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How do host–migrant proximities shape attitudes toward internal climate migrants?

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ABSTRACT

Climate change is predicted to cause voluntary and forced internal migration on an unprecedented scale in the coming decades. Yet, research on host communities that will be on the front lines in receiving the climate migrants has thus far been a neglected area within climate change research. Inspired by previous research on psychological distance's impact on people's behavior and attitudes, this article develops a conceptual framework proposing that spatial, attitudinal, experiential, and social proximities between migrants and host community members are central to understanding how attitudes toward internal climate migrants form and develop. Using multivariate regression analysis, the article applies the framework to a survey conducted among over 630 long-term residents in Satkhira District of Bangladesh, one of the most climate-exposed districts in the country. Supporting our hypotheses, we find evidence that host–migrant proximities shape attitudes toward internal climate migrants. Although the host community's capacity to receive migrants matters for attitudes toward them, the results for the proximity variables underscore that these attitudes are profoundly relational, positional, and complex. In particular, we provide evidence that shorter spatial distance to highly exposed areas and attitudinal distance to fellow citizens in terms of values and worldviews improve host community members' attitudes toward migrants. Further, the results for social proximity bring out the positional nature of attitudes, as they become more negative when socio-economic differences to migrants increase.

1. Introduction

In addition to increasing the intensity and frequency of rapid-onset hazards (i.e., storms, flooding, wildfires, etc.), human-induced climate change is changing the environment in more gradual ways, through changes in temperatures and precipitation, ocean acidification, and sea-level rise. Such slow-onset hazards, leading to droughts, desertification, soil erosion and salinization, and changes in seasons, rainfall patterns, and flora and fauna, are expected to displace up to 143 million people internally in Africa, Asia, and Latin America by 2050 (Rigaud et al., 2018).[1] As people affected by climate change, often living in rural areas in poor countries, will increasingly look for more viable and safer places to live, many of them moving internally and over short distances (Government Office for Science, 2011; Mallick and Vogt, 2014), countries need to prepare for the coming increase in internal migration flows (Rigaud et al., 2018; Wrathall et al., 2019).

Under some scenarios, the degradation brought by climate change could trigger migration on a scale not previously experienced, and this may happen simultaneously in many developing countries. Most likely, the scope and scale of the climate-induced migration will not only test the limits of the national and international governance and cooperation in helping those in need, but also the limits of the host communities experiencing an influx of migrants (Rigaud et al., 2018). Such an influx can negatively impact the social acceptance of internal climate migrants, lead to their exclusion, and, at worst, cause violence if the social tensions between the displaced and host communities intensify and escalate due to, for example, competition over scarce resources (Burke et al., 2015; Koubi, 2019; Vivekananda et al., 2019).

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[1] A person's or household's decision to migrate is influenced by many factors, such as socio-economic, cultural, and political aspects, and is only rarely solely based on degrading environmental conditions. Due to the complex and not yet well-understood relationship between climate change and migration, all estimations of future climate migration are characterized by high uncertainty (Boas et al., 2019; Cattaneo et al., 2019).

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An essential part of the preparation for the anticipated future climate migration is to address the infrastructural, social, and other needs of locations where the displaced are likely to settle. Another, and equally vital part, is to prepare the hearts and minds of the host communities receiving the displaced. For the latter, a thorough understanding of how host community members' attitudes toward climate migrants form is crucial, an issue that thus far has been a neglected area within climate change research (Boas et al., 2019). For countries like Bangladesh, which is among the ten most exposed and vulnerable countries to climate change in the world (Eckstein et al., 2018, p. 8), with estimates of up to 20 million internal climate migrants by 2050 (Rigaud et al., 2018, p. 148), findings from such research are crucial in designing policies seeking to promote safe and dignified resettlement of internal climate migrants (Bangladesh Ministry of Disaster Management and Relief, 2020).

To promote research on the formation of host community attitudes toward internal climate migrants, this article makes two important contributions: First, it develops a conceptual framework on how different aspects of host–migrant proximity impact host community members' attitudes toward internal climate migrants. Second, it tests the framework using a household survey of over 630 long-term residents from potential host communities in Satkhira District in Bangladesh. Although the district as a whole is exposed to tropical cyclones, it is the district's southernmost parts that are expected to suffer the most from future climate change exacerbated flooding, strong winds, saltwater intrusion, and changing weather patterns. These will likely cause substantial short-distance migration within the district from the most exposed coastal areas to nearby villages and cities inland (Islam and Hasan, 2016; Islam et al., 2018; Mallick et al., 2017). This setting provides a unique opportunity to study attitudes toward internal climate migrants in an area where the likely sending and receiving areas are located close to each other and where the potential host communities also are exposed to climate-related hazards. Moreover, this context allows us to study host-migrant disparities free of the influence of ethnicity, which has been highlighted as an important source of migration-related conflict (Fearon and Laitin, 2011; Krcmaric, 2014).

Our conceptual framework is inspired by research on psychological distance's impact on behavior and attitudes. Drawing on literature on international migration, natural hazards, and climate change and its consequences, our framework posits that four types of proximities can be salient for host community members' views on internal climate migrants: i) host community members' geographic distance to highly exposed areas from where the migrants are likely to come (spatial proximity); ii) their values and worldviews concerning fellow citizens (attitudinal proximity); iii) the extent to which they have experiences similar to those of migrants (experiential proximity); and iv) their social similarity with the migrants in terms of education, wealth, and occupation (social proximity). The details of the framework are designed to specifically address and analyze attitudes toward internal climate migrants, and while the broad dimensions of the framework may be relevant to understanding migration in general, this is not a discussion we pursue here.

Our empirical results from Bangladesh show that host community members' perception of their community's capacity to settle migrants is positively related to their willingness to accommodate internal climate migrants. In other words, physical and economic capacities of host communities do matter. However, the key insight our analysis brings to light is that attitudes toward migrants are inherently *relational* and map into spatial, attitudinal, experiential, and social proximities. Moreover, our results suggest that these aspects may be highly *positional*; we find that host community members' attitudes toward migrants worsen with increased social distance to them. These results suggest that attitudes toward internal climate migrants are not reducible to simple theories of resource and labor market competition.

The article contributes to three distinct bodies of literature. First, to our knowledge, this article is among the first to study how host community members' attitudes toward internal climate migrants form (Boas et al., 2019). The analysis complements that of Kolstad et al. (2019), which finds that attitudes toward internal climate migrants are difficult to change, but has less to say about how such attitudes form. Second, although there is a large body of literature on attitudes toward international migrants among citizens of the Global North (Hainmueller et al., 2015), studies on immigration perceptions in countries in the Global South are much more scarce (Barceló, 2016; Ruedin, 2019). Our results, particularly on the effects of social distance, provide support for earlier results showing that factors influencing anti-immigrant sentiments in the Global South can be different from those in the Global North (Harris et al., 2018). Third, we complement the relatively understudied area of climate change perceptions in developing countries, which has mainly focused on agriculture (Dang et al., 2019).

2. Conceptual framework

For many – in the Global North at least – climate change and its consequences are (still) abstract phenomena that primarily affect other people, in other places and a somewhat distant and uncertain future; that is, they are psychologically distant (Brügger et al., 2015; McDonald et al., 2015; Spence et al., 2012). Similarly, the literature on immigration suggests that psychological distance between hosts and migrants influences hosts' attitudes toward migration (Hainmueller et al., 2015; Rustenbach, 2010) and the literature on disasters that increased psychological distance to a disaster and its victims influences helping and prosocial behavior (Andrighetto et al., 2014; Zagefka, 2018). Especially, the literature on climate change has been inspired by ideas from construal level theory, in which psychological distance refers to the extent to which an object or event is removed from the self here and now (Brügger, 2020; Trope and Liberman, 2010).[2]

Based on the insights from the literature, we propose that when seeking to understand how host community members' attitudes toward internal climate migrants form, one should consider host community members' proximity to climate migrants in terms of their own distance to potentially highly exposed areas (spatial proximity), personal values and worldviews that shrink or expand the compassion shown to fellow citizens (attitudinal proximity), experiences of similar life events (experiential proximity), and educational, economic and occupational similarity with the potential migrants (social proximity) (Table 1).

2.1. Spatial proximity

Physical distance to areas exposed to climate-related hazards has in many studies been shown to be relevant when it comes to people's concern for climate change, its consequences, and support for mitigation and adaptation measures (Brody et al., 2008; Verlynde et al., 2019). In particular, people living in the proximity of highly exposed areas or having personal experience of being harmed by a hazard event tend to be more concerned about climate change and support climate action (Lujala et al., 2015; McDonald et al., 2015; Zanocco et al., 2019) such as reducing energy use (Ogunbode et al., 2017; Spence et al., 2011), preparing and taking individual measures in anticipation of future weather-related events (Demski et al., 2017; Lujala and Lein, 2020), accepting restrictions like curtailing coastal development (Ray et al., 2017), and adopting new farming techniques (Azadi et al., 2019). In disaster studies, the spatial proximity to (potential) disaster events has been shown to be related to higher levels of prosocial and helping behavior (Drury et al., 2016; Maki et al., 2019).

Reduced geographic distance to weather-related hazards may induce people to update their beliefs when it comes to both the likelihood

[2] The ways in which the object or event can be removed from the reference point include time, space, and social distance, constituting different distance dimensions.

Table 1
Proximity aspects influencing attitudes toward climate migrants.

Spatial proximity	Attitudinal proximity	Experiential proximity	Social proximity
• Distance to places highly exposed to climate-related hazard events	• Values and personality • Attribution bias • In- and outgroup attitudes	• Similar past experiences • Similar present experiences • Similar (anticipated) future experiences	• Educational similarity • Economic similarity • Occupational similarity
Key references			
Maki et al., 2019; McDonald et al., 2015	Card et al., 2012; Corner et al., 2014; Harell et al., 2017; Herreros and Criado, 2009	Just and Anderson, 2015; Lujala et al., 2015	Lee et al., 2017; McDonald et al., 2015

and the potential consequences of future – climate change augmented – weather-related events for themselves and others. Further, those living closer to the most exposed areas may have a more realistic idea of how powerless the affected communities can be when faced by, for example, a tropical cyclone or devastating flooding, leading to increased compassion and understanding toward those migrating out of harm's way.

2.2. Attitudinal proximity

Attitudes toward immigrants and asylum seekers are mediated through values, worldviews, and personality (Dinesen et al., 2016; Hainmueller and Hiscox, 2007), as are perceptions of climate change (Hornsey et al., 2016; Poortinga et al., 2019) and disaster victims (Zagefka et al., 2011). In particular, people holding self-transcending values such as altruism, forgiveness, respect, and benevolence, as well as egalitarian views on division of resources, tend to be more concerned about climate change and support ameliorative action (Corner et al., 2014). In the context of welcoming climate migrants to one's own community, such values can be related to perceptions that climate migrants are not responsible for their own misfortune, but are migrating due hardship caused by external factors that are beyond their own control or are the result of randomness or fate (Harell et al., 2017); they may thus be perceived as more worthy of assistance (Marjanovic et al., 2009; Zagefka et al., 2011).

Shorter interpersonal distance, in the form of trust in other people, has been shown to predict more positive attitudes toward immigrants (Herreros and Criado, 2009; van der Linden et al., 2017). Such trust may be related to a person's own altruistic values and expectations that the new community members will behave decently, have or acquire with time the same values as the host community members, and contribute to the wellbeing of their new homeplace. In particular, a wider cultural distance has been shown to be a strong predictor of opposition to immigration as many individuals perceive immigrants as a threatening (e.g., ethnic or religious) outgroup (Card et al., 2012). Strong ingroup social identity may thus predict skepticism toward internal climate migrants, especially if they have a different sociocultural background.

Humanistic values and viewing others more like oneself and being trustworthy and deserving should thus decrease attitudinal distance to fellow citizens and lead to a greater willingness to accommodate internal climate migrants.

2.3. Experiential proximity

Distance between the host community members and climate migrants may also be reduced through similar life experiences that evoke feelings of solidarity and empathy toward migrants. As noted above (see spatial proximity), within climate perception and hazard victim studies, geographic closeness to highly exposed areas and experiences of hazard events have been shown to promote concern for climate change and support climate-friendly and prosocial behavior. Within migration studies, however, the impact of sharing life-experiences with the immigrants remains largely unstudied (Sarrasin et al., 2018). The few exceptions have focused on how people with an immigrant background view immigration, finding that recent immigrants tend to have more positive attitudes while those born in the country but having foreign roots have views more similar to the natives (Just and Anderson, 2015). One likely explanation is that people who have migrated themselves are better able to understand the choices made by the migrants, why they migrate, and the difficulties and diverse challenges involved in the relocation. Related to this, previous research has shown that interventions that foster sympathy and empathy enhance prosocial behavior and tendency to assist others (Eisenberg et al., 2010) and willingness to help disaster victims (Andrighetto et al., 2014).

Thus, we would expect that host community members with life experiences similar to the migrants would express more positive opinions toward internal climate migrants. Besides their own migration history, other types of shared experiences and vulnerabilities may be salient as well, for example, having close relatives living in highly exposed areas, having a personal experience with a hazard event, or personal anticipation of future migration.

2.4. Social proximity

Climate hazard studies suggest that people who believe that people like themselves are threatened by climate change can be more likely to support climate action (Hart and Nisbet, 2012; McDonald et al., 2015). In partial contrast to this, labor market competition theories predict that people are more hostile to migrants when they perceive migrants as competitors, for example, low-skilled native workers who fear that low-skilled immigrants will compete with them for employment opportunities and press wages down (Mayda, 2006). Several studies from Western countries, however, do not find strong support for the labor market competition thesis (Hainmueller and Hiscox, 2010; Malhotra et al., 2013; Rustenbach, 2010), and provide evidence that high-skilled workers tend to be more positive about migrants, irrespective of a migrant's skill level (Hainmueller et al., 2015). A recent study conducted in Hong Kong that assessed attitudes toward mainland Chinese migrants found that local laborers had a more positive attitude toward low-skilled immigrants than high-skilled professionals (Lee et al., 2017).

In our case, the most highly exposed areas in Satkhira District tend to be poorer than the less exposed areas, and the poor and less-educated constitute the most vulnerable population segments within these areas

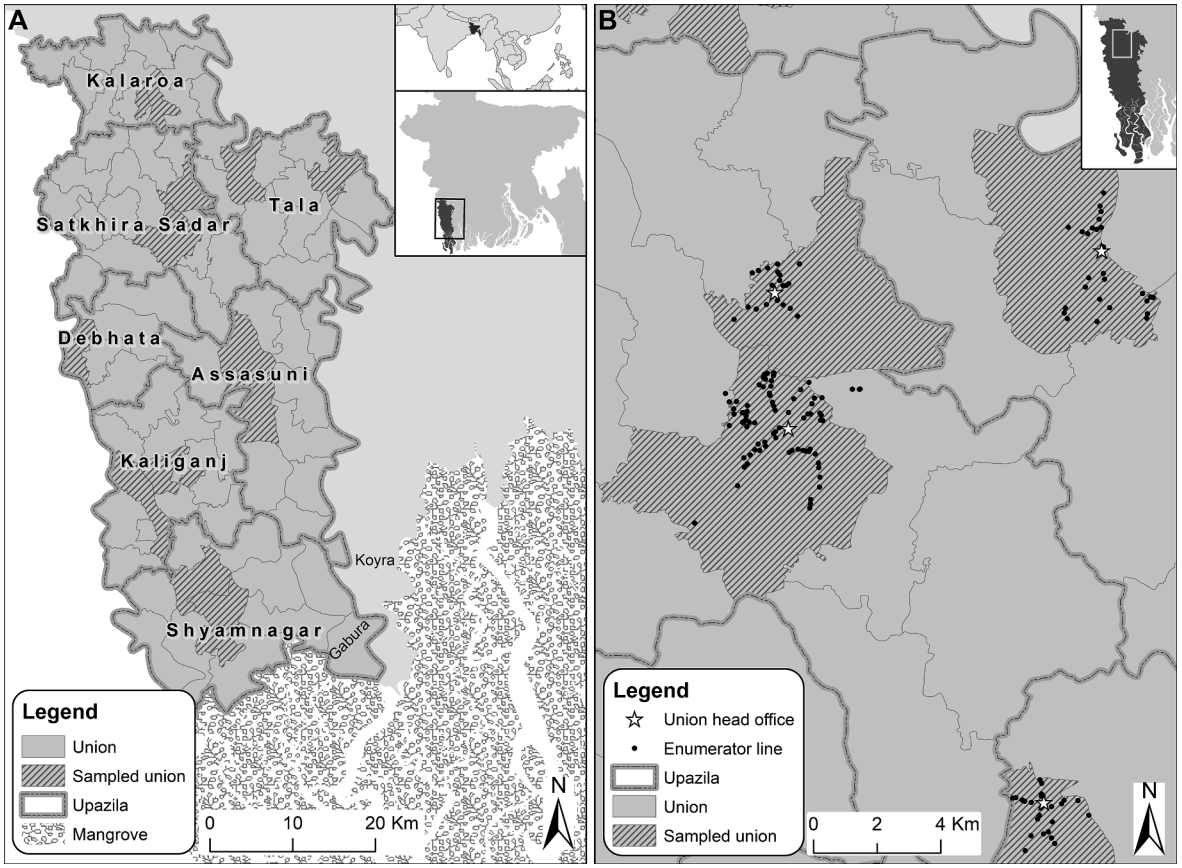

Fig. 1. Sampled unions in Satkhira District (A) and examples of enumerator lines (B).

(Mallick et al., 2017). If labor market competition is important for our survey participants' attitudes, we should see more critical views of climate migrants among the poor and less-educated host community members as we would expect them to be more concerned about the migrants' impact on job opportunities and wage level. On the other hand, it could be the case that when people perceive climate migrants to be like themselves, they are more willing to accommodate them. This would imply that the poorer and less-educated host community members would be the most welcoming toward internal climate migrants, as could also be those with similar occupations as the migrants. Conversely, class distinctions could make wealthier host community members more critical of migrants, as could expectations of tax increases on the wealthy to accommodate the migrants or dilution of the wealthier members' political influence in the host community (Facchini and Mayda, 2009).

3. Research design and data

The quantitative analysis is based on a survey conducted in March–April 2019 in Satkhira District located in southwest Bangladesh (Fig. 1). The design of the quantitative survey was informed by two rounds of qualitative fieldwork (in May and September 2018) conducted in the study location and nearby areas including over 40 informal interviews and discussions with local government officials, scientists, NGO representatives, and community members to understand migration patterns and host community perceptions of migration in the area. The analysis also draws on another survey of 410 respondents conducted in two areas in southern Satkhira (Gabura) and Khulna districts (Koyra) (Fig. 1), both extremely exposed to weather-related events and both of which constitute catchment areas of climate migrants to other unions in Satkhira District (Wiig et al., 2020).

3.1. Study area

The coastal Satkhira District is located on the Ganges floodplain, north of the Sundarbans mangrove forest, and is interlaced by rivers and waterways that bring fertile, silty water to the floodplain. Riverine flooding in the deltaic floodplain is a natural phenomenon that supports intensive agriculture in the area but often causes heavy damages to houses and crops (Fenton et al., 2017). Other climate-related threats, particularly in the southernmost parts of Satkhira District, include frequent cyclones and the associated storm surges. Although not as deadly as they used to be, thanks to improved evacuation routines (Sadik et al., 2018), tropical cyclones like Sidr in 2007, Aila in 2009, Bulbul in 2019, and Amphan in 2020 cause economic havoc among Bangladesh's coastal communities as the strong winds and flash floods destroy buildings and crops, and the accompanying storm surges push salty seawater upstream, breaking through the embankments to the surrounding areas, causing not only direct damage but, notably, contaminating the soil for several years (Subhani and Ahmad, 2019).

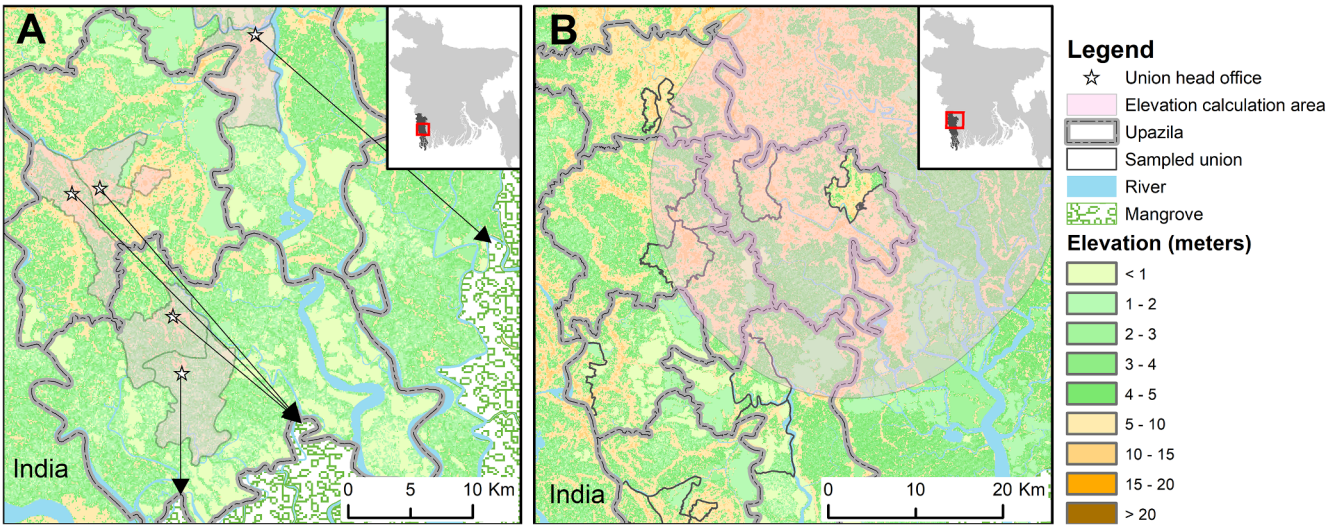

Fig. 2. Spatial proximity to exposed areas. (A) Distance to the coast (arrows) and elevation in the sampled unions. (B) Elevation of the surrounding area, using a 20 km buffer around the union (buffer shown for one union). Source for the elevation data: Jarvis et al. (2008).

People living in Satkhira District are expected to suffer increasingly from climate change exacerbated riverine flooding, strong winds, storm surge, saltwater intrusion, and changing weather patterns, the first effects being already felt now in the southernmost parts of the district (Islam et al., 2018). Satkhira's 2 million inhabitants rely mainly on agriculture and pisciculture, both sectors being vulnerable to climate-related hazards in places, like Koyra and Gabura, that are located on low-lying coastal lands (Fig. 2) (Huq et al., 2015; Mallick et al., 2017). People residing in the highly exposed coastal areas tend to be socio-economically vulnerable to hazards, with low literacy rates, limited land ownership, and often living in extreme poverty (Islam et al., 2018; Mallick et al., 2017). They thus have limited capacity to prepare and withstand environmental hazards. Cyclone Aila in 2009, for example, damaged every house and severely affected the livelihoods of all households in Gabura Union (Walton-Ellery, 2009).

According to surveys conducted in the southernmost parts of Satkhira District, cyclones, flooding, and soil salinization have forced people to change their occupation, sell their assets, or migrate to nearby villages and cities in search of a livelihood (Islam and Hasan, 2016; Islam et al., 2018; Mallick and Vogt, 2014). In the southernmost parts of Satkhira District, thus, the increasingly worsening conditions for agriculture, the threat of periodic destruction of houses and crops, and fear for life and health can over time cause economic and psychological burdens that can be difficult to bear and alleviate, leading to increased voluntary and forced climate-related migration to nearby areas and beyond (Huq et al., 2015; Mallick et al., 2017).

3.2. Survey design

The survey was conducted in 13 of the 78 administrative unions in Satkhira, covering all seven sub-districts (*upazila*; Fig. 1).[3] The unions were selected based on their attractiveness for migrants due to the existence of relevant job opportunities (e.g., day labor, rickshaw pulling) and limited exposure to waterlogging and soil salinization. The number of respondents in each unit was set proportionally to the unit's total population, ranging from a little over 8′000 (Kaila) to 113′000 inhabitants (Satkhira City, district capital). The survey targeted long-term residents, defined as persons who had been born in the community or had lived there for at least 20 years or as persons who had lived in the community at least five years in addition to being married to a person born in the community.

The data for the analysis was collected as part of a randomized field experiment. The purpose of the field experiment was to study how a narrative stressing the repeated nature of climate change-related natural hazard events, and the repeated waves of human displacement induced by the events, affect host community members' willingness to accept internal climate migrants. As part of the field experiment, two different videos were shown to the treatment and control group. Both videos included the same general introduction to climate change and its likely consequences, particularly in terms of population displacements. The treatment group video additionally contained a segment stressing the repeated nature of climate-related events and subsequent migration. Since the experimental treatment showed no discernible effect on attitude questions and inclusion of a treatment dummy variable in our estimations had no impact on results reported in this article, we include both the treatment and control group in the analyzed sample. Similar estimates to those presented in the main table are obtained when analyzing only the control group, but with an obvious decrease in statistical power (see Appendix D: Supplementary Data for the results).

The sample consists of 633 adults (18 years and over). The respondents were interviewed face-to-face by trained enumerators using the local language (Bengali).[4] A team of four to six enumerators conducted the interviews in each union, starting from the union head office building and following pre-determined, evenly spaced lines on the map (Fig. 1). Starting from the sixth residential building from the union office building, the enumerators interviewed a member of one household in every sixth building with habitation, respecting the union borders. In the case of reaching the union border, the enumerators were instructed to turn left, follow the perimeter of the union border until about halfway to the next enumerator line, and turn back inwards toward the union office building. Each enumerator alternated in interviewing female and male respondents from one interview to the next. To preserve anonymity, we did not record the interview locations but recorded the approximate location of the last interview each day.

[3] Bangladesh is divided into eight divisions. These are divided into districts (zila) and further into sub-districts (upazila). In rural areas, the subdistricts are further subdivided into unions.

[4] Bengali is the predominant and official language in Bangladesh. 98% of the Bangladeshi population are from the same ethnic group and almost 90% are Muslim, Islam being the state religion.

After determining whether the respondent was eligible (i.e., a long-term resident of the community), the first part of the survey focused on the respondent's background and household characteristics. These questions were followed by questions on the respondent's level of climate change knowledge and personality traits. The topic of climate change and climate migration was then introduced by showing the respondent the video on the tablet used for data collection. After watching the video, the respondent was asked questions related to the video, his/her attitudes toward migrants and climate change, as well as questions pertaining to respondents' values and worldviews and economic conditions in the community.

3.3. Empirical strategy

We apply our conceptual framework on how host-migrant proximities influence host community members' attitudes toward internal climate migrants to our survey data from the Satkhira District, Bangladesh, by estimating the following model:

$$y_i = \alpha + \beta_{SP} SP_j + \beta_A A_i + \beta_E E_i + \beta_S S_i + \sigma X_i + \varepsilon_i \quad (1)$$

where our outcome variable y is the respondent's stated attitude toward new internal climate migrants coming to their community. Our data is at individual level i except for spatial proximity SP, which is at union level j. Our interest is in all coefficients β that capture the effects of our independent variables measuring spatial, attitudinal A, experiential E, and social S proximity. The vector X includes our control variables. We use OLS regressions, as it is straightforward to interpret the results, and report robust standard errors clustered on enumerator-union. As a robustness check, we also run ordered logit estimations. Stata 15.1 was used in all analyses.

For anonymized replication data and replication instructions, see (Lujala, 2020).

3.4. Data

Summary statistics, survey questions, answer alternatives, and variable definitions are provided in Appendix A.

3.4.1. Dependent variables

Our first outcome variable (*Attitude I*) is based on the respondent's level of agreement with the statement: "It is a good thing that new migrants settle permanently in my home community." The responses were measured on a 5-point Likert scale ranging from 1 (Disagree very strongly) to 5 (Agree very strongly). Our second outcome variable (*Attitude II*), is a starker version of the first one, conditioning the future migration on a large present migration: "Even if our community were to receive many new migrants this year, I would still think that it is a good thing that new migrants settle here in the future," the response alternatives being the same as for the first outcome variable. Although our outcome questions do not explicitly evoke the term 'internal climate migrant,' the framing was evident to the respondent from the video shown to the respondent right before the outcome questions were asked.

The distributions of responses to the two questions suggest that few respondents are indifferent about migration, but there are also relatively few holding extreme positions (Fig. 3). Perhaps not surprisingly, people tend to agree more with the general statement than with the conditional one, the mean score declining from 3.2 to 2.9. The two scores are correlated at the 0.73 level. 36% of our respondents disagreed with the first outcome statement (*Attitude I*), while 47% disagreed with the second statement (*Attitude II*), the share of those disagreeing very strongly with the statement almost doubling. While 58% agreed with the first statement, it dropped to 46% in the case of the stronger version. In both cases, a mere 5% and 7% chose to remain indifferent, i.e., neither disagreeing nor agreeing (score 3) with the statements, respectively.

3.4.2. Independent variables

We measure the respondent's ***spatial proximity*** to climate-related hazards in three ways. Our first variable measures the distance from the union head office to the closest occurrence of mangrove forest as an approximation for the distance to the most exposed coastal areas due to strong winds, cyclones, storm surges, sea-level rise, and increasing soil salinization (Fig. 2). To include the proximity to low-lying areas (i.e., the flood-prone areas that may also be located further inland), we generated a second variable that measures the mean elevation in the union and a third variable for mean elevation within a 20 km buffer zone around the union (excluding the union itself and the area extending to India) using the Digital Elevation Model (DEM) with a spatial resolution of approximately 30 m on the equator (Fig. 2) (Jarvis et al.,

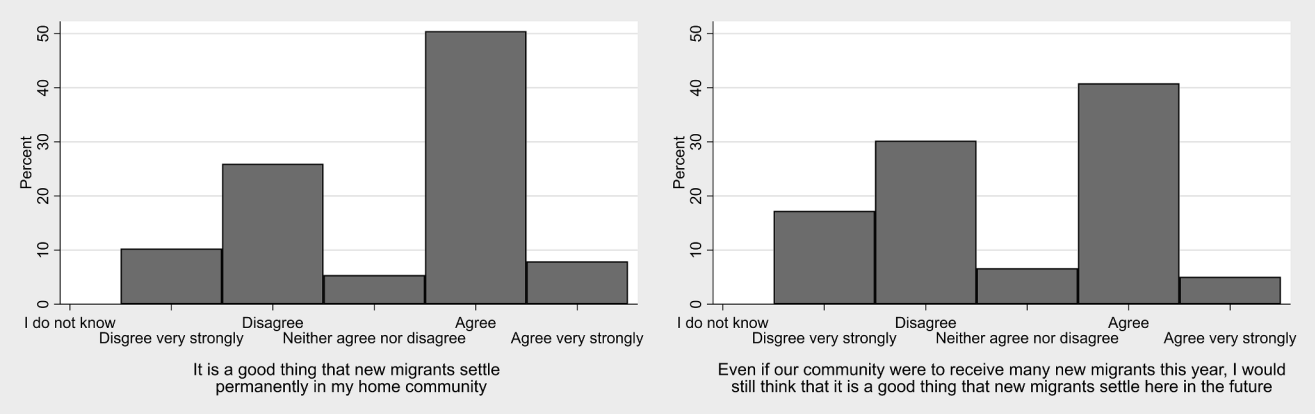

Fig. 3. Agreement with the outcome statements, Attitude I and II.

2008).

On average, the union head offices are located 33 km from the mangrove forest, the distance ranging from 9 to 56 km. The studied unions are thus located relatively close to areas that are likely to be a source of climate migrants in the future. The mean union elevation ranges from 2 to 7 m and the mean elevation for the surrounding area from 3 to 6 m. As the three measures are highly correlated, but still partially measuring different aspects of distance to the most exposed areas, they were combined into one index, *distance to exposure*, using factor analysis.

We have several variables at our disposal as proxies for ***attitudinal proximity***. We measure the respondent's values in three ways. First, we measure *trust* in other people using the respondent's agreement with the statement "I see myself as someone who is generally trusting" (5-point Likert scale). Second, we include a dummy variable that measures the respondent's attitudes toward persons being accountable for their mistakes (*accountability*), the variable taking the value of 1 if the respondent shows a relatively strong preference for the accountability principle. Third, we include a variable that captures the strength of the respondent's religious beliefs (*religious attitudes*; 5-point Likert scale). Attribution bias, i.e., to what degree the respondent feels the migrants are responsible for their own misfortune, is measured using the respondent's perception on to what degree s/he thinks it is people's own fault if they repeatedly experience bad luck (*repeated bad luck own fault*, 5-point Likert scale). Finally, perceptions on community identity, a proxy for ingroup bias, are gauged via a question on similarities between the respondent and their fellow community members compared to migrants (*host community identification*; 5-point Likert scale).

In general, people tend to trust other people (92% trust others at least to some extent), but think that those who repeatedly face bad luck should bear responsibility for it (71% agreeing with the statement that "If people have bad luck once, it is not their fault, but if they have bad luck repeatedly, it is their fault"). 64% agree with the statement "When people are displaced by climate change, that is the will of God, and there is little we can do" and 43% of the respondents would prefer the responsible person to receive a 1000 Taka (USD 12) fine for damage to a machine rather than fining two persons 100 Taka each (the culpable and one innocent), even when it means a reduction of 800 Taka in total fine. Finally, 80% of the respondents agree that they have more in common with the members of their community than with migrants.

As measures for ***experiential proximity***, we include the respondent's own household's migration history (*household migration history*) and whether s/he has relatives living in an exposed area (*extended family exposure*). Nearly one-fourth of the households had moved from one union to another one in the past, the maximum number of such moves being 10. Almost 40% of the respondents had extended family members living in areas that were very exposed to climate change.

To measure ***social proximity***, we include measures for the respondent's education level, occupation, and household wealth. *Education* is measured on a scale from no completed formal education (0) to completed tertiary level (4). In our sample, 23% have not completed primary schooling and 22% have completed upper secondary schooling or more. On average, our respondents have higher educational attainment than people living in the aforementioned coastal migrant catchment areas surveyed in Wiig et al. (2020); in these areas, 39% have no completed schooling and only 5% have completed upper secondary schooling or more.

Our household asset index is based on factor analysis of the ownership of the following assets: house, bicycle, radio, TV, motor vehicle or motorcycle, mobile phone, computer, and number of rooms occupied by the household (*household assets*). Again, on average, our respondents are wealthier than people living in the coastal migrant catchment areas: the shares are 20 percentage points higher for land ownership, 50 for bicycle, over 60 for TV, and 16 for motorbike ownership while also the number of rooms occupied by the household is higher (2.4 compared to 1.9).

In the coastal migrant catchment areas, the most common occupations are farming (inclusive fish and shrimp production; 10%), farm or fish/shrimp production laborer (9%), gathering, foraging, and hunting (9%), self-employment with no non-family employees (9%), and day laborers (15%). Therefore, we construct a dummy variable for those in our sample with the same occupations (the two studies use the same

Table 2
Attitudes toward internal climate migrants.

	(1)	(2)
	Attitude I	Attitude II
Distance to exposure (index)	−0.211***	−0.471***
	(−2.99)	(−5.62)
	0.004	0.000
Trust	0.229**	0.328***
	(2.66)	(4.17)
	0.010	0.000
Repeated bad luck own fault	−0.054	−0.077
	(−1.36)	(−1.62)
	0.178	0.111
Religious attitudes	0.280***	0.201***
	(5.25)	(4.02)
	0.000	0.000
Accountability	−0.240**	−0.249*
	(−2.14)	(−1.96)
	0.037	0.055
Household migration history	−0.039	−0.119*
	(−0.41)	(−1.76)
	0.684	0.085
Extended family exposure	−0.054	−0.257**
	(−0.61)	(−2.50)
	0.542	0.016
Education	−0.109***	−0.046
	(−2.81)	(−0.81)
	0.007	0.419
Household assets (index)	−0.135**	−0.125**
	(−2.50)	(−2.55)
	0.016	0.014
Occupation	−0.098	0.055
	(−0.83)	(0.53)
	0.410	0.596
Age	−0.001	0.002
	(−0.13)	(0.48)
	0.894	0.631
Male	−0.105	−0.123
	(−1.13)	(−1.39)
	0.264	0.171
Lack of community resources	−0.382***	−0.281***
	(−6.08)	(−3.93)
	0.000	0.000
Ease of getting job	0.096*	0.044
	(1.91)	(0.76)
	0.062	0.450
Observations	620	620
Clusters	52	52
R-squared	0.356	0.374

OLS estimations with robust t-statistics in parentheses, clustering on enumerator-union. p-values are under t-values, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

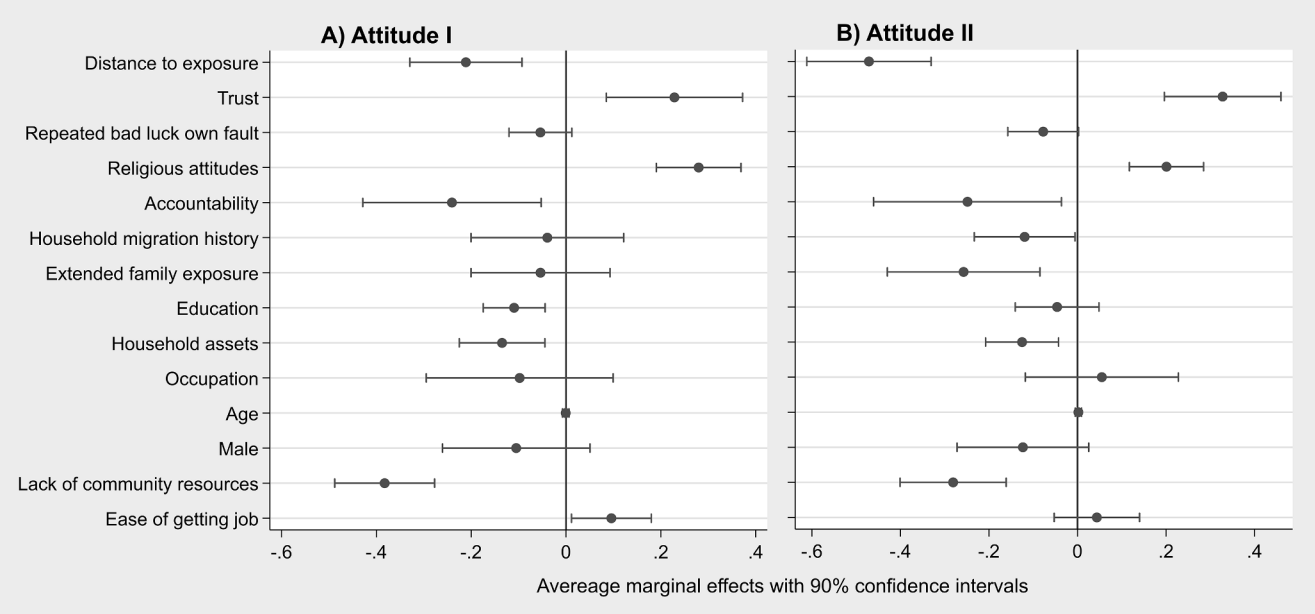

Fig. 4. Average marginal effects for all covariates. The figures are based on Model 1 (Attitude I) and Model 2 (Attitude II) in Table 2.

occupational categories; *occupation*). In total, 32% of our sample falls within these occupational categories (due to a high number of females included in the studies, over 40% of the respondents were housewives).

3.4.3. Control variables

As controls, we include *gender* and *age*, which have been associated with attitudes toward migrants and climate change in previous studies. Our average respondent is 41-years old and is as likely to be a male as a female. To control for the impact of community resources on attitudes, we include (self-reported) ease of getting a job (*ease of getting job*) and perceived resources available in the community to accommodate migrants (*lack of community resources*). Both responses are measured using the 5-point Likert scale. People tend to disagree with the statement that it is easy for someone like him/her to get a job in the community (87%), and 46% agree with the statement that their community can hardly afford to receive new migrants.

4. Results

Table 2 shows the main results using OLS regressions for each of the dependent variables, attitude toward new internal climate migrants (*Attitude I*; Model 1) and its stronger variant which conditions the statement on the community receiving many new migrants in the current year (*Attitude II*; Model 2). The models include all independent and control variables, except for the measure for ingroup identity (*home community identification*). Estimations using the variable for ingroup identity (see Appendix B, Models 1 and 6) showed that it is not related to our outcome variables, its impact on other variables is small, and its inclusion does not affect the overall performance of the model (measured as R-squared). At the same time, its inclusion decreases the sample size by over 70 observations. Therefore, we use Models 1 and 2 in Table 2 as our base models in the subsequent analysis (Appendix B) and robustness checks (Appendix C). Results for Models 1 and 2 are summarized in Fig. 4.

The Appendix D: Supplementary Data provides the ordered logit results for all estimations (SA Tables 1–3) and the results of the analysis using only the control group as the sample (SA Tables 4–6).

4.1. Proximity and attitudes toward internal climate migrants

Spatial proximity is related to attitudes: those who live in areas further from the coast and on more elevated ground are less welcoming to internal climate migrants. Moreover, the coefficient is considerably larger for Attitude II, the change in the coefficient being statistically highly significant, suggesting that the proximity to the most exposed areas is even more salient when people consider welcoming internal climate migrants in the hypothetical case of already receiving substantial numbers of migrants. When the different measures for proximity to the most hazard-prone areas are included separately (Appendix B, Models 2–4 and 7–9), all three measures predict attitudes toward internal climate migrants, with higher statistical significance levels and larger impact sizes on Attitude II.

The effect sizes are considerable: For each ten kilometers one moves away from the coastline, the attitudes toward internal climate migrants increase in negativity by 0.17 points for *Attitude I* (Appendix B, Model 2) and by 0.4 points for *Attitude II* (Appendix B, Model 7). This means that when moving from the union located closest to the coast (9 km) to the union located furthest (56 km), we would expect the attitudes to go from the score 3.8 to 2.0 on the Likert scale for *Attitude II*, keeping all the other variables at their means. Elevation has an equally strong impact on attitudes: A one-meter increase in the elevation of the surrounding area (incidentally, one meter equals one standard deviation for this variable) predicts a decrease of 0.2 and 0.45 in the scores for *Attitude I* and *II*, respectively.

Of our measures for attitudinal proximity to fellow citizens, we find that those who generally are trusting are more likely to welcome internal climate migrants. There is some indication that the effect size for *trust* could be larger for *Attitude II*, but the difference is not statistically

significant across all specifications. Respondents with strong *religious attitudes* are also more positive toward internal climate migrants. People who think that people should be held accountable for their own errors have more negative attitudes toward internal climate migrants (*accountability*). *Repeated bad luck own fault* consistently has a negative sign in the estimations and attains borderline significance levels in the estimations for *Attitude II* (see also Appendices and SA Tables 1–3). As noted earlier, *host community identification* is not related to attitudes toward migration (Appendix B, Models 1 and 6).

When it comes to effect sizes, one standard deviation (0.6) increase in *trust* increases the score for *Attitude II* by 0.2 (Table 2, Model 2), and one standard deviation (1.2) increase in *religious attitudes* increases the score for *Attitude II* by 0.25. *Accountability* (a dummy) – i.e., holding others strongly accountable for their mistakes – decreases the score for *Attitude II* by 0.25.

Contrary to expectations discussed in the conceptual framework section, shared experiences or vulnerabilities with migrants do not seem to generate more positive attitudes toward them. There is, in fact, some evidence that those who have relatives living in highly exposed areas (*extended family exposure*) are *less* welcoming to new migrants when it comes to *Attitude II*. Coefficients for *household migration history* also have a negative sign throughout the estimations, but in most estimations, the coefficients are not significant at the conventional level (and never when ordered logit estimations are used; see Appendix D: Supplementary Data).

When it comes to social proximity, the results for *household assets* show that respondents from poorer households are consistently more welcoming, and those from wealthier households less favorably inclined, toward internal climate migrants. Less-educated respondents are also more positive toward internal climate migrants, although this is only true for *Attitude I*. For *Attitude II*, we find no impact of education. Adding the different educational categories separately in the estimations (Appendix B, Models 5 and 10), using completed upper secondary education as the reference category, reveals that those without formal education and those who have only completed primary school show more positive attitudes toward climate migrants than the those in the excluded category. The differences for the three higher education categories are not statistically significantly different from each other. Our dummy for people with occupations prevalent in the potential migrant-sending areas is not significantly related to our dependent variables.

4.2. Control variables and further robustness checks

Age is not related to attitudes toward climate migrants, nor do we find any evidence for a non-linear relationship (results not shown). The coefficient for *gender* (male) is consistently negative, but it fails in most estimations to reach the conventional significance level. Those who think that their community can hardly afford to receive new migrants (*lack of community resources*) are considerably less welcoming to climate migrants. Those who find it easy for someone like them to get a job in the community tend to be more positive about welcoming migrants, although this effect dissipates for *Attitude II*.

Appendix C shows robustness analysis when adding the control for treatment video status (Models 1 and 6), previous knowledge on climate change (Models 2 and 7), belief of typical migrants' level of wealth (Models 3 and 8), and believed number of future migrants (Models 4 and 9). Models 5 and 10 include further characteristics of the respondent (whether the household owns land, respondent's residency history in the community, and respondent's status in the household).[5] The inclusion of these variables has no substantial impacts on the size or significance levels of the other variables, and none of them predicts our outcome variables.

[5] See the summary statistics table for details on these measures (Appendix A).

5. Discussion

Drawing on existing literature on perceptions of immigration, climate change, and natural hazards, we developed a conceptual framework centered on multi-dimensional host–migrant proximities as key aspects in shaping peoples' attitudes toward internal climate migrants. We tested four distinct, yet related dimensions of proximity using unique survey data from southwest coastal Bangladesh. Taken together, the study provides evidence that host–migrant proximities are important in understanding attitudes toward internal climate migrants in a developing country like Bangladesh. The results for our control variables suggest that the perceived capacity of the host community to receive internal climate migrants influences attitudes toward them – results that are in line with recent migration studies conducted in Morocco (Buehler and Ha, 2019) and South Africa (Harris et al., 2018). Crucially, however, our results for the proximity variables underscore that the attitudes toward internal climate migrants are not just a matter of capacities, they are also profoundly relational, positional, and complex.

In our study, likely sending and receiving areas are spatially very close to each other, at the maximum 60 km apart. The fact that there seems to be an impact of distance even over such short distances implies that one's own experience of, or the threat of being directly affected by a hazard, can be salient in forming attitudes toward internal climate migrants. This result is in line with extant studies, conducted mainly in developed countries showing that one's own experience and short spatial distance to being impacted by climate change or a weather-related hazard event tend to be related to concern over climate change, its consequences, and support for climate action (Brody et al., 2008; Spence et al., 2011; Verlynde et al., 2019).

Similarly, our findings on values and worldviews are mostly in line with previous studies on perceptions of climate change and immigrants (Corner et al., 2014; Harell et al., 2017; Herreros and Criado, 2009): those who see people more as makers of their own fate or hold people highly accountable for their actions tend to be more skeptical toward climate migrants while those with higher levels of social trust are more welcoming. In one respect, however, our results are perhaps surprising: we do not find evidence that stronger ingroup identity predicts more hostile attitudes toward internal climate migrants. One plausible explanation for this result is that the society we studied is very homogenous – the potential migrants and host community members speak the same language and have the same ethnicity and religion – and that we focused on short-distance migration, where sociocultural differences between the host community members and the migrants may be smaller than across larger geographic distances. Regarding our measure for religious attitudes, we found that those who thought that "when people are displaced by climate change, that is the will of God, and there is little we can do," were more likely to welcome new migrants. This may be related to the strength of people's religious beliefs or related other-regarding values. However, it is equally possible that the variable captures the effect of people feeling more empathy toward people whom they believe cannot be blamed for their misfortune (Harell et al., 2017), or religious people perhaps being more inclined to accept other people of the same religious group (Bansak et al., 2016).

Contrary to our expectations, we found little evidence that experiential proximity to migrants, measured as shared experiences of migration and extended family exposure, was positively related to attitudes toward migrants. We even found some evidence that shared experience to some degree predicted more negative attitudes toward climate migrants, as having extended family members living in highly exposed areas was related to more negative views. One possible explanation for this is that people in the studied region tend to rely on their extended family when migrating (Boas, 2020). Therefore, it is possible that the respondents with relatives living in exposed areas perhaps were wary of being stuck with the responsibility of helping their extended family members while also at the same time being asked

to accommodate non-family migrants in their community. The fact that we find significant results for this variable only for the second, more strongly phrased attitudinal outcome variable, supports such an interpretation.

In contrast to many previous studies on migration (Hainmueller and Hiscox, 2007; Mayda, 2006) and climate change perceptions (Poortinga et al., 2019), we found that the less-wealthy and the less-educated were considerably more positive about receiving internal climate migrants. As noted, this finding suggests the positional nature of attitudes toward migrants, with attitudes becoming more negative as socio-economic or class differences increase. In general, we also see little evidence that labor market competition influences attitudes in our case; respondents with occupations similar to those prevalent in migrant-sending areas were no more critical of migrants than those in other occupations.

The fact that the poor and less-educated may be less opposed to internal climate migrants can have important policy implications. The Government of Bangladesh has realized that the country needs to address climate-induced displacement challenges and find durable solutions through permanent resettlement. The draft version of the national strategy for how to manage climate-induced internal displacement emphasizes the rights of the displaced in the resettlement process, but makes only a few explicit references to the host communities, stating that it is important to "make members of host communities a part of local integration interventions" (Bangladesh Ministry of Disaster Management and Relief, 2020, p. 22) on the basis that it is the poor locals who are the challenge: "Common benefits [provided to the resettled] should also reach the poorer section of local communities in order to avoid conflict with the locals" (p. 22). Our results, however, suggest that at least in Satkhira District, the hearts and minds of the poor are more receptive to internal climate migrants than the those of the better-off.

6. Conclusion

This article is one of the first studies examining host community attitudes toward internal climate migrants in developing countries. The study was motivated by the lack of research on the host communities that will be on the front lines in receiving substantial numbers of internal climate migrants in the coming decades, should the pessimistic predictions of hundreds of millions of people being driven from their homes and lands materialize (Boas et al., 2019). Understanding how the receiving communities view migrants and how those views are shaped is crucial in designing policies that seek to lessen tensions between the host communities and the displaced and to improve resettlement outcomes (Rigaud et al., 2018; Wrathall et al., 2019).

The article posits that psychological distance to internal climate migrants is important in determining perceptions of them, conceptually dividing the different dimensions of distance into spatial, attitudinal, experiential, and social proximity. In particular, we provide evidence that spatial distance to highly exposed areas, views related to trust, attribution bias and religion, and social proximity in terms of education level and wealth are salient for host community members' attitudes toward migrants moving over short distances due to climate change-related environmental changes in southwest Bangladesh.

This study is not without limitations. The study is unique in its focus on host communities in a highly climate-exposed region, but its external validity should be assessed in further studies, inclusive the results' relevance for other types of internal and international migration. Although the study provides evidence that host–migrant proximity is an important factor in understanding how host community members perceive internal climate migrants, none of the specific findings can be taken as an established result until they have been studied in more depth across different contexts, inclusive of ethnically diverse societies. Basically, are the individual factors identified in this study of consequence when other data or better-defined variables are used? Related to this, there are likely to be several other factors, falling within the four proposed proximity categories, that can be relevant, but which were not included in this study. When it comes to spatial distance, a shortcoming in this study was the lack of individual distance to the 'threat', it thus being measured at the union level. Future studies should aim at measuring individual distance to highly exposed areas and places. Other important avenues for future research are to investigate how the formation of perceptions of internal climate migrants can be influenced (Kolstad et al., 2019), whether host community members' attitudes toward internal climate migrants depend on the type of environmental challenge they perceive to be behind the migrants' decision to migrate, and how attitudes toward temporary and permanent migration may differ.

When it comes to policy implications, the study provides some tentative advice. First, the strong positive impact of spatial proximity to the areas most exposed to impacts of climate change on attitudes suggests that a more realistic perception of natural hazards, as well as the helplessness of the affected communities, can improve empathy and support toward the displaced. Programs and campaigns focusing on creating awareness concerning the impact of climate change on displacement may thus contribute to improving attitudes toward migrants and create support for resettlement initiatives. Second, appealing to people's other-regarding values and limited options faced by those most adversely affected by climate-related environmental change may also positively impact people's attitudes toward internal climate migrants. Third, portraying the potential migrants as similar to 'oneself' may help bridge the psychological distance between the host communities and the displaced. Finally, although any resettlement program should address poverty among the local community members, the design and implementation of such programs should also consider the local political implications of the more educated and wealthier people potentially being more critical toward internal climate migrants than the poor.

Declaration of Competing Interest

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

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Appendix A

Table A1
Summary statistics and variable definitions.

Variable	Obs	Mean	St. dev.	Min	Max	Definition / Question and answer alternatives
Dependent variables						
Attitude I	632	3.2	1.2	1	5	To what extent do you agree with the following statement: It is a good thing that new migrants settle permanently in my home community. 1 Disagree very strongly; 2 Disagree; 3 Neither agree nor disagree; 4 Agree; 5 Agree very strongly
Attitude II	632	2.9	1.3	1	5	To what extent do you agree with the following statement: Even if our community were to receive many new migrants this year, I would still think that it is a good thing that new migrants settle here in the future. Answer alternatives as for Attitude I
Spatial proximity						
Distance to exposure (index)	633	0.0	1.0	−1.7	1.8	Factor analysis: Distance to mangrove forest; Elevation (union); Elevation (around union)
Distance to mangrove (km)	633	33.9	13.1	9.4	56.3	Distance to closest mangrove forest
Elevation, union (m)	633	4.9	1.5	2.0	7.0	Mean elevation of the union, calculated based on DEM
Elevation, around union (m)	633	4.2	1.0	2.9	6.1	Mean elevation of the area surrounding the union (20 km buffer), calculated based on DEM
Attitudinal proximity						
Trust	630	4.2	0.6	2	5	How well does the following statement describe your personality: I see myself as someone who is generally trusting. Answer alternatives as for Attitude I
Repeated bad luck own fault	630	3.8	1.0	1	5	To what extent do you agree with the following statement: If people have bad luck once, it is not their fault, but if they have bad luck repeatedly, it is their fault. Answer alternatives as for Attitude I
Religious attitudes	633	3.4	1.2	1	5	To what extent do you agree with the following statement: When people are displaced by climate change, that is the will of God, and there is little we can do. Answer alternatives as for Attitude I
Accountability	633	0.42	0.5	0	1	Imagine two people doing the same job in a factory. One day, one person damages the machine they are working at. The factory manager fines both workers 100 Taka; both the person who broke the machine and the other worker. You can instead decide to give a fine of 1000 Taka to the worker who broke the machine, and no fine to the other worker. If you were to choose between these two options, which one would you choose? 0: Let the first person be fined 100 Taka and the second person be fined 100 Taka. In total they are fined 200 Taka. 1: Let the first person be fined 1000 Taka and the second person nothing. In total they are fined 1000 Taka
Host community identification	550	3.8	0.9	1	5	To what extent do you agree with the following statement: I have more in common with the members of my community than with migrants that arrive here. Answer alternatives as for Attitude I
Experiential proximity						
Household migration history	633	0.2	0.8	0	10	How many times has your household moved from one union to another?
Extended family exposure	632	0.39	0.5	0	1	Do you have extended family members who currently live in areas very vulnerable to climate change? 0 No; 1 Yes
Social proximity						
Education	633	1.5	1.2	0	4	What level of education have you completed? 0 None or other education; 1 Primary; 2 Secondary; 3 Higher secondary; 4 Tertiary
Household assets (index)	632	0.0	1.0	−2.2	4.2	Factor analysis: ownership of house, bicycle, radio, TV, motor vehicle or motorcycle, mobile phone, computer, number of rooms the household occupies
Occupation	633	0.32	0.5	0	1	1 Respondent's occupation: Farming or fish/shrimp production on own land, Day laborer, Farm or fish/shrimp production laborer or day laborer, Gathering/foraging/hunting or Self-employed (owns business with no non-family employees); 0 Other
Control variables and variables used in robustness checks						
Age	633	41.0	13.8	18	89	Age in years
Male	633	0.50	0.5	0	1	1 Male; 0 Female
Ease of getting job	631	1.9	0.9	1	5	How easy is it for someone like you to get a job in this community? 1 Very difficult; 2 Difficult; 3 Neither difficult nor easy; 4 Easy; 5 Very easy
Lack of community resources	628	3.1	1.0	1	5	To what extent do you agree with the following statement: Our community can hardly afford to receive new migrants. Answer alternatives as for Attitude I
Video treatment	633	0.50	0.5	0	1	1 Received treatment video; 0 Received placebo video
Climate change knowledge	633	1.3	1.0	0	3	Can you explain what climate change is, or is this something you have not yet had the opportunity to learn about? The enumerator counted how many of the options the respondent mentioned: Buildup of CO2 and other greenhouse gases in the atmosphere that causes climate to change; Increasing temperatures; Changes in rain and seasons / unstable weather; More extreme weather events; Rising sea levels. 0: None; 1: 1 aspect: 2: 2 aspects; 3: 3 or more aspects. [Partially correct answers were counted as correct answers]
Migrant wealth	576	2.3	0.8	1	5	The typical migrant to my community is likely to be _____? 1 Extremely poor; 2 Poor; 3 Neither poor nor rich; 4 Rich; 5 Extremely rich
Migration size	633	3.8	0.6	2	5	Do you think the number of migrants to this community in 5 years will be ___? 1 much smaller than today; 2 smaller than today; 3 the same as today; 4 larger than today; 5 much larger than today
Household landowner	632	0.77	0.4	0	1	1 Household owns land; 0 No
Born in community	633	0.59	0.5	0	1	1 Yes; 0 No
Residency time	633	33.6	16.1	5	89	Time the respondent has lived in the community (years)
Household head	633	0.42	0.5	0	1	1 The respondent is the household head; 0 The respondent is not the household head

Appendix B

Table A2
Attitudes toward internal climate migrants, additional analysis.

	(1) Attitude I	(2) Attitude I	(3) Attitude I	(4) Attitude I	(5) Attitude I	(6) Attitude II	(7) Attitude II	(8) Attitude II	(9) Attitude II	(10) Attitude II
Distance to exposure (index)	−0.188**				−0.209***	−0.482***				−0.469***
	(−2.43)				(−3.01)	(−5.45)				(−5.63)
	0.019				0.004	0.000				0.000
Trust	0.119	0.223**	0.242***	0.231**	0.233***	0.292***	0.308***	0.362***	0.331***	0.333***
	(1.45)	(2.62)	(2.79)	(2.64)	(2.74)	(3.92)	(4.29)	(4.30)	(4.22)	(4.21)
	0.153	0.012	0.007	0.011	0.009	0.000	0.000	0.000	0.000	0.000
Repeated bad luck own fault	−0.074*	−0.056	−0.055	−0.051	−0.056	−0.070	−0.083*	−0.080	−0.072	−0.080
	(−1.89)	(−1.43)	(−1.36)	(−1.29)	(−1.41)	(−1.42)	(−1.79)	(−1.57)	(−1.45)	(−1.67)
	0.065	0.159	0.180	0.201	0.165	0.161	0.080	0.124	0.153	0.102
Religious attitudes	0.241***	0.282***	0.271***	0.278***	0.281***	0.186***	0.211***	0.178***	0.199***	0.202***
	(4.68)	(5.30)	(5.16)	(5.12)	(5.24)	(3.81)	(4.49)	(3.57)	(3.72)	(4.03)
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.000
Accountability	−0.262**	−0.220*	−0.271**	−0.250**	−0.232**	−0.230	−0.189	−0.326**	−0.266*	−0.234*
	(−2.24)	(−1.91)	(−2.61)	(−2.14)	(−2.04)	(−1.59)	(−1.57)	(−2.51)	(−1.92)	(−1.85)
	0.029	0.062	0.012	0.038	0.046	0.119	0.122	0.015	0.060	0.070
Household migration history	−0.038	−0.035	−0.050	−0.045	−0.037	−0.108	−0.102	−0.150**	−0.130*	−0.117*
	(−0.40)	(−0.37)	(−0.50)	(−0.46)	(−0.38)	(−1.63)	(−1.57)	(−2.02)	(−1.82)	(−1.71)
	0.692	0.716	0.617	0.645	0.702	0.110	0.123	0.048	0.074	0.093
Extended family exposure	−0.046	−0.051	−0.060	−0.039	−0.059	−0.265**	−0.256**	−0.260**	−0.227**	−0.267**
	(−0.51)	(−0.59)	(−0.67)	(−0.45)	(−0.67)	(−2.36)	(−2.63)	(−2.32)	(−2.17)	(−2.55)
	0.613	0.560	0.505	0.657	0.506	0.023	0.011	0.025	0.035	0.014
Education	−0.085*	−0.105**	−0.113***	−0.121***		−0.024	−0.030	−0.063	−0.070	
	(−1.84)	(−2.67)	(−2.96)	(−3.16)		(−0.40)	(−0.55)	(−1.07)	(−1.22)	
	0.071	0.010	0.005	0.003		0.691	0.582	0.288	0.227	
Household assets (index)	−0.161***	−0.136**	−0.132**	−0.142**	−0.130**	−0.124**	−0.125**	−0.125**	−0.140***	−0.117**
	(−2.68)	(−2.55)	(−2.43)	(−2.67)	(−2.34)	(−2.17)	(−2.62)	(−2.41)	(−2.90)	(−2.34)
	0.010	0.014	0.019	0.010	0.023	0.035	0.012	0.020	0.005	0.023
Occupation	−0.046	−0.097	−0.086	−0.107	−0.086	0.108	0.055	0.081	0.033	0.074
	(−0.43)	(−0.83)	(−0.73)	(−0.89)	(−0.72)	(1.14)	(0.54)	(0.77)	(0.30)	(0.71)
	0.672	0.413	0.468	0.377	0.473	0.260	0.589	0.446	0.763	0.481
Age	0.001	−0.000	−0.001	−0.001	−0.001	0.004	0.003	0.001	0.001	0.002
	(0.12)	(−0.07)	(−0.19)	(−0.30)	(−0.17)	(0.88)	(0.75)	(0.25)	(0.15)	(0.41)
	0.908	0.943	0.854	0.763	0.863	0.382	0.458	0.807	0.884	0.684
Male	−0.153*	−0.115	−0.105	−0.088	−0.116	−0.196**	−0.152*	−0.117	−0.086	−0.139
	(−1.76)	(−1.23)	(−1.13)	(−0.95)	(−1.25)	(−2.45)	(−1.73)	(−1.24)	(−1.00)	(−1.59)
	0.085	0.223	0.262	0.348	0.219	0.018	0.090	0.222	0.323	0.118
Lack of community resources	−0.426***	−0.377***	−0.392***	−0.381***	−0.384***	−0.280***	−0.265***	−0.304***	−0.278***	−0.284***
	(−7.04)	(−5.91)	(−6.29)	(−5.91)	(−6.21)	(−3.71)	(−3.84)	(−4.15)	(−3.77)	(−4.03)
	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000
Ease of getting job	0.118**	0.095*	0.084	0.101**	0.095*	0.090	0.044	0.015	0.058	0.044
	(2.02)	(1.91)	(1.60)	(2.05)	(1.93)	(1.29)	(0.82)	(0.23)	(1.05)	(0.77)
	0.049	0.061	0.116	0.045	0.059	0.204	0.418	0.821	0.300	0.446
Host community identification	0.038					0.000				
	(0.50)					(0.00)				
	0.617					0.998				
Distance to mangrove (km)		−0.017***					−0.040***			
		(−3.11)					(−6.53)			
		0.003					0.000			
Elevation, union (m)			−0.131***					−0.259***		
			(−2.82)					(−4.37)		
			0.007					0.000		
Elevation, around union (m)				−0.196**					−0.452***	
				(−2.66)					(−5.25)	
				0.011					0.000	
No education					0.398**					0.267
					(2.46)					(1.33)
					0.017					0.190
Primary education					0.327**					0.250
					(2.02)					(1.46)
					0.048					0.151
Lower secondary education					0.112					0.076
					(0.65)					(0.51)
					0.518					0.613
Tertiary education					0.060					0.225
					(0.40)					(1.55)
					0.693					0.127
Observations	546	620	620	620	620	546	620	620	620	620
Clusters	50	52	52	52	52	50	52	52	52	52
R-squared	0.356	0.357	0.352	0.351	0.358	0.375	0.399	0.334	0.356	0.378

OLS estimations with robust t-statistics in parentheses, clustering on enumerator-union. p-values are under t-values, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Appendix C

Table A3
Attitudes toward internal climate migrants, robustness analysis.

	(1) Attitude I	(2) Attitude I	(3) Attitude I	(4) Attitude I	(5) Attitude I	(6) Attitude II	(7) Attitude II	(8) Attitude II	(9) Attitude II	(10) Attitude II
Distance to exposure (index)	−0.211***	−0.212***	−0.176**	−0.207***	−0.214***	−0.471***	−0.469***	−0.467***	−0.458***	−0.467***
	(−2.99)	(−2.95)	(−2.44)	(−2.89)	(−3.00)	(−5.61)	(−5.43)	(−5.28)	(−5.53)	(−5.51)
	0.004	0.005	0.018	0.006	0.004	0.000	0.000	0.000	0.000	0.000
Trust	0.230***	0.229**	0.135	0.224***	0.230**	0.328***	0.328***	0.300***	0.314***	0.322***
	(2.70)	(2.66)	(1.66)	(2.74)	(2.62)	(4.20)	(4.16)	(3.91)	(3.83)	(3.99)
	0.009	0.011	0.103	0.008	0.011	0.000	0.000	0.000	0.000	0.000
Repeated bad luck own fault	−0.055	−0.054	−0.089**	−0.055	−0.051	−0.077	−0.079	−0.089	−0.082*	−0.077
	(−1.37)	(−1.36)	(−2.52)	(−1.43)	(−1.29)	(−1.61)	(−1.64)	(−1.66)	(−1.71)	(−1.57)
	0.176	0.179	0.015	0.158	0.202	0.113	0.107	0.102	0.094	0.123
Religious attitudes	0.280***	0.280***	0.238***	0.279***	0.279***	0.201***	0.202***	0.192***	0.198***	0.204***
	(5.24)	(5.27)	(5.09)	(5.28)	(5.24)	(4.03)	(4.09)	(4.11)	(4.07)	(3.96)
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Accountability	−0.239**	−0.241**	−0.258**	−0.233**	−0.246**	−0.249*	−0.247*	−0.233*	−0.224*	−0.250*
	(−2.14)	(−2.15)	(−2.18)	(−2.04)	(−2.19)	(−1.97)	(−1.93)	(−1.75)	(−1.77)	(−2.00)
	0.038	0.036	0.034	0.047	0.034	0.054	0.059	0.086	0.083	0.050
Household migration history	−0.039	−0.040	−0.030	−0.037	−0.035	−0.120*	−0.118*	−0.112*	−0.113*	−0.111*
	(−0.41)	(−0.41)	(−0.33)	(−0.39)	(−0.37)	(−1.76)	(−1.75)	(−1.77)	(−1.79)	(−1.72)
	0.686	0.684	0.741	0.695	0.714	0.084	0.086	0.084	0.079	0.092
Extended family exposure	−0.054	−0.055	−0.033	−0.045	−0.051	−0.257**	−0.253**	−0.255**	−0.229**	−0.254**
	(−0.62)	(−0.62)	(−0.36)	(−0.51)	(−0.59)	(−2.48)	(−2.43)	(−2.41)	(−2.26)	(−2.53)
	0.538	0.541	0.720	0.611	0.555	0.017	0.019	0.020	0.028	0.014
Education	−0.110***	−0.111***	−0.093**	−0.107***	−0.107***	−0.046	−0.038	−0.039	−0.038	−0.044
	(−2.81)	(−2.85)	(−2.29)	(−2.80)	(−2.72)	(−0.81)	(−0.72)	(−0.65)	(−0.70)	(−0.77)
	0.007	0.006	0.026	0.007	0.009	0.421	0.476	0.519	0.490	0.443
Household assets (index)	−0.136**	−0.135**	−0.146**	−0.132**	−0.130**	−0.125**	−0.124**	−0.104**	−0.118**	−0.125**
	(−2.53)	(−2.50)	(−2.55)	(−2.38)	(−2.22)	(−2.56)	(−2.52)	(−2.10)	(−2.22)	(−2.34)
	0.014	0.016	0.014	0.021	0.031	0.013	0.015	0.041	0.031	0.023
Occupation	−0.096	−0.097	−0.025	−0.101	−0.100	0.055	0.051	0.104	0.046	0.045
	(−0.82)	(−0.83)	(−0.25)	(−0.85)	(−0.86)	(0.52)	(0.49)	(1.10)	(0.45)	(0.46)
	0.419	0.411	0.804	0.401	0.392	0.603	0.623	0.278	0.656	0.650
Age	−0.001	−0.001	−0.000	−0.001	−0.012	0.002	0.002	0.003	0.002	−0.005
	(−0.16)	(−0.14)	(−0.05)	(−0.15)	(−0.88)	(0.49)	(0.51)	(0.67)	(0.44)	(−0.39)
	0.874	0.890	0.960	0.884	0.381	0.628	0.615	0.505	0.665	0.699
Male	−0.104	−0.106	−0.150*	−0.101	−0.133	−0.124	−0.119	−0.162*	−0.111	−0.212
	(−1.13)	(−1.10)	(−1.75)	(−1.06)	(−0.86)	(−1.39)	(−1.31)	(−1.93)	(−1.23)	(−1.41)
	0.265	0.276	0.086	0.295	0.393	0.171	0.197	0.059	0.225	0.166
Lack of community resources	−0.383***	−0.383***	−0.418***	−0.384***	−0.383***	−0.281***	−0.280***	−0.292***	−0.284***	−0.277***
	(−6.07)	(−6.19)	(−6.58)	(−6.03)	(−6.02)	(−3.92)	(−3.96)	(−3.81)	(−3.99)	(−3.88)
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ease of getting job	0.095*	0.096*	0.087	0.093*	0.094*	0.044	0.043	0.061	0.036	0.037
	(1.89)	(1.90)	(1.67)	(1.87)	(1.81)	(0.78)	(0.76)	(0.98)	(0.64)	(0.63)
	0.065	0.064	0.101	0.067	0.076	0.438	0.452	0.330	0.527	0.532
Video treatment	−0.031					0.010				
	(−0.45)					(0.10)				
	0.653					0.921				
Climate change knowledge		0.004					−0.021			
		(0.07)					(−0.40)			
		0.945					0.691			
Migrant wealth			−0.049					0.019		
			(−0.67)					(0.26)		
			0.509					0.799		
Migration size				−0.061					−0.188	
				(−0.49)					(−1.46)	
				0.629					0.151	
Household land owner					−0.036					0.026
					(−0.36)					(0.20)
					0.718					0.844
Born in community					−0.202					−0.039
					(−0.70)					(−0.14)
					0.489					0.893
Residency time					0.011					0.007
					(0.91)					(0.58)
					0.366					0.565
Household head					0.056					0.080
					(0.39)					(0.49)
					0.695					0.624
Observations	620	620	571	620	619	620	620	571	620	619
Clusters	52	52	51	52	52	52	52	51	52	52
R-squared	0.356	0.356	0.342	0.357	0.357	0.374	0.374	0.360	0.380	0.375

OLS estimations with robust t-statistics in parentheses, clustering on enumerator-union. p-values are under t-values, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Appendix D. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.gloenvcha.2020.102156.

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