



Are there gender differences in aspirations formation in rural Ethiopia?

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Abstract

This paper examines gender differences in aspirations formation (with respect to income, wealth, and children's education) using survey data collected from sample households in rural Ethiopia. Results show evidence of upward looking income aspirations for both men and women, and upward looking wealth aspirations only for women, while the social effect of aspirations to children's education appears to be weak for both sexes. Even though men (in general) appear to have higher aspirations than women, the differences in parameter estimates across gender are not statistically significant, suggesting that the gender-differentiated effect of social drivers on aspirations is limited. The results imply that policies and interventions that raise incomes in the village may increase income aspirations of both men and women, while efforts to enhance women's wealth aspirations may be more effective if they improve wealth of women in the village. Since our sample is relatively small with limited geographic coverage, findings of this study could be context specific. Hence, further study using more recent and more representative data is necessary to draw fairly generalizable conclusions.

Keywords Aspirations · Gender · Social drivers · Ethiopia

Introduction

In much of the developing world, social norms and practices have gender-differentiated roles and preferences over access to and control over resources, perpetuating the economic and social gap between men and women (Dibie 2018; Quisumbing et al 2014; World Bank 2012). Based on previous studies on gender issues in Africa, Dibie (2018) reports that women have commonly occupied subordinate status even though the role of men and women varies from one geographical region to another (Dibie 2018). These may have implications on productivity, self-esteem (Quisumbing et al 2014), and “agency”—the

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ability to make effective choices and to transform those choices into desired outcomes (World Bank 2014). A recent study in Ethiopia finds that women lag men by 36% in agricultural productivity, by 79% in business sales, and by 44% in hourly wages (World Bank 2019). These indicate not only the magnitude of gender gaps in key economic activities but also the remaining challenges to realizing the full economic potential of women in Ethiopia. While reducing these gaps is necessary, it may not be sufficient for women's empowerment since many of the gender gaps are deeply rooted in social norms which give root to the belief that "men and women are and should be different in behavior, aspirations, status, and economic activity" (World Bank 2019, p. 42). Consequently, gendered differences in behavioral patterns such as aspirations¹ may emerge.

The concept of aspirations as an analytical tool to understanding development issues has gained increased attention in development economics in recent years, following Appadurai (2004) and Ray (2006). The aspirations failure framework links the situation of the poor and their investment behavior to low aspirations (or aspirations failure). According to Appadurai (2004), Dalton et al. (2016), Genicot and Ray (2017) and Ray (2006), "internal" constraints such as low aspirations and other psychological factors could reinforce "external" constraints (or material deprivations) and this may lead to a self-sustaining trap of poverty and the lack of proactive behavior. Laajaj (2017) empirically shows that poverty and shortsightedness (i.e., having short planning horizon) reinforce each other. Other studies find strong correlations between higher aspirations and: expenditures on agricultural inputs, yields, and savings (Kosec and Khan 2016); savings choices and health-seeking behavior (Ghosal et al. 2016); private school enrollment (Galab et al. 2013); children's educational outcomes (Serneels and Dercon 2014); and lower-grade repetition and drop-out (Goux et al. 2017). Furthermore, recent studies find a nonlinear relationship between: aspirations and future-oriented behavior (Janzen et al. 2017), the size of an adolescent's aspirations gap (i.e., the difference between aspired level and current status) and human capital as a young adult (Ross 2019); and that aspirations could pass on intergenerationally (Dercon and Singh 2013).

The existence of gender gaps in key economic and social activities, which may have a bearing on aspirations formation, is widely recognized as described above. Despite recent advances in the literature, empirical evidence on gendered differences in aspirations formation, especially in Ethiopia, is limited. Better understanding of gender differences in aspirations formation will be useful to design effective interventions that break behavioral poverty traps (World Bank 2015) and improve gender equality. In this context, this paper examines gender differences in aspirations formation in rural Ethiopia. Specifically, we examine if aspirations of men and women are constrained by gender of the reference group or the "aspirations window." The aspirations window is "an individual's cognitive world, her zone of 'similar', 'attainable' individuals (in terms of their life styles, their social and political norms, and their economic well-being), and from which the individual draws her aspirations" (Ray 2006, p. 410). We further motivate our study by describing the theoretical background and brief review of the related literature in the next section. Then a section on "**Material and methods**" presents the material and methods. Results are discussed in the section on "**Results and discussion**," followed by concluding remarks in the Section on "**Conclusions**."

¹ Citing the dictionary definition of aspiration as "a desire or ambition to achieve something," Bernard et al (2011) note that simple wishes are different from aspirations for the latter implicitly requires to exert some effort to realize the desired aim or target.

Theoretical background and literature review

A person's "beliefs, preferences and decisions" are influenced by the social environment which may also be referred to as "culture"—a set of shared beliefs, symbols and customs (Goodenough 1999). Culture consists of cumulated knowledge and experience which are transmitted across generations through learning by individuals in interaction with other members of the social groups to which they belong (Goodenough 1999). This suggests that culture may affect individual behavior by expanding their "capacity to aspire" for the "ideas of the future, as much as of those about the past, are embedded and nurtured" in it (Appadurai 2004, p. 59). Nonetheless, not all cultures facilitate equal access to resources, opportunities, and respect for men and women (Dibie 2018; Quisumbing et al 2014). In addition, the social environment shapes behavior also because people compare their achievements not only to their own past status, but also the average achievements of relevant others—in what Ray (2006) referred to as the aspirations window. Ray (2006) discusses three pathways in which group action may influence individual behavior, by acting as: internal conveyors of information (e.g., motivation drawn from education experience of neighbors), external conveyors of information (e.g., as lobbying force), and coordination devices (e.g., savings group in which peers' savings behavior may motivate individuals to save). This suggests that aspirations or a person's ability to exercise agency is "not bound to that individual only but resides also in others around her and is mediated by communities and their values" (Galie and Farnworth 2019, p. 16). For example, in India, Beaman et al. (2012) find that, even in the absence of change in labor market opportunities, exposure to female leaders in local government raised both the aspirations and educational attainment of girls. The role model effect was the most important channel in changing aspirations, which Macours and Vakis (2014) also find in poor rural areas in Nicaragua.

Evidence from previous empirical studies shows that behavioral changes can be effected to enhance proactive behavior and break behavioral poverty traps. For example, using short-term training and a cash transfer program aimed at increasing households' investments, Macours and Vakis (2014) find a positive impact of social interactions on aspirations. Similarly, using a randomized control trial that varies the number of people invited to watch inspirational videos of role models, by village, Bernard et al. (2014) show that such simple interventions increase the aspirations of viewers, and that future-oriented behavior improves with the rise of the number of viewers in one's social network. Similarly, based on a "hope intervention" that includes inspirational videos among women with access to microfinance loans in Mexico, Lybbert and Wydick (2016) find increased aspirations and raised the hope index among treated subjects.

Relatedly, based on a randomized control trial that provided agro-input subsidies and a Matched-Savings program in Mozambique, Lajaj (2017) finds that improvement in economic prospects resulted in a significant increase in the planning horizon of the poor beneficiaries. Based on survey data collected from rural Nepali women, Janzen et al (2017) report that a woman's aspirations are associated with the outcomes of those in the individual's social network of higher, but not lower, status. This is in line with Ferrer-i-Carbonell (2005) who reports that the incomes of the reference group are about as important as own income for individual happiness in Germany, and supports Deussenberry's (1949) hypothesis that comparisons are mostly upward. Based on a national household survey from 2008/2009 in South Africa, Posel and Rogan (2019) find that the aspirations of both the poor and the nonpoor vary positively with local levels of inequality, but aspirations respond significantly only to the relative success of others in the same race group.

Empirical studies examining the social aspects of aspirations are growing. Some of the studies reviewed above, (including Lajaj 2017; Lybbert and Wydick 2016; Bernard et al. 2014; Macours and Vakis 2014; Beaman et al. 2012), rely on randomized experiments that exogenously vary group composition and/or partial interventions that directly affect only some peers within a group. These allowed the studies to account for the common problems of identification which may arise due to strategic links or the endogenous formation of networks (Bala and Goyal 2000; Jackson 2011; Manski 1993). The commonality of these studies shows the power of social influence on individual behavior such as aspirations. However, none of the aforementioned studies examined whether social influence affects the aspirations of men and women differently. While this study closely follows Janzen et al. (2017), to our knowledge this is the first study to examine gender differences in aspirations formation in Ethiopia.

Material and methods

Sampling and measurement issues

The data come from a household survey carried out between January and March 2014 in rural Ethiopia, with the overall goal of understanding farm households' aspirations, agricultural innovations and well-being outcomes (Mekonnen 2016a). The survey builds on an existing sample of agricultural households surveyed in 2006 and again in 2010² in Oromia region under an NGO project that promoted agricultural innovations and ended up in 2010. The original survey used purposive and random sampling procedures to select 390 households from three study sites (Aredo, et al. 2008). The primary sampling unit consisted of a pair of neighboring districts or 'woredas' which had been chosen based on the density of cultivation of the major crop and the presence of active farmers' cooperatives. At the second stage, ten 'kebeles' (villages) which had active farmers' cooperatives were selected. Using the number of participating households within a cooperative as a sampling frame, 65 households were randomly selected, giving a total of 130 households from each study site.

In the latest survey, only 379 out of the total of 390 households from the baseline were available for interviews. Yet, due to missing data, four households were further excluded from the analysis. This study is based on 375 households. Nonetheless, when compared against the full sample, households that dropped out of the analysis did not show any statistically significant baseline differences with regard to key indicators such as income, wealth and landholdings. This implies that sample attrition was not systematic. The sample size at individual level, comprising of the two most senior members (or spouses) of the household, was 675 which is less than twice the number of households. This is because about 10% of households were single headed, and one of the two spouses was not available for interviews in some households.

² The analysis in this paper relies on the 2014 survey for the main variables of interest (i.e. aspirations) were missing in the preceding surveys.

Defining the “aspirations window” or the reference group

Earlier studies on the social drivers of individual behavior, for example, in terms of technology adoption, define reference groups based on membership in a village, clan or a group defined by other social and cultural boundaries (e.g., Foster and Rosenzweig 1995; Munshi 2004; Munshi and Myaux 2006; Isham 2002). One of the underlying assumptions is that the outcomes and behavior of all individuals that form the group affect the member's behavior. Yet, this may not be necessarily the case for individuals may look up and draw inspiration only from those who are doing better (Deusenberry 1949) or from others outside of the defined network. However, the advantage of, for example, defining a village as a reference group is that it may not only ensure the exogeneity of networks, but also help capture the influence of multiple reference groups that may exist in a village (e.g., Block and Grund 2014; Ray 2006; Goerke and Pannenberg 2015). These reference groups may be related to, for example, gender, age group, education status, religion, ethnicity, etc. Note, however, that individuals who belong to the same village may not necessarily know each other or have close relationships. Yet, lack of acquaintance among villagers does not necessarily lead to the exclusion of some from their cognitive windows. This is because individuals could still compare their statuses even from the distance by observing tangible wealth indicators such as livestock holdings, housing structure—which all would help shape one's aspirations. Following the above, we define two reference groups or “aspiration windows”: (1) all people from the same village as the respondent and (2) all villagers of the same gender as the respondent.

Measuring aspirations

Individuals may set different goals in life, which makes aspirations multidimensional. Aspirations are also dynamic such that they tend to change in light of new experiences, choices and information (Leavy and Smith 2010). Further, since aspirations are attitudinal in nature, measurement errors could easily arise due to “anchoring, wording and scale dependence; respondent role playing and instability over time or over respondents' moods” (Bernard and Taffesse 2014, p. 190). Against this backdrop, Bernard and Taffesse (2014) suggest that useful information regarding individual behavior could be collected as long as extra care is taken during the design and implementation of surveys. For this study, we collect data on aspirations with respect to income, wealth and children's education, using the survey instrument Bernard and Taffesse (2014) proposed. For each of these dimensions, respondents were asked two questions: what level on this dimension they would like to achieve (“aspirations”) and what level they thought they would reach in ten years (“expectations”).³ The question on the expected level was intended to guide respondents differentiate their aspirations from their expectations. Further, to ensure that respondents understood the questions and did not state their simple wishes when asked their aspirations, special care was applied during interviews. For example, after further clarification of the concept and definitions, respondents were allowed to change their responses if they thought that

³ Wealth (or current value of assets) and income (annual income from agriculture and non-agricultural activities) were asked in terms of Ethiopian Birr (ETB) (the official exchange rate during the time of the survey was 1 USD=19 ETB); children's education in terms of years of education. Note also that income and wealth were asked about family income and wealth, and the spouses may report different figures depending on their perception of what their family income or wealth was worth.

Table 1 Descriptive statistics of the sample

	Female (<i>N</i> = 346)		Male (<i>N</i> = 329)		diff = mean(female) – mean(male) <i>p</i> -value
	Mean	SD	Mean	SD	
Age of the respondent	43	12	50	13	0.0000
Years of education	2.6	3.4	5.0	4.0	0.0000
Current income (perceived) (log)	10.3	0.79	10.6	0.79	0.0000
Current value of assets (perceived) (log)	10.9	1	11.3	1	0.0000
Current education of child [†]	7.8	3.9	7.8	4	–
Household has a migrant (0/1)	0.12	0.32	0.1	0.3	–
Aspired income (log)	11.1	0.97	11.7	0.96	0.0001
Aspired wealth (log)	11.8	1.1	12.5	1.1	0.0000
Aspired children's education [†]	14.6	2.8	15.5	1.8	0.0000

[†]Sample size for female and male with children below 18 years of age was 293 and 282, respectively. Income and wealth were measured in terms of Ethiopian Birr, and children's education in terms of years of education

they had given “incorrect” responses. More detailed information regarding the survey and measurement issues is described in the working paper version (Mekonnen 2016b).

Descriptive statistics

Table 1 presents characteristics of the sample. The average age of female and male respondents was about 43 years and 50 years, respectively. The maximum years of education attained by women and men, respectively, were 2.6 and 5, on average. Men reported higher levels of yearly income and wealth (i.e., value of nonproductive assets) than women. Similarly, men reported higher levels of aspirations with respect to income, wealth, and children's education than women, on average. About 11% of women and 10% of men had at least one household member who migrated to a different location.

Table 2 presents the current status of the reference groups with higher and lower statuses than the respondent's aspirations with respect to income, wealth, and children's education. Regardless of the type of reference group, the mean values (with respect to income and wealth) of men's reference group were statistically significantly higher than the corresponding mean values of women's reference group.

Empirical strategy

We examine gender differences in aspirations formation in rural Ethiopia, closely following the methodology of Janzen et al. (2017). As noted above, we use two types of reference groups: all villagers in the sample and all villagers with the same gender as the respondent. The basic regression model for each gender group is specified as follows⁴:

⁴ We adopt notations used in Janzen et al. (2017).

Table 2 Aspirations windows proxied by the average outcomes of the reference group

	Reference group: all in the village				Reference group: only same gender			
	Female (n = 346)		Male (n = 329)		Female (n = 346)		Male (n = 329)	
	Mean	s.d	Mean	s.d	Mean	s.d	Mean	s.d
Average income above (log)*	11	0.49	11	0.52	11	0.53	11	0.5
Average income below (log)*	9.8	0.6	10	0.54	9.7	0.57	10	0.57
Average assets above (log)*	12	0.54	12	0.63	12	0.54	12	0.63
Average assets below (log)*	10	0.82	11	0.74	10	0.78	11	0.78
Average years of child’s education, above†	12	2.1	12	2.1	12	2.1	12	2.2
Average years of child’s education, below†	4.9	2.4	4.9	2.4	4.8	2.4	4.8	2.5

†Sample size for female and male with children below 18 years of age was 293 and 282, respectively

*The difference between mean values of men’s and women’s reference groups was statistically significant at $p < 0.05$. Further note that ‘above’ (‘below’) indicates the current status of the reference group in a specific dimension with higher (lower) status than the respondent’s aspirations in the corresponding dimension

$$a_{ig} = \alpha + \beta_1 \bar{y}_{ig} + \beta_2 \underline{y}_{ig} + \beta_3 s_{ig} + X'_{ig} \delta + v_d + \varepsilon_{ig}, \tag{1}$$

where a_{ig} denotes aspirations (with respect to: income, wealth, or children’s education) of individual i in reference group g , and g is defined alternatively as all villagers in the sample and all villagers in the sample with the same gender as the respondent; \bar{y}_{ig} and \underline{y}_{ig} denote the average status of i ’s reference group g with higher and lower status than the individual, respectively. Note that when a is measured in terms of income, wealth, or children’s education, \bar{y} and \underline{y} are measured by the corresponding indicator. As noted before, individuals draw their aspirations by comparing their status with others’ in their cognitive window; hence, both \bar{y} and \underline{y} are relevant despite differences in their importance.

As explained in Janzen et al. (2017), unobserved factors may drive one’s own status and the average status of others in the reference group; hence, we control for s , own status in the respective dimension. X represents a vector of covariates including the respondent’s age, education, and whether the household has a migrant. The aim of the migrant dummy is to capture the influence of job opportunities that may be available elsewhere on aspirations, as earlier theories predict earnings differential is one of the key reasons for people migrating (Harris and Todaro 1970; Lewis 1954). The migrant dummy may capture potential benefits of migration such as new information and remittances which could also be aspirations enhancing.

In the specifications for aspirations for wealth and education, current income is also included in X . Additional controls include the number of individuals in the reference group with statuses above and below the individual, corresponding to \bar{y} and \underline{y} , to capture both their relative size and the individual’s rank in the group. We control for study site fixed effects, v_d , to eliminate the influence of unobserved heterogeneities such as markets, schools, and other infrastructure at study site level. ε is the random error. We estimate variants of this model separately for men and women. Since there is potential for error ε_{ig} to be correlated over individuals within a cluster, we cluster standard errors

on the group (or village level) (Cameron and Trivedi 2010). Further, we control for ethnicity and religion dummies to proxy for the role of culture in shaping aspirations.

Identifying the social determinants of individual behavior, such as aspirations, is challenging especially with observational data used in this study, due to the potential of omitted variables, homophily (Jackson 2011), strategic links (Bala and Goyal 2000) or wishful link reporting (Comola and Fafchamps 2017), and simultaneity bias or the reflection problem (Manski 1993). Homophily and strategic link formation are closely related and refer to a situation where factors that determine the formation of links may also affect each individuals' behavior. The reflection problem arises wherein the propensity of an individual to behave in some way varies with: the mean behavior of the group ("endogenous effects"); the exogenous characteristics of the group ("contextual effects"); and "correlated effects" wherein individuals in the same group tend to behave similarly because they have similar individual characteristics or face similar institutional environments (Manski 1993). In this study, we link aspirations in a specific dimension with the current status of the reference group in that dimension, which is exogenous to the individual. While we cannot fully rule out the potential of a reflection problem, the concern in this study is minimal because the current status of the reference group is unlikely to be affected by the future status that the individual aspires to achieve. Further, since the mean behavior (e.g., mean aspirations of the reference group) as defined in Manski (1993) is not the causal variable in this study, both "contextual" and "endogenous" effects are estimated together. The exogenous characteristics of the reference group may include their incomes, wealth, and children's education which are of primary interest. We minimize identification threats associated with "contextual" and "correlated" effects by controlling for own status and location fixed effects. We minimize identification threats associated with strategic and wishful links by employing plausibly exogenous networks including village and gender-based networks. Nonetheless, we interpret our results as associations rather than causal relations.

Results and discussion

As previously noted, we examine the social drivers of aspirations based on two reference groups: all villagers in the sample and all villagers with the same gender as the respondent. Results are summarized in Tables 3, 4 and 5. In all tables, results are presented in columns 1–4 when the reference group is all villagers, and columns 5–8 when the reference group is villagers with the same gender as the respondent. To allow comparability of results with that of Janzen et al (2017), columns 1–2 and 5–6 present similar specifications (hereafter baseline specifications). Further, to proxy for the role of culture in shaping individual behavior ethnicity and religion dummies are added in the specifications corresponding to columns 3, 4, 7 and 8.

After controlling for own current income and other covariates, the baseline specifications show evidence of statistically significant associations between income aspirations and the average income of villagers with higher incomes than the individual's aspired income, for both men (column 1) and women (column 2) (Table 3). That is, a 100% increase in the average income of villagers with higher incomes is associated with a 35% increase in a woman's income aspirations (column 1) and a 42% increase in a man's income aspirations (column 2). Similarly, when the reference group is villagers with the same gender as the respondent, baseline results indicate that a 100% increase in the average income of villagers with higher incomes is associated with a 20% and 40% increase in the income

Table 3 Links between income aspirations and income of the reference group

	Reference group: all in the village				Reference group: same gender in the village			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Female	Male	Female	Male	Female	Male	Female	Male
Ave. above (log)	0.348** (0.149)	0.418*** (0.126)	0.401** (0.170)	0.315 (0.178)	0.198* (0.095)	0.404** (0.140)	0.234* (0.123)	0.327* (0.160)
Ave. below (log)	-0.142 (0.242)	-0.125 (0.304)	-0.130 (0.254)	-0.252 (0.319)	-0.145 (0.191)	0.064 (0.224)	-0.139 (0.193)	-0.005 (0.222)
No. of links above	0.004** (0.001)	0.006** (0.002)	0.004*** (0.001)	0.005** (0.002)	0.008** (0.003)	0.012** (0.004)	0.008** (0.003)	0.011** (0.004)
No. of links below	0.002** (0.001)	0.003** (0.001)	0.002** (0.001)	0.004*** (0.001)	0.004 (0.002)	0.006* (0.003)	0.004 (0.003)	0.007** (0.003)
Current income (log)	0.995*** (0.185)	0.791** (0.271)	0.977*** (0.202)	0.888** (0.290)	1.051*** (0.130)	0.713*** (0.201)	1.040*** (0.138)	0.762*** (0.202)
Age (years)	0.002 (0.003)	-0.000 (0.004)	0.002 (0.003)	-0.001 (0.003)	0.002 (0.003)	-0.000 (0.003)	0.002 (0.003)	-0.000 (0.003)
Own education (years)	0.014* (0.008)	0.000 (0.012)	0.017* (0.009)	0.001 (0.011)	0.014 (0.008)	0.001 (0.012)	0.016* (0.009)	0.003 (0.011)
Household has a migrant	0.033 (0.102)	0.017 (0.074)	0.021 (0.105)	0.004 (0.074)	0.037 (0.104)	0.035 (0.070)	0.024 (0.106)	0.019 (0.070)
Religion	No	No	Yes	Yes	No	No	Yes	Yes
Ethnicity	No	No	Yes	Yes	No	No	Yes	Yes
Constant	-1.798 (1.651)	-0.358 (1.581)	-2.339 (1.840)	1.017 (1.941)	-0.662 (0.954)	-1.288 (1.614)	-1.019 (1.118)	-0.268 (1.733)
Observations	344	328	342	328	344	328	342	328
R-squared	0.644	0.479	0.647	0.487	0.640	0.476	0.643	0.484

Study location fixed effects are controlled in all specifications. Standard errors (clustered at village level) in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

aspirations of women (column 5) and men (column 6), respectively. The coefficient estimates for women remain statistically significant with the inclusion of ethnicity and religion dummies (columns 3 and 7). Test results reject the joint hypothesis for ethnicity and religion^{5,6}, suggesting that culture (proxied by religion and ethnicity) is an important predictor of aspirations, as theorized by Appadurai (2004). Furthermore, test of any differences (including intercepts) across genders rejects the null,⁷ suggesting that parameter estimates

⁵ For columns 1 and 3, Chi-squared(9)=379.06 with Prob>Chi-squared=0.0000; and for columns 5 and 7, Chi-squared(9)=2.5e+07 with Prob>Chi-squared=0.0000.

⁶ For columns, 2 and 4, Chi-squared(9)=21.86 with Prob>Chi-squared=0.0093; and for columns 6 and 8, Chi-squared(9)=55.46 with Prob>Chi-squared=0.0000.

⁷ When the reference group is all villagers (with specifications that include religion and ethnicity), $F(9, 9)=139.20$ with Prob> $F=0.0000$; and when the reference group is same gender, $F(9, 9)=109.44$ with Prob> $F=0.0000$. Furthermore, test results suggest that intercepts differ across gender only when the reference group is all villagers, $F(1, 9)=9.23$ with Prob> $F=0.0141$.

Table 4 Links between wealth aspirations and wealth of the reference group

	Reference group: all in the village		Reference group: same gender in the village					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Female	Male	Female	Male	Female	Male	Female	Male
Ave. above (log)	0.201 (0.171)	0.141 (0.135)	0.201 (0.172)	0.133 (0.137)	0.565** (0.247)	0.142 (0.100)	0.577** (0.246)	0.132 (0.104)
Ave. below (log)	0.225 (0.227)	-0.151 (0.191)	0.295 (0.270)	-0.139 (0.189)	0.109 (0.195)	-0.164 (0.162)	0.139 (0.229)	-0.145 (0.159)
No. of links above	-0.000 (0.003)	0.003 (0.005)	-0.001 (0.004)	0.003 (0.005)	-0.009 (0.006)	0.007 (0.011)	-0.010 (0.006)	0.006 (0.011)
No. of links below	0.002 (0.001)	0.002 (0.003)	0.002 (0.001)	0.002 (0.003)	-0.012* (0.006)	0.004 (0.005)	-0.012* (0.006)	0.005 (0.005)
Current assets value (log)	0.429** (0.156)	0.647*** (0.118)	0.361 (0.210)	0.630*** (0.110)	0.431** (0.186)	0.667*** (0.091)	0.395 (0.218)	0.649*** (0.092)
Current income (log)	0.206*** (0.063)	0.283** (0.089)	0.214*** (0.064)	0.286** (0.090)	0.215*** (0.064)	0.285** (0.088)	0.224*** (0.065)	0.287*** (0.089)
Age (years)	0.015 (0.017)	0.014 (0.015)	0.013 (0.017)	0.014 (0.014)	0.012 (0.019)	0.013 (0.015)	0.010 (0.019)	0.013 (0.014)
Own education (years)	0.003 (0.003)	-0.003 (0.004)	0.003 (0.003)	-0.003 (0.004)	0.003 (0.003)	-0.003 (0.003)	0.003 (0.003)	-0.003 (0.004)
Household has a migrant(1/0)	-0.070 (0.121)	0.087 (0.123)	-0.060 (0.124)	0.069 (0.129)	-0.075 (0.114)	0.097 (0.119)	-0.067 (0.117)	0.081 (0.124)
Religion	No	No	Yes	Yes	No	No	Yes	Yes
Ethnicity	No	No	Yes	Yes	No	No	Yes	Yes
Constant	0.042 (2.639)	1.980 (2.555)	0.006 (2.743)	2.118 (2.637)	-2.704 (2.739)	1.867 (2.312)	-2.829 (2.877)	1.966 (2.374)
Observations	344	328	342	328	344	328	342	328
R-squared	0.629	0.472	0.626	0.474	0.632	0.474	0.629	0.475

Study location fixed effects are controlled in all specifications. Standard errors (clustered at village level) in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

for men and women are different. However, parameter estimates corresponding to the average income of the reference group with higher status do not show statistically significant differences between men and women, regardless of the reference group.⁸ This appears contrary to expectations since previous studies report that women hold subordinate status in many places in Africa (Dibie 2018), and this may bring about gendered differences in self-esteem, agency (Quisumbing et al 2014) and aspirations. Further, test results comparing parameter estimates for the two reference groups reveal that the larger reference group (i.e., “all villagers”) was relatively more important for women’s income aspirations.⁹

Note that regardless of the type of reference group, none of the estimated coefficients for the average income of the reference group with lower incomes are statistically significant (Table 3). This, jointly with the statistically significant coefficients of the average income of the reference group with higher incomes, suggests that comparisons are mostly upward as hypothesized by Deussenberry (1949) and in line with the results of Janzen et al. (2017). The reasons for a positive and statistically strong correlation of income aspirations with the number of people with lower incomes require further study. However, the theory on the evolutionary origins of human status hierarchies (Cheng and Tracy 2014) lends potential explanations. Drawing on this theory and a large body of evidence, Cheng and Tracy (2014) argue that dominance (inducing fear in others) and prestige (gaining others’ respect) are two fundamental pathways to human social rank attainment. Since higher social rank entails privileged influence and access to valued resources (Anderson et al 2015; Cheng and Tracy 2014), aspirations may increase with the individual’s rank in the group, captured by the number of people with lower incomes than the individual.

The links between wealth aspirations and the average wealth of the reference group are summarized in Table 4. When the reference group is all villagers, we do not find a statistically significant correlation between wealth aspirations and the average wealth of villagers with higher wealth, for both men and women (columns 1–4). When the reference group is villagers with the same gender as the respondent, we observe a statistically significant correlation between a woman’s aspirations to wealth and the average wealth of other women with higher wealth (columns 5 and 7). Test results comparing parameter estimates for the two reference groups reveal that the same gender reference group was more important for women’s wealth aspirations.¹⁰ This seems to suggest that women look up to the wealth of other women in their community rather than to the wealth of all people in the community when forming their wealth aspirations.

Regarding children’s education, we do not find statistically significant correlations between parental aspirations and the mean education level of others’ children, for both men and women respondents (Table 5). This seems surprising given that previous studies find higher returns to education in developing countries (Peet et al. 2015), and more specifically in Ethiopia in terms of farm productivity (e.g., Weir 1999) and fertilizer adoption (Asfaw and Admassie 2004), and a strong social effect of aspirations for children’s education in Nepal (Janzen et al. 2017). The low level of education attainment and lower job prospects in the community may offer potential explanations for the lack of strong social effect of aspirations for children’s education. First, the maximum years of children’s education in

⁸ For columns 1 and 2, Chi-squared(1)=0.08 with Prob>Chi-squared=0.7716; and for columns 3 and 4, Chi-squared(1)=0.1 with Prob>Chi-squared=0.7551; for columns 5 & 6, Chi-squared(1)=0.99 with Prob>Chi-squared=0.3206; for columns 7 and 8, Chi-squared(1)=0.16 with Prob>Chi-squared=0.6883.

⁹ For columns 3 and 7, Chi-squared(9)=46.98 with Prob>Chi-squared=0.0000.

¹⁰ For columns 1 and 5, Chi-squared(1)=5.36 with Prob>Chi-squared=0.0206; and for columns 3 and 7, Chi-squared(1)=6.14 with Prob>Chi-squared=0.0132.

Table 5 Links between aspirations for children's education and education level of children in the reference group

	Reference group: all in the village				Reference group: same gender in the village			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Female	Male	Female	Male	Female	Male	Female	Male
Ave. above (log)	-0.019 (0.165)	-0.191 (0.139)	-0.010 (0.178)	-0.182 (0.145)	-0.008 (0.150)	-0.172 (0.152)	0.008 (0.159)	-0.164 (0.158)
Ave. below (log)	0.324* (0.150)	0.154* (0.076)	0.331** (0.122)	0.138 (0.080)	0.273 (0.188)	0.098 (0.075)	0.301* (0.146)	0.070 (0.078)
No. of links above	0.012 (0.016)	-0.004 (0.005)	0.017 (0.015)	-0.003 (0.005)	0.021 (0.036)	-0.009 (0.009)	0.031 (0.035)	-0.006 (0.009)
No. of links below	-0.009 (0.006)	-0.001 (0.005)	-0.008 (0.005)	-0.001 (0.005)	-0.010 (0.012)	-0.001 (0.011)	-0.009 (0.011)	0.001 (0.011)
Current education (years)	0.092 (0.134)	0.094 (0.087)	0.102 (0.149)	0.103 (0.091)	0.088 (0.112)	0.108 (0.091)	0.091 (0.123)	0.120 (0.094)
Current income (log)	0.379 (0.226)	-0.050 (0.100)	0.378 (0.221)	-0.055 (0.104)	0.385 (0.233)	-0.052 (0.101)	0.381 (0.228)	-0.057 (0.106)
Age (years)	0.030 (0.061)	0.086*** (0.026)	0.037 (0.060)	0.090*** (0.026)	0.031 (0.061)	0.086** (0.027)	0.037 (0.060)	0.089*** (0.026)
Own education (years)	0.052** (0.017)	0.012 (0.017)	0.052*** (0.016)	0.013 (0.017)	0.052** (0.017)	0.013 (0.017)	0.052*** (0.016)	0.013 (0.017)
Household has a migrant	-0.520 (0.511)	-0.160 (0.377)	-0.638 (0.510)	-0.185 (0.384)	-0.536 (0.510)	-0.132 (0.377)	-0.653 (0.509)	-0.157 (0.384)
Religion	No	No	Yes	Yes	No	No	Yes	Yes
Ethnicity	No	No	Yes	Yes	No	No	Yes	Yes
Constant	7.586** (2.697)	16.340*** (1.982)	7.269** (2.628)	16.192*** (2.053)	7.490** (3.147)	16.214*** (2.025)	7.096** (3.059)	16.080*** (2.090)
Observations	291	281	289	281	291	281	289	281
R-squared	0.170	0.098	0.190	0.105	0.166	0.095	0.187	0.102

Study location fixed effects are controlled in all specifications. Standard errors (clustered at village level) in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

the sample were less than 12 years or incomplete high school, on average. In addition, the average years of education of adults in the sample were less than 6 years. Thus, the level of education in the community may not be high enough to enhance parents' aspirations for children's education. Secondly, for youth with high-school level education, job opportunities in the formal economic sectors outside of agriculture are relatively scarce in Ethiopia (Broussard and Tekleselassie 2012). Relatedly, the percentage of graduate unemployment relative to the total unemployment in Ethiopia has increased in recent years (Reda and Gebre-eyesus 2019). Further, the indicator variable for whether the household has a migrant (proxy for job opportunities that may be available elsewhere) was not statistically significant in any of the specifications. Hence, the fact that employment prospects are limited in the country may not be aspirations enhancing, especially for parents who wish their children pursue scientific or public sector careers.

Conclusions

This study examines whether aspirations formation differs by gender, using two plausibly exogenous reference groups (“aspiration windows”), including all villagers in the sample and all villagers with the same gender as the respondent. Descriptive statistics suggest that men have statistically significantly higher aspirations (with respect to income, wealth, and children’s education) than their women counterparts, on average. This study explores whether such differences are linked to the social drivers. In general, results suggest that income and wealth aspirations are correlated with the social drivers, but the coefficient estimates differ by gender and the type of reference group. For example, we find suggestive evidence of upward looking income aspirations for both men and women. That is, income aspirations of both men and women are strongly associated with the average income of their reference group with higher, but not lower, incomes than themselves. However, the differences in parameter estimates between men and women are not statistically significant. Further, there appears to be suggestive evidence of upward looking wealth aspirations for women, but only when the reference group is other women in the village. Findings of this study imply that policies and interventions that raise incomes in the village may increase income aspirations of both men and women. However, efforts to enhance women’s wealth aspirations may be more effective if they target women groups.

The social effects of gender differences on income aspirations are weak. This appears contrary to expectations since previous studies report that women hold subordinate status in many places in Africa (Dibie 2018) and this may bring about gendered differences in self-esteem, agency (Quisumbing et al. 2014) and aspirations (World Bank 2019). In addition, despite high returns to education in developing countries (Peet et al. 2015) and a strong social effect of education aspirations in Nepal (Janzen et al. 2017), results of this study indicate that the social effect of aspirations to children’s education in rural Ethiopia is weak. Since our sample is relatively small with limited geographic coverage, findings of this study could be context specific.

Further, years have passed since data used in this study were collected. Nonetheless, the data are still likely relevant to study aspirations in rural Ethiopia. This is because, for example, based on historical data (1950–2020) and four elements of social capability, including the degree of structural transformation, the extent of economic inclusion and the state’s autonomy and accountability, Till (2022) finds that the level of economic inclusion in Ethiopia has been persistently low. In this context our data could still reflect the social and economic ethos, including aspirations, of the study population. This is because aspirations are always formed in interaction and in the thick of life and are never simply individual (Appadurai 2004). Further, in low-income settings, poverty and the failure of aspirations sustain each other and hence today’s aspirations are very much dependent on those of the past (Ray 2006).

However, since aspirations are also dynamic that they tend to change in the light of new experiences, choices and information (Leavy and Smith 2010), our results do not capture the potential influence of the recent socio-political dynamics in the country (including the appointment of many women to government’s top ministerial positions,¹¹ the presidency (head of state), the federal supreme court, and since 2021, over 38% of seats in the national parliament are being held by women) on aspirations formation. Despite the above

¹¹ Over 36% of the current Council of Ministers are women. See <https://pmo.gov.et/council/> (accessed 21 Aug. 22).

limitations, this study has a unique contribution since we are not aware of any other gender-disaggregated data nor published study that compared gendered differences in aspirations formation in rural Ethiopia. Nonetheless, further study using more representative and more recent data is necessary to examine whether and how aspirations vary across social groups using a gender intersectionality lens and draw fairly generalizable conclusions.

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Availability of data and materials The data are available on request.

Code availability Software application code is available on request.

Declarations

Conflict of interest The author declares no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript and in the decision to publish the results.

Ethical approval The study protocol was approved by the Ethical Review Committee at the Center for Development Research, University of Bonn. All ethical principles were standard in accordance with the Medical Ethic Commission of the Federal Republic of Germany.

Informed consent Households who were subjects to the surveys gave their consent to the research by signing on the "Participation Information Sheet and Informed Consent Form" provided to them which clearly explains (including in local language) that their participation was voluntary, and any information obtained from them would be used purely for academic research and kept strictly confidential.

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