



Intricate Dawn or Window for Rapid, Transformative Change?

Gender Norms and Norms Misperceptions in Rural Bangladesh

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Abstract: *Influential new research on gender-regressive social norms - and misperceptions of such norms - finds that married men in Saudi Arabia, with subsequent extensions to countries representing 80 % of the world's population, underestimate the support among similar, other men for women's freedom to take up paid work outside the home. This suggests that gender-regressive social practices rest on more fragile foundations than received wisdom would suggest. Gender-related transformative change may thus be easier to achieve than expected. Using two large and unique experimental and household panel datasets from rural Bangladesh, we add theoretical insights and report in-depth empirical findings that nuance, expand on and pose some challenges for this emerging consensus. We find women's and men's gender-related views to be conservative in some domains, liberal or fragmented in others, and not always in the expected manner. While norm misperceptions are common, average misperceptions are small. In rural Bangladesh, low-cost belief corrections are not the effective policy option advocated elsewhere. Using the panel-data to shed light on norm dynamics, we find some stability, but also that radical changes can occur fast: in addition, social change is neither consistent nor unidirectional and backlashes and progressive shifts occur side by side.*

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1. Introduction

A rapidly growing literature in economics is concerned with social norms and their effects on behaviour and on economic and other important outcomes (Dasgupta (2005); Krupka and Weber (2013); Bursztyn, Cappelen, Tungodden, Voena and Yanagizawa-Drott (2023)). While the literature is replete with eloquent definition attempts, Young (2015;361) argues that *'norms often prescribe behaviors that run counter to an individual's immediate self-interest, in which case they are sustained by the prospect of social disapproval, ostracism, loss of status, and other forms of social punishment.'* Gelfand, Navrilats and Nunn (2024) provide a rich and nuanced interdisciplinary review of the literature on norm persistence and change bringing in perspectives and insights from anthropology, social psychology, evolutionary biology and other disciplines.

It is common to distinguish between descriptive and injunctive norms: while the former can be interpreted as beliefs about what people actually do (Gelfand et al (2024)), the latter proscribes 'do's and don'ts' and represent a 'shared belief about what group members ought to do in a given context' (Elster (2007;354); Groenendyk et al (2022;4)). Drawing on insights from social psychology (e.g. Miller and McFarland 1987), Bursztyn, Gonzalez and Yanagizawa-Drott (2020) show that perceptions about such shared beliefs – and injunctive norms - may be misguided: the result may be **minority overweighting** or the stronger **pluralistic ignorance** where individuals wrongly believe that their own view about the rightness or wrongness of a behaviour or action represents a minority view that runs contrary to the views of the majority within the relevant community, peer or social reference group.

Bursztyn, Gonzalez and Yanagizawa-Drott (2020) provide an influential empirical illustration, using the mistaken belief among young, married Saudi men that similar, other Saudi men are more conservative and less supportive than themselves of their respective wives taking up paid work outside the home. A key implication of this specific and of similar misperceptions, is that what on the face of it appear to be persistent, gender-regressive and norm-compliant social practices, rest on a more fragile foundation than what received wisdom would suggest. For policy, this clearly matters, since gender transformative change may be (much) easier to achieve than expected.

In important follow-up work, Bursztyn et al. (2023) expand on and look for generalizations of the Saudi findings. Covering 60 countries that account for about 80 % of the global population, they add perceptions of gender-related affirmative action to the focus on women's work outside the home. As in the Saudi research, they find that underestimating the support for women working outside the home is not only common, but ubiquitous (ibid. 3): a majority of men and women in all of the 60 countries covered, support women's freedom to work outside the home. They also find that underestimation of male support is more common, while gender gaps (the difference between female and male support) tend to be more pronounced in

gender-unequal societies: in some countries, such as Jordan and Algeria, this gap crosses 30 percentage points.

In this paper, we expand on the thematic scope and the depth of inquiry, by taking advantage of two new and unusually rich primary datasets from Bangladesh, a country that with regard to gender, offers settings that combine strong tradition with rapid, recent change (Heath and Mobarak 2015). The first of our two datasets comprises behavioural experimental and post-experimental survey data from male and female participants from 903 rural households in two divisions in northwest Bangladesh. The second which was collected earlier, is a two-round panel dataset covering about 3,500 rural households from the same two divisions with data from separate interviews of male and female household member respondents.

Our behavioural experiments draw on Krupka and Weber's (2013) coordination game which has aided multiple, recent norm elicitation efforts (e.g. Kimbrough and Vostroknutov (2016); Groenendyk et al (2022)). We engage with, expand on but also importantly depart from Bursztyn et al's (2020; 2023) approach by adding thematic spheres that include women's participation in household decision-making and women's asset-ownership but also by addressing different types of work and income-earning activities, both within and outside the home. Further, and since local cultural traditions often restrict women's freedom to move around (Adams 2015), we also include participant views about women's freedom to go the market, visit female friends and seek healthcare for themselves and their children.

Our experimental participants were first asked about their own view about women's involvement and freedom in each of the specific spheres covered. We adopt a similar theoretical entry point as Bursztyn et al (2023) who interpret the average view among their survey respondents as their social norm measure: respondent beliefs about this average represent respondent perceptions (or misperceptions) of the norm in question.

Following the elicitation of their own views, our participants were then asked to predict (make informed guesses about) the views of their spouses and, when this person was a household member, a co-resident parent or in-law. Finally, participants were asked to predict the modal responses of other women and men in their respective village communities. Experimental participants were financially rewarded if they got a randomly selected subset of their modal choice predictions for other female and male village residents right. For each of the above, and echoing Bursztyn et al (2023), there may be systematic differences across male and female participants, both with regard to their own views and their beliefs about the views of other men and women in their respective village communities.

The findings from our behavioural experiments can be summarized as follows: female participants strongly support their own and male respondents their wife's involvement in household decision-making related to production, including which varieties to produce and the choice of production inputs. We observe some, but limited variation in the average responses of women and men: women are marginally more supportive than men. On women's asset ownership and co-ownership, an often controversial and non-trivial issue (see e.g. Agarwal (1994); Adams (2015)), we find

significantly more support than expected, both among male and female participants. For women's work participation, a key distinguishing feature is whether the place of work is within or outside the home: while running a business or earning an income from home are strongly supported by both male and female participants, selling output in the market, running a business or doing any work based outside the home, meets with much lower approval. At the same time, we find that approval of work outside the home varies sharply with the type of work in question. Similar observations relate to women's freedom to move about outside the home.

Theoretically and while notions of social norms typically rest on ideas of an equilibrium and conformity - often manifested in substantive majority approval or disapproval - it is evident that the average view may also be fragmented and split, including evenly, between societal approval and disapproval: from a theoretical point of view, such a split could be stable – which would indicate the absence of a norm - or reflect a transition involving a shift from one equilibrium to another. Further and with regard to direction, such a shift could be progressive or conservative, the latter representing a backlash. Some theoretical perspectives (e.g. Young 2015) focus on norm dynamics through the lens of tipping points, with rapid movement from an old to a new equilibrium.

Against this backdrop, an empirical observation of fragmentation provides a potentially clarificatory entry point for our panel data in the form of additional information about stability or change and the order of magnitude, pace and direction of change. With baseline and endline implemented in 2021 and 2023, a reasonable prior would be to expect limited, if any change. This is not, however, what we observe.

Our findings point to a more nuanced reality than Bursztyn et al. (2023). While rural women and men are 'liberal' with regard to women's participation in household decision-making and more liberal than expected with regard to women's ownership and co-ownership of productive assets, there is much less support for women's work outside the home, and for women's general freedom to move around. Unlike Bursztyn et al (2023), our findings in these arguably most contested spheres - appear to align more closely with orthodox interpretations and evidence on gender norms.

However, and like Bursztyn et al's (2023) findings, our participants misjudge the support for the more liberal positions on women's work participation outside the home, and also of women's mobility. The direction of such misperceptions are, however, different. In rural Bangladesh, false consensus dominates minority overweighting. Further, and while the average misperceptions are of comparatively small orders of magnitude and generally smaller than in Bursztyn et al (2023), these averages conceal systematic and important underlying heterogeneity.

The rest of the paper is organised as follows: section 2 provides contextual background, while section 3 presents a condensed literature review and outlines our methodological approach. Section 4 provides a brief conceptual and theoretical anchoring and broad patterns in the experimental data while section 5 presents the rich descriptive statistics from the experiments, with sub-headings for each thematic

sphere. Section 6 presents findings on norms misperceptions and heterogeneity in these misperceptions. Section 7 uses the panel data to present norm dynamics while section 8 concludes.

2. Contextual background

Since Bangladesh's independence in 1971, gender parity has emerged as a key issue in state policy and civil-society mobilization, partly driven by the surge of foreign development assistance earmarked for women's empowerment and gender-focused programs. Subsequent decades have witnessed notable gains: maternal mortality has declined, women's political participation has expanded, and girls' enrollment in primary and secondary education has risen markedly: these trends are reflected in Bangladesh's ascent in the World Economic Forum's Global Gender Gap Index from 91st in 2006 to 47th in 2017 and, despite a post-COVID setback, to a reported high of 24th in 2025. Yet these advances coexist alongside persistent challenges, including high rates of child marriage, adolescent pregnancy, and violence against women, especially intimate-partner violence. Restrictions on women's mobility through the practice of *purdah* also remain, which can generate community and religious backlash when NGO interventions or participants appear to run contra to established norms. At the same time, structural economic shifts—most notably the rise of the garment industry—have required women to leave the home, prompting adaptive changes such as increased adoption of the *burqa* or *niqab* to reconcile wage employment with expectations of modesty, a development some interpret as a resurgence of conservative religious practice. These dynamics have led scholars and practitioners to question the transformative potential of NGO-driven interventions that target women in isolation and prioritize narrow sectoral outcomes, given the continued constraints of unequal household power dynamics and gendered social institutions.

The data for this study was collected as part of the rigorous impact evaluation of the WorldFish IDEA-project, which covered smallholder, rural households in seven districts and two divisions in northwest Bangladesh. Two important developments form a backdrop for this initiative: the first, the so-called 'quiet revolution' refers to the more than 15-fold growth in farmed fish production between 1984 and 2014, making Bangladesh the fifth largest aquaculture producer in the world (Hernandez et al., 2017). The second is the similarly impressive garment sector growth (Heath and Mubarak 2015), with employment increasing from 40,000 in 1983 to 4 million by 2013 (ibid.) and garments accounting for 79 % of Bangladesh's export earnings in 2008-09.¹ Crucially, the garment sector transformed women's employment outside their homes in an at the outset strongly conservative society: as with garments, the improvements in women's position generated by the IDEA project were also expected to be transformative.

The IDEA-project can be described as a nutrition-sensitive aquaculture intervention that aimed to enhance the productivity of smallholder aquaculture, strengthen women's say in household decision-making, increase their participation in aquaculture, including expanding their involvement in aquaculture value chain nodes

¹ The current contribution is around 85 %.

which had low female presence at baseline. The choice of Rajshahi and Rangpur divisions was motivated by the comparatively high levels of malnutrition and the lagging behind of aquaculture relative to other areas of Bangladesh. Our base- and endline surveys were implemented in 2021 and 2023, conducting interviews with one male and one female respondent from each of about 3,500 rural households.²

3. Literature review and methodological approach

Our experimental design draws on, but also departs from Krupka and Weber's (2013) use of coordination games for norm elicitation, which has seen a number of recent applications (e.g. Schmidt, Heinike and König-Kersting (2022); Fallucchi F. and D. Nosenzo (2022)). We follow Bursztyn et al's (2023) definition of a *social norm* relating to a specific issue as a summary of society's views or average societal support: as illustrated below, average support is easy to infer from our experimental data. In contrast, *perceptions of social norms* represent what individuals believe to be societal support the same issue which can also be identified using our experimental data.

These definitions align quite closely with Young's (2015) interpretation of social norms as 'equilibria in repeated games (p. 360)' with multiple equilibria and where a given equilibrium is self-enforcing and characterised by behavioural conformity.

In the experiments, and using a female respondent as example, we worked with a five-point Likert-scale first asking the respondent about her view about her own participation^{3,4} in household decision-making related to production decisions, including which fish species to cultivate. The response options were (i) strongly agree; (ii) agree; (iii) neither agree or disagree; (iv) disagree or (v) strongly disagree with the relevant statement. We then asked each female participant to predict their husband's response to a similar question about her participation in this decision: in addition, and when co-resident, we also asked her to predict her mother-in-law's response. Finally, we asked her to predict the responses to the same question posed to other women and men in the village community.

Prior to implementation, we organised two comprehensive pilots paying careful attention to translations, framing, wording and language: the first pilot uncovered several challenges related to framing and variation in enumerator practice, underscoring the need for adjustments and agreements on interpretation of protocol and standards. The finalized protocol contained up to two warm-up examples to test and ensure participant comprehension of both the tasks and the reward structure. An important pilot insight on the modal response guesses followed a lot of back and forth on whether one could really know what the most common response among 'other' women and men in the village would be. Participants agreed that while

² The two household panel surveys were implemented by Innovation for Poverty Action (IPA) and Innovision, respectively: information on survey design, training and field protocol can be found in appendix 2.

³ A recurring dilemma during piloting and finalization related to the choice of wording for women's involvement in household decision-making. We were familiar with and had administered the Women's Empowerment in Agriculture Index (WEAI) approach in the panel, but landed on 'participation': while a low threshold and possibly low hanging fruit, this would pick up if women were at least a party in decision-making.

⁴ This approach differs from Bursztyn et al (2023) who used statements relating to women in general.

nobody could know for sure, everyone would be able to use their own knowledge to make a best possible guess.

Our study covered participants in 50 villages with 18 HHs – and thus 36 participants - per village. These 50 villages were included and part of either the control or one of the two treatment areas covered by the large household panel referred to above. While around 65 % of the households participating in the experiments were also part of the panel, villages did not always have enough panel households: other households that matched the criteria for inclusion in the panel were therefore selected randomly and invited to participate in the survey experiment. On the experimental reward structure, the max reward for a household was 600 takas which is roughly equivalent to the daily agricultural wage for each member of the core couple.

One possible limitation of Bursztyn et al's (2023) important research is the assumption that gender norm perceptions can be adequately captured by data from nationally 'representative' samples that are comparatively small: this becomes a concern in countries with large populations and sharp regional and other heterogeneity in gender inequalities and attitudes. Bursztyn et al (2023) seek to allay this specific concern by reporting additional evidence to show a close correspondence between national level and local norms in the United States: however, and while the US is a large and important country, it lacks the heterogeneity that would be expected to matter: this concern is particularly relevant for populous and culturally diverse countries like India where stark regional and other contrasts in gender norms are a well-established empirical fact.

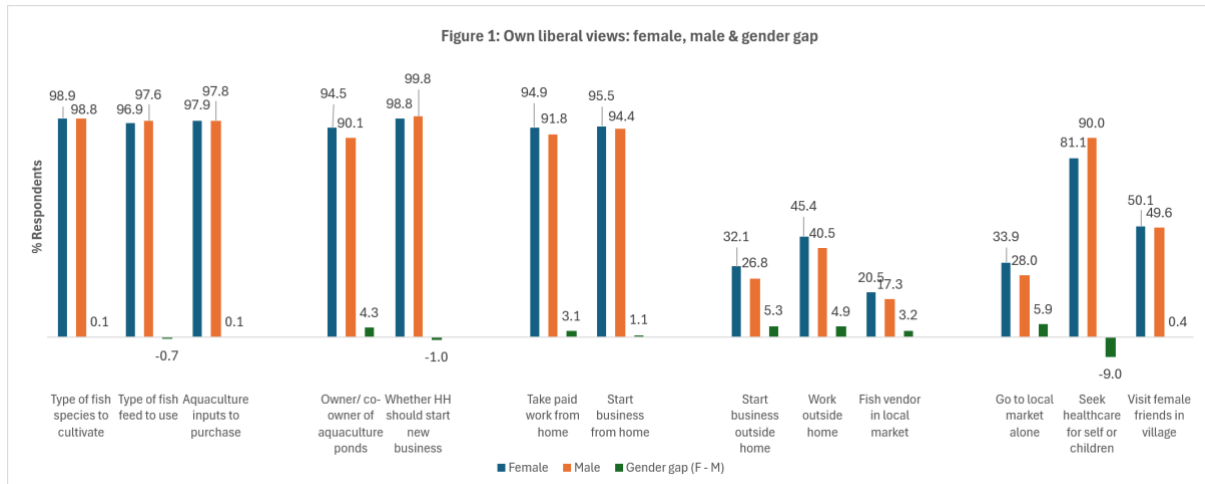
4. Norms: conceptual and theoretical anchoring

Against the backdrop of Bursztyn et al's (2023) interpretations, our experimental and panel data open the door for a variety of possibilities. Reiterating Young's (2015) emphasis on conformity, if the own views of participants and their beliefs about the modal choice of others related to various aspects of women's freedom closely align and classify as liberal (or conservative), this would be suggestive of a stable equilibrium norm. If, on the other hand, there are notable deviations between participants' own, say, liberal and de facto majority views and their predictions of the view of other men or women in their villages, there are norm misperceptions which here would take the form of minority overweighting (or the stronger pluralistic ignorance), as in Bursztyn et. al (2023). Alternatively, and if the liberal view is a minority view and liberal participants systematically overestimate the support for their own minority view, the norm misperception would classify as false consensus.⁵

For each of the above, and as in Bursztyn et al (2023), there may be differences across male and female participants, both with regard to their own views and their beliefs about the views of men and women in their respective communities.

⁵ For pluralistic ignorance to provide the type of window of opportunity highlighted in Bursztyn et al's (2020) Saudi-evidence, a small number of deviators will not suffice: at the same time, unambiguously pinning down a 'sufficient frequency' threshold is not straightforward.

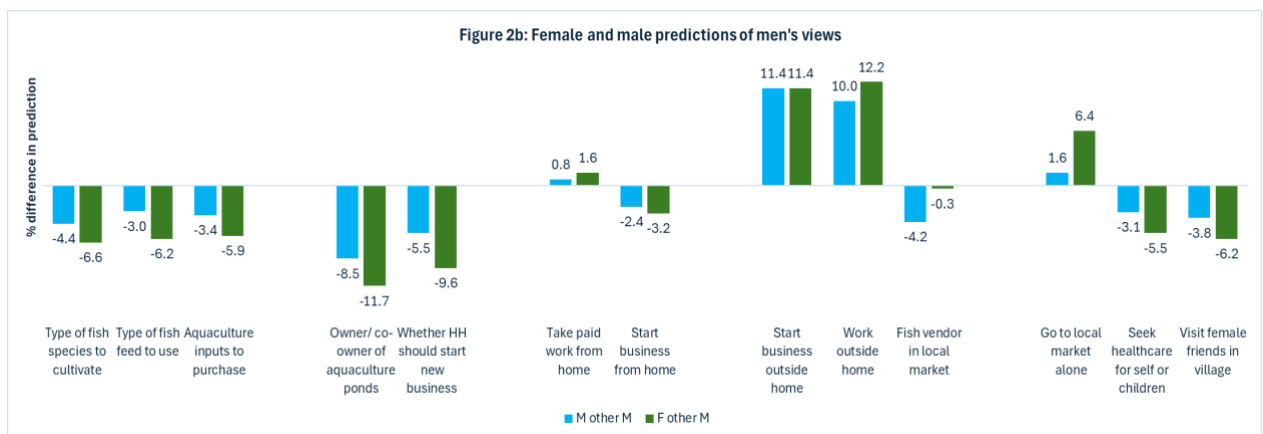
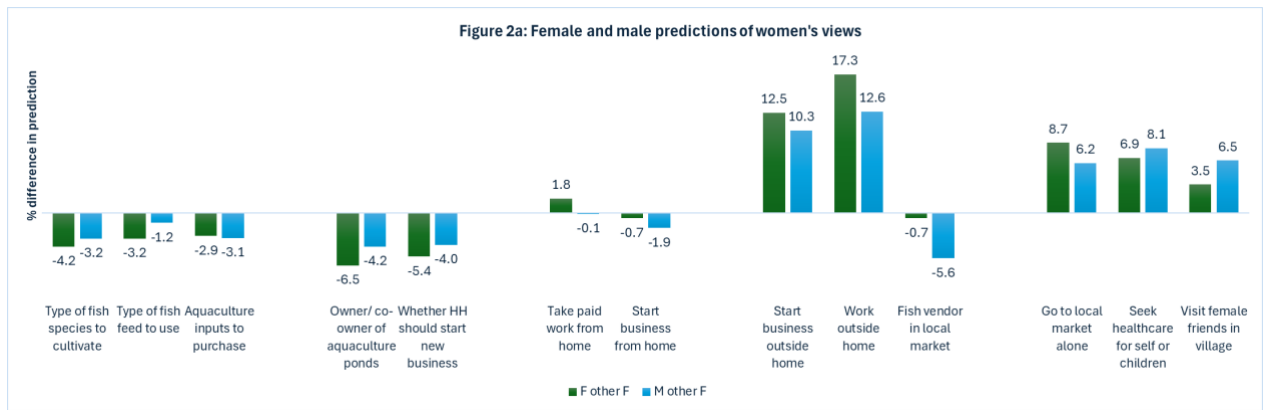
Figure 1 presents descriptive statistics for female and male participant's own views - first about women's participation in household decision-making - followed by each of the other thematic spheres. We report on different types of home-based work before work that would be undertaken outside the home. Showing the share of female and male participants with liberal views, these aggregate averages align with Bursztyn et al's (2023) and the above definition of norms.



As one moves rightwards in Figure 1 towards what a priori would be expected to be more contested spheres - relating to women working outside the home and women's freedom to move around - there are conspicuous shifts from large majority liberal to large and then modest minority liberal views, both among women and men.

For theory, there is also a notable and growing friction between the notion of norm-driven conformity, which is apparent in the first half of Figure 1 and the more fragmented views that appear as one moves from left to right and relating to work outside the home and women's freedom to move around. As discussed above, an important question is whether, and where this could vary across each of these thematic spheres, observed fragmentation represents stability or a snapshot of a transition towards a more liberal or more conservative societal views. We will use the panel-data to shed some light on such stability or dynamic change below.

In Figure 2a, we report on average norms misperceptions as represented by female and male participant predictions of the views of other women in the village. Figure 2b reports female and male participant predictions of the views of other men in the community. In Figure 2a, a zero value represents a perfect overlap between women's own views and their predictions of the views of other women and thus no misperception: a below zero value would imply that women, on average, underestimate support among other women which would be the case for minority overweighting or pluralistic ignorance: in contrast, a positive value signifies that participants overestimate liberal views among other women. The latter is suggestive of false consensus if it is driven by liberal women's belief that one's own liberal views echo similar among other women in the village.



5. Descriptive statistics

5.1 Participation in household decision-making

As Figure 1 above indicates, there is close to perfect overlap in the average responses and the views of husbands (98.8 % strongly agree or agree) and wives (98.9 % strongly agree or agree), with regard to the wife's (her own) participation in decisions about which fish species to cultivate. As Figure 2a indicates, both groups of participants believe themselves to be slightly more liberal than and thus slightly underestimate support among other women (Male Prediction (MP): 95.6 %, Women's Prediction (WP): 94.7 %) and among other men (MP: 94.4 %, WP: 92.2 %) in the community.

For women's participation in decisions about the type of fish feed to use and the type of inputs to purchase, the responses, as Figure 1 also shows, are very similar. On inputs, there is again close to perfect overlap in average responses and the views of husbands (97.8 % strongly agree or agree) and wives (97.9 % strongly agree or agree). When predicting the views of others, the numbers are, once more, very similar to the above.

In summary and while our choice of wording for participation in household decision-making may be interpreted as a low hanging fruit, we find liberal attitudes to

represent a large majority of women and men with only minor deviations between own views and the predicted views of others. Our evidence thus points to small (average) norm misperceptions and liberal and gender-progressive equilibrium norms for women's participation in important production-related household decision-making.

5.2 **Asset ownership and co-ownership**

We next report responses to whether it is ok for the female respondent/the wife to be an owner or co-owner of aquaculture ponds. Findings here deviate slightly from the results for household decision-making. As Figure 1 shows, the average responses of husbands (90.1 % strongly agree or agree) and wives (94.5 % strongly agree or agree) remain notably gender-progressive: this is important given the often acute sensitivity of and perceived male objections to women's asset ownership (e.g. Agarwal 1994): notice, however, that alignment is somewhat less pronounced and that a small gender gap is now discernible.

Men predict women in the community to be slightly more conservative than they are, while women are more pessimistic than men about the views of other women. With regard to predictions about other men in the community, and as Figure 2b shows, men think other men are more conservative than themselves (81.6 % strongly agree or agree), so an average difference of about 8.5 percentage points between men's beliefs about and actual views: women are, again, more pessimistic about the views of others - this time other men in the community - than their husbands are with a 3.2 percentage point difference. Once more, the direction is clear with both men and women underestimating support among others in the community: average norm misperceptions are, therefore, and in this case, somewhat more pronounced.

5.3 **Work inside and outside the home**

Starting with responses about income-earning home-based work, or running a business from home, we find both to be strongly approved of by both male and female participants: liberal views among the latter are in the 94-95 % range, with husbands just behind in the 91.8-94.4 % range. On average, female and male predictions of the views among women and men in the community are, once more, quite accurate and closely aligned with their own views. As above, these descriptives on support for women undertaking home-based income-generating activities or running a home-based business point to the existence of large majority gender-progressive equilibrium norms.

We next consider responses to the statements related to women's work outside the home: starting with whether it is ok for her/their wife to work outside the home for any work and where the examples provided were fish processing, garment or other industry. The average responses and views of female (45.4 % strongly agree or agree) and male (40.5 % strongly agree or agree) participants are close to an even split between a liberal and a slight majority conservative view hinting at a polarized and bimodal distribution.

With regard to predictions and norms misperceptions, it turns out that, on average, both wives and husbands now overestimate liberal support among other women and

men in the community: women participants predict a pronounced liberal majority (62.7 %) among female peers, while men predict that 58 % of other women have a liberal attitude to work outside the home: with regard to predictions for other men in the community, men predict 50.5 % and women 52.7 % to be liberally inclined, suggesting very close to even splits between liberal and conservative views. In contrast to the above, the norms misperceptions now take the form of false consensus if it indeed turns out to be the case that a liberal minority overestimate the support for their own minority view.

Given the centrality of support for women's work outside the home in Burstzyn et al. (2023), important nuances surface when we consider the two other types of women's work outside the home: running a business and working as a fish-selling vendor in a local market. For running a business outside the home, support declines sharply with 32.1 % female and 26.8 % male support. Prediction errors and norm misperceptions are now slightly less pronounced but once more point to significant overestimation of support for running such a business: women and men overestimate other women's approval by 12.5 and 10.3 percentage points, respectively: the corresponding numbers for other men are 11.4 percentage points for both.

Finally, and for work as a fish-selling vendor in a local market, approval drops even further with only 20.5 % female and 17.3 % male approval. Interestingly, female and male predictions of the views of others are now considerably more accurate: further and in contrast to the two other types of work outside the home, female and male prediction errors for other women's views now **underestimate** women's support and liberal views by 0.7 and by 5.6 percentage points, respectively. Since the majority is now conservative, this also appears to represent false consensus with the conservative majority overestimating support for their own conservative view. The corresponding predictions for other men, underestimate support by 0.3 and by 4.2 percentage points, respectively.

This compelling variation between the three different types of work outside the home highlights the need for a rethink of policy efforts to engage with, circumvent and mitigate gender-regressive norms and practices. One possible and plausible explanation for the observed variation is that our approach captures concerns about whether women will be on their own – or isolated – as opposed to being in the company of other women in the workplace. While this may not have been a specific intention, the garment sector was able to rapidly expand women's work outside the home by offering work environments that were considered safer and more socially appropriate than a programme targeting, say, women's entrepreneurship outside the home. The scope for expanding approval and thus stretching gender-regressive norms can thus become more effective by acknowledging this heterogeneity and situational flexibility in the acceptability of women's work outside the home. Other potentially relevant concerns, include social status considerations (e.g. fish vendor as possibly lower social status) which may further lower approval beyond the effects of safety concerns associated with women working on their own.

5.4 Freedom to move around outside the home

As with work outside the home, women's mobility and freedom to move around is strongly restricted in the study area. We now consider women's freedom to move around outside their home, and once more observe considerable variation. Starting with whether it is ok to go to the market alone without asking for permission, we find 33.9 % liberal support among women and 28.0 % liberal support among men: as with work outside the home, both female and male participants significantly overestimate liberal views by other women, now by 8.7 and 6.2 percentage points, respectively. The corresponding predictions for other men, are in the same direction and miss by 6.4 and 1.6 percentage points, respectively. As for work outside the home, we thus observe over- rather than underestimation of liberal views in the study areas.

We next consider women's freedom to visit others in the village: focusing on 'female friends' rather than just 'friends' is a deliberate distinction and was used to identify possible situational flexibility given the traditional restrictions on women's mobility and freedom to move around in the study areas: female and male approval rates are now much higher, effectively representing an even split both among women (50.1 % approve) and men (49.6 % approve). Once more, both women and men overestimate support among other women again reflecting false consensus. At the same time, there is a notable contrast in the predictions of men's views, where both men and women underestimate liberal views among other men.

We also observe other exceptions to these strong mobility norms. A significant majority of female (81.1 %) and male (90.0 %) respondents express support for a woman to go and seek healthcare for herself or her children without asking for permission. Here, and as for women visiting female friends, women and men participants both overestimate female and underestimate male support. As for work outside the home, we once more observe situational flexibility in the mobility restrictions facing local women.

6 Norms misperceptions: heterogeneity and the problem of averages

The averages reported in Figures 2a and 2b suggest norm misperceptions of small orders of magnitude and close correspondence between actual views and beliefs. In tightknit rural communities, which sharply contrast the context in Bursztyn et al (2020), it is not unreasonable to expect residents to be quite well informed about the preferences and views of others: the generally close average alignments in Figures 2a and 2b thus appear plausible and in line with a priori expectations.

At the same time, aggregation may conceal important variations: to explore heterogeneity in norms misperceptions, we estimate and report on simple OLS regressions which take the following simple form:

$$Y_{ij} = \beta_{0j} + \beta_1 Dlib_{ij} + u_{ij} \quad (1)$$

In (1), the dependent variable Y_{ij} is a dummy that takes the value 1 if individual i predicts that the modal choice of other men or women in their village relating to issue j is liberal, while the independent variable $Dlib$ is a dummy that takes the value 1 if

individual i 's own view about issue j is liberal. Given the four possible combinations and 13 issue-specific statements, we estimate 52 regressions capturing female predictions of female views, female predictions of male views, male prediction of male views and male predictions of female views. The estimated coefficients have simple and intuitive interpretations, with the intercept representing i 's prediction of liberal views if i has a conservative view on issue j ; the intercept plus the slope coefficient represent i 's prediction of liberal views if i 's own view on issue j is liberal.

While Table A1 in Appendix 1 provides the coefficients and estimated predictions for men's predictions of other men's views, Table 1 presents the coefficient estimates for women's predictions of other women's views across the 13 statements.

Table 1: From averages to disaggregation & heterogeneity: regressing predictions of others' views on own views (women on other women)

	Type of species to cultivate	Type of fish feed to use	Aquaculture inputs to purchase	Owner/co-owner of aquaculture ponds	Starting new business	Take paid work from home	Start business from home
Intercept	0.700*** (0.07)	0.679*** (0.05)	0.526*** (0.05)	0.340*** (0.04)	0.636*** (0.07)	0.761*** (0.03)	0.512*** (0.05)
Dummy for own liberal view	0.250*** (0.07)	0.267*** (0.05)	0.433*** (0.05)	0.571*** (0.04)	0.301*** (0.07)	0.217*** (0.07)	0.456*** (0.03)
R^2	0.014	0.036	0.082	0.161	0.018	0.071	0.183
N	903	903	903	903	903	903	903

	Start business outside home	Work outside home	Fish vendor in local market	Go to local market alone	Seek healthcare for self or children	Visit female friends in village
Intercept	0.266*** (0.02)	0.436*** (0.02)	0.072*** (0.01)	0.251*** (0.02)	0.515*** (0.02)	0.222*** (0.02)
Dummy for own liberal view	0.562*** (0.03)	0.420*** (0.03)	0.614*** (0.03)	0.517*** (0.03)	0.450*** (0.02)	0.628*** (0.03)
R^2	0.278	0.187	0.386	0.245	0.293	0.396
N	903	903	903	903	903	903

Notes: Coefficients reported with standard errors in parentheses. *** $p < 0.01$.

From Figures 1 and 2, we expect notable variation across the different spheres in terms of intercepts and the Dlib estimate. This is what we observe and will discuss using Figures 3 and 4 to portray estimates and coefficients graphically. Before that, it is worth noting that the explanatory power of these specifications varies notably across the less and more controversial spheres: for household decision-making relating to input use, the R squared for the regressions are below 0.1. For female co-owner or ownership of aquaculture ponds, it jumps to 0.16. For the work outside home regressions, the range is 0.187-0.386 and for the mobility regressions, the range is 0.245-0.396.

Figures 3a and 3b now report results for the four thematic spheres and all thirteen issues.

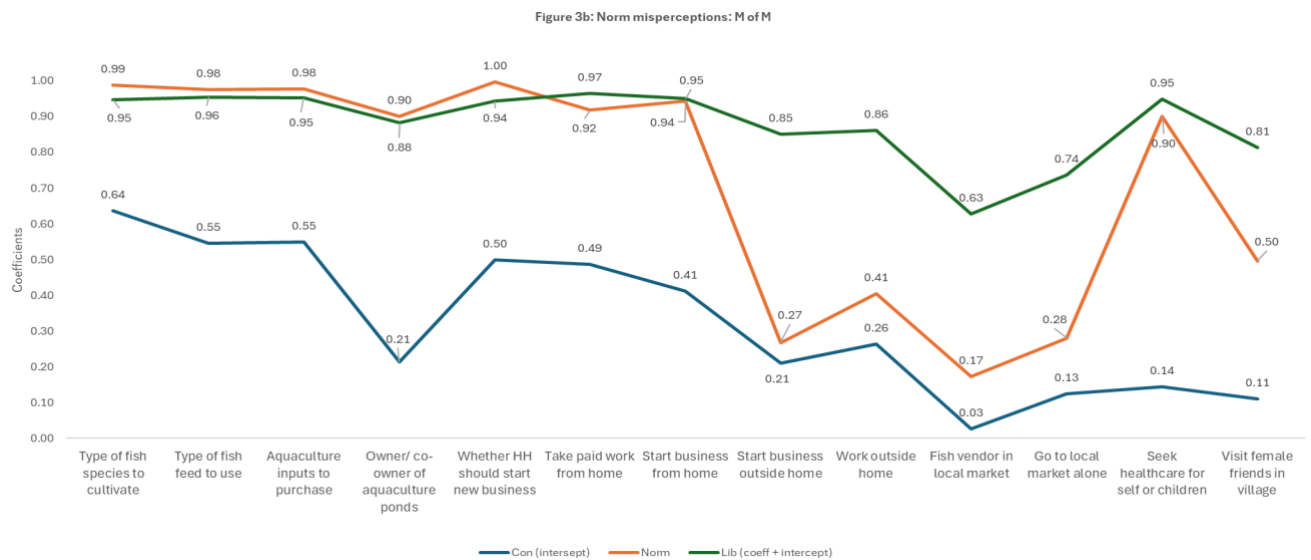
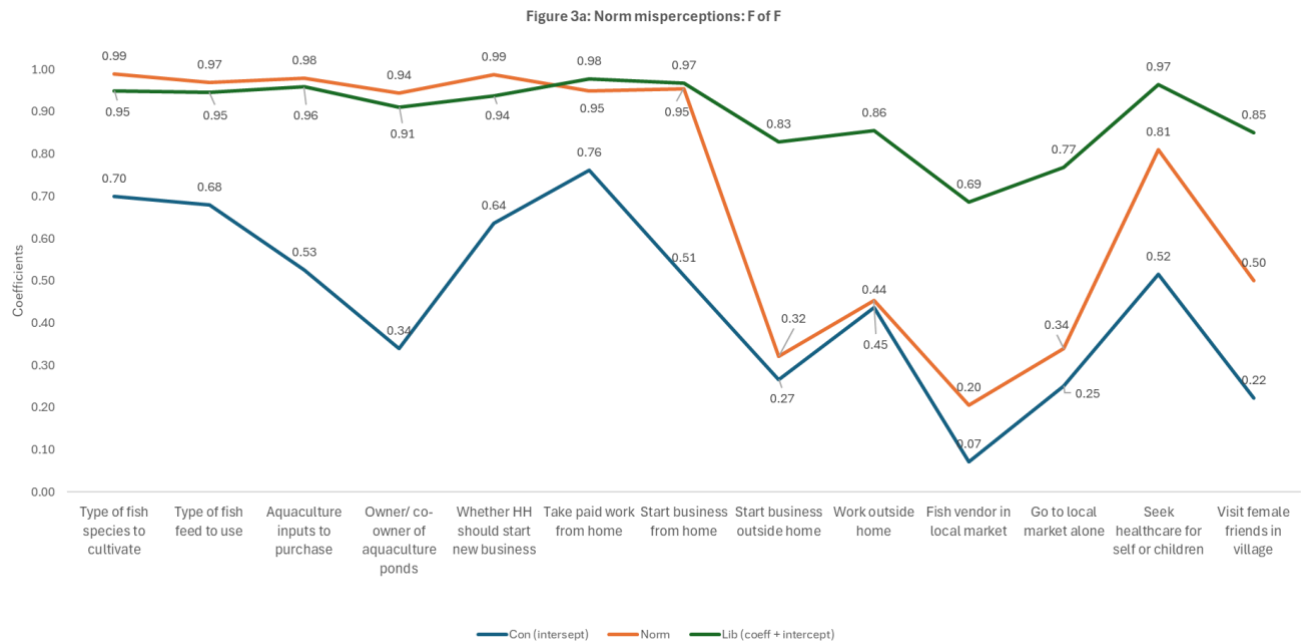


Figure 3a covers female predictions and beliefs about the views of other women. The orange line represents the aggregate average view or the social norm: the blue and green lines represent the predictions and thus the estimated norm misperceptions of a conservative and a liberal female participant⁶, respectively. Moving from left to right and starting with household decision-making relating to inputs, there is a very close correspondence between having a liberal view about the issue of interest and the accuracy of the modal choice prediction. From Figure 1 we

⁶ Notice that conservative or liberal refers to the participant's view on this specific issue.

know that supporting women's participation in household decision-making relating to inputs is a large majority position: in contrast to Bursztyn et al (2021), the majority liberals are spot on in their predictions. For minority conservatives, demarcated by the blue line, predictions are less accurate but not too far off, at least for the first two input decisions. For women's ownership or co-ownership of aquaculture ponds, where here is again a large majority liberal view, this majority also gets their predictions right. For the now slightly larger group of minority conservatives, the prediction error is more pronounced. When considering women's work inside the home, the patterns are very similar to those observed for women's participation in household decision-making.

Turning to the more contested issues and starting with women's work outside the home, the majorities are now conservative: on these issues, majority conservative women make much more accurate predictions than their liberal minority peers, who are way off. In Figure 3b, a similar pattern is observed for conservative men, although conservative women are more accurate in their predictions than conservative men.

For these issues, Figure 2 conceals dramatic underlying heterogeneity in norm misperceptions among conservative and liberal women and conservative and liberal men. The main take home lesson here, which distinguishes our findings from Bursztyn et al. (2021 and 2023), is that while de facto liberal majorities underestimate liberal support in their work, the majorities – whether liberal or conservative – and whether among women or men – make very accurate predictions in rural Bangladesh. The empirical norm misperceptions we observe largely arise because minorities – whether conservative or liberal – significantly overestimate the support for their own minority view. Overall, the misperceptions we observe are thus most accurately described as false consensus. Accordingly, belief corrections have little to offer as a policy option in the areas covered by our study.

7 Using panel data to identify norm dynamics

While Figure 1 aligns with expectations of social norms as reflective of either high or low approval for women's participation in household decision-making, co-ownership or ownership of ponds and women's work inside the home (all very high), the Figure also presents snapshots as opposed to dynamics. For the more contested spheres, women's work outside the home and women's freedom to move around, it is unclear whether the more fragmented snapshots we observe represent the absence of a norm or a norm dynamic with a snapshot of a process of shifting from one equilibrium to another.

We now use the household panel data to obtain suggestive evidence about norm dynamics and stability, including the order of magnitude, pace and direction of change. While the same Likert scale was used and the overall thematic spheres closely resemble those in the experimental study, it is crucial to emphasize that wording, while close, was not identical. For instance, in the two panel survey rounds, statements posed to respondents were formulated as relating to women in general rather than to the individual women respondents. As in the experimental study, the female and male members of the core conjugal unit in each randomly selected

eligible household were interviewed separately, with interviews conducted at both baseline and endline.

Methodologically and while experimental participants were strongly tuned in on and highly focused on the statements related to gender norms, respondents in the panel data survey, answered the questions about their gender norm-related views as part of a thematically broader and more comprehensive data collection exercise. In this part of the analysis, we focus on spheres and issues with prospects for comparisons, specifically women’s co-ownership and ownership of ponds, women's selling of fish to neighbours, women's selling of fish in markets and women’s fulltime work in aquaculture.

As before, we report the share of female and male respondents who strongly agree or agree with a liberal position. In Table 2, we report summary observations and the share of female and male respondents with liberal views at baseline and endline along with the magnitude of the change in each - in percentage points - distinguishing between small (<5 percentage points), medium (between 5 and 10 percentage points) and large (>10 percentage points) changes. Depending on the direction, we classify a statistically significant change as either progressive or a backlash.

An immediate insight from Table 2 is the challenge posed to notions of norm-related views as static, stable or slow-moving and of women’s empowerment as a unidirectional, monotonic and free of contradictions 'journey' that unfolds consistently across spheres: what is observed, instead, is a combination of progress and backlashes, of uneven orders of magnitude.

Table 2: Norm dynamics: changes in women’s and men’s views

Statement	Women				Men			
	BL	EL	Change	Type	BL	EL	Change	Type
Women should not be owners or joint owners of homestead ponds	0.623	0.670	0.047***	Progressive (Small)	0.515	0.636	0.121***	Progressive (Large)
It is okay for women to sell fish to neighbors	0.686	0.722	0.036***	Progressive (Small)	0.536	0.562	0.027*	Progressive (Small)
Being involved in aquaculture fulltime is not appropriate for women	0.519	0.362	-0.158***	Backlash (Large)	0.370	0.319	-0.051***	Backlash (Medium)
Men should mainly be responsible for selling fish in the market	0.066	0.055	-0.011*	Backlash (Small)	0.024	0.046	0.022***	Progressive (Small)
Observations	2,633	2,632	2,632		2,633	2,633	2,633	

Notes: BL = Baseline, EL = Endline. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

As discussed, women’s land and other rural asset ownership rights tend to be sensitive and controversial topics. As in the experimental data, we observe considerable support for women’s joint or own ownership of homestead ponds. At the same time - which the cross-section experimental data were unable to shed light on - we observe sharp progressive shifts both in women's and men's views. Among

women, the baseline starting point of 62.3% is clear majority liberal with a 4.7 percentage point progressive shift between baseline and endline: for men, the liberal starting point is also majority but marginal, at 51.5%: the male progressive shift is substantive and significant and to 63.6%. We thus observe progressive dynamic shifts for both women and men during a short period of time: these shifts appear to be consistent with gravitation towards a solid majority progressive equilibrium norm.

On women's work and involvement in economic activities, the panel data are less rich than the experimental data, but cover three important issues. The first, which a priori is expected to be the least controversial, relates to views about women's selling of fish to neighbours. Both the female (69%) and the male (54%) majority are liberal at baseline, with a small progressive shift for women and a small progressive shift among men between baseline and endline. This is consistent with consolidation of and increasingly solid majority progressive views.

We next consider attitudes to women's fulltime participation in aquaculture with 52% of women and 37% of men favourable inclined at baseline. This represents a close to even split among women and a solid minority among men. However, and between baseline and endline, we observe notable shifts and a large backlash among women and a medium backlash among men. With notable male-female differences and women being significantly more progressive at baseline, there is convergence between the two groups: women's views now become more similar to the views of men.

We next consider views about responsibility for selling fish in the market. This intersects with and reflects the (strong) social norms regulating women's movements and mobility in the study areas that we alluded to above: as expected, liberal attitudes at baseline are now rarer and limited to 7% among women and 2% among men. Between baseline and endline, we observe a small backlash among women and a progressive shift, with a close to doubling of the small initial share, among men.

CONCLUSION

Influential new research on social norms suggests that men systematically underestimate the support among other men for women taking up work outside their home. The ensuing pluralistic ignorance - or minority overweighting - suggests that gender-transformative change may be easier to achieve than expected. In rural Bangladesh, we do find overwhelming majority support both for women's participation in household decision-making related to production and for their involvement in income-earning activities, but no majority support among women and men for women taking up work outside the home. Instead, and for work outside the home, there is notable variation in support across different types of work: work undertaken alone or in isolation (likely relating to safety) or the social status of work (a prevalent concern in South Asia) may both affect 'approval'. For women's freedom to move around, typically strongly restricted, support is again differentiated and dependent on the nature of movement.

We find average norm misperceptions to be small for women's participation in household decision-making, asset ownership, and taking up paid work from home. For the more contested issues – work outside the home and freedom to move around, misperceptions are more pronounced and represent false consensus rather than minority overweighting, which limits the usefulness of belief corrections as a policy option. For these misperception averages (Fig 2a and 2b), it might be tempting to conclude that gender norm misperceptions are less pronounced in tightknit rural communities. This would be a mistake, however, since underlying heterogeneity is pronounced.

Unlike misperceptions in the Bursztyn et al papers, however, liberal and conservative majorities largely get their predictions right: there is no discernible difference between liberal majority women and liberal majority men: conservative majority women predict better than conservative majority men: minorities always overestimate support for their own view, making belief correction efforts less meaningful. At the same time and what opens up for the contested issues is a gradual progress path through 'norm stretching' – taking advantage of situational specificity and not from conservative to liberal in one go – but gradually: for mobility, the route is from seeking own health care, via visiting female friends, to going to the market alone.

While the experiments provide snapshots, the panel data add norm dynamics clues: for the typically strongly contested issue of asset ownership, progress has been fast. However, change is neither consistent nor unidirectional and varies for women and men: backlashes and progressive shifts occur side by side: net changes conceal significant shift activity.

Appendix 1

Table A.1 : From averages to disaggregation & heterogeneity: regressing predictions of others' views on own views (men on other men)

	Type of fish species to cultivate	Type of fish feed to use	Aquaculture inputs to purchase	Owner/Co-owner of aquaculture ponds	Whether HH should start new business	Take paid work from home	Start business from home
Intercept	0.636*** (0.07)	0.545*** (0.05)	0.550*** (0.05)	0.213*** (0.04)	0.500*** (0.16)	0.486*** (0.03)	0.412*** (0.03)
Dummy for own liberal view	0.311*** (0.07)	0.410*** (0.05)	0.402*** (0.05)	0.669*** (0.04)	0.443*** (0.16)	0.479*** (0.03)	0.538*** (0.04)
R^2	0.022	0.078	0.066	0.265	0.008	0.251	0.207
N	903	903	903	903	903	903	903

	Start business outside home	Work outside home	Fish vendor in local market	Go to local market alone	Seek healthcare for self or children	Visit female friends in village
Intercept	0.210*** (0.02)	0.263*** (0.02)	0.027*** (0.01)	0.125*** (0.01)	0.144*** (0.02)	0.110*** (0.02)
Dummy for own liberal view	0.641*** (0.03)	0.598*** (0.03)	0.601*** (0.02)	0.611*** (0.03)	0.805*** (0.03)	0.703*** (0.02)
R^2	0.341	0.345	0.455	0.361	0.512	0.497
N	903	903	903	903	903	903

Notes: Coefficients shown with standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01. *** p<0.01.

Appendix 2 Panel survey design and survey execution

Design

The research team led the design of and oversaw the implementation of a clustered, multi-arm randomized controlled trial (RCT) to evaluate the impacts of an aquaculture program in Rajshahi and Rangpur divisions in northwest Bangladesh. The RCT had three experimental arms: (i) a control group that received no intervention, (ii) a treatment group receiving extension services through small Local Service Providers (LSPs), and (iii) a treatment group receiving extension services through the networks of large and well known Bangladeshi non-governmental organizations (NGOs). The evaluation followed a theory-based, mixed-methods approach to assess the impacts on aquaculture knowledge and practices, productivity, household income, women's involvement in aquaculture and women's empowerment and a variety of food security and nutritional outcomes.

The Baseline survey was conducted by Innovations for Poverty Action (IPA) Global and the Endline survey was conducted by Innovision Consulting. The household surveys were administered to 3,716 aquaculture households across 551 villages in 159 unions in the Rangpur and Rajshahi divisions. Unions were randomly assigned to study arms, with buffers introduced to minimize the risk of spillovers. A listing exercise was conducted between December 2020 and February 2021 to develop a roster of 4,574 households across 176 evaluation unions. The baseline survey

covered 1,220 households in the control arm, 1,253 in the LSP treatment arm, and 1,243 in the NGO treatment arm. The baseline survey commenced in February 2021. The endline survey was conducted between May and July 2023, a few months after the program ended. For the endline survey, the months of March and April 2023 were avoided because of Ramadan. For the endline we were able to track and revisit 3,654 households with an attrition rate of 1.7 percent.

Within each household, separate modules were administered to the adult male and adult female member of the core conjugal unit. All survey instruments and questions were extensively piloted, with careful attention to phrasing and comprehension, with translation and back-translation and other checks. Data were collected using SurveyCTO on tablet devices with embedded skip logic, consistency checks, and real-time data validation.

Enumerator Training

A team of enumerators (mix of male and female) were organized into field teams, each comprising four male and two female enumerators and were supervised by a team leader. All teams reported to a central field manager. Enumerators were gender-matched to respondents to ensure respondent comfort and reduce response bias.

Enumerators participated in a 10-day structured training program conducted in two parallel batches. Training consisted of three components: (i) five days of classroom-based orientation covering study objectives, questionnaire content, interview techniques, and ethical considerations; (ii) two days of supervised field piloting in aquaculture communities close to Dhaka; and (iii) three days of refresher training addressing issues identified during piloting and early quality checks. Training emphasized standardized interviewing techniques, respondent rapport, and accurate recording of responses.

Survey Implementation and Field Protocols

Household interviews were conducted in person following strict identification protocols using unique household IDs provided by the evaluation team. Verbal informed consent was obtained from all respondents prior to data collection. Given the length of the household questionnaire, interviews were permitted to be split across multiple visits, allowing modules to be completed over consecutive days based on respondent availability.

Enumerators made a minimum of three revisit attempts to reach initially unavailable respondents. Detailed tracking logs were maintained to document respondent availability, refusals, and follow-up attempts, with daily reporting to the evaluation team to monitor attrition. These procedures were designed to minimize non-response and ensure balanced coverage across treatment arms. As noted above, the overall attrition rate was very low and at 1.7 %. Data quality assurance included daily supervisor review, back-checks, real-time monitoring of incoming data through Survey CTO dashboards, and routine consistency checks by the data management team.

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