.300	-20.740	-0.224	-0.259	-0.304	-0.188
	(0.274)	(0.277)	(0.274)	(0.278)	(98.290)	(99.470)	(98.870)	(98.610)	(0.550)	(0.557)	(0.554)	(0.555)
Constant	2.221*	2.403*	2.402*	2.414*	-40.360	0.248	-6.650	103.100	-0.705	-0.406	-0.521	-0.341
	(1.255)	(1.260)	(1.250)	(1.267)	(450.800)	(452.000)	(450.800)	(450.000)	(2.522)	(2.529)	(2.525)	(2.532)
Observations	1,024	1,024	1,024	1,008	1,024	1,024	1,024	1,008	1,024	1,024	1,024	1,008
R-squared	0.212	0.207	0.216	0.205	0.373	0.371	0.372	0.380	0.321	0.318	0.318	0.323
Hypothesis tests / *p*-values												
All gender interactions = 0	0.586	0.579	0.259	0.551	0.767	0.779	0.800	0.676	0.559	0.582	0.590	0.544
Maternal chars × gender interactions = 0	0.897	0.883	0.784	0.830	0.693	0.654	0.662	0.716	0.186	0.176	0.178	0.160
Household demographics × gender interactions = 0	0.931	0.920	0.881	0.813	0.666	0.701	0.688	0.727	0.387	0.416	0.388	0.277
Household wealth × gender effects = 0	0.081	0.089	0.053	0.079	0.933	0.918	0.925	0.850	0.990	0.996	0.994	0.993
Prices × gender effects = 0	0.939	0.948	0.935	0.954	0.201	0.199	0.199	0.240	0.272	0.274	0.272	0.306
Division dummies × gender effects = 0	0.550	0.493	0.649	0.567	0.548	0.570	0.614	0.563	0.869	0.880	0.895	0.898

Source: Estimated using data from the IFPRI Bangladesh Integrated Household Survey, 2011–2012 (Ahmed 2013).
Note: Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.2 Full set of ordinary least squares results for women's empowerment and dietary quality of children ages 5–10

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Female	1.547	1.486	1.550	1.303	-671.500	-743.300	-708.900	-653.500	-0.200	-0.669	-0.562	-0.893
	(1.046)	(1.047)	(1.039)	(1.057)	(500.000)	(498.900)	(499.300)	(501.300)	(3.012)	(3.010)	(3.010)	(3.036)
Empowerment score of primary female	0.418***				140.300**				1.146***			
	(0.140)				(66.950)				(0.403)			
Empowerment score × female	0.053				-20.230				-0.297			
	(0.202)				(96.520)				(0.581)			
Number of groups		0.122*				-38.200				-0.009		
		(0.068)				(32.280)				(0.195)		
Number of groups × female		-0.060				84.870*				0.309		
		(0.095)				(45.000)				(0.272)		
Number of asset decisions			0.014***				-0.270				0.014	
			(0.003)				(1.674)				(0.010)	
Number of asset decisions × female			0.001				1.208				-0.004	
			(0.005)				(2.351)				(0.014)	
Gender parity gap				-0.443***				-167.8**				-1.108**
				(0.162)				(76.710)				(0.465)
Gender parity gap × female				0.050				57.020				0.570
				(0.236)				(111.9)				(0.678)
Age of child	-0.090	-0.095	-0.103	-0.108	187.400***	181.600***	183.500***	174.600***	0.464	0.436	0.427	0.426
	(0.129)	(0.130)	(0.129)	(0.131)	(61.780)	(61.850)	(61.870)	(61.940)	(0.372)	(0.373)	(0.373)	(0.375)

Table A.2 Continued

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Age of child, squared	0.007	0.007	0.008	0.008	-5.734	-5.354	-5.468	-4.803	-0.004	-0.002	-0.001	-0.001
	(0.008)	(0.009)	(0.008)	(0.009)	(4.046)	(4.051)	(4.052)	(4.056)	(0.024)	(0.024)	(0.024)	(0.025)
Child of primary female (= 1, 0 otherwise)	0.108	0.101	0.127	0.112	33.530	29.150	31.590	34.490	0.120	0.092	0.121	0.063
	(0.101)	(0.101)	(0.100)	(0.101)	(48.160)	(48.210)	(48.280)	(48.090)	(0.290)	(0.291)	(0.291)	(0.291)
Age of primary female	-0.017	-0.013	-0.025	-0.019	20.570**	21.870**	22.120**	18.860*	0.106*	0.117**	0.106*	0.103*
	(0.020)	(0.020)	(0.020)	(0.020)	(9.631)	(9.620)	(9.715)	(9.659)	(0.058)	(0.058)	(0.059)	(0.059)
Age of primary female, squared	0.000*	0.000	0.0001**	0.000*	-0.222*	-0.238**	-0.239**	-0.204*	-0.001	-0.001*	-0.001	-0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.118)	(0.118)	(0.119)	(0.118)	(0.001)	(0.001)	(0.001)	(0.0014)
Education of primary female	0.048***	0.049***	0.046***	0.049***	4.744	4.874	5.158	4.618	0.053*	0.056*	0.053*	0.053*
	(0.011)	(0.011)	(0.011)	(0.011)	(5.037)	(5.042)	(5.058)	(5.063)	(0.030)	(0.030)	(0.031)	(0.031)
Age of primary female × female	0.011	0.011	0.008	0.016	-3.278	-3.541	-4.524	-1.931	-0.021	-0.025	-0.022	-0.021
	(0.029)	(0.029)	(0.029)	(0.029)	(13.960)	(13.950)	(14.100)	(13.960)	(0.084)	(0.084)	(0.085)	(0.085)
Age of primary female, squared × female	-0.000	-0.000	-0.000	-0.000	0.056	0.058	0.067	0.042	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.170)	(0.170)	(0.172)	(0.170)	(0.001)	(0.001)	(0.001)	(0.001)
Education of primary female × female	-0.001	-0.001	-0.004	-0.001	-1.133	-0.670	-1.628	-3.070	0.020	0.022	0.019	0.017
	(0.015)	(0.015)	(0.015)	(0.015)	(7.091)	(7.099)	(7.144)	(7.116)	(0.043)	(0.043)	(0.043)	(0.043)
Household dependency ratio	-0.027	-0.025	-0.034	-0.031	2.107	0.839	1.819	1.451	-0.124	-0.127	-0.132	-0.137
	(0.051)	(0.051)	(0.051)	(0.051)	(24.390)	(24.420)	(24.440)	(24.380)	(0.147)	(0.147)	(0.147)	(0.148)
Household size	0.026	0.020	0.028	0.024	-20.920**	-22.530**	-22.770**	-21.220**	-0.102*	-0.116**	-0.109*	-0.112*
	(0.020)	(0.020)	(0.020)	(0.021)	(9.757)	(9.732)	(9.777)	(9.734)	(0.059)	(0.050)	(0.059)	(0.059)

Table A.2 Continued

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Household dependency ratio × female	-0.094	-0.094	-0.085	-0.096	33.260	35.970	34.380	32.230	0.247	0.259	0.260	0.278
	(0.069)	(0.070)	(0.069)	(0.070)	(33.380)	(33.420)	(33.440)	(33.380)	(0.201)	(0.202)	(0.202)	(0.202)
Household size × female	0.024	0.028	0.024	0.027	2.050	3.228	3.698	0.834	-0.031	-0.019	-0.025	-0.017
	(0.028)	(0.028)	(0.028)	(0.028)	(13.330)	(13.320)	(13.360)	(13.300)	(0.080)	(0.080)	(0.081)	(0.081)
Household has access to electricity	0.008	0.017	-0.001	0.009	-20.260	-13.120	-14.510	-20.660	0.121	0.164	0.139	0.141
	(0.066)	(0.066)	(0.066)	(0.067)	(31.610)	(31.590)	(31.710)	(31.590)	(0.190)	(0.191)	(0.191)	(0.191)
Household has sanitary latrine	0.202***	0.221***	0.188**	0.201***	49.520	53.030	55.030	45.480	0.135	0.174	0.147	0.157
	(0.077)	(0.077)	(0.077)	(0.078)	(36.870)	(36.840)	(37.020)	(36.860)	(0.222)	(0.222)	(0.223)	(0.223)
Household owns tube well	-0.052	-0.044	-0.046	-0.052	-82.520**	-70.220*	-74.490**	-81.930**	-0.446**	-0.382*	-0.399*	-0.434**
	(0.076)	(0.076)	(0.075)	(0.076)	(36.100)	(36.160)	(36.040)	(36.160)	(0.218)	(0.218)	(0.217)	(0.219)
Number of dairy cows	0.087***	0.092***	0.088***	0.085***	16.460	15.820	17.010	14.860	0.049	0.054	0.054	0.049
	(0.028)	(0.028)	(0.028)	(0.028)	(13.480)	(13.530)	(13.500)	(13.470)	(0.081)	(0.082)	(0.081)	(0.082)
ln(owned cultivable land + 1)	0.049**	0.048**	0.037*	0.057***	20.420**	18.550*	19.420*	24.130**	0.116*	0.106*	0.090	0.125**
	(0.021)	(0.021)	(0.021)	(0.022)	(10.140)	(10.150)	(10.190)	(10.290)	(0.061)	(0.061)	(0.061)	(0.062)
Electricity × female	0.121	0.129	0.142	0.139	39.180	34.510	38.110	39.670	0.111	0.088	0.124	0.086
	(0.093)	(0.094)	(0.093)	(0.094)	(44.600)	(44.540)	(44.620)	(44.600)	(0.269)	(0.269)	(0.269)	(0.270)
Sanitary latrine × female	-0.053	-0.059	-0.033	-0.061	-28.640	-28.820	-31.660	-16.550	0.132	0.116	0.137	0.158
	(0.108)	(0.108)	(0.108)	(0.109)	(51.550)	(51.540)	(51.690)	(51.620)	(0.311)	(0.311)	(0.312)	(0.313)
Hand-pumped tube well × female	0.049	0.064	0.053	0.049	53.570	43.120	51.870	60.750	0.286	0.239	0.281	0.329
	(0.108)	(0.108)	(0.107)	(0.108)	(51.390)	(51.410)	(51.250)	(51.320)	(0.310)	(0.310)	(0.309)	(0.311)

Table A.2 Continued

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Number of dairy cows × female	-0.055	-0.055	-0.058	-0.051	10.130	12.980	10.160	13.160	0.021	0.032	0.020	0.039
	(0.039)	(0.039)	(0.038)	(0.039)	(18.430)	(18.490)	(18.470)	(18.400)	(0.111)	(0.112)	(0.111)	(0.111)
ln(owned cultivable land + 1) × female	0.007	0.01	0.017	-0.000	-18.010	-15.290	-16.370	-17.840	-0.102	-0.086	-0.081	-0.124
	(0.031)	(0.031)	(0.031)	(0.032)	(14.760)	(14.760)	(14.810)	(14.980)	(0.089)	(0.089)	(0.089)	(0.091)
Price of rice	0.025**	0.024**	0.022*	0.023**	-9.199*	-10.400*	-9.975*	-8.988	-0.015	-0.022	-0.023	-0.019
	(0.012)	(0.012)	(0.011)	(0.012)	(5.488)	(5.490)	(5.486)	(5.494)	(0.033)	(0.033)	(0.033)	(0.033)
Price of chicken	0.003	0.004	0.004*	0.003	0.471	0.553	0.512	0.340	0.001	0.002	0.002	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(1.114)	(1.115)	(1.117)	(1.111)	(0.007)	(0.007)	(0.007)	(0.007)
Price of lentils	-0.001	-0.001	-0.001	-0.001	-1.417	-1.436	-1.416	-1.430	0.013	0.013	0.013	0.013
	(0.003)	(0.003)	(0.003)	(0.003)	(1.548)	(1.550)	(1.551)	(1.546)	(0.009)	(0.009)	(0.009)	(0.009)
Price of small fish	0.001	0.001	0.001	0.001	-0.290	-0.291	-0.280	-0.047	-0.005	-0.005	-0.005	-0.004
	(0.001)	(0.001)	(0.001)	(0.001)	(0.548)	(0.549)	(0.549)	(0.548)	(0.003)	(0.003)	(0.003)	(0.003)
Price of large fish	0.002**	0.002**	0.002**	0.002**	0.412	0.458	0.447	0.447	0.003	0.003	0.003	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.346)	(0.347)	(0.348)	(0.345)	(0.002)	(0.002)	(0.002)	(0.002)
Price of rice × female	-0.018	-0.017	-0.015	-0.015	9.952	11.180	10.560	8.009	0.006	0.013	0.012	0.005
	(0.016)	(0.0164	(0.016)	(0.016)	(7.793)	(7.799)	(7.798)	(7.803)	(0.047)	(0.047)	(0.047)	(0.047)
Price of chicken × female	-0.002	-0.002	-0.001	-0.002	0.476	0.407	0.606	0.618	0.002	0.002	0.002	0.003
	(0.004)	(0.004)	(0.004)	(0.004)	(1.810)	(1.812)	(1.816)	(1.805)	(0.011)	(0.011)	(0.011)	(0.011)
Price of lentils × female	-0.008*	-0.008	-0.009*	-0.008	2.910	3.098	2.938	2.748	-0.008	-0.007	-0.008	-0.007
	(0.005)	(0.005)	(0.005)	(0.005)	(2.295)	(2.297)	(2.302)	(2.305)	(0.014)	(0.014)	(0.014)	(0.014)

Table A.2 Continued

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Price of small fish × female	0.002	0.002	0.002	0.002	-0.381	-0.342	-0.418	-0.362	0.001	0.001	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.789)	(0.791)	(0.790)	(0.784)	(0.005)	(0.005)	(0.005)	(0.005)
Price of large fish × female	-0.001	-0.001	-0.001	-0.001	0.252	0.235	0.236	0.176	0.001			0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.559)	(0.559)	(0.560)	(0.551)	(0.003)	(0.003)	(0.003)	(0.003)
Barisal	-0.274*	-0.268*	-0.254*	-0.302**	-268.100***	-238.900***	-251.500***	-273.600***	-1.347***	-1.213***	-1.243***	-1.430***
	(0.150)	(0.152)	(0.149)	(0.153)	(71.750)	(72.270)	(71.550)	(72.500)	(0.432)	(0.436)	(0.431)	(0.439)
Chittagong	0.239*	0.185	0.187	0.232*	-297.200***	-298.900***	-306.300***	-282.900***	-1.143***	-1.220***	-1.244***	-1.114***
	(0.127)	(0.128)	(0.126)	(0.129)	(60.620)	(60.870)	(60.610)	(61.030)	(0.365)	(0.367)	(0.365)	(0.370)
Dhaka	-0.058	-0.049	-0.016	-0.047	-37.830	-14.960	-24.500	-34.260	-0.771**	-0.660**	-0.659**	-0.759**
	(0.104)	(0.105)	(0.103)	(0.104)	(49.704)	(50.050)	(49.420)	(49.510)	(0.300)	(0.302)	(0.298)	(0.300)
Khulna	-0.296**	-0.355**	-0.304**	-0.260*	-165.300**	-154.700**	-169.200**	-130.500*	-0.834**	-0.863**	-0.862**	-0.735*
	(0.144)	(0.146)	(0.143)	(0.146)	(68.600)	(69.750)	(68.700)	(69.120)	(0.413)	(0.421)	(0.414)	(0.419)
Rajshahi	-0.129	-0.147	-0.187	-0.139	-154.300**	-138.600**	-147.500**	-148.700**	-0.860**	-0.815**	-0.889**	-0.865**
	(0.128)	(0.129)	(0.128)	(0.128)	(60.990)	(61.650)	(61.690)	(60.740)	(0.367)	(0.372)	(0.372)	(0.368)
Rangpur	-0.571***	-0.595***	-0.640***	-0.590***	-242.700***	-232.500***	-239.800***	-239.800***	-1.480***	-1.467***	-1.540***	-1.514***
	(0.130)	(0.131)	(0.131)	(0.130)	(62.040)	(62.560)	(62.770)	(61.850)	(0.374)	(0.377)	(0.378)	(0.375)

Table A.2 Continued

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Barisal × female	0.034	0.047	0.025	0.063	10.180	-29.030	3.713	22.090	1.326**	1.136*	1.288**	1.497**
	(0.209)	(0.212)	(0.207)	(0.212)	(99.630)	(100.900)	(99.390)	(100.400)	(0.600)	(0.609)	(0.599)	(0.608)
Chittagong × female	-0.097	-0.081	-0.069	-0.093	108.900	92.780	112.400	104.500	0.303	0.262	0.364	0.375
	(0.179)	(0.181)	(0.178)	(0.181)	(85.550)	(86.100)	(85.560)	(86.030)	(0.515)	(0.519)	(0.516)	(0.521)
Dhaka × female	-0.138	-0.114	-0.134	-0.127	-62.670	-83.460	-64.560	-71.450	0.497	0.407	0.467	0.615
	(0.145)	(0.146)	(0.143)	(0.145)	(69.210)	(69.420)	(68.720)	(68.990)	(0.417)	(0.419)	(0.414)	(0.418)
Khulna × female	-0.158	-0.135	-0.137	-0.195	-136.700	-166.300*	-135.300	-165.700*	-0.099	-0.195	-0.083	-0.096
	(0.195)	(0.198)	(0.194)	(0.197)	(93.050)	(94.420)	(93.220)	(93.670)	(0.561)	(0.570)	(0.562)	(0.567)
Rajshahi × female	-0.446**	-0.423**	-0.456***	-0.462***	-126.300	-153.100*	-131.800	-129.600	-0.387	-0.499	-0.366	-0.266
	(0.176)	(0.179)	(0.177)	(0.177)	(83.880)	(85.180)	(85.020)	(83.920)	(0.505)	(0.514)	(0.513)	(0.508)
Rangpur × female	-0.0030	0.019	0.003	0.021	53.100	35.420	48.590	50.720	0.332	0.273	0.367	0.467
	(0.181)	(0.183)	(0.182)	(0.183)	(86.630)	(87.290)	(87.590)	(86.660)	(0.522)	(0.527)	(0.528)	(0.525)
Constant	2.140**	2.340***	2.443***	2.725***	606.400	727.900*	699.500*	790.500*	1.206	1.981	2.017	2.638
	(0.856)	(0.856)	(0.848)	(0.857)	(409.100)	(407.700)	(407.500)	(406.700)	(2.465)	(2.460)	(2.456)	(2.463)
Observations	2,015	2,015	2,015	1,983	2,015	2,015	2,015	1,983	2,015	2,015	2,015	1,983

Table A.2 Continued

VARIABLE	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
R-squared	0.172	0.166	0.180		0.170	0.194	0.192	0.191	0.197	0.119	0.114	0.114	0.114
Hypothesis tests / *p*-values												
All gender interactions = 0	0.318	0.311	0.278		0.285	0.411	0.222	0.379	0.357	0.824	0.789	0.842	0.702
Primary female chars × gender interactions = 0	0.348	0.354	0.452		0.535	0.937	0.949	0.944	0.853	0.940	0.935	0.954	0.963
Household demographics × gender interactions = 0	0.461	0.328	0.408		0.319	0.557	0.486	0.505	0.597	0.470	0.437	0.436	0.385
Household wealth × gender effects = 0	0.511	0.454	0.380		0.483	0.581	0.695	0.620	0.551	0.803	0.891	0.857	0.685
Prices × gender effects = 0	0.348	0.428	0.356		0.392	0.580	0.500	0.536	0.712	0.987	0.989	0.983	0.989
Division dummies × gender effects = 0	0.156	0.188	0.132		0.098	0.073	0.046	0.065	0.042	0.125	0.164	0.152	0.074

Source: Estimated using data from the IFPRI Bangladesh Integrated Household Survey, 2011–2012 (Ahmed 2013).
Note: Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.3 Full set of ordinary least squares results for women's empowerment and dietary quality of children ages 11–17

	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Female	0.443	0.490	0.578	0.377	-824.900	-885.800	-824.600	-1,035.000	1.586	1.309	1.454	-0.260
	(1.398)	(1.397)	(1.399)	(1.411)	(723.200)	(724.100)	(724.300)	(732.400)	(4.556)	(4.560)	(4.563)	(4.576)
Empowerment score of primary female	0.159				230.000***				1.685***			
	(0.169)				(87.220)				(0.549)			
Empowerment score × female	0.084				-182.600				-1.400*			
	(0.241)				(124.900)				(0.787)			
Number of groups		0.109				16.660				0.432*		
		(0.075)				(38.810)				(0.244)		
Number of groups × female		-0.076				-23.820				-0.243		
		(0.109)				(56.270)				(0.354)		
Number of asset decisions			0.006				4.414**				0.034***	
			(0.004)				(1.992)				(0.013)	
Number of asset decisions × female			-0.002				-2.874				-0.029	
			(0.006)				(2.971)				(0.019)	
Gender parity gap				-0.016				-236.300**				-1.562**
				(0.198)				(102.700)				(0.642)
Gender parity gap × female				-0.186				146.400				1.937**
				(0.288)				(149.600)				(0.935)
Age of child	0.05	0.05	0.03	0.08	70.27	67.51	55.24	72.53	-0.10	-0.13	-0.21	-0.10
	(0.232)	(0.232)	(0.232)	(0.234)	(120.200)	(120.400)	(120.300)	(121.700)	(0.757)	(0.758)	(0.758)	(0.760)

Table A.3 Continued

	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Age of child, squared	-0.002	-0.002	-0.002	-0.003	0.875	0.986	1.419	0.829	0.017	0.018	0.021	0.018
	(0.009)	(0.009)	(0.009)	(0.009)	(4.341)	(4.349)	(4.346)	(4.395)	(0.027)	(0.027)	(0.027)	(0.028)
Child of primary female (= 1, 0 otherwise)	-0.204*	-0.200*	-0.190	-0.220*	86.800	85.010	91.070	87.130	0.259	0.236	0.292	0.285
	(0.119)	(0.119)	(0.119)	(0.120)	(61.790)	(61.850)	(61.780)	(62.400)	(0.389)	(0.390)	(0.389)	(0.390)
Age of primary female	0.023	0.023	0.020	0.028	2.686	6.620	2.806	4.187	0.101	0.123	0.100	0.089
	(0.034)	(0.034)	(0.034)	(0.034)	(17.590)	(17.560)	(17.610)	(17.720)	(0.111)	(0.111)	(0.111)	(0.111)
Age of primary female, squared	0.000	0.000	0.000	0.000	0.017	-0.030	0.017	-0.003	-0.001	-0.001	-0.001	-0.001
	(0.000)	(0.00)	(0.000)	(0.000)	(0.207)	(0.207)	(0.207)	(0.208)	(0.001)	(0.001)	(0.001)	(0.001)
Education of primary female	0.061***	0.063***	0.061***	0.060***	8.350	9.419	8.359	8.215	0.067	0.077*	0.067	0.067
	(0.013)	(0.013)	(0.013)	(0.013)	(6.898)	(6.909)	(6.905)	(6.937)	(0.044)	(0.044)	(0.044)	(0.043)
Age of primary female × female	-0.028	-0.024	-0.026	-0.026	11.680	8.932	10.340	13.540	-0.121	-0.139	-0.123	-0.085
	(0.045)	(0.044)	(0.045)	(0.045)	(23.060)	(23.020)	(23.160)	(23.220)	(0.145)	(0.145)	(0.146)	(0.145)
Age of primary female, squared × female	0.000	0.000	0.000	0.000	-0.193	-0.161	-0.179	-0.217	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.268)	(0.268)	(0.269)	(0.270)	(0.002)	(0.002)	(0.002)	(0.002)
Education of primary female × female	-0.041**	-0.041**	-0.041**	-0.039**	-3.925	-4.644	-4.387	-2.895	-0.006	-0.015	-0.006	0.002
	(0.019)	(0.019)	(0.019)	(0.019)	(9.752)	(9.754)	(9.807)	(9.829)	(0.061)	(0.061)	(0.062)	(0.061)
Household dependency ratio	-0.158**	-0.155**	-0.161**	-0.155**	-73.410**	-74.710**	-77.150**	-65.360*	-0.127	-0.127	-0.155	-0.041
	(0.066)	(0.066)	(0.066)	(0.066)	(33.910)	(34.000)	(33.930)	(34.400)	(0.214)	(0.214)	(0.214)	(0.215)
Household size	0.089***	0.088***	0.091***	0.087***	13.210	12.730	14.630	11.170	-0.033	-0.041	-0.022	-0.054
	(0.024)	(0.024)	(0.024)	(0.024)	(12.210)	(12.240)	(12.230)	(12.370)	(0.077)	(0.077)	(0.077)	(0.078)

Table A.3 Continued

	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Household dependency ratio × female	0.014	0.010	0.014	0.015	98.080**	98.880**	101.100**	95.290**	0.043	0.052	0.066	-0.014
	(0.087)	(0.087)	(0.087)	(0.087)	(44.840)	(44.970)	(44.840)	(45.300)	(0.282)	(0.283)	(0.282)	(0.283)
Household size × female	-0.005	-0.004	-0.006	-0.003	-12.790	-12.240	-13.870	-10.010	-0.065	-0.061	-0.074	-0.045
	(0.033)	(0.033)	(0.033)	(0.033)	(17.010)	(17.060)	(17.030)	(17.160)	(0.107)	(0.107)	(0.107)	(0.107)
Household has access to electricity	0.089	0.086	0.089	0.099	-75.870*	-71.030*	-72.360*	-68.590*	0.087	0.101	0.111	0.104
	(0.076)	(0.076)	(0.076)	(0.076)	(39.230)	(39.330)	(39.200)	(39.560)	(0.247)	(0.248)	(0.247)	(0.247)
Household has sanitary latrine	0.167**	0.176**	0.168**	0.173**	165.900***	169.500***	167.100***	169.900***	0.736***	0.781***	0.744***	0.756***
	(0.085)	(0.085)	(0.085)	(0.086)	(43.930)	(44.060)	(43.940)	(44.390)	(0.277)	(0.277)	(0.277)	(0.277)
Household owns tube well	0.162*	0.159*	0.171**	0.163*	-62.920	-46.960	-47.870	-56.020	-0.199	-0.128	-0.090	-0.081
	(0.087)	(0.087)	(0.087)	(0.087)	(44.960)	(44.880)	(44.470)	(45.120)	(0.283)	(0.283)	(0.280)	(0.282)
Number of dairy cows	0.0372	0.0387	0.0350	0.0344	42.42***	42.31***	40.57***	43.86***	0.0395	0.0436	0.0254	0.0636
	(0.0292)	(0.0292)	(0.0292)	(0.0293)	(15.08)	(15.12)	(15.10)	(15.22)	(0.0950)	(0.0952)	(0.0952)	(0.0951)
ln(owned cultivable land + 1)	0.038*	0.041*	0.034	0.036	31.860***	30.160**	27.760**	34.990***	0.228***	0.230***	0.197***	0.217***
	(0.022)	(0.023)	(0.022)	(0.023)	(11.610)	(11.740)	(11.610)	(11.940)	(0.073)	(0.074)	(0.073)	(0.075)
Electricity × female	0.042	0.052	0.050	0.041	45.590	42.550	43.920	37.380	0.097	0.086	0.083	0.112
	(0.109)	(0.109)	(0.109)	(0.109)	(56.370)	(56.450)	(56.300)	(56.750)	(0.355)	(0.355)	(0.355)	(0.355)
Sanitary latrine × female	0.130	0.126	0.128	0.121	-65.680	-69.260	-68.010	-70.600	0.057	0.023	0.046	0.075
	(0.123)	(0.123)	(0.123)	(0.124)	(63.500)	(63.680)	(63.560)	(64.160)	(0.400)	(0.401)	(0.400)	(0.401)
Hand-pumped tube well × female	-0.028	-0.011	-0.029	-0.028	24.670	12.440	9.538	16.130	-0.053	-0.121	-0.154	-0.164
	(0.124)	(0.124)	(0.123)	(0.124)	(64.260)	(64.110)	(63.830)	(64.580)	(0.405)	(0.404)	(0.402)	(0.403)

Table A.3 Continued

	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Number of dairy cows × female	0.044	0.044	0.044	0.047	18.950	18.900	19.730	18.250	0.066	0.067	0.077	0.048
	(0.041)	(0.041)	(0.042)	(0.041)	(21.260)	(21.340)	(21.350)	(21.430)	(0.134)	(0.134)	(0.134)	(0.134)
ln(owned cultivable land + 1) × female	-0.008	-0.012	-0.007	-0.006	-16.170	-15.320	-12.640	-19.400	-0.224**	-0.220**	-0.196*	-0.219*
	(0.034)	(0.034)	(0.034)	(0.035)	(17.600)	(17.790)	(17.580)	(18.050)	(0.111)	(0.112)	(0.111)	(0.113)
Price of rice	0.018	0.019	0.018	0.016	-17.870***	-18.350***	-18.590***	-18.320***	-0.051	-0.049	-0.056	-0.055
	(0.013)	(0.013)	(0.012)	(0.013)	(6.444)	(6.483)	(6.441)	(6.479)	(0.041)	(0.041)	(0.041)	(0.041)
Price of chicken	0.002	0.002	0.003	0.002	-1.075	-0.908	-0.613	-0.925	0.007	0.007	0.010	0.008
	(0.003)	(0.003)	(0.003)	(0.003)	(1.736)	(1.740)	(1.740)	(1.744)	(0.011)	(0.011)	(0.011)	(0.011)
Price of lentils	-0.004	-0.004	-0.004	-0.004	-1.459	-1.450	-1.196	-1.653	0.015	0.016	0.017	0.015
	(0.004)	(0.004)	(0.004)	(0.004)	(2.043)	(2.050)	(2.049)	(2.062)	(0.013)	(0.013)	(0.013)	(0.013)
Price of small fish	0.004***	0.004***	0.004**	0.003**	0.610	0.617	0.529	0.645	0.002	0.002	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.730)	(0.734)	(0.731)	(0.744)	(0.005)	(0.005)	(0.005)	(0.005)
Price of large fish	0.001	0.001	0.001	0.001	0.026	0.000	-0.074	0.013	0.000	0.000	-0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.515)	(0.516)	(0.516)	(0.526)	(0.003)	(0.003)	(0.003)	(0.003)
Price of rice × female	0.006	0.003	0.005	0.008	4.553	4.713	4.972	4.700	0.038	0.036	0.041	0.034
	(0.018)	(0.018)	(0.018)	(0.018)	(9.077)	(9.108)	(9.066)	(9.151)	(0.057)	(0.057)	(0.057)	(0.057)
Price of chicken × female	0.001	0.001	0.001	0.001	4.680*	4.616*	4.285*	4.807*	0.016	0.015	0.013	0.016
	(0.005)	(0.005)	(0.005)	(0.005)	(2.482)	(2.490)	(2.482)	(2.493)	(0.016)	(0.016)	(0.016)	(0.016)
Price of lentils × female	-0.002	-0.002	-0.002	-0.002	-2.820	-2.830	-3.132	-2.757	-0.018	-0.018	-0.020	-0.018
	(0.005)	(0.006)	(0.006)	(0.006)	(2.840)	(2.849)	(2.846)	(2.863)	(0.018)	(0.018)	(0.018)	(0.018)

Table A.3 Continued

	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Price of small fish × female	-0.001	-0.001	-0.001	0.000	0.109	0.092	0.169	-0.003	-0.003	-0.004	-0.003	-0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.984)	(0.987)	(0.985)	(1.001)	(0.006)	(0.006)	(0.006)	(0.006)
Price of large fish × female	0.002	0.002	0.002	0.002	0.133	0.159	0.217	0.191	0.004	0.004	0.005	0.004
	(0.001)	(0.001)	(0.001)	(0.001)	(0.747)	(0.749)	(0.749)	(0.759)	(0.005)	(0.005)	(0.005)	(0.005)
Barisal	-0.466***	-0.490***	-0.460***	-0.513***	-339.100***	-325.400***	-324.900***	-316.700***	-1.830***	-1.835***	-1.728***	-1.514***
	(0.160)	(0.161)	(0.159)	(0.164)	(82.810)	(83.700)	(82.560)	(84.920)	(0.522)	(0.527)	(0.520)	(0.531)
Chittagong	0.252*	0.215	0.234*	0.261*	-301.900***	-323.400***	-324.000***	-280.600***	-0.805*	-1.033**	-0.969**	-0.607
	(0.141)	(0.141)	(0.140)	(0.144)	(72.910)	(73.280)	(72.660)	(74.970)	(0.459)	(0.461)	(0.458)	(0.468)
Dhaka	-0.235*	-0.248**	-0.230*	-0.235*	-5.665	2.598	4.027	5.677	-0.908**	-0.906**	-0.838**	-0.674*
	(0.121)	(0.122)	(0.121)	(0.123)	(62.800)	(63.200)	(62.690)	(63.990)	(0.396)	(0.398)	(0.395)	(0.400)
Khulna	-0.458***	-0.501***	-0.465***	-0.483***	-242.600***	-262.500***	-255.200***	-232.700***	-1.267**	-1.506***	-1.358***	-1.049**
	(0.157)	(0.158)	(0.157)	(0.160)	(81.190)	(82.000)	(81.050)	(82.830)	(0.511)	(0.516)	(0.511)	(0.518)
Rajshahi	-0.640***	-0.674***	-0.666***	-0.666***	-200.200***	-201.500**	-217.500***	-187.900**	-1.574***	-1.691***	-1.710***	-1.330***
	(0.150)	(0.152)	(0.151)	(0.152)	(77.530)	(78.820)	(78.170)	(78.760)	(0.488)	(0.496)	(0.492)	(0.492)
Rangpur	-0.934***	-0.949***	-0.960***	-0.949***	-261.900***	-259.400***	-279.000***	-244.400***	-2.438***	-2.473***	-2.572***	-2.211***
	(0.167)	(0.167)	(0.168)	(0.171)	(86.350)	(86.760)	(86.960)	(88.620)	(0.544)	(0.546)	(0.548)	(0.554)
Barisal × female	0.234	0.273	0.242	0.384	205.700*	202.200	191.300	194.200	0.850	0.797	0.764	0.688
	(0.238)	(0.241)	(0.237)	(0.241)	(123.000)	(125.000)	(122.600)	(125.000)	(0.775)	(0.787)	(0.772)	(0.781)
Chittagong × female	-0.101	-0.081	-0.091	-0.063	50.980	73.130	71.490	38.330	-0.401	-0.236	-0.247	-0.565
	(0.198)	(0.199)	(0.197)	(0.201)	(102.200)	(103.200)	(102.000)	(104.400)	(0.644)	(0.650)	(0.643)	(0.652)

Table A.3 Continued

	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Dhaka × female	0.059	0.083	0.071	0.102	118.000	116.100	111.300	113.500	0.666	0.635	0.616	0.524
	(0.176)	(0.177)	(0.175)	(0.177)	(91.150)	(91.950)	(90.770)	(92.100)	(0.574)	(0.579)	(0.572)	(0.575)
Khulna × female	-0.139	-0.126	-0.142	-0.092	72.010	92.360	83.350	76.410	0.220	0.354	0.297	0.037
	(0.223)	(0.226)	(0.222)	(0.226)	(115.20)	(117.300)	(115.000)	(117.200)	(0.726)	(0.739)	(0.725)	(0.733)
Rajshahi × female	0.057	0.095	0.070	0.132	53.930	62.300	64.090	52.180	0.844	0.896	0.968	0.707
	(0.212)	(0.216)	(0.215)	(0.214)	(109.700)	(112.200)	(111.100)	(110.900)	(0.691)	(0.707)	(0.700)	(0.693)
Rangpur × female	0.001	0.002	0.014	0.046	107.200	106.100	120.200	83.870	0.884	0.860	1.003	0.641
	(0.229)	(0.230)	(0.230)	(0.233)	(118.500)	(119.400)	(119.000)	(120.900)	(0.746)	(0.752)	(0.750)	(0.755)
Constant	2.116	2.122	2.235	2.029	1,732.000*	1,816.000*	1,879.000**	1,875.000*	3.894	4.467	4.978	5.293
	(1.839)	(1.838)	(1.837)	(1.859)	(951.200)	(952.700)	(951.200)	(965.100)	(5.992)	(6.000)	(5.993)	(6.030)
Observations	1,786	1,786	1,786	1,753	1,786	1,786	1,786	1,753	1,786	1,786	1,786	1,753
R-squared	0.210	0.209	0.210	0.210	0.208	0.205	0.208	0.208	0.117	0.114	0.116	0.112
Hypothesis tests / *p*-values												
All gender interactions = 0	0.958	0.944	0.957	0.878	0.487	0.606	0.546	0.555	0.557	0.748	0.593	0.630
Primary female chars × gender interactions = 0	0.166	0.167	0.165	0.179	0.517	0.540	0.508	0.471	0.422	0.436	0.390	0.442
Household demographics × gender interactions = 0	0.980	0.989	0.976	0.984	0.089	0.088	0.076	0.109	0.833	0.850	0.785	0.907
Household wealth × gender effects = 0	0.774	0.778	0.777	0.780	0.631	0.653	0.679	0.604	0.495	0.501	0.592	0.506
Prices × gender effects = 0	0.897	0.891	0.882	0.802	0.409	0.419	0.430	0.390	0.586	0.586	0.550	0.609
Division dummies × gender effects = 0	0.796	0.702	0.754	0.550	0.719	0.781	0.798	0.778	0.405	0.562	0.484	0.461

Source: Estimated using data from the IFPRI Bangladesh Integrated Household Survey, 2011–2012 (Ahmed 2013).
Note: Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.4 Full set of ordinary least squares results for women's empowerment and dietary quality of adults

	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Female	0.110	0.128	0.082	0.136	-472.200*	-542.900*	-521.800*	-565.200**	-0.354	-0.762	-0.580	-0.870
	(0.485)	(0.482)	(0.480)	(0.486)	(280.900)	(279.300)	(278.800)	(281.400)	(2.035)	(2.023)	(2.020)	(2.037)
Empowerment score of primary female	0.247***				292.700***				1.948***			
	(0.083)				(47.830)				(0.346)			
Empowerment score × female	-0.006				-110.100				-0.606			
	(0.116)				(67.160)				(0.486)			
Number of groups		0.093**				-44.140**				-0.126		
		(0.039)				(22.520)				(0.163)		
Number of groups × female		-0.063				41.660				0.314		
		(0.055)				(31.660)				(0.229)		
Number of asset decisions			0.012***				7.445***				0.051***	
			(0.002)				(1.152)				(0.008)	
Number of asset decisions × female			0.001				-1.366				-0.011	
			(0.003)				(1.624)				(0.012)	
Gender parity gap				-0.220**				-335.900***				-1.908***
				(0.096)				(55.510)				(0.402)
Gender parity gap × female				-0.043				159.900**				0.941*
				(0.135)				(77.930)				(0.564)
Age of member (years)	0.011**	0.011***	0.009**	0.011**	16.420***	16.970***	15.700***	17.160***	0.081***	0.085***	0.077***	0.086***
	(0.004)	(0.004)	(0.004)	(0.004)	(2.388)	(2.397)	(2.389)	(2.405)	(0.017)	(0.017)	(0.017)	(0.017)
Age of member, squared	-0.000	-0.000	-0.000	-0.000	-0.000***	-0.000***	-0.000***	-0.000***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000	(0.026)	(0.026)	(0.026)	(0.026)	(0.001)	(0.001)	(0.001)	(0.001)

Table A.4 Continued

	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Education of member (years)	0.043***	0.043***	0.040***	0.043***	2.251	1.969	0.842	2.946	0.069***	0.069***	0.059***	0.076***
	(0.004)	(0.004)	(0.004)	(0.004)	(2.238)	(2.246)	(2.240)	(2.259)	(0.016)	(0.016)	(0.016)	(0.016)
Household dependency ratio	-0.129***	-0.129***	-0.132***	-0.130***	-10.540	-13.050	-13.320	-6.875	-0.377***	-0.390***	-0.395***	-0.343**
	(0.032)	(0.032)	(0.032)	(0.033)	(18.740)	(18.800)	(18.720)	(18.920)	(0.136)	(0.136)	(0.136)	(0.137)
Household size	0.068***	0.066***	0.071***	0.066***	0.448	-0.426	1.905	0.406	-0.029	-0.037	-0.019	-0.037
	(0.010)	(0.010)	(0.010)	(0.010)	(5.852)	(5.870)	(5.857)	(5.907)	(0.042)	(0.043)	(0.042)	(0.043)
Household dependency ratio × female	0.022	0.020	0.022	0.021	-5.142	-4.168	-4.345	-9.570	0.101	0.109	0.105	0.060
	(0.045)	(0.045)	(0.045)	(0.045)	(25.960)	(26.05)0	(25.930)	(26.210)	(0.188)	(0.189)	(0.188)	(0.190)
Household size × female	0.008	0.009	0.009	0.009	-3.806	-3.550	-3.587	-3.457	-0.050	-0.050	-0.050	-0.042
	(0.014)	(0.014)	(0.014)	(0.014)	(8.299)	(8.327)	(8.310)	(8.369)	(0.060)	(0.060)	(0.060)	(0.061)
Household has access to electricity	0.145***	0.148***	0.146***	0.147***	-36.720*	-28.410	-32.830	-37.990*	0.035	0.084	0.059	0.077
	(0.038)	(0.038)	(0.038)	(0.038)	(22.020)	(22.080)	(21.980)	(22.200)	(0.160)	(0.160)	(0.159)	(0.161)
Household has sanitary latrine	0.171***	0.176***	0.166***	0.171***	89.550***	93.200***	88.350***	86.390***	0.612***	0.637***	0.602***	0.605***
	(0.042)	(0.042)	(0.042)	(0.043)	(24.450)	(24.520)	(24.440)	(24.670)	(0.177)	(0.178)	(0.177)	(0.179)
Household owns tube well	0.078*	0.086**	0.089**	0.075*	-18.320	10.610	0.413	-14.030	-0.129	0.043	-0.005	-0.061
	(0.043)	(0.043)	(0.043)	(0.043)	(25.060)	(24.990)	(24.740)	(25.140)	(0.182)	(0.181)	(0.179)	(0.182)
Number of dairy cows	0.054***	0.058***	0.047***	0.055***	41.820***	42.550***	38.270***	43.160***	0.023	0.032	-0.002	0.034
	(0.015)	(0.015)	(0.015)	(0.015)	(8.382)	(8.429)	(8.411)	(8.422)	(0.061)	(0.061)	(0.061)	(0.061)
ln(owned cultivable land + 1)	0.033***	0.034***	0.027**	0.035***	7.386	4.838	3.367	9.697	0.108**	0.096**	0.081*	0.110**
	(0.011)	(0.011)	(0.011)	(0.011)	(6.532)	(6.581)	(6.539)	(6.627)	(0.047)	(0.048)	(0.047)	(0.048)
Electricity × female	0.026	0.028	0.021	0.029	38.490	35.410	35.170	38.750	0.166	0.146	0.149	0.137
	(0.053)	(0.053)	(0.053)	(0.054)	(30.750)	(30.810)	(30.690)	(30.970)	(0.223)	(0.223)	(0.222)	(0.224)

Table A.4 Continued

	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Sanitary latrine × female	0.062	0.062	0.057	0.063	-36.960	-36.890	-38.820	-33.580	-0.162	-0.159	-0.169	-0.129
	(0.059)	(0.059)	(0.059)	(0.059)	(34.250)	(34.350)	(34.250)	(34.540)	(0.248)	(0.249)	(0.248)	(0.250)
Hand-pumped tube well × female	-0.003	0.005	-0.009	-0.007	20.330	6.691	9.939	18.640	0.212	0.129	0.156	0.191
	(0.061)	(0.061)	(0.060)	(0.061)	(35.260)	(35.140)	(34.820)	(35.370)	(0.255)	(0.254)	(0.252)	(0.256)
Number of dairy cows × female	-0.017	-0.019	-0.016	-0.017	-5.557	-5.297	-4.600	-6.650	0.022	0.026	0.031	0.016
	(0.021)	(0.021)	(0.021)	(0.021)	(12.040)	(12.110)	(12.070)	(12.100)	(0.087)	(0.088)	(0.088)	(0.088)
ln(owned cultivable land + 1) × female	0.010	0.009	0.010	0.010	-12.280	-10.540	-11.110	-12.860	-0.044	-0.032	-0.036	-0.045
	(0.016)	(0.016)	(0.016)	(0.016)	(9.040)	(9.111)	(9.051)	(9.163)	(0.066)	(0.066)	(0.066)	(0.066)
Price of rice	0.025***	0.025***	0.025***	0.025***	-13.750***	-14.520***	-13.940***	-14.000***	-0.039	-0.044*	-0.041	-0.041
	(0.006)	(0.006)	(0.006)	(0.006)	(3.640)	(3.652)	(3.635)	(3.697)	(0.026)	(0.026)	(0.026)	(0.027)
Price of chicken	0.003**	0.003**	0.004**	0.004**	1.812**	2.154**	2.316***	1.893**	0.014**	0.016**	0.017***	0.014**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.890)	(0.892)	(0.889)	(0.893)	(0.006)	(0.006)	(0.006)	(0.006)
Price of lentils	-0.004**	-0.004**	-0.004**	-0.004**	-1.112	-1.158	-1.185	-1.232	0.011	0.010	0.009	0.009
	(0.002)	(0.002)	(0.002)	(0.002)	(1.098)	(1.103)	(1.097)	(1.109)	(0.008)	(0.008)	(0.008)	(0.008)
Price of small fish	0.002***	0.002***	0.002***	0.002***	0.544	0.529	0.525	0.467	-0.003	-0.003	-0.003	-0.003
	(0.001)	(0.001)	(0.001)	(0.001)	(0.377)	(0.379)	(0.377)	(0.384)	(0.003)	(0.003)	(0.003)	(0.003)
Price of large fish	0.001***	0.002***	0.001***	0.002***	0.550**	0.561**	0.480*	0.653**	0.004**	0.004**	0.003*	0.004**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.269)	(0.270)	(0.269)	(0.275)	(0.002)	(0.002)	(0.002)	(0.002)
Price of rice × female	-0.002	-0.002	-0.002	-0.002	4.668	5.212	4.879	4.617	0.009	0.013	0.011	0.009
	(0.009)	(0.009)	(0.009)	(0.009)	(5.094)	(5.112)	(5.087)	(5.172)	(0.037)	(0.037)	(0.037)	(0.037)
Price of chicken × female	0.000	0.000	0.000	0.000	-0.402	-0.632	-0.583	-0.419	-0.008	-0.009	-0.009	-0.007
	(0.002)	(0.002)	(0.002)	(0.002)	(1.254)	(1.257)	(1.252)	(1.257)	(0.009)	(0.009)	(0.009)	(0.009)

Table A.4 Continued

	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Price of lentils × female	0.000	-0.001	0.000	-0.001	0.266	0.351	0.350	0.291	-0.006	-0.005	-0.005	-0.005
	(0.003)	(0.003)	(0.003)	(0.003)	(1.545)	(1.550)	(1.543)	(1.559)	(0.011)	(0.011)	(0.011)	(0.011)
Price of small fish × female	-0.000	-0.000	-0.000	-0.000	0.027	0.044	0.029	0.074	0.004	0.004	0.004	0.003
	(0.001)	(0.001)	(0.001)	(0.001)	(0.523)	(0.525)	(0.523)	(0.531)	(0.004)	(0.004)	(0.004)	(0.004)
Price of large fish × female	0.000	0.000	0.000	0.000	0.001	0.010	0.007	-0.024	0.001	0.001	0.001	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.377)	(0.378)	(0.377)	(0.384)	(0.003)	(0.003)	(0.003)	(0.003)
Barisal	-0.479***	-0.484***	-0.476***	-0.450***	-425.400***	-370.900***	-405.400***	-398.700***	-1.570***	-1.272***	-1.440***	-1.304***
	(0.084)	(0.085)	(0.083)	(0.085)	(48.630)	(49.170)	(48.270)	(49.190)	(0.352)	(0.356)	(0.350)	(0.356)
Chittagong	0.283***	0.250***	0.261***	0.316***	-290.600***	-296.600***	-312.000***	-276.600***	-0.532*	-0.607*	-0.675**	-0.436
	(0.077)	(0.077)	(0.076)	(0.078)	(44.280)	(44.610)	(44.170)	(45.04)0	(0.321)	(0.323)	(0.320)	(0.326)
Dhaka	-0.269***	-0.271***	-0.253***	-0.240***	18.470	44.430	36.880	33.340	0.060	0.202	0.183	0.215
	(0.065)	(0.065)	(0.064)	(0.065)	(37.310)	(37.560)	(37.160)	(37.700)	(0.270)	(0.272)	(0.269)	(0.273)
Khulna	-0.593***	-0.635***	-0.588***	-0.555***	-144.300***	-141.400***	-147.100***	-117.000**	-0.039	-0.078	-0.057	0.171
	(0.078)	(0.079)	(0.078)	(0.079)	(45.120)	(45.870)	(45.040)	(46.030)	(0.327)	(0.332)	(0.326)	(0.333)
Rajshahi	-0.572***	-0.588***	-0.629***	-0.550***	-229.600***	-200.700***	-257.900***	-217.700***	-0.896***	-0.756**	-1.091***	-0.767**
	(0.074)	(0.075)	(0.074)	(0.075)	(42.770)	(43.400)	(43.190)	(43.290)	(0.310)	(0.314)	(0.313)	(0.313)
Rangpur	-0.867***	-0.886***	-0.899***	-0.847***	-235.700***	-224.500***	-255.400***	-231.600***	-1.558***	-1.520***	-1.692***	-1.444***
	(0.079)	(0.080)	(0.079)	(0.081)	(46.130)	(46.540)	(46.200)	(46.750)	(0.334)	(0.337)	(0.335)	(0.338)
Barisal × female	-0.064	-0.039	-0.074	-0.094	82.640	53.560	69.290	68.580	0.145	-0.043	0.079	-0.000
	(0.118)	(0.118)	(0.116)	(0.119)	(68.000)	(68.680)	(67.530)	(68.730)	(0.493)	(0.497)	(0.489)	(0.497)
Chittagong × female	-0.105	-0.095	-0.100	-0.121	72.770	66.580	81.330	64.170	0.146	0.094	0.195	0.086
	(0.107)	(0.108)	(0.106)	(0.109)	(62.000)	(62.370)	(61.800)	(62.960)	(0.449)	(0.452)	(0.448)	(0.456)

Table A.4 Continued

	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Dhaka × female	-0.115	-0.104	-0.112	-0.127	-12.110	-26.840	-17.580	-18.990	-0.239	-0.336	-0.268	-0.300
	(0.090)	(0.091)	(0.089)	(0.091)	(52.280)	(52.620)	(52.070)	(52.760)	(0.379)	(0.381)	(0.377)	(0.382)
Khulna × female	-0.068	-0.047	-0.066	-0.076	-61.710	-71.240	-58.590	-74.490	-0.524	-0.608	-0.512	-0.629
	(0.109)	(0.110)	(0.108)	(0.111)	(62.880)	(63.950)	(62.770)	(64.110)	(0.455)	(0.463)	(0.455)	(0.464)
Rajshahi × female	-0.021	-0.003	-0.033	-0.026	31.930	12.670	30.630	32.640	0.029	-0.106	0.040	0.017
	(0.104)	(0.106)	(0.105)	(0.105)	(60.390)	(61.290)	(61.050)	(61.080)	(0.437)	(0.444)	(0.442)	(0.442)
Rangpur × female	-0.100	-0.086	-0.099	-0.111	7.770	-1.658	13.340	5.680	-0.067	-0.135	-0.023	-0.133
	(0.112)	(0.113)	(0.112)	(0.113)	(64.850)	(65.390)	(64.930)	(65.630)	(0.470)	(0.474)	(0.471)	(0.475)
Constant	2.288***	2.398***	2.312***	2.478***	2,728.000***	2,893.000***	2,814.000***	2,950.000***	8.384***	9.441***	8.939***	9.706***
	(0.357)	(0.355)	(0.354)	(0.358)	(206.7)	(205.8)	(205.3)	(207.4)	(1.497)	(1.491)	(1.487)	(1.501)
Observations	7,506	7,506	7,506	7,389	7,506	7,506	7,506	7,389	7,506	7,506	7,506	7,389
R-squared	0.195	0.194	0.202	0.193	0.186	0.181	0.188	0.185	0.085	0.079	0.086	0.082
Hypothesis tests / *p*-values												
All gender interactions = 0	0.993	0.981	0.996	0.989	0.633	0.710	0.771	0.552	0.975	0.970	0.985	0.966
Household demographics × gender interactions = 0	0.684	0.679	0.649	0.668	0.854	0.878	0.874	0.815	0.670	0.664	0.666	0.780
Household wealth × gender effects = 0	0.757	0.745	0.811	0.750	0.387	0.520	0.479	0.389	0.842	0.933	0.900	0.902
Prices × gender effects = 0	0.998	0.997	0.998	0.998	0.966	0.933	0.948	0.967	0.858	0.802	0.827	0.897
Division dummies × gender effects = 0	0.857	0.865	0.900	0.797	0.303	0.376	0.314	0.305	0.770	0.767	0.750	0.717

Source: Estimated using data from the IFPRI Bangladesh Integrated Household Survey, 2011–2012 (Ahmed 2013).
Note: Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.5 Full set of fixed-effects regression results for women's empowerment and dietary quality of children younger than five years

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Female	-2.482	-2.251	-1.561	-2.805	1,459.000	1,120.000	1,458.000	1,467.000	21.130	16.260	16.730	21.780
	(5.093)	(5.452)	(5.466)	(5.008)	(2,148.000)	(2,290.000)	(2,316.000)	(2,201.000)	(14.470)	(15.190)	(15.370)	(14.560)
Empowerment score × female	0.424				-176.000				-0.998			
	(0.682)				(287.700)				(1.938)			
Number of groups × female		0.062				-75.710				-1.037		
		(0.382)				(160.300)				(1.063)		
Number of asset decisions × female			0.011				-0.340				-0.052	
			(0.022)				(9.502)				(0.063)	
Gender parity gap × female				0.441				64.910				-0.752
				(0.388)				(170.500)				(1.128)
Age (months)	0.142***	0.140***	0.142***	0.142***	0.193	0.880	1.162	0.546	-0.181*	-0.180*	-0.183*	-0.183
	(0.037)	(0.037)	(0.037)	(0.037)	(15.610)	(15.580)	(15.700)	(16.300)	(0.105)	(0.103)	(0.104)	(0.108)
Age squared	-0.002***	-0.002***	-0.002***	-0.002***	0.263	0.254	0.250	0.260	0.004**	0.004**	0.004**	0.004**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.226)	(0.226)	(0.228)	(0.236)	(0.002)	(0.002)	(0.002)	(0.002)
Child of primary female (= 1, 0 otherwise)	0.594	0.675	0.750	0.326	772.200**	749.000**	731.300**	686.400*	7.100***	7.095***	6.591***	7.514***
	(0.841)	(0.837)	(0.838)	(0.861)	(354.700)	(351.500)	(355.200)	(378.300)	(2.389)	(2.331)	(2.357)	(2.502)
Age of mother × female	0.036	0.027	0.007	0.074	-53.600	-47.310	-50.290	-47.160	-1.293**	-1.228**	-1.173*	-1.360**
	(0.204)	(0.206)	(0.209)	(0.202)	(86.050)	(86.540)	(88.600)	(88.940)	(0.580)	(0.574)	(0.588)	(0.588)
Age of mother, squared × female	-0.000	-0.000	0.000	-0.001	0.659	0.582	0.617	0.591	0.019**	0.019**	0.0182**	0.021**
	(0.003)	(0.003)	(0.003)	(0.003)	(1.247)	(1.253)	(1.283)	(1.284)	(0.008)	(0.008)	(0.009)	(0.009)

Table A.5 Continued

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Education of mother × female	0.058	0.054	0.051	0.047	-14.600	-11.580	-13.560	-14.840	-0.070	-0.036	-0.046	-0.050
	(0.062)	(0.063)	(0.062)	(0.061)	(26.040)	(26.450)	(26.400)	(26.800)	(0.175)	(0.175)	(0.175)	(0.177)
Dependency ratio × female	0.074	0.068	0.098	-0.014	-191.600	-187.400	-190.800	-205.000	-1.231	-1.186	-1.349	-1.086
	(0.304)	(0.306)	(0.309)	(0.313)	(128.200)	(128.700)	(131.100)	(137.400)	(0.864)	(0.853)	(0.870)	(0.909)
Household size × female	-0.050	-0.044	-0.040	-0.082	-31.760	-34.350	-34.400	-39.590	-0.053	-0.068	-0.086	-0.001
	(0.079)	(0.079)	(0.079)	(0.084)	(33.650)	(33.500)	(33.810)	(36.940)	(0.227)	(0.222)	(0.224)	(0.244)
Electricity × female	-0.698	-0.665	-0.643	-0.803*	86.260	55.790	79.960	63.360	0.490	0.113	0.263	0.660
	(0.462)	(0.482)	(0.471)	(0.466)	(194.900)	(202.600)	(199.400)	(204.900)	(1.313)	(1.343)	(1.323)	(1.355)
Sanitary latrine × female	0.486	0.523	0.454	0.418	244.900	225.800	233.600	208.100	1.158	1.002	1.377	1.230
	(0.484)	(0.485)	(0.499)	(0.498)	(204.100)	(203.900)	(211.200)	(218.800)	(1.375)	(1.352)	(1.402)	(1.447)
Hand-pumped tube well × female	0.113	0.111	0.176	-0.027	157.600	175.300	148.200	126.000	0.237	0.544	-0.013	0.463
	(0.395)	(0.417)	(0.404)	(0.411)	(166.500)	(175.200)	(171.200)	(180.800)	(1.122)	(1.162)	(1.136)	(1.196)
Number of dairy cows × female	-0.165	-0.175	-0.159	-0.078	-15.360	-10.020	-12.520	5.760	0.068	0.114	0.019	-0.066
	(0.169)	(0.170)	(0.171)	(0.199)	(71.290)	(71.430)	(72.630)	(87.490)	(0.480)	(0.474)	(0.482)	(0.579)
ln(owned cultivable land + 1) × female	-0.150	-0.162	-0.166	-0.117	16.960	18.860	23.200	30.310	-0.028	-0.052	0.011	-0.074
	(0.106)	(0.107)	(0.104)	(0.110)	(44.880)	(44.790)	(44.040)	(48.540)	(0.302)	(0.297)	(0.292)	(0.321)
Price of rice × female	-0.009	0.000	-0.013	-0.022	68.680*	70.160	62.710	60.500	0.348	0.420	0.398	0.366
	(0.095)	(0.100)	(0.099)	(0.092)	(39.840)	(42.070)	(41.810)	(40.280)	(0.268)	(0.279)	(0.277)	(0.266)
Price of chicken × female	0.005	0.007	-0.000	0.002	-7.680	-7.586	-7.781	-7.647	-0.047	-0.044	-0.043	-0.049
	(0.021)	(0.021)	(0.021)	(0.020)	(8.663)	(8.699)	(8.764)	(8.880)	(0.058)	(0.058)	(0.058)	(0.059)

Table A.5 Continued

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Price of lentils × female	0.019	0.018	0.018	0.017	-7.021	-7.206	-6.667	-7.183	-0.006	-0.011	-0.005	-0.005
	(0.018)	(0.018)	(0.018)	(0.018)	(7.628)	(7.714)	(7.662)	(8.043)	(0.051)	(0.051)	(0.051)	(0.053)
Price of small fish × female	-0.000	-0.001	0.000	0.003	-2.730	-1.670	-2.718	-2.150	-0.011	0.003	-0.009	-0.016
	(0.012)	(0.013)	(0.012)	(0.012)	(4.854)	(5.360)	(4.900)	(5.211)	(0.033)	(0.036)	(0.033)	(0.035)
Price of large fish × female	0.004	0.004	0.003	0.005	1.123	1.144	1.059	1.095	-0.003	-0.002	-0.002	-0.005
	(0.004)	(0.004)	(0.004)	(0.004)	(1.590)	(1.603)	(1.633)	(1.646)	(0.011)	(0.011)	(0.011)	(0.011)
Barisal × female	1.815*	1.705	1.763*	2.032*	25.490	80.710	64.640	112.600	-0.241	0.190	-0.226	-0.546
	(1.026)	(1.024)	(1.021)	(1.035)	(432.800)	(430.000)	(432.500)	(454.800)	(2.915)	(2.851)	(2.869)	(3.008)
Chittagong × female	-0.220	-0.272	-0.287	-0.176	-59.090	-33.230	-39.220	-23.810	-0.150	0.0500	0.0548	-0.188
	(0.502)	(0.501)	(0.500)	(0.498)	(211.900)	(210.600)	(211.700)	(218.900)	(1.427)	(1.396)	(1.405)	(1.448)
Dhaka × female	-0.346	-0.351	-0.403	-0.343	-337.500*	-332.800*	-334.900*	-336.000*	-1.692	-1.635	-1.434	-1.695
	(0.398)	(0.401)	(0.413)	(0.391)	(167.700)	(168.400)	(175.000)	(171.800)	(1.130)	(1.117)	(1.161)	(1.136)
Khulna × female	0.542	0.555	0.455	0.632	-842.100***	-824.900***	-855.400***	-855.900***	-2.964	-2.592	-2.468	-3.156
	(0.659)	(0.683)	(0.705)	(0.646)	(278.100)	(286.900)	(298.800)	(283.800)	(1.874)	(1.902)	(1.983)	(1.877)
Rajshahi × female	-0.669	-0.679	-0.837	-0.589	148.300	177.900	145.100	102.100	0.995	1.472	1.817	0.719
	(0.673)	(0.704)	(0.770)	(0.768)	(283.700)	(295.600)	(326.400)	(337.400)	(1.911)	(1.960)	(2.165)	(2.232)
Rangpur × female	-0.246	-0.418	-0.487	-0.211	-768.700*	-677.300	-705.000*	-685.800	-7.584**	-6.821**	-6.806**	-7.562**
	(0.977)	(0.967)	(0.969)	(0.942)	(412.300)	(406.300)	(410.400)	(414.000)	(2.777)	(2.694)	(2.723)	(2.738)
Constant	1.071	1.046	0.981	1.263	-53.200	-46.970	-39.210	10.420	-0.202	-0.215	0.145	-0.347
	(0.787)	(0.792)	(0.797)	(0.813)	(331.900)	(332.500)	(337.500)	(357.100)	(2.236)	(2.205)	(2.239)	(2.362)
Observations	102	102	102	100	102	102	102	100	102	102	102	100

Table A.5 Continued

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
R-squared	0.602	0.596	0.600	0.630	0.822	0.821	0.819	0.816	0.730	0.737	0.734	0.733
Hypothesis tests / *p*-values												
All gender interactions = 0	0.845	0.866	0.853	0.783	0.357	0.368	0.384	0.411	0.353	0.308	0.324	0.341
Maternal × gender interactions = 0	0.782	0.820	0.820	0.728	0.861	0.906	0.887	0.908	0.133	0.142	0.186	0.131
Household demographics × gender interactions = 0	0.817	0.855	0.862	0.621	0.159	0.154	0.163	0.179	0.325	0.328	0.253	0.496
Household wealth × gender effects = 0	0.510	0.511	0.546	0.425	0.784	0.783	0.798	0.811	0.953	0.941	0.932	0.953
Prices × gender effects = 0	0.901	0.899	0.922	0.836	0.412	0.433	0.493	0.524	0.707	0.672	0.660	0.640
Division dummies × gender effects = 0	0.250	0.265	0.246	0.212	0.058	0.070	0.080	0.065	0.123	0.147	0.167	0.135

Source: Estimated using data from the IFPRI Bangladesh Integrated Household Survey, 2011–2012 (Ahmed 2013).
Note: Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.6 Full set of fixed-effects regression results for women's empowerment and dietary quality of children ages 5–10 years

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Female	0.264	0.356	0.267	0.312	-186.400	-187.100	-211.000	-142.100	3.619	3.689	3.536	3.885
	(0.494)	(0.492)	(0.496)	(0.515)	(529.100)	(531.000)	(530.300)	(545.800)	(2.455)	(2.464)	(2.462)	(2.540)
Empowerment score × female	0.059				-56.509				-0.198			
	(0.090)				(96.519)				(0.448)			
Number of groups × female		0.097**				-17.550				0.001		
		(0.044)				(47.010)				(0.218)		
Number of asset decisions × female			0.001				-1.965				-0.007	
			(0.002)				(2.326)				(0.011)	
Gender parity gap × female				-0.032				-19.520				-0.148
				(0.103)				(108.700)				(0.506)
Age	0.104	0.101	0.107	0.100	142.800**	143.100**	137.300*	141.300**	0.981***	0.981***	0.962***	0.977***
	(0.066)	(0.065)	(0.066)	(0.066)	(70.080)	(70.120)	(70.340)	(70.060)	(0.325)	(0.325)	(0.326)	(0.326)
Age squared	-0.006	-0.006	-0.007	-0.006	-1.805	-1.823	-1.448	-1.708	-0.034	-0.034	-0.033	-0.034
	(0.004)	(0.004)	(0.004)	(0.004)	(4.564)	(4.566)	(4.581)	(4.563)	(0.021)	(0.021)	(0.021)	(0.021)
Child of primary female (= 1, 0 otherwise)	0.051	0.071	0.047	0.043	119.000	118.100	121.800	128.000	0.663	0.674	0.672	0.699
	(0.123)	(0.123)	(0.123)	(0.124)	(131.800)	(132.200)	(131.600)	(131.200)	(0.611)	(0.613)	(0.611)	(0.611)
Age of primary female × female	-0.011	-0.011	-0.011	-0.011	16.980	15.630	18.060	16.370	0.041	0.036	0.045	0.036
	(0.016)	(0.015)	(0.016)	(0.016)	(16.720)	(16.530)	(16.800)	(16.800)	(0.078)	(0.077)	(0.078)	(0.078)

Table A.6 Continued

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Age of primary female, squared × female	0.000	0.000	0.000	0.000	-0.190	-0.174	-0.201	-0.178	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.208)	(0.206)	(0.208)	(0.209)	(0.001)	(0.001)	(0.001)	(0.001)
Education of primary female × female	0.002	0.002	0.002	0.002	-3.030	-3.248	-2.368	-3.365	0.022	0.022	0.025	0.020
	(0.007)	(0.007)	(0.007)	(0.007)	(7.245)	(7.237)	(7.305)	(7.226)	(0.034)	(0.034)	(0.034)	(0.034)
Dependency ratio × female	0.018	0.022	0.018	0.018	33.480	32.570	33.840	27.600	0.154	0.154	0.156	0.130
	(0.030)	(0.030)	(0.031)	(0.031)	(32.570)	(32.630)	(32.560)	(32.590)	(0.151)	(0.151)	(0.151)	(0.152)
Household size × female	-0.014	-0.016	-0.013	-0.013	-0.616	-0.240	-1.352	-1.849	-0.066	-0.066	-0.068	-0.069
	(0.013)	(0.013)	(0.013)	(0.013)	(13.860)	(13.910)	(13.870)	(13.820)	(0.064)	(0.065)	(0.064)	(0.064)
Electricity × female	0.004	0.001	0.007	0.007	58.860	55.980	56.420	51.270	0.281	0.266	0.272	0.258
	(0.043)	(0.042)	(0.042)	(0.043)	(45.730)	(45.320)	(45.200)	(45.230)	(0.212)	(0.210)	(0.210)	(0.211)
Sanitary latrine × female	0.016	0.023	0.016	0.013	-21.790	-22.220	-21.100	-21.520	0.076	0.080	0.079	0.084
	(0.049)	(0.049)	(0.049)	(0.049)	(52.450)	(52.580)	(52.400)	(52.440)	(0.243)	(0.244)	(0.243)	(0.244)
Hand-pumped tube well × female	0.025	0.014	0.026	0.024	-19.160	-19.040	-18.990	-26.250	-0.017	-0.025	-0.017	-0.040
	(0.046)	(0.046)	(0.046)	(0.047)	(49.480)	(49.740)	(49.380)	(49.430)	(0.230)	(0.231)	(0.229)	(0.230)
Number of dairy cows × female	0.029*	0.033*	0.029*	0.030*	6.492	5.879	7.574	7.518	0.038	0.038	0.041	0.042
	(0.017)	(0.017)	(0.017)	(0.017)	(17.940)	(18.000)	(17.970)	(17.910)	(0.083)	(0.084)	(0.083)	(0.083)
ln(owned cultivable land + 1) × female	-0.002	-0.003	-0.002	-0.001	-21.260	-21.840	-21.550	-25.100	-0.124	-0.127*	-0.125	-0.141*
	(0.015)	(0.015)	(0.015)	(0.016)	(16.430)	(16.390)	(16.370)	(16.500)	(0.076)	(0.076)	(0.076)	(0.077)
Price of rice × female	0.004	0.003	0.004	0.004	9.651	9.586	10.060	8.043	-0.002	-0.002	0.000	-0.009
	(0.008)	(0.008)	(0.008)	(0.008)	(8.310)	(8.317)	(8.331)	(8.340)	(0.039)	(0.039)	(0.039)	(0.039)

Table A.6 Continued

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Price of chicken × female	-0.001	-0.002	-0.001	-0.002	-2.132	-2.121	-2.294	-2.012	-0.028***	-0.028***	-0.029***	-0.028***
	(0.002)	(0.002)	(0.002)	(0.002)	(1.712)	(1.716)	(1.717)	(1.713)	(0.008)	(0.008)	(0.008)	(0.008)
Price of lentils × female	0.000	-0.001	0.000	-0.001	-2.389	-2.399	-2.430	-2.182	-0.008	-0.008	-0.008	-0.007
	(0.002)	(0.002)	(0.002)	(0.002)	(2.430)	(2.433)	(2.427)	(2.447)	(0.011)	(0.011)	(0.011)	(0.011)
Price of small fish × female	0.001**	0.002**	0.002**	0.001**	-0.566	-0.575	-0.583	-0.657	-0.002	-0.002	-0.002	-0.003
	(0.001)	(0.001)	(0.001)	(0.001)	(0.744)	(0.744)	(0.743)	(0.733)	(0.003)	(0.003)	(0.003)	(0.003)
Price of large fish × female	0.000	0.000	0.000	0.000	0.514	0.481	0.534	0.262	0.003	0.003	0.003	*0.002*
	(0.000)	(0.000)	(0.000)	(0.001)	(0.529)	(0.526)	(0.530)	(0.543)	(0.002)	(0.002)	(0.002)	*(0.003)*
Barisal × female	0.046	0.002	0.047	0.060	51.880	56.030	53.500	16.290	-0.564	-0.580	-0.558	*-0.750*
	(0.095)	(0.096)	(0.095)	(0.101)	(101.200)	(103.600)	(101.100)	(106.700)	(0.470)	(0.481)	(0.469)	*(0.496)*
Chittagong × female	-0.024	-0.055	-0.030	-0.028	71.220	81.110	77.820	77.190	-0.176	-0.158	-0.153	*-0.145*
	(0.072)	(0.072)	(0.072)	(0.073)	(77.080)	(77.600)	(76.540)	(77.280)	(0.358)	(0.360)	(0.355)	*(0.360)*
Dhaka × female	-0.070	-0.080	-0.065	-0.069	-33.560	-34.840	-38.650	-30.070	-0.313	-0.329	-0.331	*-0.306*
	(0.061)	(0.060)	(0.060)	(0.061)	(64.910)	(65.040)	(64.420)	(64.380)	(0.301)	(0.302)	(0.299)	*(0.300)*
Khulna × female	-0.110	-0.149	-0.111	-0.110	-35.080	-28.000	-33.100	-36.900	-0.933**	-0.934**	-0.927**	*-0.939***
	(0.0919)	(0.0929)	(0.0919)	(0.0924)	(98.31)	(100.1)	(98.28)	(97.98)	(0.456)	(0.465)	(0.456)	*(0.456)*
Rajshahi × female	-0.181**	-0.212***	-0.183**	-0.184**	-120.3	-114.9	-116.5	-128.1	-0.835**	-0.837**	-0.822**	*-0.868***
	(0.076)	(0.077)	(0.076)	(0.077)	(81.550)	(83.010)	(81.640)	(81.140)	(0.378)	(0.385)	(0.379)	*(0.378)*
Rangpur × female	0.035	0.012	0.031	0.037	199.300**	201.300**	209.800**	183.700**	0.466	0.455	0.501	*0.402*
	(0.078)	(0.079)	(0.079)	(0.079)	(83.780)	(84.680)	(85.070)	(83.420)	(0.389)	(0.393)	(0.395)	*(0.388)*

Table A.6 Continued

	Dietary diversity (7 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Constant	3.489***	3.480***	3.481***	3.507***	631.900**	631.300**	649.400**	625.00**	1.223	1.214	1.282	*1.158*
	(0.267)	(0.265)	(0.268)	(0.269)	(285.400)	(285.500)	(286.100)	(285.100)	(1.324)	(1.325)	(1.328)	*(1.327)*
Observations	589	589	589	583	589	589	589	583	589	589	589	*583*
R-squared	0.072	0.086	0.072	0.072	0.548	0.548	0.549	0.549	0.490	0.489	0.490	*0.489*
Hypothesis tests / *p*-values												
All gender interactions = 0	0.566	0.304	0.579	0.594	0.218	0.227	0.204	0.247	0.068	0.072	0.065	*0.0644*
Primary female × gender interactions = 0	0.870	0.882	0.878	0.864	0.642	0.672	0.625	0.614	0.801	0.817	0.772	*0.8059*
Household demographics × gender interactions = 0	0.536	0.422	0.554	0.564	0.575	0.588	0.574	0.696	0.440	0.432	0.424	*0.4711*
Household wealth × gender effects = 0	0.591	0.496	0.607	0.593	0.505	0.516	0.514	0.446	0.408	0.413	0.411	*0.3482*
Prices × gender effects = 0	0.377	0.319	0.385	0.383	0.456	0.468	0.414	0.574	0.014	0.014	0.012	*0.0182*
Division dummies × gender effects = 0	0.131	0.082	0.139	0.118	0.025	0.023	0.019	0.033	0.031	0.035	0.028	*0.0265*

Source: Estimated using data from the *IFPRI Bangladesh Integrated Household Survey*, 2011–2012 (Ahmed 2013).
Note: Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.7 Full set of fixed-effects regression results for women's empowerment and dietary quality of children ages 11–17 years

	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Female	0.168	0.098	0.176	0.474	-473.100	-512.400	-535.600	-481.700	-2.467	-2.482	-2.782	-3.289
	(0.885)	(0.885)	(0.884)	(0.907)	(919.300)	(923.500)	(921.300)	(943.900)	(4.308)	(4.319)	(4.303)	(4.299)
Empowerment score × female	0.038				164.600				0.419			
	(0.132)				(137.000)				(0.642)			
Number of groups × female		-0.047				15.920				0.110		
		(0.060)				(62.660)				(0.293)		
Number of asset decisions × female			0.002				-0.298				-0.013	
			(0.003)				(3.241)				(0.015)	
Gender parity gap × female				-0.210				-140.000				-0.248
				(0.161)				(167.600)				(0.763)
Age (months)	0.324**	0.320**	0.328**	0.314**	194.500	197.800	195.800	158.800	1.104	1.119	1.082	0.969
	(0.144)	(0.144)	(0.144)	(0.146)	(149.700)	(150.200)	(150.200)	(151.500)	(0.701)	(0.702)	(0.702)	(0.690)
Age squared	-0.012**	-0.012**	-0.012**	-0.012**	-3.690	-3.796	-3.719	-2.453	-0.026	-0.027	-0.026	-0.022
	(0.005)	(0.005)	(0.005)	(0.005)	(5.364)	(5.382)	(5.384)	(5.429)	(0.025)	(0.025)	(0.025)	(0.026)
Child of primary female (= 1, 0 otherwise)	-0.329***	-0.334***	-0.328***	-0.331***	-154.000	-150.800	-153.000	-147.300	-0.743	-0.727	-0.747	-0.695
	(0.109)	(0.110)	(0.109)	(0.109)	(113.800)	(114.300)	(114.100)	(113.800)	(0.533)	(0.535)	(0.533)	(0.518)
Age of primary female × female	-0.029	-0.029	-0.031	-0.039	-17.180	-12.550	-12.110	-13.250	-0.072	-0.061	-0.044	-0.025
	(0.031)	(0.031)	(0.031)	(0.032)	(32.640)	(32.490)	(32.710)	(33.060)	(0.153)	(0.152)	(0.153)	(0.151)
Age of primary female, squared × female	0.000	0.000	0.000	0.000	0.239	0.183	0.177	0.199	0.001	0.001	0.001	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.370)	(0.367)	(0.370)	(0.375)	(0.002)	(0.002)	(0.002)	(0.002)

Table A.7 Continued

	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Education of primary female × female	-0.001	0.000	-0.002	-0.003	10.090	11.340	11.600	12.470	0.042	0.045	0.053	0.057
	(0.011)	(0.011)	(0.012)	(0.012)	(11.870)	(11.850)	(11.980)	(12.030)	(0.056)	(0.055)	(0.056)	(0.055)
Dependency ratio × female	-0.063	-0.066	-0.064	-0.051	24.540	18.460	17.910	16.180	0.137	0.123	0.114	0.0441
	(0.056)	(0.056)	(0.056)	(0.056)	(58.040)	(57.960)	(57.960)	(58.180)	(0.272)	(0.271)	(0.271)	(0.265)
Household size × female	0.042**	0.042**	0.042**	0.039**	7.33	7.886	8.012	8.542	0.088	0.089	0.096	0.106
	(0.017)	(0.017)	(0.017)	(0.017)	(17.450)	(17.490)	(17.540)	(17.500)	(0.082)	(0.082)	(0.082)	(0.079)
Electricity × female	-0.079	-0.076	-0.081	-0.073	24.830	28.450	29.680	29.940	0.191	0.197	0.221	0.157
	(0.059)	(0.059)	(0.059)	(0.059)	(61.130)	(61.260)	(61.340)	(61.490)	(0.286)	(0.286)	(0.286)	(0.280)
Sanitary latrine × female	-0.054	-0.065	-0.053	-0.048	-111.300	-115.700	-119.500*	-128.300*	-0.443	-0.440	-0.484	-0.546*
	(0.068)	(0.069)	(0.068)	(0.068)	(70.340)	(71.390)	(70.440)	(70.320)	(0.330)	(0.334)	(0.329)	(0.320)
Hand-pumped tube well × female	-0.124*	-0.116	-0.128*	-0.124*	48.540	58.050	61.110	56.170	0.290	0.306	0.373	0.258
	(0.072)	(0.071)	(0.072)	(0.072)	(74.460)	(74.400)	(75.210)	(75.020)	(0.349)	(0.348)	(0.351)	(0.342)
Number of dairy cows × female	0.002	0.001	0.001	0.003	-5.578	-6.502	-6.479	-3.807	0.016	0.014	0.020	0.033
	(0.023)	(0.023)	(0.023)	(0.023)	(23.790)	(23.840)	(23.890)	(23.950)	(0.111)	(0.111)	(0.112)	(0.109)
ln(owned cultivable land + 1) × female	0.025	0.019	0.024	0.030	13.100	10.610	8.965	17.350	-0.018	-0.017	-0.030	-0.0028
	(0.021)	(0.021)	(0.020)	(0.021)	(21.510)	(22.200)	(21.300)	(22.060)	(0.101)	(0.104)	(0.099)	(0.100)
Price of rice × female	0.001	0.001	0.001	0.000	4.864	5.206	5.160	5.003	0.024	0.025	0.024	0.029
	(0.009)	(0.009)	(0.009)	(0.009)	(9.818)	(9.840)	(9.842)	(9.844)	(0.046)	(0.046)	(0.046)	(0.045)
Price of chicken × female	0.000	0.001	0.000	0.000	1.171	1.479	1.587	1.755	-0.003	-0.003	-0.003	0.000
	(0.002)	(0.003)	(0.003)	(0.002)	(2.399)	(2.429)	(2.386)	(2.388)	(0.011)	(0.011)	(0.011)	(0.011)

Table A.7 Continued

	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Price of lentils × female	0.002	0.002	0.002	0.002	1.940	2.126	2.198	2.382	0.012	0.012	0.013	0.015
	(0.003)	(0.003)	(0.003)	(0.003)	(2.971)	(2.982)	(2.972)	(2.991)	(0.014)	(0.014)	(0.014)	(0.014)
Price of small fish × female	0.001	0.001	0.001	0.001	-1.243	-1.240	-1.254	-1.474	-0.006	-0.006	-0.006	-0.007
	(0.001)	(0.001)	(0.001)	(0.001)	(1.086)	(1.090)	(1.089)	(1.092)	(0.005)	(0.005)	(0.005)	(0.005)
Price of large fish × female	-0.000	-0.000	-0.000	-0.000	-0.609	-0.700	-0.687	-0.885	0.003	0.002	0.003	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.840)	(0.839)	(0.843)	(0.847)	(0.004)	(0.004)	(0.004)	(0.004)
Barisal × female	-0.185	-0.158	-0.184	-0.162	191.800	195.600	204.200	173.700	1.411**	1.384**	1.452**	1.166*
	(0.134)	(0.137)	(0.133)	(0.134)	(138.900)	(142.700)	(139.000)	(139.300)	(0.651)	(0.668)	(0.649)	(0.635)
Chittagong × female	-0.012	0.005	-0.016	0.022	183.000*	168.600	173.800*	158.5	1.067**	1.009**	1.060**	0.816*
	(0.101)	(0.102)	(0.101)	(0.102)	(104.800)	(106.500)	(104.900)	(106.200)	(0.491)	(0.498)	(0.490)	(0.484)
Dhaka × female	-0.034	-0.021	-0.033	-0.017	31.140	36.680	40.290	5.538	0.559	0.559	0.591	0.317
	(0.093)	(0.093)	(0.093)	(0.094)	(96.470)	(97.360)	(96.460)	(97.700)	(0.452)	(0.455)	(0.451)	(0.445)
Khulna × female	-0.141	-0.120	-0.144	-0.099	-51.950	-82.810	-74.320	-100.100	0.429	0.312	0.360	0.061
	(0.131)	(0.134)	(0.130)	(0.133)	(136.000)	(139.500)	(135.200)	(138.200)	(0.637)	(0.652)	(0.631)	(0.629)
Rajshahi × female	-0.129	-0.0988	-0.140	-0.118	125.700	124.700	136.600	96.210	0.987*	0.942*	1.105**	0.710
	(0.109)	(0.115)	(0.111)	(0.110)	(113.200)	(119.500)	(115.600)	(114.300)	(0.530)	(0.559)	(0.540)	(0.521)
Rangpur × female	-0.199	-0.188	-0.209*	-0.164	22.100	9.122	14.720	-29.450	0.554	0.503	0.593	0.158
	(0.123)	(0.124)	(0.124)	(0.127)	(128.100)	(129.300)	(129.100)	(132.300)	(0.600)	(0.605)	(0.603)	(0.603)
Constant	2.534**	2.564**	2.507**	2.586**	577.200	548.400	564.000	818.200	0.813	0.689	0.949	1.748
	(0.990)	(0.990)	(0.990)	(1.000)	(1,029.000)	(1,032.000)	(1,032.000)	(1,041.000)	(4.820)	(4.826)	(4.820)	(4.739)
Observations	531	531	531	524	531	531	531	524	531	531	531	524
R-squared	0.121	0.122	0.121	0.121	0.389	0.386	0.386	0.385	0.321	0.320	0.322	0.316

Table A.7 Continued

VARIABLE	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Hypothesis tests / *p*-values												
All gender interactions = 0	0.327	0.300	0.315	0.348	0.784	0.854	0.857	0.746	0.820	0.834	0.801	0.829
Primary female × gender interactions = 0	0.785	0.811	0.043	0.612	0.637	0.811	0.669	0.574	0.786	0.795	0.393	0.359
Household demographics × gender interactions = 0	0.039	0.037	0.768	0.063	0.789	0.669	0.819	0.814	0.411	0.419	0.767	0.700
Household wealth × gender effects = 0	0.343	0.397	0.325	0.339	0.599	0.559	0.537	0.432	0.726	0.724	0.592	0.585
Price × gender effects = 0	0.816	0.786	0.793	0.842	0.803	0.754	0.739	0.609	0.758	0.770	0.731	0.637
Division dummies × gender effects = 0	0.546	0.677	0.514	0.635	0.383	0.355	0.325	0.355	0.235	0.291	0.183	0.376

Source: Estimated using data from the IFPRI Bangladesh Integrated Household Survey, 2011–2012 (Ahmed 2013).
Note: Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.8 Full set of fixed-effects regression results for women's empowerment and dietary quality of adults

	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Female	-0.222	-0.185	-0.208	-0.177	-339.800*	-391.000**	-380.200**	-418.300**	0.304	0.162	0.291	0.069
	(0.167)	(0.165)	(0.166)	(0.166)	(174.100)	(172.500)	(173.100)	(174.200)	(0.980)	(0.971)	(0.974)	(0.980)
Empowerment score × female	0.058				-64.420				-0.105			
	(0.039)				(41.520)				(0.234)			
Number of groups × female		-0.014				52.370***				0.291***		
		(0.019)				(19.470)				(0.110)		
Number of asset decisions × female			0.001				0.299				-0.003	
			(0.001)				(1.010)				(0.006)	
Gender parity gap × female				-0.077*				125.100***				0.444
				(0.046)				(48.020)				(0.270)
Age	0.003*	0.003*	0.003*	0.003	18.610***	18.780***	18.640***	18.980***	0.088***	0.089***	0.088***	0.090***
	(0.002)	(0.002)	(0.002)	(0.002)	(1.802)	(1.802)	(1.803)	(1.812)	(0.010)	(0.010)	(0.010)	(0.010)
Age squared	-0.000**	-0.000**	-0.000**	-0.000**	-0.294***	-0.296***	-0.294***	-0.297***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.019)	(0.019)	(0.019)	(0.019)	(0.000)	(0.000)	(0.000)	(0.000)
Education	0.004*	0.004*	0.004*	0.004*	-1.446	-1.648	-1.576	-0.942	0.005	0.004	0.005	0.007
	(0.002)	(0.002)	(0.002)	(0.002)	(2.197)	(2.195)	(2.196)	(2.213)	(0.012)	(0.012)	(0.012)	(0.012)
Dependency ratio × female	0.000	-0.001	-0.001	0.003	-5.773	-4.443	-5.449	-9.929	0.016	0.022	0.017	-0.010
	(0.015)	(0.015)	(0.015)	(0.015)	(16.030)	(16.030)	(16.030)	(16.160)	(0.090)	(0.090)	(0.090)	(0.091)
Household size × female	0.012**	0.012**	0.012**	0.011**	-3.002	-3.164	-2.599	-3.092	-0.034	-0.036	-0.035	-0.033
	(0.005)	(0.005)	(0.005)	(0.005)	(5.132)	(5.129)	(5.146)	(5.165)	(0.029)	(0.029)	(0.029)	(0.029)

Table A.8 Continued

	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Electricity × female	0.006	0.008	0.006	0.008	52.830***	49.420***	50.910***	53.560***	0.169	0.156	0.169	0.159
	(0.018)	(0.018)	(0.018)	(0.018)	(19.010)	(18.980)	(19.000)	(19.110)	(0.107)	(0.107)	(0.107)	(0.108)
Sanitary latrine × female	-0.003	-0.002	-0.003	0.003	-25.790	-26.070	-27.200	-23.110	-0.183	-0.180	-0.180	-0.163
	(0.020)	(0.020)	(0.020)	(0.021)	(21.270)	(21.240)	(21.290)	(21.400)	(0.120)	(0.120)	(0.120)	(0.120)
Hand-pumped tube well × female	-0.019	-0.013	-0.016	-0.019	40.440*	28.950	34.920	41.640*	0.121	0.078	0.116	0.136
	(0.021)	(0.021)	(0.021)	(0.021)	(21.850)	(21.690)	(21.600)	(21.880)	(0.123)	(0.122)	(0.122)	(0.123)
Number of dairy cows × female	-0.007	-0.007	-0.008	-0.007	-9.956	-8.834	-10.620	-10.530	-0.014	-0.006	-0.012	-0.018
	(0.007)	(0.007)	(0.007)	(0.007)	(7.474)	(7.487)	(7.504)	(7.496)	(0.042)	(0.042)	(0.042)	(0.042)
ln(owned cultivable land+1) × female	0.002	0.003	0.003	0.003	-19.500***	-17.770***	-19.420***	-20.030***	-0.104***	-0.095***	-0.102***	-0.106***
	(0.005)	(0.005)	(0.005)	(0.005)	(5.661)	(5.684)	(5.680)	(5.725)	(0.032)	(0.032)	(0.032)	(0.032)
Price of rice × female	0.000	0.000	0.000	0.000	1.884	2.248	1.986	2.090	-0.006	-0.004	-0.006	-0.005
	(0.003)	(0.003)	(0.003)	(0.003)	(3.170)	(3.169)	(3.170)	(3.215)	(0.018)	(0.018)	(0.018)	(0.018)
Price of chicken × female	0.001	0.001	0.001	0.001	-0.785	-0.896	-0.819	-0.757	-0.009**	-0.010**	-0.009**	-0.009**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.774)	(0.773)	(0.774)	(0.774)	(0.004)	(0.004)	(0.004)	(0.004)
Price of lentils × female	0.001	0.001	0.001	0.001	-0.027	0.034	-0.041	0.057	-0.006	-0.006	-0.006	-0.006
	(0.001)	(0.001)	(0.001)	(0.001)	(0.954)	(0.953)	(0.954)	(0.961)	(0.005)	(0.005)	(0.005)	(0.005)
Price of small fish × female	0.000	0.000	0.000	0.000	-0.181	-0.153	-0.184	-0.182	0.001	0.001	0.001	0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.325)	(0.325)	(0.325)	(0.329)	(0.002)	(0.002)	(0.002)	(0.002)
Price of large fish × female	0.000	0.000	0.000	0.000	-0.066	-0.054	-0.078	-0.083	-0.001	-0.001	-0.001	-0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.234)	(0.234)	(0.234)	(0.237)	(0.001)	(0.001)	(0.001)	(0.001)

Table A.8 Continued

	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Barisal × female	-0.083**	-0.070*	-0.079**	-0.077*	105.400**	77.630*	96.490**	101.500**	0.164	0.041	0.159	0.145
	(0.041)	(0.041)	(0.040)	(0.041)	(42.290)	(42.570)	(42.050)	(42.640)	(0.238)	(0.240)	(0.237)	(0.240)
Chittagong × female	-0.087**	-0.088**	-0.091**	-0.078**	106.200***	99.950***	110.000***	104.700***	0.279	0.229	0.288	0.269
	(0.037)	(0.037)	(0.037)	(0.037)	(38.660)	(38.740)	(38.590)	(39.160)	(0.218)	(0.218)	(0.217)	(0.220)
Dhaka × female	-0.130***	-0.124***	-0.126***	-0.124***	21.650	8.442	18.180	20.780	-0.047	-0.107	-0.054	-0.046
	(0.031)	(0.031)	(0.031)	(0.031)	(32.500)	(32.600)	(32.430)	(32.750)	(0.183)	(0.183)	(0.183)	(0.184)
Khulna × female	-0.067*	-0.064*	-0.068*	-0.059	-34.520	-49.660	-31.530	-42.190	-0.209	-0.303	-0.208	-0.248
	(0.038)	(0.038)	(0.037)	(0.038)	(39.150)	(39.640)	(39.130)	(39.830)	(0.220)	(0.223)	(0.220)	(0.224)
Rajshahi × female	-0.071**	-0.064*	-0.077**	-0.057	51.480	32.340	46.470	59.080	0.124	0.0303	0.140	0.180
	(0.036)	(0.036)	(0.036)	(0.036)	(37.502)	(37.910)	(37.970)	(37.880)	(0.211)	(0.213)	(0.214)	(0.213)
Rangpur × female	-0.083**	-0.079**	-0.087**	-0.079**	22.305	11.130	21.040	23.830	0.0478	-0.0129	0.057	0.047
	(0.039)	(0.039)	(0.039)	(0.039)	(40.190)	(40.370)	(40.310)	(40.610)	(0.226)	(0.227)	(0.227)	(0.228)
Constant	4.118.00***	4.118.00***	4.118.00***	4.121.00***	2,615.00***	2,613.00***	2,615.00***	2,606.00***	11.240***	11.230***	11.240***	11.180***
	(0.043)	(0.043)	(0.043)	(0.043)	(44.900)	(44.880)	(44.910)	(45.190)	(0.253)	(0.253)	(0.253)	(0.254)
Observations	7,433	7,433	7,433	7,317	7,433	7,433	7,433	7,317	7,433	7,433	7,433	7,317
R-squared	0.030	0.029	0.030	0.030	0.373	0.374	0.373	0.376	0.276	0.277	0.276	0.278
Hypothesis tests / *p*-values												
All gender interactions = 0	0.007	0.001	0.007	0.008	0.000	0.000	0.000	0.000	0.023	0.003	0.022	0.012
Household demographics × gender interactions = 0	0.052	0.057	0.046	0.055	0.734	0.748	0.783	0.610	0.494	0.456	0.478	0.477

Table A.8 Continued

	Dietary diversity (9 groups)				Calorie intake (Kcal/day)				Iron intake (mg/day)			
VARIABLE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Household wealth × gender effects = 0	0.830	0.889	0.848	0.817	0.000	0.001	0.000	0.000	0.005	0.015	0.006	0.005
Prices × gender effects = 0	0.724	0.713	0.674	0.778	0.869	0.925	0.843	0.864	0.190	0.174	0.179	0.231
Division dummies × gender effects = 0	0.005	0.008	0.007	0.008	0.003	0.005	0.004	0.002	0.387	0.365	0.360	0.284

Source: Estimated using data from the IFPRI Bangladesh Integrated Household Survey, 2011–2012 (Ahmed 2013).
Note: Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

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