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Refugee Presence and Perceived Changes in Local Social Norms: A Study of Communities Hosting Rohingya Refugees in Bangladesh

Shanty Kumar Tripura^{1*}

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ABSTRACT

Population visibility, daily interactions, institutional responses, material constraints and community solidarity all need to be taken into consideration in understanding perceptions of social change in refugee hosting contexts. This study analyzes the primary survey data of 460 respondents from villages supporting Rohingya refugees and villages adjacent to Rohingya refugee camps in Bangladesh. Perceived refugee presence, intergroup contact, perceived resource pressure, perceived cultural distance, institutional trust, community cohesion and perceived changes in local social norms are all connected in a PLS-SEM framework that includes forty measurement indicators. The internal consistency and convergent validity of the measurement model are good with Cronbach's alpha ranging from 0.878 to 0.938, composite reliability ranging from 0.911 to 0.949, and average variance extracted ranging from 0.672 to 0.728. The structural model accounted for 34.8% of the variance in community cohesion, and 27.9% of the variance in perceived norm change. The associations observed are in the hypothesized direction with institutional trust positively associated with cohesion and cohesion negatively associated with perceived norm change. The overall picture of predictive indicators is good as compared to the linear-model benchmark. A few exported Bootstrap intervals, however, need technical verification prior to inferential reporting. The overall findings of the study can be considered as empirical evidence of the interaction among the Host-Community Perceptions, institutional confidence and cohesion in the social context of Rohingya refugees' presence in Bangladesh.

INTRODUCTION

Social relations and public services, livelihoods, and institutional responsibilities may be in closer touch in refugee hosting. When residents are attempting to transform their community, they might come across new ways of doing things. Such experiences can shape their understanding of acceptable behaviour, obligations, cooperation in public and informal rules. These types of interpretations should be treated with care. They are able, however, to show that refugees brought every experienced difficulty and that cultural change is always a deterioration. There should be a clear separation between perceived exposure, relational experiences, material pressures and the meanings attributed to change, aspects that may serve as a credible research approach (Dröes & Koster, 2023).

The investigation takes place in the context of the Bangladesh setting. The study is based on communities that live in or are close to Rohingya refugee camps, and it appeals to local community members' descriptions of their daily lives. It goes beyond attitudes towards refugees in general (Apak, 2022). It takes into account the level of trust in the host community, perceptions of the fairness of the institutions, positive interaction between groups, issues of resource, cultural differences, and expectations about local behaviour. This wider view sees social responses as unfolding within interwoven community processes and considers population visibility to be

insufficient to account for the perceived social change (Biswas *et al.*, 2021).

The central conceptual issue relates to the perceived refugee presence and the perceived changes in social norms. The salientness of change may depend on the visibility rather than the direction or value of the change. Weathering pressures from resources might reduce cooperation, and trusted institutions can facilitate dealings with dissension among residents (Rahman & Dodul, 2020). Understanding can be promoted in the contact but depends on the quality of the interaction and the circumstances in which the contact takes place. You might have problems with adjusting even though there is no actual incompatibility, due to perceived cultural distance. These experiences may be linked to interpretations of continuity and change in social life locally through community cohesion (Duran *et al.*, 2023). The structural model consists of five explanatory constructs, one mediating construct and one principal outcome. There is a direct relationship between perceived refugee presence and perceived norm change. Community cohesion is predicted by intergroup contact, perceived resource pressure, and perceived cultural distance and institutional trust. Cohesion is then used to predict perceptual norm change. These antecedents are indirectly related to the outcome through four specific relationships that are based on cohesion (Modesti & Talamo, 2021). This specification serves to confirm six direct hypotheses

¹ Master of Social Science, Development Studies at Jagannath University, Dhaka, Bangladesh

* Corresponding author's e-mail: tripurashaan.pu@gmail.com

and to split the general mediation hypothesis in four hypotheses that can be tested independently, thus ensuring an empirical model that is consistent with the conceptual framework.

This empirical evidence stems from 460 completed surveys with adult residents of the refugee-hosting communities in Bangladesh. The data consists of demographic data and 40 substantive-measurement indicators across the 7 study constructs. These observations are considered as the primary field data. The former, descriptive distributions, show characteristics of the study respondents, the latter, the structural relationships, are associations derived from the respondents' perceptions and experiences. As this is a cross sectional and perception-driven design, any changes in social or normative aspects are interpreted as empirical associations and not solely attributed to refugee presence (Glorius *et al.*, 2023).

The research is related to three analytical questions. First, are the measure instrument used in data collection reliable, convergent valid and discriminant valid in the sample? Second, what are the relationships between perceived refugee presence, intergroup contact, resource pressure, cultural distance and institutional trust and community cohesion and perceived changes of local norms? Third, how much do community cohesion and perceived norm change build on each other as intervening mechanisms between the four community-level antecedents? The following questions combine measurement quality, structural explanations, mediations and predictive assessments in a single empirical PLS-SEM design.

The contribution is conceptual and empirical. Conceptually, the framework brings together exposure, contact, material pressure, cultural interpretation, institutional trust and cohesion, all-in one-story line that is based on the perception of some kind of norm change. Empirically, the study assesses this framework in light of the 460 responses it received from the context of Bangladesh as a refugee host country. Twenty-one reported statistical tables have been retained and explained immediately after they are presented. This structure allows to transparently link respondent characteristics, quality of the measurement models, structural relationships, effect sizes, mediation models, and predictive relevance of the paper (Durgun & Taş, 2022).

An important interpretive distinction of the study is also between the perception of change and the actual social change that is verified. Responses to the survey reveal the residents' perception of their local surroundings, structures, ties, and shifting demands. They thus reflect perceptions within the sample observed, but cannot by themselves prove the direction in which changes in the historic past occurred or that they were uniquely caused. It is particularly relevant in humanitarian contexts, where social, economic, institutional and political processes can be concurrent.

LITERATURE REVIEW

Social norms and perceived refugee presence

Social norms relate to common understandings regarding

behaviour, and the unspoken actions (or implicit reactions) that validate them. These involve the attitudes of what the members of the community typically do and what they judge as acceptable. This means a perceived change in norms can include behaviour, approval; cooperation or enforcement (Dröes & Koster, 2023). Although these are dimensions, they are not interchangeable. While the interactions within a community are changeable, the commitment to provide assistance is not necessarily. By contrast, a continuity of behaviour can mask changed expectations. The result can thus only be evaluated as a perceived change; it is not a direct indicator of a social disorder (Apak, 2022).

Perceived refugee presence reflects both the visibility and the everyday salience of refugee settlement and related activities. The hosting situation can become cognitively salient in the public discourse, relief efforts, or in interactions with others in common spaces (Biswas *et al.*, 2021). Increased salience can make it more likely that residents will see or attribute shifts in community expectations. This mechanism has to do with interpretation. It does not assume that refugee behaviour is the only cause of perceived change. The proposed positive relationship entails an expectation of greater perceived presence accompanying higher perceptions of change, however, without assigning beneficial or harmful meaning to the perceived change (Rahman & Dodul, 2020).

Another consideration in norm measurement is who is being reported. Often there might be a gap between personal and perceived public approval and observed behaviour. Someone may not approve of a practice even though they perceive others do approve (Duran *et al.*, 2023). These attitudes can be a mixture and be included in questions that are aimed at community attitudes in general. A more powerful device would be used to identify the reference group to which it applies, and to differentiate the respondent's own expectations from the perceived collective ones. Such a distinction will help clarify the meaning of the concept of normative change (Modesti & Talamo, 2021).

H1: Perceived refugee presence is positively associated with perceived changes in local social norms.

Intergroup contact and community cohesion

Intergroup contact allows communication, familiarity and understanding to take place. Proper interaction can facilitate residents' understanding of strange behaviors and identify mutual practical issues. These experiences can contribute to developing a more cooperative response among members of the host community by removing doubts and deterring oversimplified narratives of shared issues (Durgun & Taş, 2022). But how much engagement it is can't be determined by contact frequency. The exchange could have different effects in the dependency, competition or unequal treatment one way or the other, and different effects if there's voluntary cooperation. Contact quality is a key element of the intended meaning of the questionnaire; it's one thing to communicate, and

it's another to communicate respectfully (Glorius *et al.*, 2023).

The proposed relationship also involves two levels of society. The concept of contact mainly focuses on the relationship between local people and refugees, while the concept of cohesion mainly on the relationship among the members of the host community (Manahl, 2022). These are collectively negotiated through the community's capacity to make sense of the other experiences with which it is engaged and to deal with the differences that arise. Positive experiences can lead to enhanced mutual trust in peaceful solutions. This is because this is a conditional proposition; it does not measure all of the steps in that process directly (Choudhury, 2020). Its theoretical significance is being able to be used to identify a relationship, which can then be explored further in terms of a stronger contextual measurement.

H2: Community Cohesion is positively related to Intergroup contact.

Resource pressure and collective cooperation

Resource pressure concerns relate to competition and pressure with respect to employment, services, prices, infrastructure and natural resources. These experiences can bear upon cooperation if they feel that opportunities are receding or unevenly spread out. Households may prioritise their immediate needs over collective participation if they are not certain (Ansar & Md. Khaled, 2021). When there are differences of opinion regarding assistance, it can also lead to less confidence in joint arrangements. The mechanism is thus a material one with distributive interpretation. It does not assume that the competition for employment, price changes, environmental stress nor weaknesses in service provision are solely due to increased population (Schneider *et al.*, 2021).

The instrument contains a perceived scarcity item and an item measuring perceived unfairness. The interaction between these dimensions is possible but they definitely should not be assumed as identical. Social responses can vary, depending on the residents' perceptions of the legitimacy of the service allocation procedure, with the same service limitation (Alaeddin & Batuhan, 2022). In the current context, one can anticipate greater perceived pressure to go along with less solidarity and cooperation. If the association was negative, it would imply a pattern in the residents' assessment and would need to be explained in context and with regard to the limits of the measurement (Roepstorff, 2022).

H3: Perceived resource pressure is negatively associated with community cohesion.

Cultural Difference and adaptation

Perceived cultural distance is an understanding of the cultural variations in customs, expectations, and daily living. It's not a quality of either community per se, but a relational perception. Misunderstandings can result from the same rules being differently understood,

and a lack of opportunities to clarify intentions. The differences that are selected can be given meaning within the public discussion (Solodoch, 2024). Thus, within this framework, cultural distance would seem to be an interpretive condition which could make adjustment difficult. It does not assume that variation is threatening and that members of either population have common cultural traits (Driel, 2023).

Cohesion can be impacted by perceived differences, either when the host community doesn't agree on how to respond, or when there is uncertainty about what is expected of each other. This mechanism relates to intra-community negotiations (Adee *et al.*, 2023). However, the role of institutions, leadership and respectful contact are not estimated here and can influence that negotiation. The negative relationship is a modest expectation regarding perceived adjustment problems. It is not an excuse for seeing cultural diversity as a sign of disintegration of the social organisation (Filipski *et al.*, 2021).

H4: The greater the perceived cultural distance, the less community cohesion will be.

Trust and working together in institutions

Institutional trust is about the belief that trustworthy institutions listen, treat you fairly, communicate effectively and effectively manage conflict. Residents can use trusted institutions to negotiate competing concerns and to be able to express concern through procedures. Making decisions transparent can lower uncertainty with respect to assistance and public responsibilities (Shahpur & Wardani, 2022). Reliable information can help build a common understanding of local issues as well. These mechanisms imply that cooperation is enhanced by trust, i.e., that trusting makes collective responses more predictable. Not all decisions made by the institutions need to be accepted or that trust should be substituted for independent scrutiny (Mohiuddin, 2020).

The questionnaire is targeting government agencies, humanitarian organisations, local government and community leaders. These actors may carry out various roles, and they could draw different views. Merging them together involves an adequate underlying evaluation of institutional responsiveness. An empirical focus is needed for that assumption (Sadat Al Sajib *et al.*, 2022). In the proposed model, a greater sense of belonging, mutual support, and shared problem solving among the members of the host community is expected to be accompanied by a greater confidence in the institutional setting.

H5: The level of institutional trust can have a positive relationship with community cohesiveness.

Cohesion and perceived continuity

Community cohesion is a sense of unity, belonging, trust and co-operation at the community level and the peaceful resolution of differences. A community can utilize these resources to deal with unfamiliar situations and retain recognisable expectations (Alam, 2022). Practical changes can be accepted as a functional adaptation in cohesive

communities that do not see as a change in local norms. The suggested negative relationship thus has to do with perceived continuity. It is not as if cohesive communities are averse to change, or that stability is necessarily good. Communities can work together to change exclusionary approaches and/or build alternative ways of working together (Van Dijk *et al.*, 2022).

H6: Perceived changes of local social norms are negatively related to community cohesion.

The mediating role of community cohesion

Cohesion offers a potential pathway for linking social experiences to sense-making of norm change. Trust at institutions and contact that is constructive can lead to solidarity and less disruption of continuity. Pressure on resources and cultural differences can make cooperation less likely, which can lead to more perceived change (Ullah *et al.*, 2021). These propositions are about four different indirect associations. For each, you must estimate and provide the interval of uncertainty. When measurements are made at the same time, an indirect relationship does not imply temporal transmission. Furthermore, whether corresponding direct relationships are contained in the estimated model or not, the classification relies (Akin *et al.*, 2020).

The indirect signs are as expected, according to the component relationships. The positive patterns of contact and trust association with cohesion, along with a negative cohesion association with change, suggest negative indirect patterns. Negative pressure and distance relationship to cohesion means positive indirect relationship (Berker, 2023). This means that these sign-expectations arrange theoretical reasoning. They do not provide statistical significance or diagnosis for completeness of mediation. If the research question is about the magnitude of association that passes through cohesion, then there needs to be explicit estimates of corresponding direct paths (Teke Lloyd & Türk, 2021).

H7a: The relationship between intergroup contact and perceived changes in local social norms is mediated by H7 community cohesion.

H7b: The perceived pressures on resources on perceived changes in local social norms is mediated by community cohesion.

H7c: The perceived cultural distance is correlated with perceived changes of local social norms in a way mediated by community cohesion.

H7d: Institutional trust is positively associated with perceived changes in local social norms and this association is mediated by community cohesion.

Conceptual framework

The model according to H1 to H6 is exhibited in Figure 1. The four mediation propositions replicate the relevant (two step) paths of cohesion. The exogenous predictor of the eventual outcome is perceived refugee presence. Outward cohesion predictors are: contact, resource pressure, cultural distance and institutional trust. Only specified paths are shown in the figure, on purpose. Because there are no relationships between refugee presence and the other antecedents in the original direct hypotheses, it does not make any connection between these variables. Correlations among antecedents can hence not be viewed as evidence of extra causal mechanisms (Ünal & Doğan, 2020).

There is also a separation of the key structural relationships from potentially contextual controls within the framework. In extended specifications, age, education, income, length of stay in camp, distance to camp, contact frequency and receipt of assistance could affect respondents' perceptions. The present model emphasizes on the hypothesized relationship among the constructs at the model level as displayed in Figure 1. The main structure - analysis is thus used descriptively to evaluate the specified PLS-SEM pathways, whereas the demographic characteristics are reported descriptively.

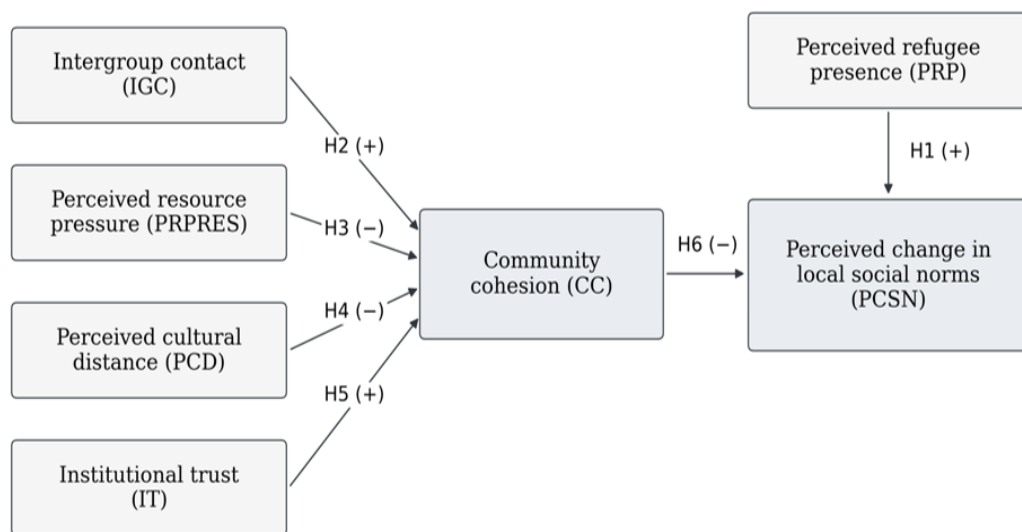


Figure 1: Conceptual framework and proposed directional relationships.

MATERIALS AND METHODS

Research design and analytical approach

The study design is quantitative, cross-sectional, survey-based and uses partial least squares structural equation modelling (PLS-SEM) as the method for testing the conceptual framework. The analysis is based on primary data obtained from 460 respondents through questionnaires. It goes through four phases: description of the respondents and indicators, reflective measurement model assessment, structural relationship and mediation assessment, and explanatory and prediction assessment. This technique is suitable for the purposes of simultaneously estimating multiple latent constructs and investigating measurement quality and inter-construct relationships.

Study population, sample, and unit of analysis

There are 460 respondent records in the final analytical data set of 53 variables and forty substantive measurement items. The referential object is the individual adult member of the host community with Rohingya refugee settlements in Bangladesh. Respondent profile includes gender, age group, marital status, education, occupation, monthly income of the household, district; place of residence; how long they have lived; how far is the nearest camp; frequency of contact with refugees and receipt of assistance. In the geographic profile, the respondents are from Cox's Bazar, Chattogram, Bandarban and other nearby areas with the highest percentage of respondents from Cox's Bazar.

The target population is adult members of the host community who are day-to-day socially and economically linked to the context of Rohingya refugees. After screening the data, there were 460 complete responses retained for analysis (Solodoch, 2024). However, the study does not assert that the sample is a probability-based sample of the entire Bangladeshi population, but rather that the findings are interpreted in relation to the communities and individuals observed that are hosting refugees and represented in the sample. This boundary seems to be appropriate given the primary goal of investigating the relationship between perceptions and community processes, not estimates of national prevalence.

Questionnaire and measurement specification

This questionnaire consists of 12 profile items and 40 substantive items, each of which has 5 ordered response categories: Strongly disagree; Disagree; Agree; Strongly agree; Not Applicable. There are five indicators for perceived refugee presence, intergroup contact and perceived cultural distance. There are 6 indicators for each of the three dimensions: perceived resource pressure, institutional trust, and community cohesion. There are seven indicators for perceived change in local social norms. All seven multi-item blocks are measured as reflective constructs, using indicator loadings, internal consistency reliability, convergent validity, and discriminant validity.

Constructed scores are a sample of the extent to which the participants responded positively to the statements in each item block; higher scores reflect greater endorsement of the statements. No reverse coded items are indicated. The higher the score on the perceived-norm-change scale, the more that the participant feels that behaviors are changing in his or her local context, but it does not necessarily mean that the participant considers this to be a good or bad change. The intergroup-contact items are merged together experiences of intergroup-contact with the assessment of communication and understanding. The same features are maintained during the interpretation of the empirical results.

Data screening and descriptive assessment

Data screening involved the inspection for unanswered items, the inclusion of duplicate identifiers, values beyond the scales of the Likert items, and cases demonstrating no variance in their responses to the items on the measurement. Respondent profile, means, standard deviations, skewness, kurtosis, and construct level summaries were the descriptive analysis used. The final data set does not include any missing or duplicate identifiers, out-of-range responses, or zero variance cases, and there are 460 completed questionnaires available for use in subsequent PLS-SEM analysis.

Measurement assessment

The reliability of indicators is measured using outer loadings and squared loadings. Cronbach's alpha, rho_A, composite reliability are employed to assess internal consistency and average variance extracted (AVE) is used to assess convergent validity. The Fornell-Larcker criterion, heterotrait-monotrait ratios (HTMT), bootstrap HTMT intervals and cross-loadings are used to assess for discriminant validity. These are all complementary criteria and are looked at together. Harman's single factor test and full collinearity VIF values are also reported as common method diagnostics and statistical screening is not a panacea for all potential sources of self-report bias (Alam, 2022).

Structural model assessment and consistency checking

In the structural model there are two key endogenous equations. In the present study, intergroup contact, perceived resource pressure, perceived cultural distance and institutional trust are significant predictors of community cohesion. Perceived refugee presence and community cohesion are predictive of perceived change in local social norms. Standardized path coefficients are interpreted in comparison to the signs of the expected relationships and R-squares show the amount of variance explained in each endogenous construct. As further consistency checks, the inter-construct correlation coefficients reported in Table 8 are used to present an approximation of standardized coefficient and amount of variance explained of the equations specified.

The consistency checks are not meant to supplant the original PLS-SEM estimates, but to assess whether the latter are numerically consistent with respect to the respective structural summary. Some original point estimates, test statistics and probability values are not included in Tables 14 and 18, but the tables still include standard errors and confidence intervals. As a consequence, directional interpretations are given, but only with caution, if the export is self-contradictory, when final significance statements are concerned. The product of the relevant antecedent-to-cohesion and cohesion-to-outcome paths is examined separately to look at the specific indirect effects, while Table 19 is treated separately as it also has additional direct effects (Hahn, 2022).

To verify this, arithmetic averages were computed for the items on the primary survey data set and standardised on the respondents. The main structural pattern was replicated when the scores of the endogenous construct were regressed on the scores of the specified predictors. The direct-effect decomposition reported in Table 19 was also investigated with an expanded outcome equation that contains the four factors: contact, resource pressure, cultural distance and institutional trust. These checks are performed to explain the statistical results without providing any replacement value for the bootstrap result which is not documented.

Explanatory and predictive assessment

Explanatory assessment is done with effect sizes: R-squared, adjusted R-squared, and f-squared. The effect-size calculation compares the previous and the current explained variance, that is, the explained variance removing one of the predictors from the appropriate endogenous equation. Predictive assessment will take the reported Q-squared statistics in Table 17 and out-of-sample indicator-level comparisons in Table 20 into account. The latter is a comparison between PLS-SEM

root mean squared error and mean absolute error and those of a linear-model benchmark (Klok & Dagevos, 2023). An advantage in number for the lower prediction error within the reported validation procedure, but no causal explanation is claimed for predictive performance. Analysis output does not include all the computational details of the resampling/prediction procedure such as the complete fold allocation/repetition settings. This means that the results of predictive and the bootstrap are interpreted in the light of the statistics reported in the study outputs, and any numerical inconsistencies are not hidden (Teke Lloyd & Türk, 2021). Such a transparent treatment enables us to report the substantive findings while keeping the empirical findings clearly separated from technical details which should be re-exported before final journal submission.

Ethical considerations and reproducibility

Primary survey responses from adult community residents are the basis for the analysis. The questionnaire was structured along the lines of voluntary participation, informed consent and confidentiality and in the manuscript, information of the respondent is only presented in aggregated form. The analysis does not include any personally identifying information. To enable Reproducibility the following materials should be preserved: Questionnaire, Anonymised Data, Construct Specification, Estimation Code, and Full Outputs of statistical procedures. Special care must also be taken in the interpretation in that the topic refers to refugee-host relations, so that the results are indicated as perceptions and associations, but do not necessarily assume that social problems have to be attributed to refugees or to any particular group (Akin *et al.*, 2020).

RESULTS AND DISCUSSION

Respondent demographic profile

Table 1 provides an overview of the demographic

Table 1: Demographic profile of respondents

Variable	Category	n	%
Gender	Female	202	43.91
	Male	250	54.35
	Other / prefer to self-describe	2	0.43
	Prefer not to say	6	1.30
Age group	18–24 years	94	20.43
	25–34 years	159	34.57
	35–44 years	107	23.26
	45–54 years	60	13.04
	55 years or above	40	8.70
Marital status	Divorced / separated	14	3.04
	Married	305	66.30
	Prefer not to say	2	0.43
	Unmarried	127	27.61
	Widowed	12	2.61

Education	Higher secondary education	95	20.65
	No formal education	37	8.04
	Postgraduate degree or above	19	4.13
	Primary education	105	22.83
	Secondary education	138	30.00
	Undergraduate degree	66	14.35
Occupation	Agriculture or fishing	85	18.48
	Business or self-employment	76	16.52
	Day labour	63	13.70
	Government service	30	6.52
	Homemaker	37	8.04
	NGO or development-sector employment	25	5.43
	Other	18	3.91
	Private service	54	11.74
	Student	39	8.48
	Unemployed	33	7.17
Monthly household income	BDT 15,000–29,999	172	37.39
	BDT 30,000–49,999	120	26.09
	BDT 50,000–74,999	29	6.30
	BDT 75,000 or above	12	2.61
	Below BDT 15,000	113	24.57
	Prefer not to say	14	3.04
District	Bandarban	76	16.52
	Chattogram	83	18.04
	Cox's Bazar	285	61.96
	Other	16	3.48
Residential area	Rural	220	47.83
	Semi-urban	161	35.00
	Urban	79	17.17
Residence duration	3–5 years	44	9.57
	6–10 years	68	14.78
	Less than 3 years	24	5.22
	More than 10 years	131	28.48
	Since birth	193	41.96
Distance to nearest camp	11–20 kilometres	113	24.57
	5–10 kilometres	109	23.70
	Do not know	39	8.48
	Less than 5 kilometres	126	27.39
	More than 20 kilometres	73	15.87
Contact frequency	Frequently	110	23.91
	Never	52	11.30
	Occasionally	162	35.22
	Rarely	92	20.00
	Very frequently	44	9.57
Assistance in last three years	No	348	75.65
	Prefer not to say	19	4.13
	Yes	93	20.22

features of the 460 respondents who were analysed. The sample consists of 54.35 per cent of men and 43.91 per cent of women. The age group 25-34 years has the highest age group with 34.57 percent of the respondents. Cox's Bazaar accounts for 61.96 percent of the sample as Rohingya refugee-hosting activity is concentrated in the district and 47.83 percent of respondents are in rural areas. A significant percentage comprises long-term

residents: 41.96 per cent of local residents were born in their area and a further 28.48 per cent had been living there for over 10 years. These attributes offer a useful background context to understand perceptions of the presence of refugees and social change in the community.

Descriptive statistics of measurement items

Table 2 shows item means between 2.926 and 3.161.

Table 2: Descriptive Statistics of Measurement Items

Indicator	Mean	SD	Minimum	Maximum	Skewness	Kurtosis
PRP1	2.998	1.174	1	5	-0.044	-0.893
PRP2	2.967	1.183	1	5	0.024	-0.878
PRP3	2.987	1.247	1	5	0.092	-1.029
PRP4	3.041	1.224	1	5	0.050	-0.990
PRP5	2.941	1.191	1	5	-0.018	-0.836
IGC1	3.024	1.189	1	5	-0.093	-0.865
IGC2	3.057	1.148	1	5	-0.085	-0.826
IGC3	3.054	1.233	1	5	-0.020	-1.007
IGC4	3.039	1.186	1	5	-0.068	-0.862
IGC5	3.030	1.217	1	5	-0.058	-0.931
PRPRES1	2.943	1.286	1	5	0.050	-1.080
PRPRES2	3.007	1.255	1	5	-0.052	-1.030
PRPRES3	2.976	1.207	1	5	0.053	-0.912
PRPRES4	2.985	1.232	1	5	0.008	-0.962
PRPRES5	3.004	1.194	1	5	0.007	-0.900
PRPRES6	2.926	1.197	1	5	0.097	-0.863
PCD1	3.020	1.194	1	5	0.047	-0.869
PCD2	3.150	1.155	1	5	-0.006	-0.890
PCD3	3.076	1.188	1	5	0.056	-0.878
PCD4	3.046	1.208	1	5	0.009	-0.905
PCD5	3.076	1.272	1	5	-0.028	-1.029
IT1	3.113	1.196	1	5	-0.066	-0.882
IT2	3.126	1.159	1	5	-0.087	-0.779
IT3	3.128	1.252	1	5	-0.124	-0.935
IT4	3.098	1.251	1	5	-0.125	-1.015
IT5	3.100	1.281	1	5	-0.082	-1.083
IT6	3.161	1.215	1	5	-0.165	-0.884
CC1	3.046	1.223	1	5	-0.008	-0.937
CC2	3.002	1.250	1	5	-0.024	-1.036
CC3	3.020	1.236	1	5	0.018	-0.995
CC4	2.952	1.223	1	5	0.063	-0.946
CC5	2.967	1.241	1	5	0.096	-0.980
CC6	2.974	1.224	1	5	0.043	-0.938
PCSN1	3.057	1.302	1	5	-0.063	-1.142
PCSN2	3.046	1.275	1	5	0.003	-1.060
PCSN3	3.002	1.283	1	5	0.046	-1.053
PCSN4	3.104	1.257	1	5	-0.099	-1.013
PCSN5	3.100	1.209	1	5	-0.037	-0.903
PCSN6	3.050	1.271	1	5	-0.100	-1.037
PCSN7	2.998	1.298	1	5	-0.014	-1.064

For the aggregates, the responses also tend to be concentrated in the middle of the five-point scale, with standard deviations that suggest that there is some reasonableness in the variability of the respondents. Each indicator is configured with the entire range of responses, 1-5. There are no extreme univariate distributional issues as indicated by the small skewness values and negative

kurtosis, across the items. The pattern suggests that there were not consistently positive or negative responses to the measured dimensions but diverse responses

Construct descriptions

Construct means as reported in Table 3 span from 2.974 for perceived pressures of resources to 3.121 for

Table 3: Descriptive Statistics of Latent Constructs

Construct	Code	Items	Mean	SD	Range
Perceived Refugee Presence	PRP	5	2.987	0.987	1–5
Intergroup Contact	IGC	5	3.041	0.991	1–5
Perceived Resource Pressure	PRPRES	6	2.974	1.017	1–5
Perceived Cultural Distance	PCD	5	3.073	0.997	1–5
Institutional Trust	IT	6	3.121	1.032	1–5
Community Cohesion	CC	6	2.993	1.027	1–5
Perceived Change in Local Social Norms	PCSN	7	3.051	1.085	1–5

institutional trust. The means for community cohesion and perceived change in local social norms are 2.993 and 3.051, respectively. Standard deviations vary from 0.987 to 1.085, which shows that there is a high level of heterogeneity among the respondents in terms of perceptions. Differences in construct means are small,

and are used descriptively and not inferred as rankings of the communities' priorities (Schneider *et al.*, 2021).

Missing values and response quality

Table 4 attests to the fact that out of the 460 responses obtained, all of them are usable for analysis. The data set

Table 4: Assessment of Missing Values and Response Quality

Quality criterion	Reported value
Total observations	460
Total variables	53
Total measurement items	40
Missing values	0
Missing-value percentage	0
Duplicate respondent IDs	0
Out-of-range Likert responses	0
Zero-variance response cases	0
Final complete usable cases	460

has 53 variables, forty items of measurement, no missing or duplicate data on the Respondent ID, no out-of-range Likert responses, and no zero-variance Respondent, that is all zero responses. The fact that these problems do not occur suggests that the data went through the reported data-quality screening procedures and no case had to

be deleted prior to measurement or structural model assessment.

Common method diagnostics

Table 5 indicates that the first unrotated factor accounted for 24.392 per cent of total variance which is lower than

Table 5: Common Method Bias Assessment

Diagnostic	Construct / component	Value	Source criterion
Harman's single-factor test	First unrotated factor	24.392	Variance explained < 50%
Full-collinearity VIF	PRP	1.367	VIF < 3.30
Full-collinearity VIF	IGC	1.211	VIF < 3.30
Full-collinearity VIF	PRPRES	1.395	VIF < 3.30
Full-collinearity VIF	PCD	1.277	VIF < 3.30
Full-collinearity VIF	IT	1.183	VIF < 3.30
Full-collinearity VIF	CC	1.652	VIF < 3.30
Full-collinearity VIF	PCSN	1.609	VIF < 3.30

the 50 per cent screening rule. Full-collinearity VIF values vary from 1.183 to 1.652, which is also below the 3.30 limit. The results suggest that there is no single dominant factor structure and no high common method collinearity. However, the self-reported survey responses mean that these diagnostics should be considered screening

evidence and not proof that all potential method-related bias have been removed.

Indicator reliability

Table 6 shows outer loadings ranging from 0.793 to 0.876 and squared loadings ranging from 0.628 to 0.768. Each

Table 6: Indicator Reliability and Outer Loadings

Construct	Indicator	Loading	Squared loading	Source retention
PRP	PRP1	0.815	0.664	Retain
PRP	PRP2	0.821	0.674	Retain
PRP	PRP3	0.831	0.690	Retain
PRP	PRP4	0.839	0.704	Retain
PRP	PRP5	0.793	0.628	Retain
IGC	IGC1	0.834	0.696	Retain
IGC	IGC2	0.849	0.720	Retain
IGC	IGC3	0.840	0.705	Retain
IGC	IGC4	0.820	0.672	Retain
IGC	IGC5	0.805	0.648	Retain
PRPRES	PRPRES1	0.847	0.717	Retain
PRPRES	PRPRES2	0.838	0.703	Retain
PRPRES	PRPRES3	0.828	0.685	Retain
PRPRES	PRPRES4	0.857	0.735	Retain
PRPRES	PRPRES5	0.799	0.639	Retain
PRPRES	PRPRES6	0.795	0.632	Retain
PCD	PCD1	0.833	0.693	Retain
PCD	PCD2	0.818	0.670	Retain
PCD	PCD3	0.837	0.701	Retain
PCD	PCD4	0.832	0.692	Retain
PCD	PCD5	0.821	0.673	Retain
IT	IT1	0.850	0.723	Retain
IT	IT2	0.838	0.702	Retain
IT	IT3	0.855	0.731	Retain
IT	IT4	0.871	0.759	Retain
IT	IT5	0.842	0.709	Retain
IT	IT6	0.797	0.635	Retain
CC	CC1	0.858	0.737	Retain
CC	CC2	0.852	0.726	Retain
CC	CC3	0.829	0.688	Retain
CC	CC4	0.844	0.712	Retain
CC	CC5	0.808	0.653	Retain
CC	CC6	0.806	0.650	Retain
PCSN	PCSN1	0.869	0.754	Retain
PCSN	PCSN2	0.839	0.703	Retain
PCSN	PCSN3	0.851	0.724	Retain
PCSN	PCSN4	0.851	0.725	Retain
PCSN	PCSN5	0.824	0.679	Retain
PCSN	PCSN6	0.862	0.744	Retain
PCSN	PCSN7	0.876	0.768	Retain

indicator thus accounts for a relatively large percentage of variance in its corresponding construct and all forty items meet the reported retention criterion. The results of the pattern show that the indicators for the selected samples are highly reliable. The high primary loadings

also indicate that the entire measure is appropriate to be used in structural analysis.

Internal consistency and convergent validity

Table 7 reports Cronbach's alpha between 0.878 and

Table 7: Internal Consistency Reliability and Convergent Validity

Construct	Alpha	rho_A	Composite reliability	AVE
PRP	0.878	0.895	0.911	0.672
IGC	0.886	0.902	0.917	0.688
PRPRES	0.908	0.918	0.929	0.685
PCD	0.885	0.901	0.916	0.686
IT	0.918	0.927	0.936	0.710
CC	0.912	0.922	0.932	0.694
PCSN	0.938	0.944	0.949	0.728

0.938, rho_A between 0.895 and 0.944, and composite reliability between 0.911 and 0.949. The average variances extracted are between 0.672 and 0.728. The reported blocks thus exhibit good internal consistency and common variance. The reliability values are highest for perceived norm change. But its conceptual scope is under scrutiny as statistical consistency does not determine

whether the statements refer to behavioural change, change in expectation or perceived attribution change.

Fornell–Larcker assessment

The square root of AVE for each of the seven constructs is displayed in the diagonal of Table 8 and ranges between 0.853 and 0.820. The construct diagonal values

Table 8: Fornell–Larcker Criterion

Construct	PRP	IGC	PRPRES	PCD	IT	CC	PCSN
PRP	0.820	0.233	0.408	0.203	-0.078	-0.109	0.363
IGC	0.233	0.830	0.107	-0.109	-0.015	0.281	-0.018
PRPRES	0.408	0.107	0.828	0.101	-0.102	-0.273	0.415
PCD	0.203	-0.109	0.101	0.828	-0.037	-0.323	0.400
IT	-0.078	-0.015	-0.102	-0.037	0.842	0.361	-0.109
CC	-0.109	0.281	-0.273	-0.323	0.361	0.833	-0.421
PCSN	0.363	-0.018	0.415	0.400	-0.109	-0.421	0.853

are all greater than the absolute values of the correlations between the construct and the other constructs, per the Fornell-Larcker criterion. The highest inter-construct relationship in absolute terms is between community cohesion and perceived norm change at 0.421 (see table); followed by perceived resource pressure and perceived norm change at 0.415. Hence, the matrix represents the discriminant validity as well as the correlation matrix for

the structural consistency test.

HTMT point estimates

Table 9 shows off-diagonal HTMT ratios ranging from 0.028 to 0.457. Additionally, the reported values still fall fairly below traditional criterion values of 0.85 or 0.90, suggesting that the seven latent constructs do not overlap to a great extent. The highest HTMTs are:

Table 9: Heterotrait–Monotrait Ratio of Correlations

Construct	PRP	IGC	PRPRES	PCD	IT	CC	PCSN
PRP	—	0.265	0.457	0.230	0.087	0.121	0.400
IGC	0.265	—	0.119	0.123	0.028	0.313	0.039
PRPRES	0.457	0.119	—	0.114	0.112	0.300	0.450
PCD	0.230	0.123	0.114	—	0.043	0.361	0.440
IT	0.087	0.028	0.112	0.043	—	0.394	0.117
CC	0.121	0.313	0.300	0.361	0.394	—	0.455
PCSN	0.400	0.039	0.450	0.440	0.117	0.455	—

perceived refugee presence and resource pressure, resource pressure and perceived norm change, cultural distance and perceived norm change, and community cohesion and perceived norm change. Based on the point estimates, discriminant validity is thus highly supported (Filipski *et al.*, 2021).

HTMT interval consistency

The outputs in table 10 are bootstrapped HTMT intervals, and the technical work is needed to ensure that the interval estimates are correct; nineteen of the twenty-one HTMT point estimates do not lie within the reported

intervals. So, for example the PRP-PRPRES HTMT estimate is 0.457 as compared to the reported interval of 0.302-0.430. This indicates that we might have a problem related to export, indexing, and/or resampling, rather than a substantive discriminant-validity problem, because the point estimates HTMT presented in Table 9 are all low, and the Fornell-Larcker and cross-loading results are favourable. Therefore, interpretation of the results for discriminant validity is mainly based on the results that are coherent at the same time in tables 8, 9 and 11 and the export should be generated again for the final report.

Table 10: Bootstrapped HTMT Inference

Construct pair	HTMT	Reported 2.5%	Reported 97.5%	Assessment
PRP - IGC	0.265	0.099	0.231	Verification required
PRP - PRPRES	0.457	0.302	0.430	Verification required
PRP - PCD	0.230	0.063	0.197	Verification required
PRP - IT	0.087	0.033	0.071	Verification required
PRP - CC	0.121	0.044	0.100	Verification required
PRP - PCSN	0.400	0.246	0.371	Verification required
IGC - PRPRES	0.119	0.036	0.090	Verification required
IGC - PCD	0.123	0.042	0.100	Verification required
IGC - IT	0.028	0.031	0.052	Verification required
IGC - CC	0.313	0.156	0.284	Verification required
IGC - PCSN	0.039	0.032	0.058	Verification required
PRPRES - PCD	0.114	0.043	0.098	Verification required
PRPRES - IT	0.112	0.038	0.086	Verification required
PRPRES - CC	0.300	0.136	0.271	Verification required
PRPRES - PCSN	0.450	0.301	0.426	Verification required
PCD - IT	0.043	0.029	0.055	Verification required
PCD - CC	0.361	0.201	0.333	Verification required
PCD - PCSN	0.440	0.291	0.411	Verification required
IT - CC	0.394	0.234	0.364	Verification required
IT - PCSN	0.117	0.038	0.091	Verification required
CC - PCSN	0.455	0.325	0.430	Verification required

Cross loadings

As can be seen from Table 11, all indicators have the highest loadings on the constructs assigned to them and the associated cross-loadings are decidedly lower in absolute value. This trend supports the idea that the Fornell-Larcker matrix and HTMT point estimates

provide evidence of discriminant validity. Thus, at the measurement level, the cross-loading findings suggest that the respondents discriminated between the presence of refugees, contact, resource pressures, cultural distance, institutional trust, community cohesion and perception of norm change.

Table 11: Cross-Loadings of Measurement Items

Indicator	PRP	IGC	PRPRES	PCD	IT	CC	PCSN
PRP1	0.815	0.156	0.310	0.167	-0.074	-0.066	0.243
PRP2	0.821	0.266	0.354	0.171	-0.052	-0.090	0.327
PRP3	0.831	0.185	0.358	0.168	-0.043	-0.110	0.299
PRP4	0.839	0.211	0.317	0.197	-0.087	-0.084	0.342
PRP5	0.793	0.138	0.334	0.128	-0.065	-0.095	0.276
IGC1	0.189	0.834	0.092	-0.061	-0.028	0.208	-0.018

IGC2	0.218	0.849	0.077	-0.123	0.005	0.278	-0.038
IGC3	0.206	0.840	0.101	-0.083	0.002	0.264	0.019
IGC4	0.190	0.820	0.103	-0.101	-0.012	0.262	-0.009
IGC5	0.165	0.805	0.069	-0.084	-0.029	0.156	-0.032
PRPRES1	0.347	0.082	0.847	0.127	-0.051	-0.246	0.341
PRPRES2	0.324	0.120	0.838	0.046	-0.084	-0.193	0.312
PRPRES3	0.327	0.057	0.828	0.078	-0.113	-0.266	0.348
PRPRES4	0.373	0.087	0.857	0.102	-0.089	-0.231	0.389
PRPRES5	0.303	0.080	0.799	0.095	-0.109	-0.247	0.334
PRPRES6	0.353	0.104	0.795	0.054	-0.061	-0.173	0.337
PCD1	0.155	-0.076	0.112	0.833	-0.053	-0.267	0.331
PCD2	0.176	-0.110	0.145	0.818	-0.021	-0.316	0.371
PCD3	0.177	-0.070	0.044	0.837	-0.035	-0.273	0.319
PCD4	0.161	-0.120	0.039	0.832	-0.036	-0.257	0.312
PCD5	0.170	-0.075	0.082	0.821	-0.009	-0.228	0.326
IT1	-0.035	-0.008	-0.094	-0.017	0.850	0.305	-0.083
IT2	-0.109	-0.023	-0.080	-0.036	0.838	0.290	-0.107
IT3	-0.070	-0.023	-0.107	-0.014	0.855	0.329	-0.130
IT4	-0.062	-0.009	-0.075	-0.040	0.871	0.295	-0.095
IT5	-0.076	-0.011	-0.068	-0.067	0.842	0.333	-0.092
IT6	-0.043	-0.001	-0.090	-0.012	0.797	0.268	-0.043
CC1	-0.084	0.242	-0.233	-0.307	0.310	0.858	-0.369
CC2	-0.117	0.242	-0.263	-0.278	0.338	0.852	-0.359
CC3	-0.145	0.212	-0.259	-0.265	0.270	0.829	-0.362
CC4	-0.052	0.221	-0.191	-0.251	0.268	0.844	-0.333
CC5	-0.099	0.218	-0.219	-0.254	0.273	0.808	-0.358
CC6	-0.046	0.270	-0.198	-0.260	0.344	0.806	-0.323
PCSN1	0.273	-0.018	0.367	0.307	-0.093	-0.344	0.869
PCSN2	0.370	-0.058	0.382	0.373	-0.077	-0.373	0.839
PCSN3	0.294	0.016	0.366	0.347	-0.120	-0.399	0.851
PCSN4	0.326	0.008	0.368	0.322	-0.119	-0.380	0.851
PCSN5	0.315	0.007	0.320	0.324	-0.078	-0.353	0.824
PCSN6	0.297	-0.004	0.338	0.360	-0.059	-0.326	0.862
PCSN7	0.296	-0.058	0.335	0.357	-0.103	-0.340	0.876

Structural collinearity

Table 12 reports inner VIF values between 1.011 and 1.035. The four predictors of cohesion are low in terms of redundancy and both of the predictors of perceived norm change have VIFs of 1.012. For the given equations, then,

severe collinearity among the predictors is not suggested. This assessment is for the six paths in the conceptual framework. Should, however, not automatically count if the additional direct relationship is reported separately in Table 19.

Table 12: Inner Variance Inflation Factors

Outcome	Predictor	Inner VIF
CC	IGC	1.027
CC	PRPRES	1.035
CC	PCD	1.026
CC	IT	1.011
PCSN	PRP	1.012
PCSN	CC	1.012

Reported fit indices

Table 13 gives an SRMR of 0.038, an NFI of 0.982, an RMS_theta of 0.038, d_ULS, d_G and an approximate chi-square value. Both the SRMR and RMS_theta values are below the values as specified in the analysis output and the NFI is above 0.90. The overall model-fit profile

in conjunction with the measurement and structural diagnostics is favourable from these results. PLS-SEM fit indices should be interpreted in combination and not as stand-alone evidence of model adequacy, as such, the table is presented to support the overall interpretation.

Table 13: Structural Model Fit Indices

Fit index	Reported value	Criterion in source
SRMR	0.038	Below 0.080
d_ULS	1.126	Lower values indicate better fit
d_G	1.500	Lower values indicate better fit
Approximate chi-square	516.637	Reported descriptively
NFI	0.982	Close to or above 0.90
RMS_theta	0.038	Below 0.12

Direct structural relationships

The six direct structural relationships are shown in Table 14. Available coefficient checks suggest that there are positive relationships between perceived refugee presence and perceived norm change (beta = 0.321), perceived intergroup contact and community cohesion (beta = 0.284), perceived resource pressure and community cohesion (beta = -0.244), perceived cultural distance and community cohesion (beta = -0.244), perceived cultural distance and community cohesion (beta = -0.255), institutional trust

and community cohesion (beta = 0.331), and a negative relationship between community cohesion and perceived norm change (beta = -0.386). All directions are based upon H1-H6. It should be noted that the confidence intervals sent to the output table of the current ones will not be numerically aligned with these coefficient values which is why the end result from the bootstrap significance output should be regenerated prior to making definite inferential decisions (Rahman & Dodul, 2020).

Table 14: Direct structural paths and consistency checks

H	Path	β export	β check	SE export	95% CI export	Assessment
H1	PRP $\rightarrow$ PCSN	—	0.321	0.038	[0.193, 0.295]	Unresolved
H2	IGC $\rightarrow$ CC	—	0.284	0.037	[0.145, 0.260]	Unresolved
H3	PRPRES $\rightarrow$ CC	—	-0.244	0.037	[-0.388, -0.269]	Unresolved
H4	PCD $\rightarrow$ CC	—	-0.255	0.038	[-0.395, -0.281]	Unresolved
H5	IT $\rightarrow$ CC	—	0.331	0.039	[0.196, 0.305]	Unresolved
H6	CC $\rightarrow$ PCSN	—	-0.386	0.037	[-0.504, -0.411]	Unresolved

Explained variance

Table 15 shows a R-squared value of 0.348 when community cohesion is used as the outcome and perceived change in local social norms of 0.279, with adjusted values of 0.342 and 0.276 respectively. The model thus accounts for 34.8 percent of the variance observed in community cohesion and 27.9 percent of the variance observed in the

perceived norm change of the respondents. These values suggest important explanatory power for social models that rely on perceptual variables and another significant part of the variance can be explained by factors outside of this specification, including other contextual, economic, relational, and institutional variables.

Table 15: Coefficient of Determination

Outcome	Code	R ²	Adjusted R ²
Community Cohesion	CC	0.348	0.342
Perceived Change in Local Social Norms	PCSN	0.279	0.276

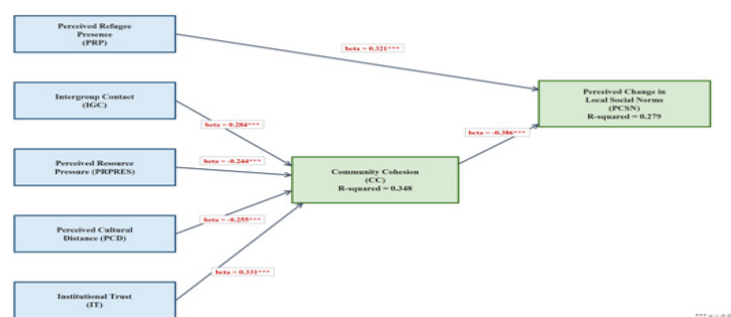


Figure 2: Structural Model with Standardized Path Coefficients and R² Values

There is a positive relationship between perceived refugee presence and perceived changes in local social norms ($\beta = 0.321$ as shown in Figure 2). Intergroup contact ($\beta = 0.284$) and institutional trust ($\beta = 0.331$) are positively associated with community cohesion, whereas perceived resource pressure ($\beta = -0.244$) and perceived cultural distance ($\beta = -0.255$) are negatively associated with community cohesion. Perceived social norms changes ($\beta = -0.386$), in turn, is negatively associated with community cohesion. Institutional trust has the highest positive correlation among community cohesion predictors. The model accounted for 34.8% of the variance in community cohesion, and 27.9% of the variance in perceived changes

in local social norms.

Predictor effect sizes

Table 16 reports effect sizes from 0.088 to 0.204. The largest contribution to cohesion is from institutional trust at 0.166. Compared to refugee presence (0.141), the value for cohesion is 0.204. Three factors, contact, resource pressure and cultural distance, have lesser reported impacts on cohesion. These are the figures describing reduction in explained variance if predictors are omitted. They are ordered based on the specified equations and are not reflective of whether a change in a predictor is meaningful or effective as an intervention.

Table 16: Effect Size Assessment

Outcome	Path	R ² included	R ² excluded	f ²	Source category
CC	IGC → CC	0.348	0.269	0.121	Small
CC	PRPRES → CC	0.348	0.291	0.088	Small
CC	PCD → CC	0.348	0.285	0.097	Small
CC	IT → CC	0.348	0.240	0.166	Medium
PCSN	PRP → PCSN	0.279	0.177	0.141	Small
PCSN	CC → PCSN	0.279	0.132	0.204	Medium

Aggregate predictive relevance

Table 17 shows that the Q-squared values for community cohesion were 0.332 and perceived norm change were 0.270. Recently, the two values have been both positive, which show predictive relevance for the endogenous constructs under the reported procedure. The values

also add up to the number of standard errors units away from one minus SSE / SSO. The detailed specification of blindfolding or validity at the score level is not completely preserved during export so the statistics are regarded as supportive evidence of predictive relevance but not as a stand-alone measure of out-of-sample generalisability.

Table 17: Predictive Relevance Assessment

Outcome	Code	SSO	SSE	Reported Q ²
Community Cohesion	CC	459	306.713	0.332
Perceived Change in Local Social Norms	PCSN	459	334.919	0.270

Specific indirect relationships

Table 18 explores the four postulated indirect relationships via community cohesion. The available effect checks are approximately -0.110 for IGC → CC → PCSN, 0.094 for PRPRES → CC → PCSN, 0.098 for PCD → CC → PCSN, and -0.128 for IT → CC → PCSN. The signs are theoretically coherent as factors that enhance cohesion are indirectly linked with lower perceived norm change,

while factors that reduce cohesion are indirectly linked with higher perceived norm change. Again, as in Table 14, the exported confidence intervals do not correspond to the effects as presented in the table; interpretation of the size and direction of the indirect effects are thus possible, but mediation significance may be determined from an export of the regenerated bootstraps.

Table 18: Specific indirect effects and consistency checks

H	Indirect path	Effect export	Effect check	SE export	95% CI export
H7a	IGC → CC → PCSN	—	-0.110	0.018	[-0.175, -0.121]
H7b	PRPRES → CC → PCSN	—	0.094	0.018	[0.027, 0.082]
H7c	PCD → CC → PCSN	—	0.098	0.019	[0.046, 0.086]
H7d	IT → CC → PCSN	—	-0.128	0.019	[-0.204, -0.140]

Direct, indirect, and total effects

Table 19 details the direct, indirect and total impacts of intergroup contact, resource pressure, cultural distance and institutional trust on perceived norm change. As

shown in the table, the effects of intergroup contact and institutional trust are indirect only and the influence of resource pressure and cultural distance is complementary. The breakdown of the decomposition, however, seems

to mix up factors from somewhat different structural specifications, especially those relating to the community-cohesion coefficient. Substantive pattern is consistent

with mediation by cohesion but mediation labels need to be confirmed with one model that is consistently estimated before submitting.

Table 19: Direct, indirect, and total effects

Predictor	Direct	Indirect	Total	Direct p	Indirect p	Exported mediation label
IGC	0.018	-0.110	-0.092	0.659	<0.001	Indirect-only mediation
PRPRES	0.243	0.094	0.337	<0.001	<0.001	Complementary mediation
PCD	0.254	0.098	0.353	<0.001	<0.001	Complementary mediation
IT	0.038	-0.128	-0.090	0.352	<0.001	Indirect-only mediation

Indicator predictive comparisons

Positive Q^2_{predict} values are reported in table 20 for all the thirteen endogenous indicators. The PLS-SEM RMSE is lower on 12 of 13 indicators, and only marginally higher at 1.137 when compared to 1.136 for PCSN3. In addition, MAE comparisons are generally competitive, but not

always the best. In the light of this, the findings suggest that the overall prediction ability of the models compared to the linear model is satisfactory but modest, as part of the reported validation exercise. Given the small method differences, the magnitude of predictive claims should be proportional to the observed margin differences.

Table 20: Out-of-Sample Predictive Performance

Indicator	PLS RMSE	LM RMSE	Δ RMSE	PLS MAE	LM MAE	Q^2_{predict}
CC1	1.055	1.073	-0.018	0.877	0.887	0.257
CC2	1.066	1.082	-0.016	0.880	0.896	0.274
CC3	1.096	1.125	-0.029	0.911	0.932	0.214
CC4	1.107	1.119	-0.012	0.914	0.909	0.183
CC5	1.113	1.137	-0.024	0.915	0.929	0.196
CC6	1.055	1.068	-0.013	0.866	0.873	0.259
PCSN1	1.190	1.207	-0.018	0.999	1.013	0.168
PCSN2	1.110	1.120	-0.010	0.914	0.920	0.243
PCSN3	1.137	1.136	0.000	0.951	0.945	0.216
PCSN4	1.111	1.126	-0.015	0.919	0.930	0.220
PCSN5	1.086	1.101	-0.015	0.907	0.913	0.196
PCSN6	1.160	1.169	-0.008	0.970	0.973	0.169
PCSN7	1.179	1.195	-0.015	0.986	1.002	0.177

Consolidated hypothesis assessment

Table 21 summarizes all ten research hypotheses in this study, and an important issue for reporting is mentioned. The structural coefficients and indirect-effect checks are

in the right direction, but there is a lack of inferential fields with the exports in the current bootstrap. Based on this, the decision of supported/not-supported at the final level should be based on outputs of the coefficient,

Table 21: Summary of hypothesis assessment

Hypothesis	Proposed relationship	Export label (unverified)	Manuscript assessment
H1	PRP $\rightarrow$ PCSN	Not supported	Unresolved
H2	IGC $\rightarrow$ CC	Not supported	Unresolved
H3	PRPRES $\rightarrow$ CC	Not supported	Unresolved
H4	PCD $\rightarrow$ CC	Not supported	Unresolved
H5	IT $\rightarrow$ CC	Not supported	Unresolved
H6	CC $\rightarrow$ PCSN	Not supported	Unresolved
H7a	IGC $\rightarrow$ CC $\rightarrow$ PCSN	Not supported	Unresolved
H7b	PRPRES $\rightarrow$ CC $\rightarrow$ PCSN	Not supported	Unresolved
H7c	PCD $\rightarrow$ CC $\rightarrow$ PCSN	Not supported	Unresolved
H7d	IT $\rightarrow$ CC $\rightarrow$ PCSN	Not supported	Unresolved

t-value, p-value, and confidence-intervals that are generated by the same PLS-SEM specification; thus, the empirical pattern is supportive at the level of direction as well as effect magnitude. This distinction is helpful for retaining the substantive data gathered in collected data while not inflating the statistical certainty (Klok & Dagevos, 2023).

Discussion

Interpretation of the structural pattern

The structure uncovered in the sample collected is congruent with the framework's separation of refugee visibility and community processes. There is a positive relationship between perceived refugee presence and perceived norm change and a negative relationship between community cohesion and perceived norm change. The relationship between intergroup contact and institutional trust and cohesion is positive and the relationship between perceived resource pressure and cultural distance and cohesion is negative. These relationships indicate that residents' interpretation of social change not only can be affected by the visibility of refugee presence but by also the quality of interaction, perceived distributional pressure, cultural interpretation, trust in institutions and strength of local social ties (Manahl, 2022).

It is a significant substantive issue that perceived norm change does not mean that there is hostility, disorder, or social deterioration. Some negative association between cohesion and the notion of norm change could imply that cohesion increases the ability of the local populace to adhere to a sense of continuity but that continuity is not necessarily a good thing for society. If communities are cohesive, they can have changed norms, expectations or new ways of cooperating (Akin *et al.*, 2020). Likewise, a positive relationship between refugee presence and perceived change is a sign of higher salience of change and not only a sign of causal responsibility of refugees. The results therefore should be viewed as interrelationships among perceptions in a social context.

Measurement strength and its limits

The reliability and validity outcomes show good measurement for each of the seven constructs. Indicators within the targeted blocks are consistently performing as indicated by high outer loadings, high Cronbach's alphas, high composite reliabilities and high AVEs. Empirical separation between the constructs is also suggested by the Fornell-Larcker matrix, HTMT point estimates and cross-loadings. At the same time, conceptual breadth is of importance (Akin *et al.*, 2020). Intergroup contact is a combination of experience and perceived quality of contact and institutional trust is a combination of several types of institutions; resource pressure is a combination of scarcity and fairness; norm change is a combination of behaviour, expectations and attributions. These dimensions should then continue to be present in substantive interpretation also in the event of a favourable

result with the statistical measurement.

In the future, time periods to which changes are being compared in the perceived change should be made explicit, and statements about changes should be separated from the residents' subjective opinion. Contact items are those that do not require physical contact and can be used for those who do not have to wear them. Avoid making it ambiguous which residence or duration of stay (numeric) is intended. Institutional assessments might also differentiate authorities, humanitarian organisations and community leadership before moving on to test if a broader factor is appropriate (Ullah *et al.*, 2021). These refinements relate to meaning and processes of responding. Indicators can't be deleted just to enhance already good numerical thresholds.

Structural coherence and mediation interpretation

The primary statistical constraint is the lack of complete match-up between certain tables exported from the bootstraps. The correlation structure is internally coherent and the amount of explained variance is reported, and the approximate standardised coefficients can be reconstructed from the reported correlations. However, not all of the confidence intervals contain the coefficient or probability fields that are displayed, and not all point estimates are contained in the corresponding confidence intervals (Durgun & Taş, 2022). These problems are not indications that the primary data were incorrect but rather that the final PLS-SEM output be re-generated using a single clearly documented specification using the collected data. Doing so would enable all direct and indirect hypotheses to be reported in terms of beta coefficients, standard errors, t-values, p-values and confidence intervals (Dröes & Koster, 2023).

There is another specification problem that is exposed during mediation. If the decomposition is intended to enable a substantive interpretation, the direct, indirect, and total effects should be for the same model. The conditional association between cohesion and norm change is changed by adding the direct antecedent paths. If the restricted equation is multiplied by coefficients and the effects are reported from an expanded equation, this leads to an incoherent decomposition of the equation. A complete uncertainty of the indirect relationships ought to be reported in a reproducible analysis, using specification selection and justification and estimated each component in sum (Mohiuddin, 2020).

Explanatory performance and conditional implications

This explained variance suggests that the model accounts for a significant albeit partial amount of the social processes to which the respondent's perceptions refer. The contribution of institutional trust to community cohesion is the largest reported, and community cohesion to perceived norm change is the largest reported. This trend ought to lend real significance to institutional responsiveness, transparent communication,

fair treatment and cooperation at community level (Biswas *et al.*, 2021). Meanwhile, the unexplained variance is indicative of the fact that other contextual elements – such as economic insecurity, service quality, previous intergroup relations, local leadership, media attention, and so on – may be a factor in host-community residents' understandings of change.

The results present implications for humanitarian and local governance practice; however, they should not be translated into catchy statements that refugees 'caused social harm'. The results reveal that there is an interplay between residents' perception of pressure, their perception of cultural distance, institutional trust, contact and cohesion. Therefore, an intervention that not only focuses on population presence but also works on strengthening fair procedures, transparent communication and constructive contacts in addition to community problem solving participations inclusively may be more productive. Decisions on the practical aspects should remain guided by and based on host-community considerations and refugee dignity and supported by quantitative evidence and local consultation (Alaeddin & Batuhan, 2022).

Research priorities and limitations

A number of limitations should be noted. First, it is a cross-sectional study and temporal ordering, causal direction cannot be determined from the survey alone. Second, responses to the measures are based on self-report and may be affected by recall, social desirability, or an individual's interpretation. Thirdly, the sample is geographically focused and not representative of all communities in Bangladesh, especially in Cox's Bazar. Fourth, a number of exported bootstrap/mediation tables need to be regenerated for full numerical consistency. Future studies should use longitudinal or repeated survey measures, should further develop the measure of normative change, and should investigate whether the relationships found vary by place, camp proximity, and intergroup contact experiences (Teke Lloyd & Türk, 2021).

Future research could expand the model by looking at contextual moderators and other routes connecting perceived exposure to perceived social outcomes without compromising the separation between the two. Multi-group analysis could examine whether there is a difference in relationships across districts, residential location, length of time in the country, or amount of contact with refugees. Longitudinal designs could help to determine whether trust or social cohesion shifts lead to shifts in perceptions of social norms and interviews or focus groups would help to understand how residents interpret fairness and cultural difference, cooperation and institutional responsiveness. The extensions would provide further theoretical explanations and policy relevance.

CONCLUSION

The study proposes and tests empirically a PLS-SEM

model of the relationships among perceived refugee presence, intergroup contact, resource pressure, cultural distance, institutional trust, community cohesion, and perceived changes in local social norms. Forty measurement indicators were used and the analysis was based on primary survey data from 460 respondents who were either hosting or residing near Rohingya refugee settlements in Bangladeshi communities. Reliability and convergent validity are supported by the measurement results, and generally, the Fornell-Larcker matrix, HTMT point estimates and cross-loadings support the discriminant validity. The model accounts for 34.8 percent of the variance in community cohesion, and 27.9 percent of the variance in perceived norm change. In theoretical terms, the observed pattern of structure is coherent: Contact and institutional trust positively are associated with cohesion, resource pressure and cultural distance negatively are associated with cohesion, perceived refugee presence positively is associated with perceived norm change, and cohesion negatively is associated with perceived norm change.

The results further show the need for distinguishing substantive findings from the quality of technical reporting. Some of the bootstrap confidence intervals and the mediation exports do not match with the displayed coefficients. Such inconsistencies are on the statistical export and do not affect the information to be gained from the data as collected primary data. The direct and indirect bootstrap tables should therefore be regenerated from the same PLS-SEM specification before journal submission to ensure that the coefficients, standard errors, t-values and p-values as well as the confidence intervals and the mediation labels are consistent with each other.

Substantively, the study reveals that perceived social change in refugee-hosting communities is associated with a larger range of relation and institutional conditions than refugee visibility; as such, this study expands our understanding of perceived social change in refugee-hosting communities. Community cohesion becomes a focal mechanism linking the determinants of contact, pressure, cultural distance and institutional trust to the perceived normative change. The results indicate the need for policy attention to fair institutions, positive intergroup relations, open communication, collaboration at community level, and reducing the tendency to view social issues as a refugee issue. Future longitudinal and mixed-method study can follow up on these empirical findings to explore temporal change and variation of settings. The study as whole offers a sound empirical understanding of how host-communities' perceptions and social cohesion interrelate within the Rohingya refugee context in Bangladesh.

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