

Social Network Analysis (SNA) of the Rohingya and Host Communities in Cox's Bazar, Bangladesh

Mapping the Social Capital and Information
Flows for Solidarity and Peacebuilding



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Produced by

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Suggested Citation

Sunny, S., Ahmed, B., Jahangir, Z., Islam, T., Rabbi, G.A., Anjum, I., (2021). Social Network Analysis (SNA) of the Rohingya and Host Communities in Cox's Bazar, Bangladesh: Mapping the social capital and information flows for solidarity and peacebuilding. Dhaka, Bangladesh. BRAC and United Nations High Commissioner for Refugees (UNHCR).

Cover photo: Abdul Munaf lives in Kutupalong refugee settlement along with his family. While fleeing from violence at home in Myanmar, his wife and two sons were murdered and he arrived with just one granddaughter. He lives alone and on top of grieving, he feels lonely - especially during the month of Ramadan. © UNHCR/2019/K.Hasan

Executive Summary

Following the large-scale forced displacement of Rohingya refugees in 2017, today over 860,000 refugees live in 34 camps across Ukhiya and Teknaf upazilas of the Cox's Bazar district of Bangladesh. The social networking between the Rohingya and connections in their former society have been largely impacted by their forced displacement. Although many families were separated by movement restrictions in Rakhine State of Myanmar, ease of communication in camps has brought some families closer. After their displacement and their settlement in Bangladeshi camps, the refugees quickly re-established ties with old acquaintances' and created new ones as well. The humanitarian crisis also impacted the host community, already challenged by issues such as environmental damage, poor public services and infrastructure, and rising unemployment. Moreover, the close proximity of the Rohingya and host communities, both of whom have often insufficient or inaccurate information about each other, created increased tensions. Consequently, their decision and social capital formation became influenced by factors prompting them to adapt to the new situation.

In 2019, BRAC's Advocacy for Social Change team, in partnership with United Nations High Commissioner for Refugees (UNHCR), initiated a social network analysis (SNA) study on Rohingya and host communities. The objectives were to map existing social capital, power relations and representational structures of Rohingya refugees and those living in Myanmar before the forced displacement, and factors influencing behavioural change amongst refugees; map and analyze social networks amongst Rohingya and host communities; and track information flows shaping coping mechanisms for both the refugees and host communities in Cox's Bazar.

The study combined qualitative (Key informant interviews and focused group discussions) and quantitative (surveys using Aggregated Relational Data collection methodology) techniques to provide data on host and Rohingya communities in order to illustrate community-formed network patterns and measure the networks' importance in community coping mechanisms by mapping their social capital. Thirty-five field researchers, including eight team leaders and two supervisors, led the data collection from 24 November to 29 December 2019. They conducted interviews with 42 key informants and 2,632 Rohingya refugees and host community members.

Survey results suggest both the Rohingya refugees and host community turn to their relatives first in the event of a personal emergency. 79% of the refugees seek help from family first, including marital, blood and extended relatives, and a higher percent (92%) of the host community do the same.

The second source of help were neighbours, which was 69% for the Rohingya and 58% for host community. **Majhis¹ were the choice of 75% of the Rohingya for**

1 Majhis are individual refugees from the community that are appointed by the Bangladesh Army to assist authorities to liaise with the refugee community. The majhis are not chosen by their blocks in the camps and may be unrepresentative in many cases. This has been a cause of concern for humanitarian agencies due to instances of abuse and exploitation perpetrated by majhis in their role as intermediaries. Refugees often consult majhis in the absence of alternative mechanisms. UNHCR has proposed an elected system for representation of the community with guidelines on terms of reference, accountability and a code of conduct. Only limited permission has been granted by the authorities so far to adopt this system, which is presently in four locations only.

social protection and service-related issues, while the host community chose government officials (40% approached committee members and 63% approached Union Parishad and women's committee members).

An indication of the strength of social networks and trust-based relationships is the frequency of socializing between people and actors in said networks. **38% of Rohingya frequently socialize with neighbours. Among the host community, 24% meet their marital relatives daily, 24% meet blood relatives, 24% meet distant relatives and 23% regularly meet neighbours.** In mapping the trust-based relationships of the respondents, the study found **58% of refugees trusting their relatives for exchanging resources and information with them. 36% of refugees trust their neighbours. Among the host community the percentage of trusting close relatives is 75% which is higher than refugees, whereas for neighbours it is lower at 21%.**

Among both communities, the majority of their transactions (monetary and non-monetary) were between family members, relatives and trusted neighbours. **47% of Rohingya go to neighbours, and 48% to relatives, to borrow daily necessities such as money, cooking fuel and food items such as rice. Whereas within the host community, 72% would go to relatives for such exchanges, whilst only 25% would go to their neighbours.**

Social networks were also found to be crucial in influencing decision-making. Findings reveal that **43% of the refugees turn to close relatives for advice, support and information.** However, nearly 50% of refugees will go to their neighbours and 25% rely on non-relatives. **Amongst the host community, the survey found a dependency on relatives for advice and information on personal decision-making, 35% on marital relatives, 35% on blood relatives, 19% on distant relatives and 15% on neighbours.** The Rohingya diaspora also play a significant role in the lives of refugees. Key contributions of Rohingya diaspora to the displaced communities inside the camp include remittances and other support for necessities. **Among refugee respondents, 19% have expatriate relatives (both close and distant). They are a central part of their social network, many of whom are related by blood or through marriage. About 13% reported that expatriate relatives impacted their decisions and opinions on resettlement and voluntary repatriation.**

According to the qualitative interviews, Rohingya refugees, **despite being dependent on majhis for most of their information and security, are not content with the majhi system. Refugees show extremely low trust and reliance on majhis for personal decision-making.** Around 59% of the respondents receive official information, such as social services, aid delivery and registration, from majhis. **50% of refugees turn to the majhi for security issues, whereas only 14% go to the majhis for personal decision-making. Refugees tend to mistrust the majhis, minimizing transactions between them. Only 2% of refugees trust their camp majhis.**

Generally, refugee men have a larger social network than refugee women. Education was found to be crucial in determining network size. Less education was associated with a weaker network, among both men and women. Moreover, the younger population have larger social networks. Social networks were found to become weaker with age.

Unsurprisingly, the host community has larger social networks, compared to refugees, likely caused by movement restrictions, limited communications networks and distortions in social networks caused by forced displacement. The host community have more mobility, facilitating their ability to solidify their social networks and enhance them.

Recommendations:

For Humanitarian actors (local and international organizations)

- Certain actors within the social networks of both Rohingya refugees and host communities (gatekeepers, highly visible figures, central figures and missed out individuals) are crucial in influencing behavioral changes, determining information flow, and ensuring better delivery of aid and services. Humanitarian organizations and aid agencies should design programmes taking into account the positive or negative impact these identified figures can have on the outcome of the interventions. There is also a need to enhance mitigation measures in certain situations and establish more effective and direct communication with refugees through community-based structures.
- Establish a cooperation mechanism between refugees and humanitarian agencies so that with their support, refugees can organize cultural events and creative activities within camps, particularly at NGO spaces and community spots where they can be engaged as initiators, contributors, and/or participating audience members. Agencies can also focus more on promoting age, gender and diversity (AGD) sensitivity. In this case, an evaluation on the value added by community centres in the camp might be suitable.
- Ensure social needs assessments are consistently factored into all humanitarian programming and ensure inclusion of marginalised and vulnerable populations such as the elderly, people with disabilities and females at risk. Considering that younger populations have larger social networks, it would be beneficial to increasingly incorporate youth groups- both males and females- into social activities, peace-dialogues, and community-based advocacy, enabling them to use those networks as community assets and contribute to inter-communal dialogue. This can play a vital role in conflict mitigation, especially where youth networks expand and overlap between the refugee and the host.
- Strengthen skills development programmes and educational support for youth to enhance their confidence, self-worth, self-reliance and value to their communities.
- Strengthen accountability systems in refugee camps aiming to develop effective communication on issues of concern, and resulting in fair, transparent and inclusive feedback from and responses to the community. The type of community representation available will be important, as well as the need to better partner with authorities to improve access to services for both refugee and host communities.
- Strengthen integration of diverse needs into humanitarian programmes and identify community communication channels to build awareness. Influential figures, such as Imams, can also contribute to social cohesion in communities, as well as between the Rohingya and host communities.

For the Government of Bangladesh and the local administration

- Improve public infrastructure and increase capacity for the provision of public services arising from the refugee situation to promote harmony. Ensure effective law enforcement, freedom of movement, information sharing, sufficient resource allocation, and solidify access to services for host communities in under-served areas. Strengthen accountability mechanisms for local host communities related to the refugee crisis to enable reporting of concerns and receive relevant feedback.
- The local administration and defense structures may need a collaborative intervention, approaching the community as a whole, in tackling security issues in areas including close proximity of refugee and host communities. In particular, addressing the safety of females; preventing GBV, including child marriage, and human trafficking.
- In promoting peace and solidarity, authorities could increase support and training for local government and public administration personnel to enhance their skills to foster harmonious relations between communities and organize events where locals and refugees can share their perspectives. Additionally, they could review the majhi system and engage a mechanism that uses trusted community figures in promoting dissemination of accurate information and equal access to services. Furthermore, forums for elected officials and civil society representatives from both communities can be created, with the likeliness of exploring common ground, as well as strategise to better contribute to each other's welfare and security.
- Effective and sustainable accountability measures and structures need to be better defined to promote and enable fair, transparent, participatory, and inclusive participation of the refugee community. To improve social networks and refugee resilience, government and humanitarian actors need to actively manage and aim to decrease dependency on majhi by ensuring access to information and security for refugees through other channels.

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1. Introduction



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Narun Nahar, a Rohingya refugee and a widowed mother of three lives in Kutupalong Rohingya refugee camp, along with her children and mother. She loves going to the women friendly spaces where she learns to sew and tailor.

Since 25th August 2017, more than 742,000 Rohingya refugees, fleeing violence and discrimination in Myanmar's Rakhine State, have taken shelter in the Cox's Bazar district of Bangladesh², joining around 200,000 refugees from previous waves (Human Rights Watch, 2018)³. More than 860,000 Rohingya, or nearly 90% of Rohingya in the Asia-Pacific region, currently reside in 34 established camps, according to the Joint Government of Bangladesh - UNHCR Population Factsheet (as of October 2020).

Rohingya refugees have paid high price both financially and emotionally for fleeing from Myanmar and settling in camps in Bangladesh. They have had to cut social ties and networks that they have developed over the years through family and community links resulting in a loss of social capital. Following the forced displacement, conflicts among different Rohingya groups were incited as they began moving to new camps in Ukhiya and Teknaf in Cox's Bazar. Subsequently, the community developed social ties with their kinfolk, renewing community platforms, eventually forming a new social network.

The forced displacement of Rohingya refugees into the Cox's Bazar area has also impacted the host community, a population who were already struggling with challenges including environmental damage, inadequate public services, physical infrastructure and rising unemployment. Instability between refugees and host communities, combined with insufficient or inaccurate information about each other, has resulted in increasing tension between the two communities. Consequently, their social capital formation took a

2 Source : https://data2.unhcr.org/en/situations/myanmar_refugees

3 Source: "'Bangladesh Is Not My Country': The Plight of Rohingya Refugees from Myanmar"(Human Rights Watch, 2018)

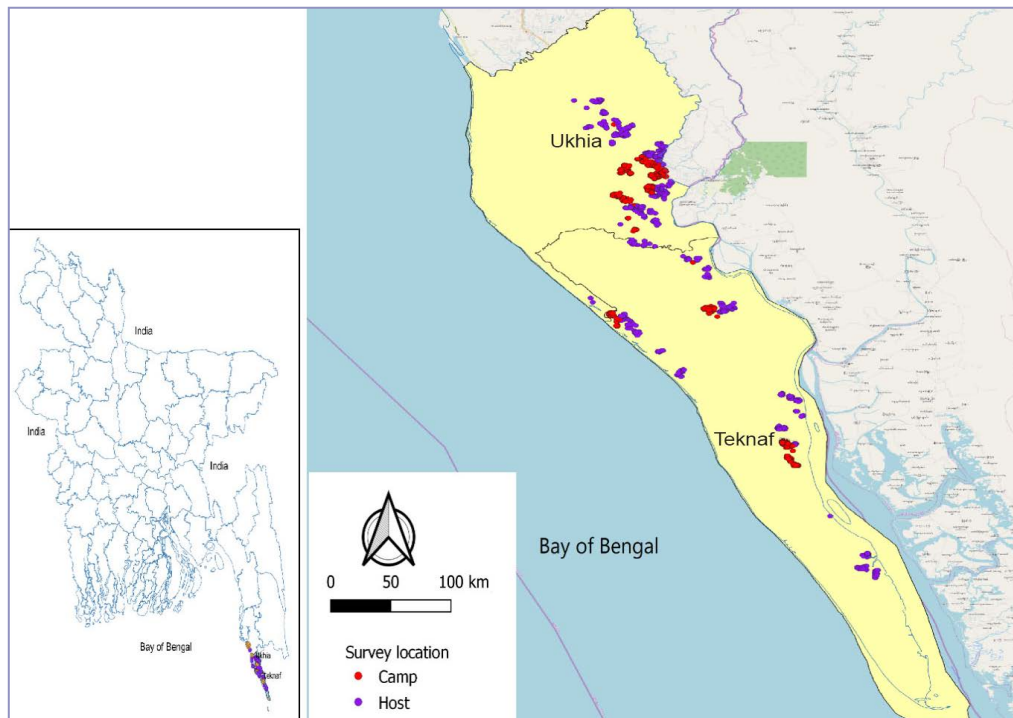


Figure 1: Social network analysis survey area.

strategic move and the network shifted towards an altered course.

Promotion of cohesion and peaceful co-existence amongst both communities requires an analysis of their social network. In this context, BRAC's Advocacy for Social Change team, in partnership with the United Nations High Commissioner for Refugees (UNHCR), initiated a social network analysis (SNA) study on Rohingya refugees and host communities in 2019. The key objectives were to map existing social capital, power relations, and representation structures of pre-2017 and more recently arrived refugees in camps of Bangladesh, as well as those existing in Myanmar before the forced displacement; map and analyze social networks amongst refugees and host communities; map factors influencing behavioural change amongst refugees, and to track information flows that shape coping mechanisms in this crisis for both refugees and the host community in Cox's Bazar.

The study combined qualitative and quantitative techniques to illustrate a network pattern formed by the communities and measure the network's significance within coping mechanisms by mapping social capital. The study investigates the roles and features of gatekeepers, highly visible figures, central figures, and missing links left out from the network, and their participation in community lives. The qualitative aspect of the study looks at the ways their behavioural changes can access resources and shape decisions and livelihood strategies. Finally, evidence-based recommendations targeting both refugees and host communities have been presented by identifying critical stakeholders, tracking information flow, and barriers of building social cohesion, aiming to offer a platform for solidarity and peaceful co-existence.

1.1 Contextual background

The Rohingya are the Muslim minority in Rakhine state. They have lived for centuries in Buddhist-majority Myanmar, yet the government does not recognize the Rohingya people as ‘taingyintha’ or natives of the soil, rendering them ‘stateless’. Both the military and democratic regimes in Myanmar consider the Rohingya to be descendants of Bengali migrants during British colonial rule. The community has a long history of enduring oppression and denial of citizenship rights, denial of freedom of movement, eviction campaigns, forced labour, expulsion from their lands and property, violence, and physical torture. Thus, the Rohingya have been forcibly displaced across the region to escape communal violence and attacks by security forces. They have been fleeing to Bangladesh since the early 1990s; and again in 2012, 2016; and, mostly recently, in August 2017, when over 742,000 refugees fled to Cox’s Bazar, Bangladesh (UNHCR, 2019).

The forced displacement of Rohingya refugees has impacted host communities in Cox’s Bazar, both positively and negatively. Southern Bangladesh has been historically associated with high unemployment and poverty. Before the arrival of public welfare programmes and international aid for Rohingya refugees, it was Bangladeshi host communities who provided them with food and shelter. As international NGOs and aid agencies developed a multi-stage emergency response for refugees in Cox’s Bazar, demand for labour in the area increased, benefitting the host community. Job opportunities for locals were created including registering refugees, distributing food, setting up camps, monitoring, implementing humanitarian programmes, and driving vehicles. However, there has been a rise in dissatisfaction and frustration among local communities as they feel that the cause of their socio-economic problems are due to increased living costs, lack of adequate job opportunities, and environmental damage that have been created by the forced displacement of refugees. This has raised tensions between the two communities (Olney et al, 2019⁴ ; UNDP 2018⁵).

Kin-relations, the basic social network among the Rohingya, has been severely distorted by forced displacement and genocide in Myanmar. However, kinship played an important role in rebuilding networks for Rohingya since their arrival in Bangladesh in 2017. Few of them joined relatives who had been living in the camps since the 1990s. Refugees contacted their families and extended relatives living in and outside the camp and also sought to reconnect with kin-relatives in Myanmar or other countries. They continued to build a new community network to shape their social capital as part of adaptation to the new environment. Historically, displaced communities tend to build new ties in new places and revamp existing, long-distance ties (Bilecen et al, 2018⁶ ; Bilecen and Sienkiewicz, 2015⁷) as a survival mechanism and a platform for a better future.

4 Olney, Jessica, Muhammad Badiuzzaman, Mohammad Azizul Hoque. *Social Cohesion, Resilience and Peace Building between Host Population and Rohingya Refugee Community in Cox’s Bazar, Bangladesh*. Center for Peace and Justice, BRAC University and Community Recovery and Resilience Project (C2RP), UNDP, Bangladesh, (June 2019): 9

5 UNDP, *Impacts of the Rohingya Refugee Influx on Host Communities*, (November 2018)

6 Bilecen, Başak, Markus Gamper, and Miranda J. Lubbers. “The missing link: Social network analysis in migration and transnationalism.” *Social Networks* 53 (2018): 1-3.

7 Bilecen, Başak, and Joanna Jadwiga Sienkiewicz. “Informal social protection networks of migrants: typical patterns in different transnational social spaces.” *Population, Space and Place* 21, no. 3 (2015): 227-243.

1.2 Problem statement

1. Rohingya refugees are prone to risk being dependent on aid and external support, which is unsustainable in the long run. The dependency is also due to the country's policy environment where Rohingya refugees do not have access to livelihood and socio-economic right. As the timing of repatriation is unknown at this point, there is a risk that gradually humanitarian programming will decrease. This may further disempower them. Relying on such ill-equipped and inaccessible support structures may, thus, compromise their wellbeing.
2. There is uneven access to information and services in camps, and limited resources in both the camps and the host areas. Access to information and social services are challenges for the Rohingya and host communities in an already underdeveloped area.
3. Intra-camp tensions exist and may eventually grow as different groups struggle for power, while relations with host communities deteriorate.

1.3 Research objectives

1. Map existing social capital, power relations and representation structures of pre-2017 and recent Rohingya refugees, as well as those living in Myanmar before the forced displacement, including social and economic support, and changes in representation amongst recent arrivals.
2. Map and analyze social networks amongst Rohingya that fled from Myanmar to Bangladesh, acquaintances of refugees, both in Myanmar and elsewhere, and host communities, as well as former social networks in Myanmar prior to displacement.
3. Map factors determining behavioural change amongst Rohingya refugees due to improvement in key socio-economic indicators.
4. Map information flows, including means and their circulators, related to access to basic services such as health, employment and business opportunities, amongst both the Rohingya and between Rohingya and host communities to understand challenges and similarities. The latter might serve as gateways to the social capital structures of host communities for the refugees.

2. Methodology



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Sangla Chakma, a Bangladeshi woman living in Shamlapur, Cox's Bazar, changed her life with the financial support and training she received from UNHCR and its partner BRAC. With her skills in farming and fishing she is creating a better future for her and her children.

In recent years, social network analysis (SNA) has received increasing focus from numerous research publications and across social and scientific fields, particularly as a set of analytical tools (Freeman, 2004)⁸. It is mostly a quantitative study method involving the generation of numerical data on social relations and use of quantitative tools such as surveys, maps, household data, and existing demographic information (Carrington et al., 2005)⁹. However, social scientists tend to use qualitative components for both in-depth analysis and tracking behavioural changes among different populations with diverse demographic figures (Edwards, G., 2010)¹⁰. Given the scope of research and demographic and historic complexities, this study combined quantitative tools with various qualitative data collection/analysis methods, such as interviews, ethnographies, FGDs, historical archival research and conversation analysis. Balancing a mixed-method approach to conduct an SNA study effectively helps in analyzing the emergent and dynamic refugee crisis in Cox's Bazar. To handle the limitations of the actors' interplays, a mixed method approach involving quantitative methods capturing the form of relationships and qualitative methods indicating the content of relationships, such as their interests and motivations, has been adopted.

8 Freeman, L. (2004). "The Development of Social Network Analysis: A Study in the Sociology of Science". Vancouver, CA: Empirical Press.

9 Carrington, P. J., Scott, J. and Wasserman, S. (eds.) (2005). "Models and Methods in Social Network Analysis". Cambridge: Cambridge University Press.

10 Edwards, Gemma (2010). "Mixed-method approaches to social network analysis." Discussion paper. National Centre for Research Methods.

2.1 Research tools

The quantitative part involves the Aggregated Relational Data (ARD) collection methodology in capturing information about a social network by asking the extent of connections between a person and a group with a particular characteristic, rather than those between each pair of individuals directly. Complementing the Rohingya crisis, a tool to measure and understand the kin network and its role in Rohingya social capital was added to the ARD questionnaire. The questionnaires comprised of four sections. Part A covers basic identifying information, while part B comprises 6 rosters listing the relatives of respondents and their current locations. Part C collected the names of people trusted by respondents from both the host and Rohingya communities and are part of their social capital and social network. Finally, part D defined the names with certain basic features and 10 traits. The ARD model was repeatedly tested, restructured and verified until it was proven to be suitable for this study during its pilot stage.

The study used qualitative tools for key informant interviews (KIs) and focus group discussions (FGDs) and two survey tools for both male and female respondents from host and Rohingya communities.

2.2 Sample Selection

Both the Rohingya and the host community were engaged for data collection. The Rohingya have multiple sub-divisions according to each of the families' year of arrival. The Bangladeshi Government and the UNHCR's joint registration data sub-divided Rohingya into three categories:

- a. Families who arrived before the 16 October 2016;
- b. Families who arrived in Bangladesh between 16 October 2016 and 24 August 2017;
- c. Families who arrived after 25 August 2017 (According to UNHCR, over 742,000 refugees have fled to Bangladesh since 25 August 2017)¹¹.

The study defines 'host' communities as Bangladeshis living near the recently constructed Rohingya refugee camps.

Of the ten FGDs conducted for the study, two were with host communities in Kutupalong and Balukhali, four were with Rohingya refugees who had arrived during the forced displacement occurred in 2017, three with pre-2017 refugees and one in the Hindu Para camp. Although a majority of FGD participants were Rohingya refugees, additional KIs with Bangladeshi participants were conducted to ensure balanced participation from the host community. As part of qualitative exploration, a total of 42 KIs were carried out, where 24 participants were from Bangladeshi communities, 8 from pre-2017 refugees and 10 from recently arrived refugees. The majority of qualitative respondents were male, but there was balanced participation from male and female respondents in the quantitative part.

¹¹ UNHCR (2019). Also available at <https://www.unhcr.org/rohingya-emergency.html>

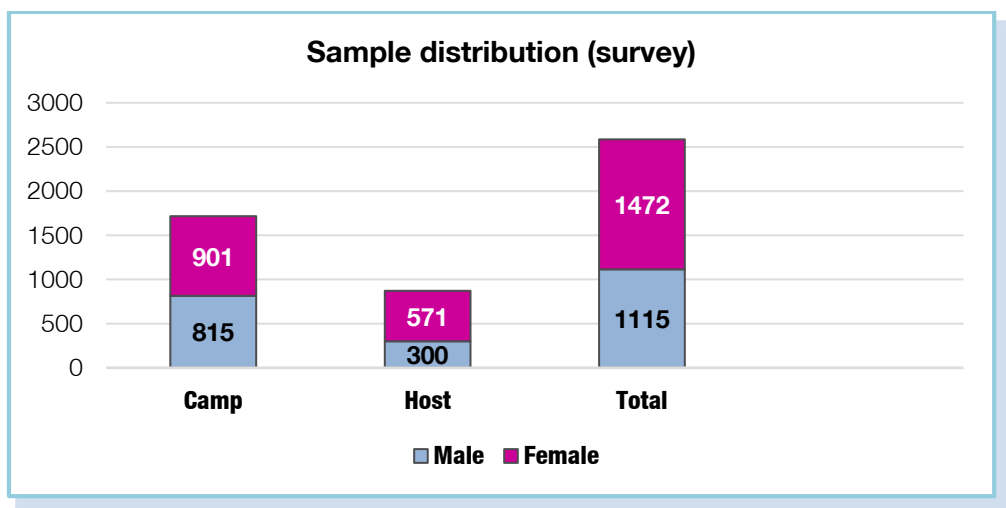


Figure 2: Sample profile

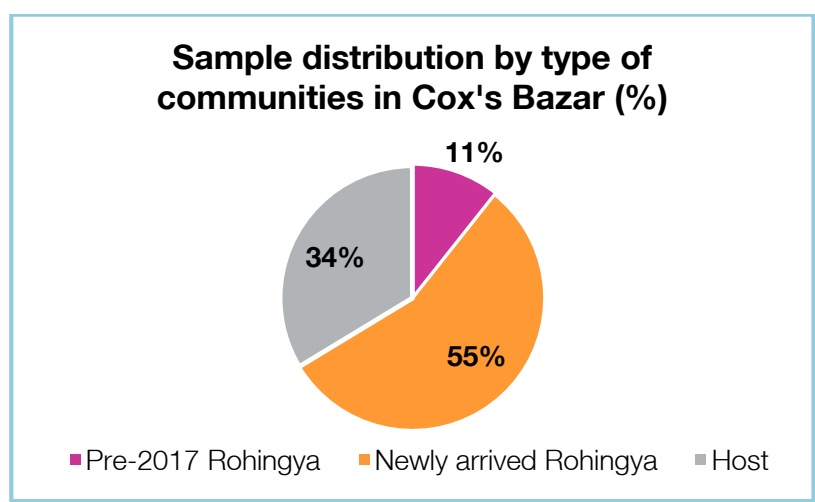
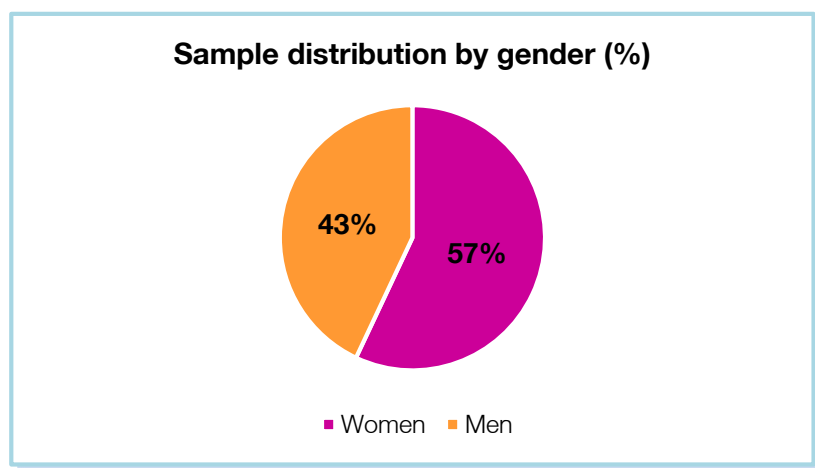


Figure 3: Sample distribution by gender and across communities (pre-2017 and newly arrived Rohingya refugees and host Bangladeshis) living in Cox's Bazar.

More samples from the Rohingya community than from the host community have been picked due to the large number of refugees in Ukhiya and Teknaf.

Table 1: Percentage of the samples from camp and affected host area.

Area	No. of sample	Percentage of sample
Camp	1,716	66.33%
Host	871	33.67%
Total	2,587	100%

2.3 Enumerators' training and data collection

A total of 2,632 household data was collected over 28 days. Field tests to validate survey tools were conducted during 18-21 November 2019. The tools were updated from field test findings and field researcher comments using Survey CTO and prepared for data collection. A total of 35 field researchers, including eight team leaders and two supervisors, led the data collection from the 24 November to 29 December 2019. After cleaning and accounting for completeness and duplication, 2,587 forms were identified from the quantitative survey.

3. Analysis and Findings



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3.1 Role of social network in case of personal emergency

Social networks are links to social relationships. They can also be the social process linking the individual with his/her social network members. The study defines social relationships into two categories: kinship or family members and community members, consisting of neighbours, community leaders, people from open platforms, NGOs and other humanitarian organizations. The study attempted to identify the nodes (individuals) or the critical actors that exist in the respondents' social network and to whom they turn to in personal emergencies, including familial and medical emergencies, catastrophes and other unexpected hardships.

Respondents from both refugee and host communities stated that they first turn to family in the event of a personal emergency, 79% of refugees and 92% of the host community. The role of neighbours came in second, of which 69% of refugees and 58% of host community would turn to neighbours. 34% of the refugees forcefully displaced in 2017 reported going to community leaders or majhis (head majhi¹² or Rohingya camp leader, block majhi or site majhi) and only 11% of them go to friends from camp-based activities.

Education and profession appear to be two key factors determining who the host community turn to in the event of an emergency. Respondents turn to close relatives (other than family members) for help based on their education level and job status. They seem to believe that a higher education level makes one more likely to provide better advice and support during emergencies. Likewise, respondents tend to reach out to relatives with more stable jobs and better access to public services.

¹² Head majhi of the camp directly reports to the Camp-in-Charge (CIC) and manages the block majhi.

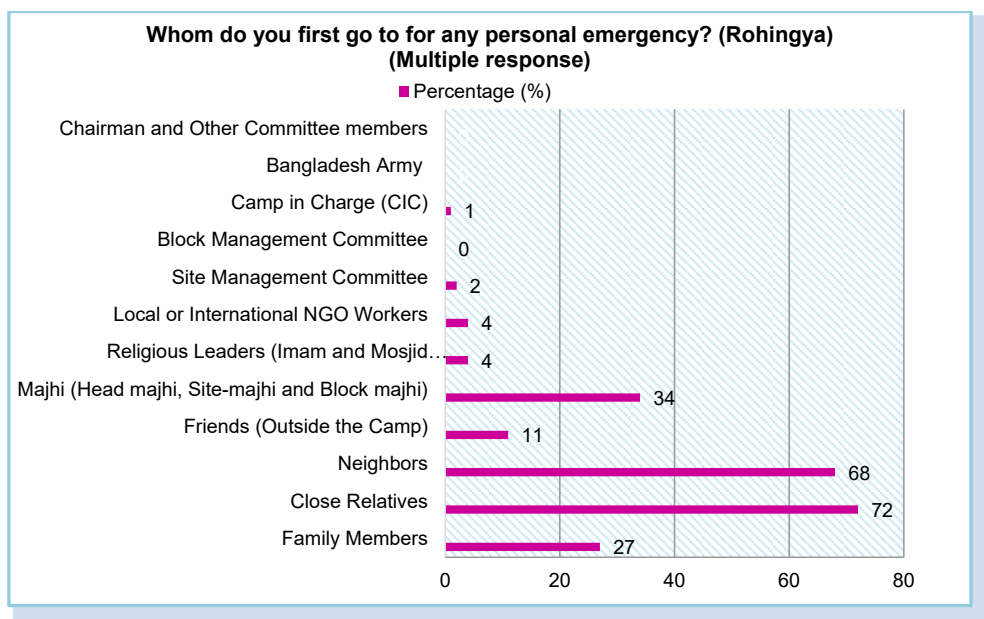


Figure 4: Percentage of actors from whom refugees seek information and support during their personal emergency (respondents were allowed to choose more than one response).

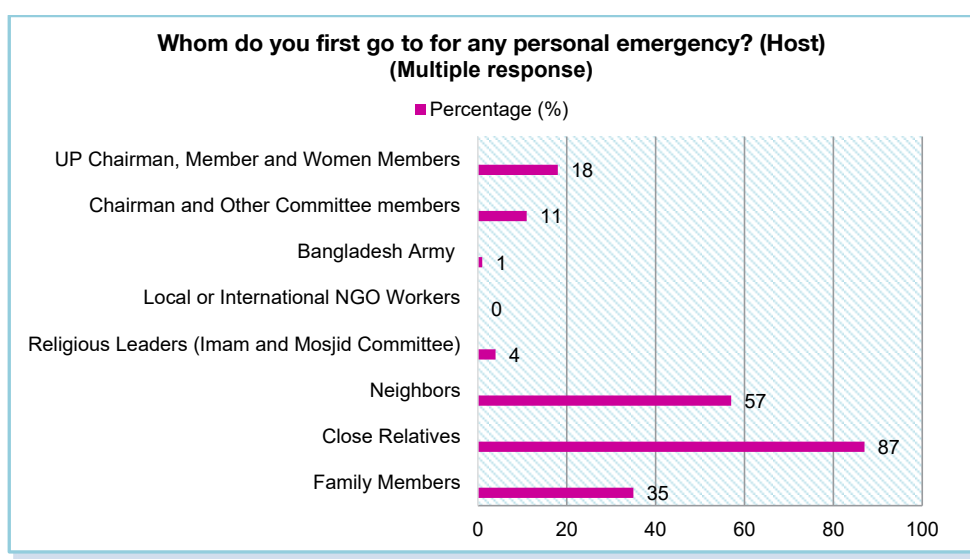


Figure 5: Percentage of actors from whom the host community seek information and support during their personal emergency (respondents were allowed to choose more than one response).

3.2 Role of social network in availing social protection/services

Social protection comprises policies and programmes required in diminishing lifelong consequences of poverty and exclusion such as conditional cash transfers, social assistance, social insurance, alongside labour market interventions, grants, food tokens, health services, rations, aid items, etc.

In identifying people host and refugee populations go to for securing social services and social protection, survey participants were asked relevant questions. During KIs and FGDs, refugees (2017 arrivals) shared multiple complaints about majhis (camp leaders).

However, a significant portion have no other option but to go to majhis (including head, block and site majhis) for health, food, education, legal services and social protection. After the majhis, most refugees rely on their neighbours (32%). Influence from religious bodies such as imams¹³ seem stronger in two of the registered camps (Nayapara and Kutupalong), comprising 13% of registered refugees.

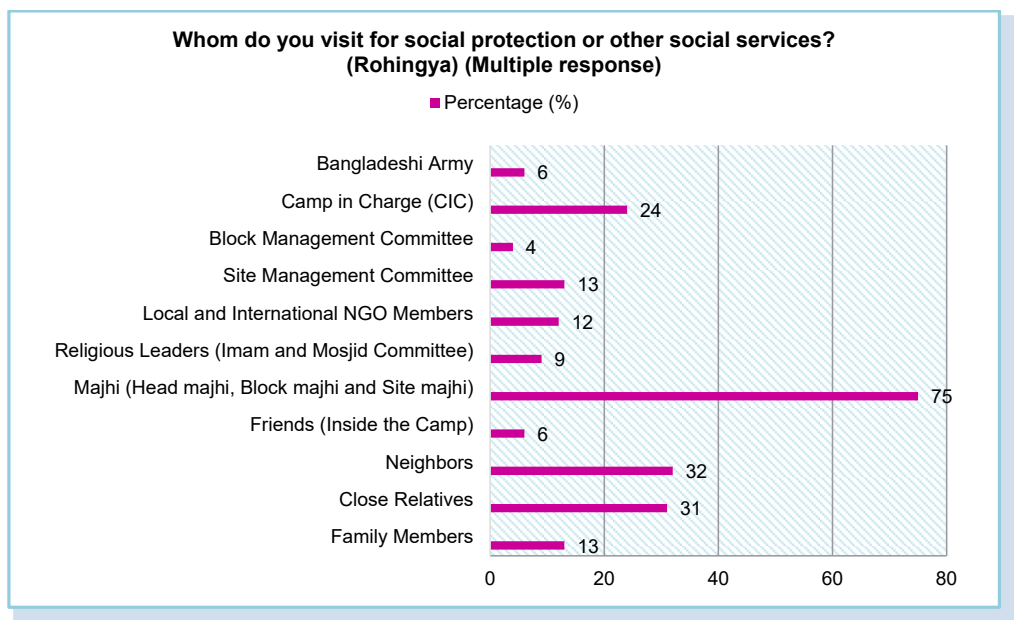


Figure 6: Percentage of actors to whom refugees go for safety, social services and social protection (respondents were allowed to choose more than one response).

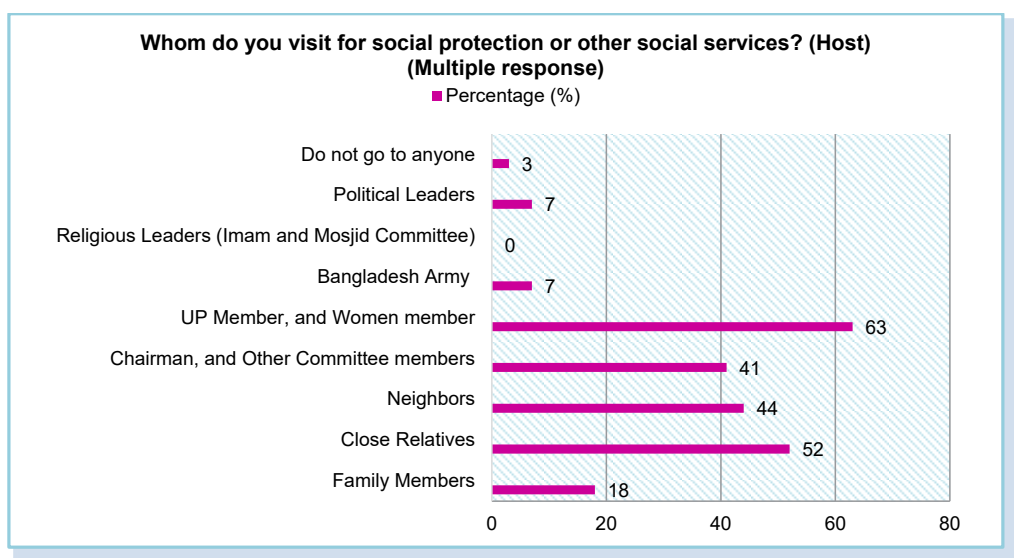


Figure 7: Percentage of actors to whom host Bangladeshis go for safety, social services and social protection (respondents were allowed to choose more than one response).

13 Imams are Muslim religious leaders.

It should be noted that a substantial amount of both refugees and the host community prefer to go to their relatives, including distant relatives, even for social services and social protection, that is 36% of refugees and 56% of host community surveyed. This finding is also reconfirmed by qualitative interviews. As people struggling with minimal access to social services lack power and voice, they are not confident to access public offices or report any urgency, eventually filing problems to administrative officials. Most of the host community respondents expressed their reluctance to approach the authorities in case of problems regarding public services. Therefore, they discuss and consult with relatives.

Among the host community, 40% go to the chairman and other community members, while 63% consult with Union Parishad (UP) members and women committee members (local government officials). Hosts are more likely to contact politically affiliated persons (7%).

3.3 Socialization within social network

An analysis of qualitative interviews reconfirmed that, on average, 38% of refugees frequently meet and socialize with neighbours. Roughly 17% of refugees frequently met marital relatives, 26% with blood relatives, slightly over 12% with distant relatives, and only 7% with non-relatives. Within the respondents' network, most of these individuals were housewives (42%), unemployed (20%) or day labourers (8%), while 5% of them were majhis and other camp-based leaders. Approximately, 90% of refugee respondents mentioned that they meet such people on a daily basis, share their personal stories and basic forms of social engagements with them. Among the people they interact with, 96% live inside the camp, 3% outside the camp and 93% joined them during the forced displacement of 2017 and have known them for more than 2 years. Around 47% of the nodes (individuals) they socialize with do not work. 90% of them have livestock or cellphones.

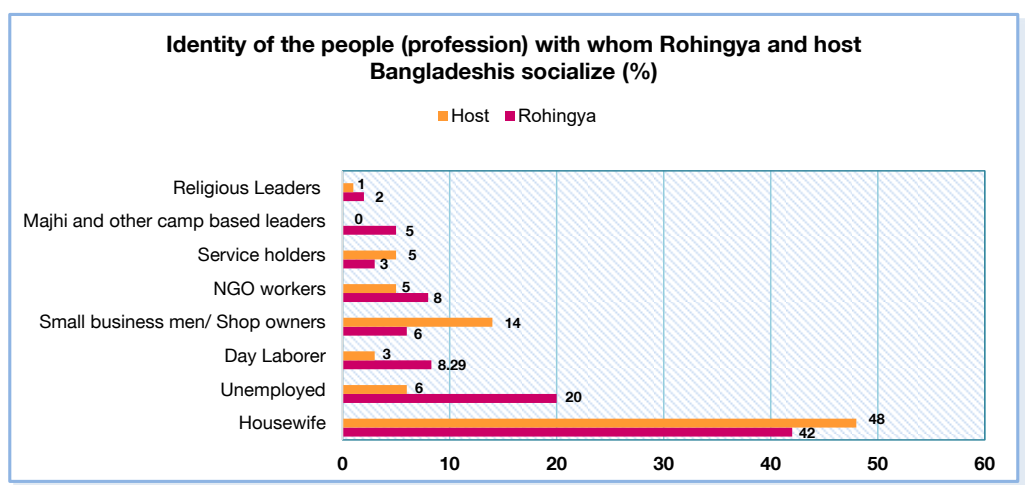


Figure 8: People with whom the Rohingya refugees and the host Bangladeshis socialize the most.

Among respondents from the host community, 24% meet their marital relatives, 24% meet blood relatives such as such as parents and sibilngs, 24% meet distant relatives and 23% meet their neighbours. 48% of individuals in host community social networks are housewives and 14% run small businesses or work as storekeepers. Within this network, 10% have relatives living abroad. With regard to healthcare seeking behavior amongst the network of host community, 40% often take public healthcare. On rare occasions, only 3% visit the healthcare service centres at camps.

3.4 Measuring trust within the social network of the respondents

Trust forms cooperation or coalition among network actors in assessing the quality and credibility of information as well as in determining how information flows through the network¹⁴. The study measured trust by exploring the following: a) people respondents feel comfortable sharing their private information and aspirations with b) people respondents trust their non-monetary assets with and c) people respondents exchange information influencing decisions with.

Roughly 58% of refugees trust and exchange resources and information with relatives, while 36% trust their neighbours. While, 75% of host community trust close relatives, and 21% of trust their neighbours.

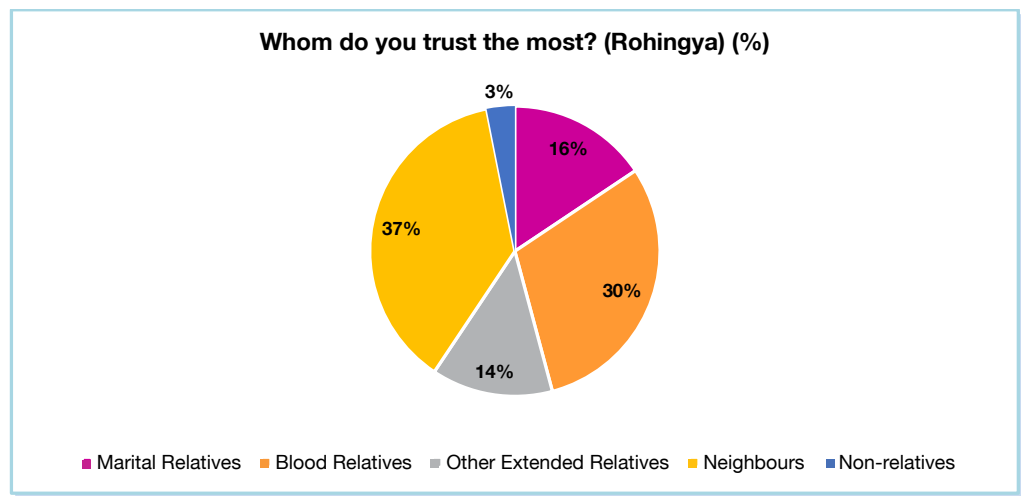


Figure 9: Measuring trust among Rohingya refugees

Qualitative interviews reveal one-third of Rohingya respondents associating trust with information and finances. In most cases, they rely on family. On communal issues such as encountering misleading information, they would turn to the elderly within their kinship for advice. Some would go to majhis for further consultation. An important finding is that women tend to not trust people outside of their family. Overall, refugees meet trusted people daily. 98% of them live inside the camp. About 58% of individuals trusted by refugees reunited with them following the forced displacement of 2017. They knew them even before fleeing Myanmar. Within the social network of refugee respondents', 4% of their relatives live outside Cox's Bazar camps and 16% live abroad. 63% of network members seek support from NGO establishments and humanitarian workers. 12% work in learning centres, as volunteers and other jobs at different NGOs and international organizations. Looking at the profiles of the individuals within the trust network, majority of them are found to be housewives.

Likewise, almost half the people within the trust network of host community are housewives (49%), while 12% are small-scale business owners, and 8% are unemployed. Additionally,

14 Adali, Sibel, Robert Escrivá, Mark K. Goldberg, Mykola Hayvanovych, Malik Magdon-Ismaïl, Bolesław K. Szymanski, William A. Wallace, and Gregory Williams, (2010). "Measuring behavioral trust in social networks." In 2010 IEEE International Conference on Intelligence and Security Informatics, pp. 150-152. IEEE, 2010.

host community respondents trust their close relatives (75%) the most. They frequently contact them through cellphones, sharing information and other news, meet daily (87%) in their homes, or in the homes of respondents. Information exchanged mostly involves issues regarding access to daily necessities, sustenance, survival and security. One-fifth of their trust network members (21%) are their neighbours and therefore, play a critical role in gathering information.



Figure 10: Measuring trust among host Bangladeshis

3.5 Role of social network in transactions (monetary and non-monetary)

Compared to Rohingya refugees, the host community engage in more transactions with their close ties within their social network. This is not surprising, since, unlike the refugees, host community members have access to people, resources and places beyond Cox's Bazar. Surveyed participants were asked about people they approach for borrowing or lending money and daily necessities such as rice. Findings reveal that roughly 47% of Rohingya go to their neighbours for such exchanges in emergency events, whilst 48% of them contact their relatives (12% marital relatives, 22% blood relatives, and 14% other extended relatives). People who assist the refugees with urgent needs mostly (97%) live inside the camps.

Similarly, host communities also tend to carry out monetary and non-monetary transactions with mostly relatives. Around 72% of them go to relatives (about 24% marital relatives, 22%, and 26% distant relatives) for such needs. Only 25% of respondents go to their neighbours.

Looking at the traits of these nodes, the exchange network for refugees is built with mostly people who neither work nor are formally employed (49%). More than half the people with which they engage in necessary transactions are women and housewives (55%). The other 17% of them are unemployed and 8% are day labourers. 6% have small businesses inside the camps. The respondents were also asked to share additional features of the individuals they trust for transactions, including quality of social engagement, their healthcare access, the potential to form a social network and their socio-economic status. Responses indicate that 62% of these individuals visit healthcare centers and camp-based social services. Only 4% of them live outside the camp and 17% of them have relatives living abroad. On the other hand, 59% of people within the transactional network of the host community are housewives, 10% own small businesses, shops or work at grocery stores. 5% work as humanitarian workers inside the camp.

3.6 Role of social network in influencing respondents' decision making

Qualitative interviews revealed that, within refugee communities, older male family members take major household decisions including settlement location, food/diet, livelihood, future of children, marriage, and social engagements. Survey findings disclose that 43% of refugees mostly ask for support and information from close relatives (11% marital, 23% blood relation and 9% other extended relatives), while almost half of them go to their neighbours (25%) and non-relatives (25%). About 93% of respondents' social connections who help them with decision-making live inside the camp. 7% of them live outside the camp, mostly humanitarian workers from the Bangladeshi community. A close look at the personal and social traits of these connections reveals that 13% of them work as humanitarian volunteers and NGO workers. The majhi system, comprising head majhis, block majhis, and site majhis, have little influence over decision making in the refugee community. Respondents shared that roughly 12% percent of them would go to the majhis for some form of information or support in taking major household decisions. Among the individuals that these respondents go to for advice, 17% are unemployed, 8% are day labourers, 5% are business people and 10% are service sector workers. With regard to health seeking behaviour of these individuals within the network, around 70% of them receive healthcare services from NGOs and health centers.

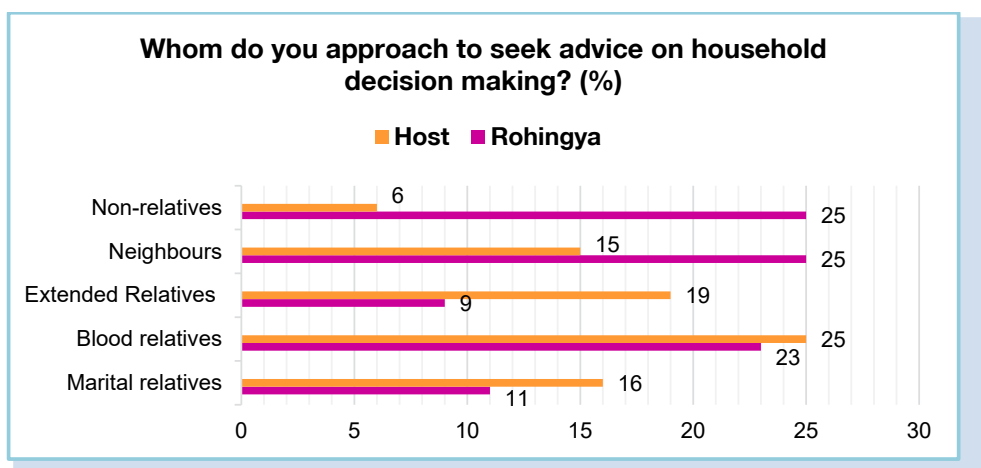


Figure 11: The identities of people whom Rohingya and host communities approach to seek advice on household decision making.

Families still dominate in helping members of host communities to take important decisions; 16% approach marital relatives, 35% approach blood relatives, and 19% approach distant relatives for such advice. Roughly 15% of the respondents seek advice from their neighbours and only 6% from non-relatives. Among the individuals approached by host respondents for advice, 21% were women and housewives, 23% were service holders and 14% worked as small-scale businesspeople.

3.7 Role of majhi system

Introduced by the Bangladeshi army in recently constituted settlements for the forced displacement of 2017, the majhi system is an unelected platform for selecting refugee appointees 'to support in the estimation of refugee populations, organization of distributions, and channel communication to the refugee community'¹⁵. Over time, their responsibilities increased by necessity and inconsistently to sometimes include solving block problems, urgent issues, relief distributions towards improving infrastructure, seeking special permission from CIC offices, aid distribution, receive reports and complaints, handling CIC office referrals, camp welfare activities, occasional support with verification of information on birth and marriage registration and many more. The role of majhis varies greatly across camps and blocks.

The qualitative interviews reveal that although refugees receive most of the information from the majhis, respondents are not content with the humanitarian's reliance on this communication channel. Refugees question the honesty of the members of the majhi system. They suspect that majhis favor people close to them, mishandling their relief. Women led households without adult males find it highly challenging to deal with the majhis for personal and social needs.

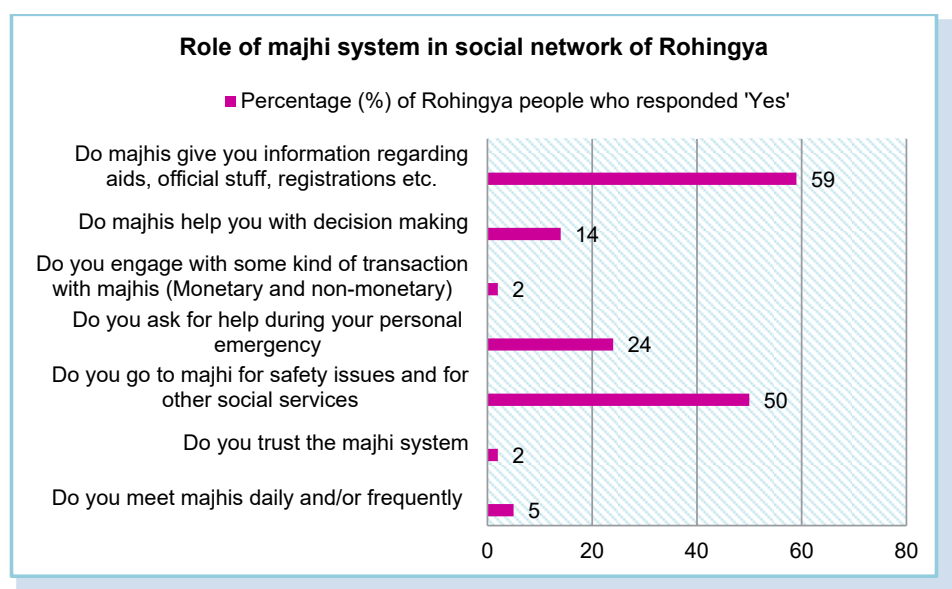


Figure 12: Role of majhi system in social network of Rohingya community members.

The survey respondents revealed that refugees in most camps rely on the majhi system merely for access to social services provided by government authorities and humanitarian. Few of them reach out in times of personal crisis when there are issues that need to be reported at the CIC office or site management offices. Only 2% of Rohingya refugees who live under the majhi system reportedly have faith and confidence in this system of "leadership". Three of the 42 KIIs mentioned that they need to pay token money to access social services and other incentives from the majhi. Majhis also complained about limited resources, excessive number of service recipients, their high expectations, work pressure, poor infrastructure, and monitoring system.

15 Rohingya Crisis, Governance and Community Participation (June, 2018). Also available at https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/20180606_acaps_npm_report_camp_governance_final_0.pdf

“

“If not very emergency. We don't go to the majhi, though one of the block majhis live close by...My brother in-law is in Cox's bazar Sadar jail and sometimes we need to meet him. Without the permission of our block majhi it is difficult for us to go straight to the CIC. They won't listen to us.”

- Old Rohingya man
(Age: 52 years)

“

“People living in my Block have high expectation. Because of living in a densely populated camp settlement they would have many problems. Starting from domestic chaos to community development I have to listen and manage everything...It is difficult to satisfy them all...and where are my resources? The amount of relief I get from the organizations are not enough. They are never enough. Sometimes, my family goes hungry, at night because someone would ask for food at the night and we cannot say no.

- Camp majhi (head majhi) (Age: 27 years)

3.8 Role of religious leaders

Coming from conservative Islamic teachings, Rohingya have high devotion towards religious leaders, known as 'alems' and 'huzur'. They work as imams, madrasah (religious schools) teachers, masjid (mosque) committee members, etc. During qualitative group discussions, respondents emphasized the values of Islam or religious practices as contributive to their enduring survival, future safety, and security. Many of them send their young children to maqtab or 'hafez khana' (types of religious schools). Although sending children to 'hafez khana' is popular in the host communities, the rate is much higher among the refugees. A moulana, munshi or imam (titles for Muslim religious leaders) or any leader in charge of teaching children the Quran, has a remarkable influence on the children's future life and educational decisions.

Subsequently, religious institutions play as key spots for the social gathering of refugees. These religious spaces are also considered to be holy shrines or sanctuaries, particularly for refugees who lost connections with people from their social network in Myanmar. This study finds two significant roles of moulana, imam, munshi and masjid committee members: a) while taking advice for any decision (6%) and b) in receiving relief, donations, and official support (2%).

3.9 Open platform, engagement with humanitarian workers, NGO officials

NGOs managing the relief effort and humanitarian support are one of the key stakeholders for the refugee communities, who require their support inside the camp settlement for a range of activities. While the necessities of camp residents are planned out by the annual Joint Response Plan (JRP), the overall size and scope of the humanitarian response is determined by funds from the donor community. Although refugees mentioned the critical roles of NGO workers in improving their lives inside the camps, the host community ridiculed the contribution of NGO workers in the local region, mentioning that the efforts were not enough for the affected host community.

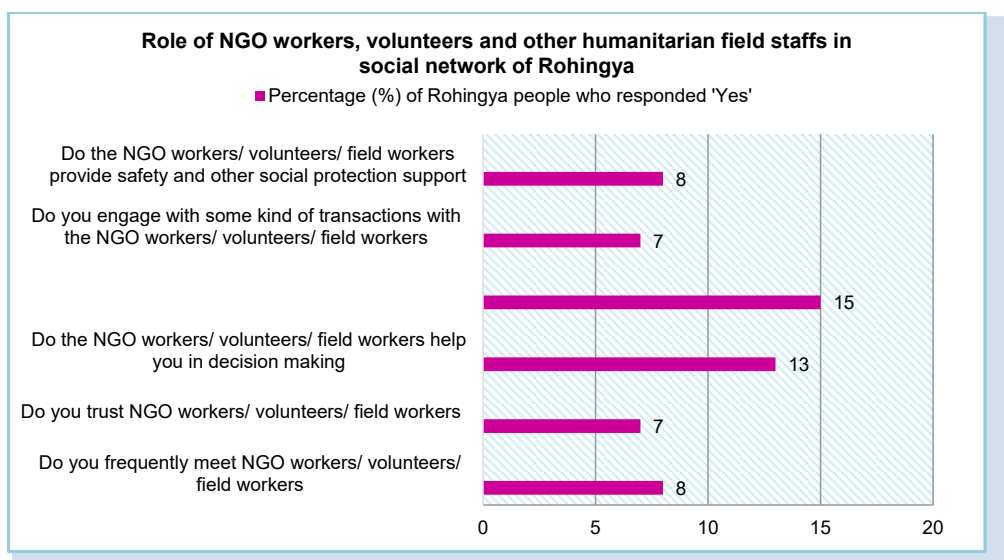


Figure 13: Role of NGO workers, volunteers and other humanitarian field staffs in social network of Rohingya.

3.10 Men have larger social network than women

There have been widely acknowledged theories that social networks among men and women vary in complex ways, particularly in terms of life stage, years of education, health outcomes, and income¹⁶.

The study finds that men's social network is significantly larger than women for both refugee and host communities. However, women tend to have contact with individuals within their smaller network more frequently. Less education among both men and women is associated with smaller and underdeveloped networks. Women, given the power dynamic and socially written gender rules, tend to have lesser integration into the process of network-building. Older women with lower education levels are not associated with younger networks. An interesting finding in the refugee community is that frequent contacts by older women with other actors in the system places them as 'Highly Visible Figures.' Another explanation could be the presence of a large number of single mothers and women-led households, contributing to a change in traditional gender norms within the household in terms of decision making. In the process, they have become empowered to combat different challenges. The analysis gives a similar result for the host community, with men having a larger network than women. (Annexure B).

¹⁶ Ajrouch, Kristine J., Alysia Y. Blandon, and Toni C. Antonucci, (2005). "Social networks among men and women: The effects of age and socioeconomic status." *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 60, no. 6 (2005): S311-S317.

3.11 Host community respondents have larger social network than Rohingya

Advanced analysis of the data reveals that the host community have a larger social network compared with refugees (controlling for other variables). The overall displacement distorted the social ties among the refugees for years. The journey of fleeing Myanmar to settle in Bangladesh's camps during 2017 caused some additional damage to their familial ties. The community platforms inside the camp through the majhi system has not developed and lack reliability in reshaping these ties. Poor mobile network and internet connectivity have adversely impacted the process of socialization. Reshaping the social capital for the Rohingya refugees has, thus, become a challenge. However, host communities living outside formed a concrete social structure and, with time, it got stronger.

3.12 Role of education in forming larger social network

The role of education is vital in shaping and reshaping an individual's social network. Education provides the ability to use information more effectively, to connect with other groups, and play as stronger nodes within the network. It also allows the individual to successfully integrate into the labour market or other earning opportunities. Madrasah education is prevalent among the refugees, whereas host communities tend to have both Madrasah and general education. The literacy rate is higher among the host community compared to refugees.

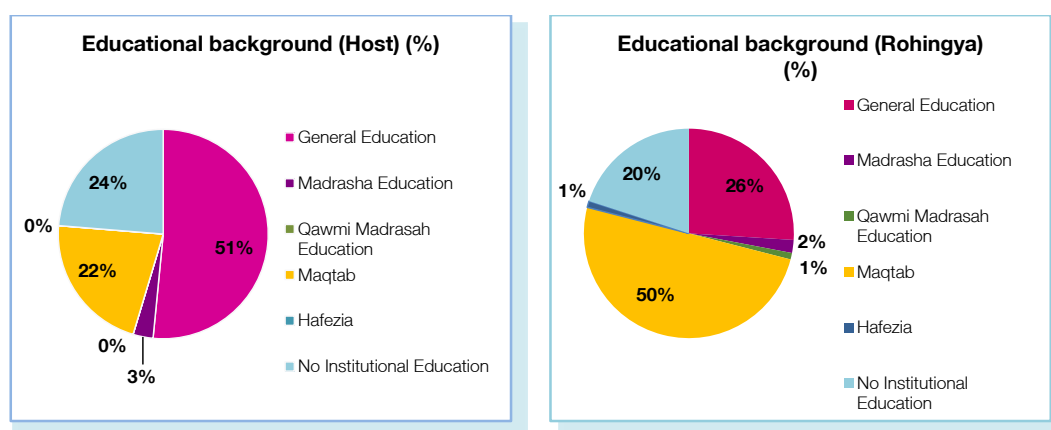


Figure 14: Educational background of Rohingya and host Bangladeshis.

Increases in average education levels improve trust and do not reduce participation levels at the social and community levels (Helliwell and Putnam, 1999)¹⁷. Consequently, more education for an individual prepares them for confident handling of crises and effective usage of resources and information. Combining general and madrasah education values, it can be concluded from the analysis that more education increases the chances of building and maintaining a larger social network. This model applies to both the host community and refugees, indicating that education enables them to construct larger networks and integrate more with the indicators towards peacebuilding.

17 Helliwell, John F., and Putnam, Robert D. (1999). Education and social capital. No. w7121. National Bureau of Economic Research, 1999.

3.13 Role of age in forming larger social network

Age differences among people may result in differing roles and responsibilities in life. While adult men are more likely to experience many familial and occupational responsibilities, older men often encounter a reduced number of competing, simultaneous demands (Marks, 1996)¹⁸.

This study finds that age has a significant influence on building a larger social network. Youth tend to have a more unified network, compared with older people. The higher their age, the smaller their network becomes. A comparison between the networks of young and older people reveals that people seem to have fewer connections in their network as they age. Older age survey respondents listed fewer names in their social network of socialization, trust, transactions, and decision-making. One hypothesis explained that age would be associated with an older personal network that is composed of a lower proportion of friends (Ajrouch et al. 2005)¹⁹. In the refugee context, it has been observed in this study that displacement and distortion of older ties limited the size of the social network among the older population. Aged people also do not mingle within the new settlement structure in the camp. This is not applicable to the female population. Their social networks remain smaller than men, irrespective of age. This model is applicable to both hosts and refugees.

The findings also indicate that the networks of younger men become larger when their parents are alive and can share their network with their son. Therefore, relatives from the paternal and maternal side amplify the strength of the network of the younger population. The total number of family members also contributes to the quality of the network.

3.14 Role of Rohingya diaspora

Diasporas are the dispersion or spread of any people from their original homeland. The status of statelessness contributed to settlements of Rohingyas spread across many countries globally. According to a report prepared by Qatari network Al Jazeera, the slow departure of the Rohingya people from Rakhine has resulted in a diaspora more widespread than any other seen before amongst Muslims. Around 200,000 Rohingya are thought to be living in Saudi Arabia, 10,000 in the United Arab Emirates, 350,000 in Pakistan, 40,000 in India, 5,000 in Thailand, 150,000 in Malaysia, and 1,000 in Indonesia²⁰.

18 Marks, N. F. (1996). "Social demographic diversity among American midlife parents." In C. D. Ryff & M. M. Seltzer (Eds.), "The parental experience in midlife" (pp. 29–75). Chicago: University of Chicago Press.

19 Ajrouch, Kristine J., Alysia Y. Blandon, and Toni C. Antonucci (2005). "Social networks among men and women: The effects of age and socioeconomic status." *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 60, no. 6 (2005): S311-S317.

20 "Behind the Rohingya Diaspora: a Story that Began 200 Years Ago"- written by Emanuele Giordana on 19 September 2017. Also available in <https://www.resetdoc.org/story/behind-rohingya-diaspora-story-began-200-years-ago/>

Key contributions of the diaspora for the displaced communities living in camps include remittances, emotional support and exchange of information. Among refugee respondents, 19% have both close and distant relatives living in foreign countries who (they are mostly close relatives through marital and blood relations) are a central part of their social network and constantly exchange information, financial support, and social capital. About 13% reported that relatives living in the foreign countries influence their decision making about resettlement and repatriation.

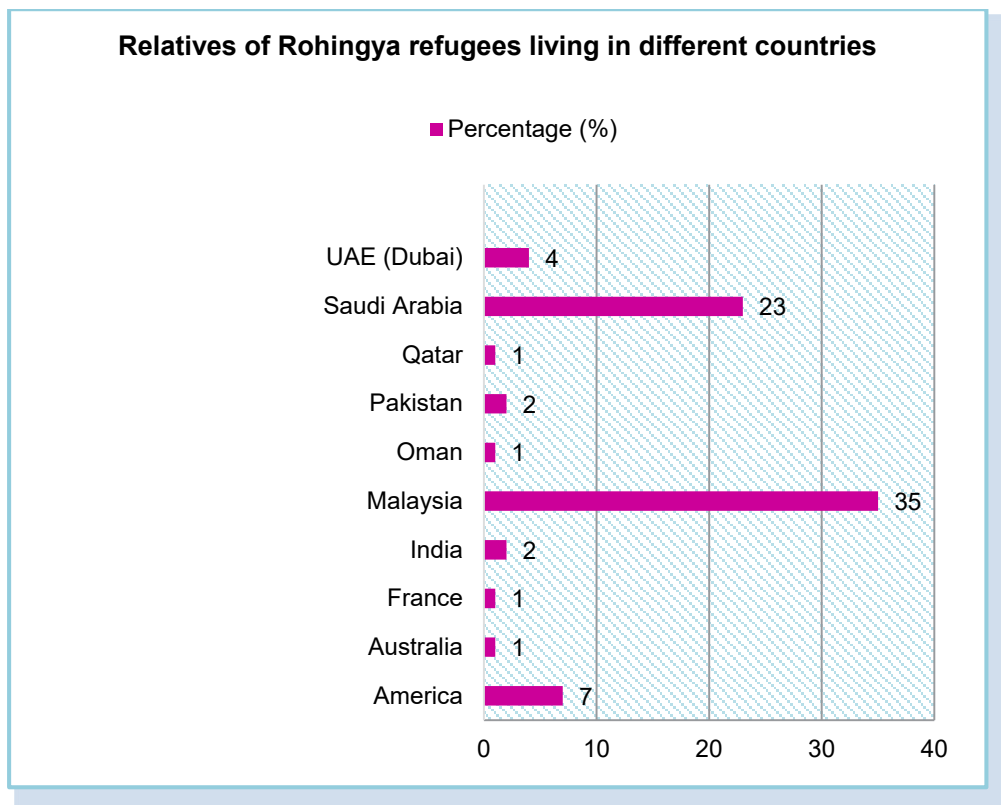


Figure 15: Percentage of the Rohingya who mentioned that they have relatives in the above-mentioned countries.

4. Discussion



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Social Network Analysis (SNA) takes place at three levels of aggregation: node level (micro), network sub-structure (meso), and overall network pattern (macro). In the micro level, this study looks at the individual and its forms of connectivity with another actor. The study focuses on 'Egocentric' SNA, measuring the individual's personal community and network across any number of social settings using name generators. The term 'ego' is used to signify a person's link to everyone in the network. An ego network is a social world from the ego's viewpoint. Alongside 'ego,' another frequently used word in a Social Network Analysis is 'alter'. 'Alter' refers to all the other individuals in the network, ranging from friends, families to community actors. Though the data was collected at the household level, the key focus of the study was to understand the connection between the respondents (nodes) and their active 'alters' (friends, kinship, community actors, and other stakeholders). Egocentric SNA is concerned with how people's interaction patterns shape their individual outcomes (mapping their social capital and securing their access to basic needs such as food and education). The network also highlights another important concept for analyzing networks: clusters. These are groups of nodes that have many associations between them. They are more securely convened than others. The scope and nature of clusters is the core part of the meso analysis.

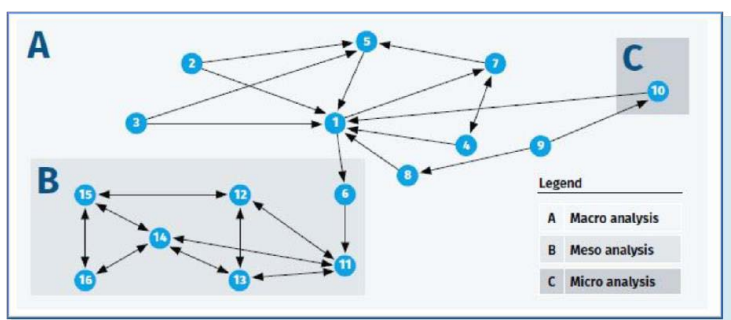


Figure 16: Social Network Analysis at three levels.

In this study, primary nodes are the people (individual and micro-level), both from refugee and host communities, in leadership and influential positions, and are critical in the process of influence and diffusion not only inside the camp but outside the camp, inside and outside of Bangladesh.

4.1 Objective (1): Map and analyze social capital

This paper analyzed the social capital in three domains: bonding, bridging, and linking capital. The features of social capital and their connection across communities differ. The accessibility and affordability of using resources, social connectivity, and communal association are different for the host and refugee community. Hence, their responses would vary. The study finds that the host social network is larger than the refugee camp network, but the level of engagement and activities of connectivity is more densely plotted inside the settlement compared to the host region. Refugees have bigger families and a younger population compared to the host community. Unlike most people, the refugees are more connected with their neighbours and community leaders.

The majhi system is more embedded at the heart of the camp management setup. Besides, many actors, including a large portion of humanitarian workers, are constantly playing roles inside the camp. On the other hand, the survey found little reliance on host community on local government actors (Chairman, Union Parishad members, and political leaders). Host communities are more connected with their relatives in case of personal emergency and social protection issues.

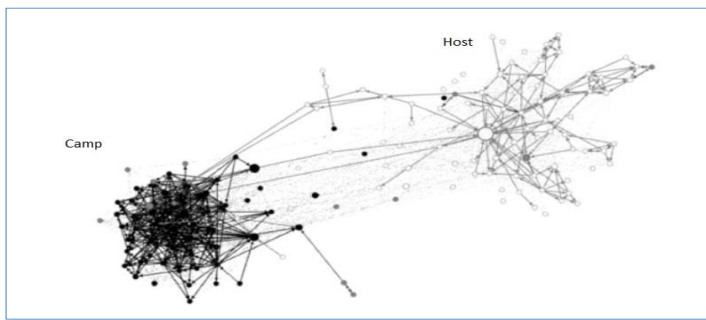


Figure 17: Scatter plots of nodes and clusters inside the camp and in the host region.

Factors that strengthen bonding social capital

- Education increases the tendency to build larger networks, offering incentives to bond with connections for value-added relationships. It acts as an important driver of an individual's political and social engagement, to increase the individual potential to access information about sources of income, and to participate in community meetings and socio-political engagements.
- Personal development and hygiene, and healthcare guidelines, are two of the factors proven most effective in connecting communities with local humanitarian workers. For example, when health workers regularly visit households, they engage in social interaction. They highly depend on the humanitarian workers and their regular visit for healthcare and their well-being. Training, self-improvement tips, and community dialogues also educate individuals and improve lives with their closer ties (families and relatives), alongside advancing their quality of lives.

- Community spaces, learning centers, Child Friendly Spaces (CFS), age-friendly spaces, Women Friendly Spaces (WFS) have become accepted for community gathering and meeting, especially for the women and elderly population, to connect with other community members.
- Integrating women in humanitarian programming promotes a larger network for women in the refugee community. Field researchers observed the role of qualified women volunteers²¹ enhancing the network among their family and neighbours who work as play leaders, mother volunteers and community health workers in many camp-based centers. They now have the skill and ability to influence their community members, quickly set up meetings, successfully run group gatherings, implement activities, and pass and collect information through community channels.
- Uninterrupted internet and mobile connectivity promote a stronger social network. Information flow is at the core of the social networks. Almost all respondents in the qualitative interviews complained about how disrupted communication hampered their communication²² frequency with distant social ties.

Factors that weaken bonding social capital

- The massive displacement and distant living from friends and families severely damaged social bonding and close ties amongst Rohingya refugees. For years, the Rohingya lived amid strict restrictions on aspects of their daily life, including freedom of movement, in northern Rakhine State²³. After escaping Myanmar and settling in Cox's Bazar camps, Rohingya refugees still face constraints on mobility, telecom connectivity, and internet usage.
- Limited and unequally allocated resources cause tension between refugees and nearby host communities. Now that Cox's Bazar is hosting over 860,000 Rohingya refugees, demands for additional resources and further infrastructure development have increased.
- Conflict within families, including gender-based violence and violence against children, weaken bonds. Violence weakens community bonding, spreading fear and distrust among the members. Women-led households struggle with proper integration into the camp-based support system. Many children suffer from psychosocial distress, negligence, and mistreatment, separation from caregivers, child marriage, child labor, and trafficking.

21 Female volunteers who provide health care support to mothers with 0 – 24-month-old children.

22 On September 9, 2019, the Bangladesh Telecommunication Regulatory Commission (BTRC) directed all telecommunication operators to shut down the 3G and 4G network services in the camps of Ukhiya and Teknaf which compromised the connectivity of the residents both inside and outside the camps. Host Bangladeshis living in a closer proximity also suffered from the poor connectivity cutting off their communication with their relatives.

23 “Myanmar: Abolish Abusive Restrictions & Practices Against Rohingya Muslims” (February 25, 2014). Also available at <https://www.fortifyrights.org/mya-inv-2014-02-25/>

- There is a lack of trust in community leaders, as respondents fear they might derive personal benefits from liaising with certain interest groups, camp-based local administration and humanitarian organizations.
- Some Rohingya respondents reported that, in case of a conflict, local police file cases listing numerous anonymous people as suspects, through which innocent people get arrested. Lacking access to the formal justice system, their relatives cannot meet them in jail, hire an advocate or bailout. Host families face similar problems from false lawsuits. Host respondents reported that, on average, 6% of people within their social network suffered as victims due to legal persecutions and false lawsuits.
- Human trafficking and illegal migration cause social tie disruptions. Young men and women disappear to attempt to reach Southeast Asian countries. Mostly, these youth get trafficked and tricked by smugglers.
- The emergence of non-state actors (individuals or groups independent of a sovereign state), organized criminal gangs and insurgency groups play a significant role in weakening the social capital. These groups tend to control the formation of the network by exercising power or sometimes even by offering communities some kind of incentives to form strong networks.

Bridging social capital when communities lack resources and rights

In Social Network Analysis, a 'bridge' is a tie between two nodes, the removal of which would break up a network into disconnected parts. Bridging social capital explores the demand and scope of social integration and bonding between Rohingya and host communities. Based on qualitative findings, this study identified the factors which create social unrest and tension between the two communities and the factors that promoting social cohesion by strengthening the bridging of social capital.

Table 2: How to establish social cohesion by strengthening the role of bridging social capital.

Factors that weaken the bridging social capital	Factors that strengthen the bridging social capital
Rumors, misguided information, the role of yellow journalism publishing fabricated/made-up information.	Focus on commonalities, common interests, shared religion as positive instruments to build social bonding.
Blame game (A situation where communities often attempt to <i>blame</i> each other rather than trying to resolve a problem).	Role of Bangladeshi humanitarian workers who are contributing to better living conditions inside the refugee camps.
Poor access to justice and the absence of legal instruments for the displaced communities	Popularize the immediate response of the Bangladeshi community in welcoming the Rohingya refugees in 2017 and their continuous support for hosting them.
Violence against vulnerable members of both refugees and the host community	Uninterrupted mobile and internet connectivity and physical mobility, so that communities can talk and meet with each other and amongst themselves.
Unbiased treatment in aid delivery, poorly planned development intervention, lack of impactful humanitarian action	Need-based assessment and risk-analysis before designing/developing programmes.

Linking social capital

Rohingya respondents mentioned the impactful role of field workers and volunteers. Initially, their work was challenged and despised by the communities. Soon after the first stage of interventions, particularly the community-based actions, people started observing changes which positively impacted their standard of living, such as child friendly spaces and health centres. Regularly visiting the households helped to reduce the gaps between the humanitarian workers and the camp residents, promoting a network of trust and reliability.

4.2 Objective (2): Map and analyze social network and structure

Building metrics and network graphs

A social network is a set of actors and the relations between them consisting of three elements: (i) a set of actors; (ii) a set of individual attributes for each actor; and (iii) a set of ties that defines at least one relation among actors. Social Network graphs are visual representations of network matrices, presenting those actors as nodes and the relational ties connecting actors as lines (ties, edges).

In the following graph, refugees seem to be more connected with kinship (green balls), than neighbours (grey balls). Majhi system (black balls), being a central figure, stays at the heart of the network. The central node tends to persuade other nodes to remain in the core. There are also other influential actors: local administration monitoring camp activities and public security forces. The graph also shows low-scale connectivity outside the camp. The visual representation also depicts NGO workers and humanitarian actors (white balls) as inseparable components.

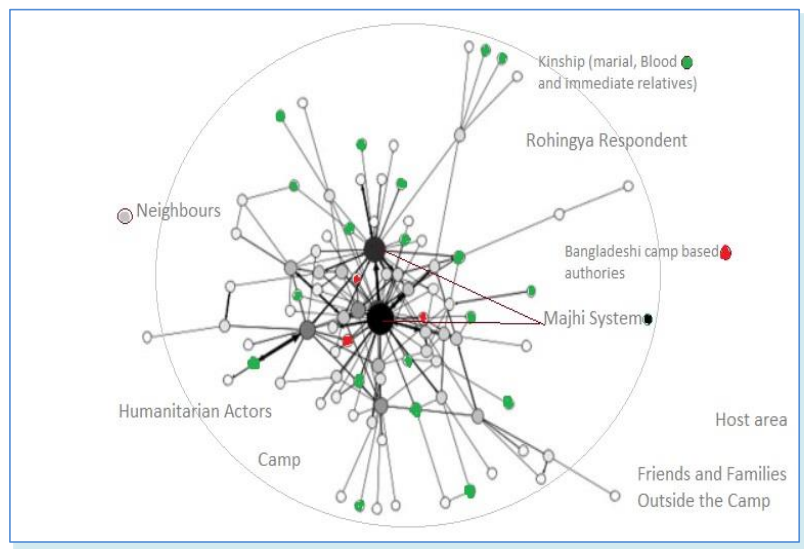


Figure 18: Social network and connectivity of Rohingya refugees.

Gatekeepers, Highly Visible Figures and Central Figures

A gatekeeper is someone who guards discrete gates that determine the news that reaches the audience. One goal of this study was to identify gatekeepers from both host and refugee communities and recommend making them a part of development programmes. The study also identified two additional roles: highly visible figure and central figure, which equally impact other nodes.

Role	Betweeners (Unique links to others in the network)	Degree (Connected to many individuals)	Characteristics
Gatekeepers	 Higher	 Lower	May play an important role in activity, but not much information is held on them. Removal may fragment networks.
Highly visible figures	 Lower	 Higher	May have information about many others in network. May be involved in lots of activity in the networks, but do not play a unique role.
Central figures	 Higher	 Higher	Very visible and central role. Key figures that may be focused on to fragment networks and to gather information.

Figure 19: Roles within any social network that impact other nodes and their characteristics²⁴

Based on these definitions, the study identified people playing the roles of these key actors among the host and refugees communities²⁵:

Table 3: Roles of the key actors among the host and Rohingya communities.

Roles	Host	Refugee
Gatekeepers	Young men and women with the completion of higher secondary level education, leaders of youth groups or sports associations, community workers, and volunteers	Young men, elderly women, adolescent boys and girls (with certain educational outcomes and skills)
Highly Visible Figure	Housewives who have an influential role in their household decisions, small businessmen, shop owners, imams, local pharmacists, youth based committee members.	Elderly women (mostly housewives) who have influential roles in their households, elderly men (who work as day laborers, seasonal workers, volunteers etc.), imams, and masjid committee members who have information about many others in the network
Central Figures	Elected chairman, union parishad (UP) members, and women members who tend to solve the social crises, inter-group disputes, and community contests, public complaints, and disrupted public services. They have information about the residents of their municipality and interact with a larger crowd.	Majhi system (head majhi, block majhi, and site majhi) who are highly visible and play a central role.
Left-out from the Network (Missing links)	Women and young girls under 18 years, elderly women	Elderly men, women led-households, single-mothers, unaccompanied children

24 “Social Network Analysis: ‘How to guide’” produced by British Government Home Office. Also Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/491572/socnet_howto.pdf

25 World Health Organization (WHO) identifies ‘adolescents’ as individuals in the 10-19 years

Missing Link in the Network

- An estimated 16% of women-led refugee households are the most vulnerable to food insecurity, availing relief products, and accessing other social services.
- Older/ ageing refugees are at risk, and especially children's guardians, as they fail to integrate with the camp system and obtain accessibility to jobs and other social services. Due to vulnerability resulting from age, displacement, and lack of education, older refugees appear to possess weaker ties.
- The majority of the female population from both refugee and host communities are the missing link who fail to secure equal access to rights, resources and take important decisions of their lives.
- Young boys and girls under 15 remain invisible in the social network of camp communities. Young boys are threatened by the prospects of getting kidnapped or trafficked, sometimes endangered by organized crime groups. Young girls are more vulnerable due to numerous social barriers (forced marriage, exclusion from education, and prohibition to work) and violence (prostitution, kidnapping, trafficking).
- Unaccompanied, separated, lost, and missing children are also overlooked links. In the refugee camps, 36% reported that they have known of an unaccompanied and/or separated child in their community since arrival (UNICEF 2018).

Inter-camp and Intra-camp conflict

Based on qualitative interviews and mentioning, a list of inter and intra communal conflicts and the causes of such conflicts are presented in Table 4:

Table 4: Forms of conflict that the communities are experiencing and their causes.

Community	Host	Refugee
Inter-community	Conflict over land and access to markets, inter-community love affairs, rape, and abduction and human trafficking.	Competition over resources, adverse perception about each other, and a sense of impunity, perceived or real, amongst the host community, the rise of organized illegal business groups, the establishment of the shadow economy, and patriarchal norms.
Intra-community	Disappearances, kidnapping, murder, getting beat up by the non-state actors and other insurgency groups, domestic violence, robbery, rape, casual violence, drug business, human trafficking, conflict over business and debts, conflict over resources, conflict among the younger population/ teenagers, familial rivalry, conflicts over old animosity.	Elderly women (housewives) who have influential roles in their households, elderly men (who work as day laborers, seasonal workers, volunteers etc.), imams, and masjid committee members who have information about many others in the network

age group and 'youth' as the 15-24 year age group, while 'young people' covers the age range 10-24 years. The SNA study acknowledges elderly men and women as 25-35 years of age and older men and women in the age range from 50 years onwards.

4.3 Objective (3): Behavioral changes

Any study of behavioural change pays attention to the individual as a locus of change (UNICEF). Measuring the behavioral changes among the refugee communities is challenging due to their complicated demographic features and high number of variables. Over the last three years, refugees who fled Myanmar since 2017 experienced tremendous changes in: a) their religious and cultural practices; b) overall access to and consumption of necessities; c) livelihood strategies; d) mapping of social capital and finally, e) leisure activities.

Refugee respondents indicated the transformation of their diet, clothing, healthcare, social status, hygiene, respect, social image, and overall living condition over the period. Each of the individuals from the refugee community experienced their behavioural changes grounded on the availability and accessibility of resources and information. According to the respondents' overall conversation, the changes are listed below:

- a. Changes in appetite and food diet: During the qualitative interviews, Rohingya respondents explained their lifestyle changes, their livelihoods in Myanmar, and the changes when they settled inside Bangladeshi camps. During one Focus Group Discussions (FGD), participants elaborated that a traditional Rohingya diet consists of dried or fresh fish, rice or rice noodles, potatoes, vegetables, milk, and chillies. Men take the first meal in the house with the children, while the women and older girls take the second meal. Paan (betel leaf) with areca nut and tobacco is used for recreational purposes and an inseparable daily consumption. Respondents mentioned that they do not find taste and flavor in Bangladeshi fish and vegetables. Before coming to Bangladesh, many of them did not eat lentil seeds.
- b. Poems and songs express the oral tradition of the Rohingya and are important in preserving their history and collective identity. Tarana²⁶ are songs or poems that express emotions, often of fear, melancholy, or desperation, and may be sung or recited. Although many families have a tendency to avoid music and only focus on religious practices, they sometimes gather and discuss the Islamic implications on their lifestyle and contemporary issues.
- c. In Myanmar, Rohingya women usually wear the traditional longyi and hijab, and are restricted from participating in parts of civic and public life. All men usually wear the longyi and older men grow beards. Before coming to Bangladesh, they could not buy their clothing from local markets. Currently, they can purchase clothing of their preference.
- d. Rohingya adult men and the elderly population claim to have enjoyed higher social status back in Myanmar. Inside the camp settlement, they do not find anything to do for the whole day, and there is no free physical space for the elderly.
- e. Rohingya health-seeking behaviour and health education are poor. In most cases, Rohingyas would adopt traditional healing methods, influenced by religious leaders and traditional health attendants²⁷. Though women are often restricted to

26 Rohingya religious folk song

27 An unlicensed person who treats bodily ailments using informally learnt techniques and medicines.

domestic activities, accessing health services is one of the few acceptable reasons for a woman to leave the house. Respected women/midwives assist other women on maternal health issues.

- f. In Myanmar, Rohingya children do not have adequate access to vaccinations or healthcare and commonly suffer from malnutrition. After taking refugee here, they have greater access to nutritional and healthcare facilities.
- g. The Rohingya practice a conservative form of Sunni Islam and are the predominant adherents of Islam in Myanmar. Traditional houses are surrounded by bamboo fences that enable purdah (strict gender separation). After coming to Bangladesh, many women and girls go outside the house for work and for their daily necessities.
- h. In Myanmar, Rohingya men visit mosques and pray together. Mosques and madrasahs were traditionally present in every village, playing an important role in education when government schools were inaccessible.

The study observes shortcomings to the extent host communities are coping in the affected localities. Due to overpopulation, heavy traffic, poor infrastructure, safety issues, and poor internet and mobile connectivity, the lives of host communities have changed as well. They visit friends and relatives less frequently. Many social events were cancelled. Poor communities had to compromise with food consumption because of the price hike. Women and young girls have stopped coming to public spaces, many young girls halting school attendance. Respondents complained that it has become difficult to get house tutors due to other work opportunities in the camps. Host community respondents reported availability of the aid products/ relief items outside the camps, in the local markets, and near the highways. These relief products are cheaper and people prefer to buy them to meet their necessities, such as: a) food items such as baby food, rice, and refined oil; and b) non-food items including gas cylinders and clothing.

4.4 Objective (4): Map and analyze information flows

Internet blackouts and network shutdowns disrupted the mode and frequency of communication process for not only refugees but also for nearby host communities. Poor communication is one of the key barriers to building and reshaping social networks limiting the information exchange between nodes and alters. Majhis and neighbours are the key actors delivering important information about aid distribution, official permission, registrations, and social services that necessary for refugees to survive inside the camp. Kinship serves as the support system for personal emergencies and future choices. Immediate relatives who live abroad and personal contacts who are still protecting their remaining assets in Myanmar convey information and influence perceptions regarding repatriation. On the other hand, host people engage in information exchange with their kinship based on education, income, and membership of religious and political groups. More education, and/ or higher income increase the chances of more involvement in exchanging information. There is a clear tension between the host and refugees about the resource distribution. Lack of clear and adequate information about each other increases chances of spreading inaccurate information, leading towards rising tension across communities. Interest groups utilize the chaos to pit communities against each other.

5. Recommendations and concluding remarks



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For Humanitarian actors (local and international organizations)

- Certain actors within the social networks of both refugees and host communities (gatekeepers, highly visible figures, central figures and missed out individuals) are crucial in influencing behavioral changes, determining information flow, and ensuring better delivery of aid and services. Humanitarian organizations and aid agencies should design programmes targeting beneficiaries taking into account the positive or negative roles they can make to interventions. Mitigation measures may need enhancement in certain situations, or there may need to be a reorganization of more effective direct communication with refugees through effective community-based structures.
- Establish a cooperation mechanism for refugees between humanitarian agencies so that with their support, refugees can organize cultural events and creative activities within camps, particularly at NGO spaces and community spots where they can be engaged as initiators, contributors, and/or participating audience members. Agencies can also promote age, gender and diversity (AGD) sensitivity. In this case, an evaluation on the value added by community centres in the camp might be suitable.
- Ensure social needs assessments are consistently factored into all humanitarian programming and ensure inclusion of service gaps and vulnerable populations such as the elderly, the disabled and females at risk. Considering that younger populations have larger social networks, it would, hence, be beneficial to increasingly incorporate youth groups, both males and females, into social activities, peace-

dialogues, and community-based advocacy enabling them to use those networks as community assets and contribute to inter-communal dialogue. This can play a vital role in conflict mitigation, especially where youth networks expand and overlap between the refugee and the host.

- Strengthen skills development programmes and educational support for youth for enhancing their confidence, self-worth, self-reliance and value to their communities.
- Strengthen accountability systems in Rohingya camps aiming to develop effective communication on issues of concern, and resulting in fair, transparent and inclusive feedback from and responses to the community. The type of community representation available will be important, as well as the need to better partner with authorities to improve access to services for both refugee and host communities.
- Strengthen integration of diverse needs into humanitarian programmes and identify community communication channels to build awareness. Influential institutions, such as mosques, can also contribute to social cohesion in communities, as well as between the Rohingya and host communities.

For the Government of Bangladesh and the local administration

- Improve public infrastructure and increase capacity for the provision of public services arising from the refugee situation to promote harmony. Ensure effective law enforcement, freedom of movement, information sharing, sufficient resource allocation, and solidify access to services for the host communities in under-served areas. Strengthen accountability mechanisms for host communities related to the refugee crisis to enable reporting of concerns with a feedback mechanism.
- The local administration and defense structures may need a collaborative intervention, approaching the community as a whole, in tackling security issues in areas including close proximity of refugee and host communities, particularly in addressing the safety of females and prevent GBV, including child marriage, and human trafficking.
- In promoting peace and solidarity, authorities could increase support and training for local government and public administration personnel to equip them with skills to foster such harmonious relations between communities and organize events where locals and refugees can share their perspectives. Additionally, they could review the majhi system and engage a mechanism that uses trusted community figures in promoting dissemination of accurate information and equal access to services. Furthermore, forums for elected officials and civil society representatives from both communities can be created, with the likeliness of exploring common ground, as well as strategise to better contribute each other's welfare and security.
- Effective and sustainable accountability measures and structures need to be better defined to promote and enable fair, transparent, participatory, and inclusive participation of the refugee community. To improve social networks and refugee resilience, government and humanitarians need to actively manage and aim to decrease dependency on majhi by ensuring access to information and security for refugees through other channels.

Concluding remarks

This study was conducted to better understand the formation and reformation of social capital amongst Rohingya refugees and the host communities in Bangladesh, the role of social networks in their lives and decisions of community members, behavioural changes caused by forced displacement, and the information flow and coping mechanisms. The findings and detailed analysis in the study generated evidence-based recommendations for the government and humanitarian agencies to promote cohesion and harmony between the two communities.

The current Rohingya situation contains complex social systems that are highly dynamic and constantly changing in nature, shaping the roles of different stakeholders. Social Networks within refugee communities include both their kinship (marital, blood and distant family) and community members (neighbours, community leaders, people from open platforms, NGOs, and other humanitarian organizations, etc.). Despite kin relatives and neighbours having significant roles during their personal emergencies, community leadership through the majhi system holds gravity in order ensure safety and protection. For host communities, they heavily require the support system of close relatives. Social cohesion can be achieved as a result of bonding, bridging, and linking social capital for Rohingya and host communities that, in return, could lead to further social capital formation and harmony. Collaborative efforts should be initiated by both the Bangladeshi Government and humanitarian actors for reducing tension and establishing peaceful co-existence.

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Annexure A

Key Terms/Glossary

Centrality	It is a measure referred to as single nodes and expresses the number of connections with its neighbors (degree or direct centrality) or with all nodes (indirect centrality).
Clustering	A measure of a network of actors' tendency to "group together" into pockets of dense connectivity.
Communities	Communities are can be defined as denser areas of the network. Actors have more ties within their community than to any other actors in the network.
Diversity	While efficiency is about getting a large number of (non-redundant) nodes, a node's diversity, conversely suggests a critical performance point of view where those nodes are diverse in nature, i.e., the history of each individual node within the network is important.
Edge, tie, arc, link	Synonyms to express a connection linking a couple of nodes. Edges can be directed or undirected, binary or unvalued, depending on the nature of the network. The use of the term respect to another depends on the approach to network study: "arc" is used in graph theory; purely statistical approaches prefer the terms "edge" and "tie"; "link" is frequently used in complexity-related perspectives.
Ego-centric networks	Ego-centric or personal networks are defined from a focal actor's perspective only. This refers to the ties directly connecting the focal actor (ego) to others (ego's alters) in the network, plus the ego's views on the ties among his or her alters.
Neighbor	A node is connected to the focal node by a link. The set of a node's neighbors is called "neighborhood".
Node	Nodes are entities/ actors/ people and the links within which social connection is constructed. The nodes in the network are the people and groups, while the links show relationships or flows between the nodes. SNA provides both a visual and mathematical analysis of human relationships. Two nodes are connected if they regularly talk to each other, or interact in some way. For example, if we consider Facebook friends as a graph, then every friend is a node.
Social Capital	Social capital is the network of relationships among the people in a society that facilitates social cooperation.

Social Network	Social network is a network of social interactions and relationships among a set of actors in society. A social network consists of three elements: (i) a set of actors; (ii) a set of individual attributes for each actor; and (iii) a set of ties that defines at least one relation among actors.
Socio-centric networks	Socio-centric or complete networks consist of the relational ties among members of a single bounded community. An example would be relational ties among all of the farmers in a farmer association.
Social Network Analysis (SNA)	SNA is defined as the multi-disciplinary application of network theory to the modeling and analysis of social systems of individuals, groups, or stakeholders, not social media networks, but rather real-life networks. Guided by graph and map theories, SNA represents a theoretical approach integrating complementary measurement methodologies to ascertain relationships and influences within a social network. It provides insight into the complex relationships between individuals and groups by emphasizing network ties.

Annexure B

Regression Analysis

Table 1: Result of regression model on social network of men and women.

-> camp_host = Camp

Source	SS	df	MS	Number of obs	=	1,714
Model	7834.97445	5	1566.99489	F(5, 1708)	=	246.80
Residual	10844.7362	1,708	6.34937715	Prob > F	=	0.0000
				R-squared	=	0.4194
				Adj R-squared	=	0.4177
Total	18679.7106	1,713	10.9046764	Root MSE	=	2.5198

c_basic_in~t	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
resp_age	.0156933	.0053237	2.95	0.003	.0052516	.0261349
alivecount	-.1129062	.0553603	-2.04	0.042	-.2214873	-.0043251
totalmem_c	.25049	.0073194	34.22	0.000	.236134	.264846
resp_sex	-.200939	.1264648	-1.59	0.112	-.4489812	.0471031
old	-.3330134	.1673641	-1.99	0.047	-.6612736	-.0047533
_cons	-.7215587	.3018962	-2.39	0.017	-1.313684	-.1294334

Table 2: Result of regression model on social network of Rohingya and host communities.

Source	SS	df	MS	Number of obs	=	2,475
Model	1232.48992	6	205.414987	F(6, 2468)	=	19.89
Residual	25489.6733	2,468	10.3280686	Prob > F	=	0.0000
				R-squared	=	0.0461
				Adj R-squared	=	0.0438
Total	26722.1632	2,474	10.8011977	Root MSE	=	3.2137

c_basic_inf~t	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
camp_host	-1.281154	.1436794	-8.92	0.000	-1.562899	-.9994094
respedu_2	.8754891	.1768064	4.95	0.000	.5287848	1.222193
respedu_m	.566824	.1670471	3.39	0.001	.2392571	.8943909
family_member	.0243031	.0297345	0.82	0.414	-.034004	.0826102
parents_count	.3008237	.1157957	2.60	0.009	.0737569	.5278906
siblings	.0351436	.0227944	1.54	0.123	-.0095545	.0798418
_cons	4.069758	.5312884	7.66	0.000	3.027941	5.111575