BANGLADESH POLICY BRIEF

Gaming for cohesion

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Executive summary

Eight years into the Rohingya refugee crisis, social tensions between host communities and refugees in Bangladesh remain high, with previous studies documenting significant hostility and negative economic impacts on hosts. This study explores an innovative approach to improving social cohesion between Bangladeshi hosts and Rohingya refugees through virtual interaction via an online mobile game. Conducted as a randomized controlled trial with 2,500 participants, the game paired Bangladeshi players with computer bots labelled as either Rohingya or Bangladeshi teammates. After one month of gameplay, participants who interacted with Rohingya-labelled bots showed a 12–18% improvement in attitudes, a 15% reduction in hostility, and were 10% more willing to engage in face-to-face interaction with refugees. The findings also indicate that sustained virtual contact is more effective than brief exposure and that high-performing bots may influence belief updating, slightly offsetting the positive impact. These results highlight the potential of online games as a scalable, low-cost policy tool to enhance social cohesion, particularly if designed to be engaging and integrated with broader community programmes.

Background

In 2017, the violence and persecution in Myanmar triggered a surge in the number of Rohingya refugees fleeing and seeking refuge in Cox's Bazar, Bangladesh. The Rohingya refugee displacement, now in its 8th year, is a protracted situation. Due to the deteriorating security conditions in Myanmar, the progress of repatriation has been limited. The refugees are aid-dependent, as they are not allowed to leave the camps, have formal employment or businesses, and access financial services.

Higuchi et al. (2025) investigated the impact of the refugee influx on the host community. The study found significant negative impact on local wages and income as well as on the environment due to deforestation. Their experimental study found alarmingly high levels of hostility toward refugees, as more than half of the surveyed households would pay from their own pocket to reduce the international support for the refugees. To address the alarming findings, this paper tests an innovative approach using virtual interaction between local Bangladeshis and Rohingya refugees to improve social cohesion.

Methodology

A randomized control trial (RCT) was conducted targeting 2,500 participants from across Bangladesh. Drawing on Allport (1954)'s intergroup contact theory, an original online mobile game application was developed in which players virtually interacted with Rohingya refugees. Due to limitations on refugee mobile phone usage due to restrictions on SIM cards, the refugee characters in the game were computer bots.[1] Prior to the game experiment, participants were informed that they would interact with other players during the game, some of whom might be computer bots, but they would not know which ones. In reality, most participants believed that all the other players they interacted with were human.

Figure 1: Screenshot from the virtual game-based interaction with Rohingya refugee participants (bots) and Bangladeshis

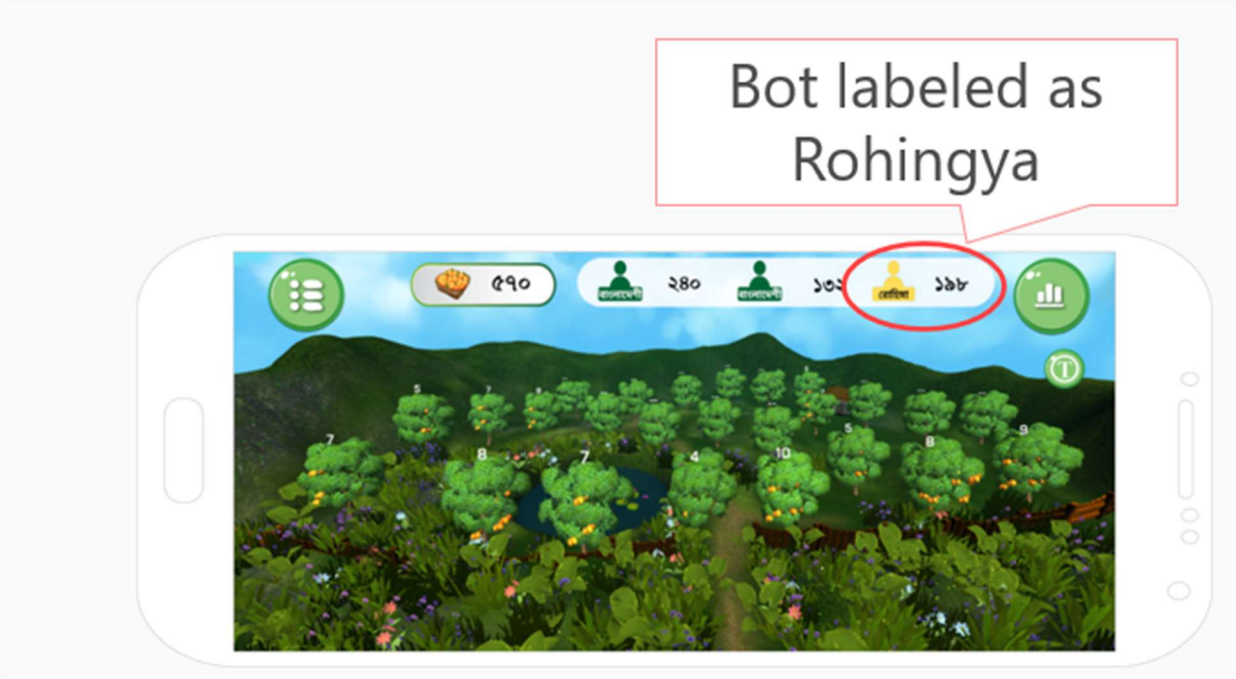
In the game, Bangladeshi participants played in teams of three to harvest fruits, with monetary rewards based on team performance (i.e., the total amount harvested by the team). The game did not include any chat function, and participants were unable to communicate with one another. However, they were informed of the composition of their team, specifically, whether each teammate was Bangladeshi or Rohingya. Both the total team harvest and individual contributions were displayed on the screen and visible to all team members during the game. As detailed below, the 2,500 participants were randomly assigned to one of four treatment groups or a control group prior to the start of the game. Each group consisted of 500 participants, and since one member of each team was a computer bot, 250 teams were formed within each group. The game was conducted for 36 days (six rounds of six days) from November 2024 to January 2025.

In the control group, two Bangladeshi players and one computer bot, labelled as Bangladeshi, played on the same team. The bot's performance was dynamically adjusted in real time to align with the average performance of Bangladeshi players in this group.

[1] Computer programme designed to perform automated tasks, typically without human intervention.

In the main treatment group, two Bangladeshi players and one computer bot labelled as Rohingya played on the same team. In short, the treatment group included a computer bot labelled as Rohingya, while the control group included one labelled as Bangladeshi.

Figure 2: Screenshot showing a computer bot assigned as a Rohingya refugee participant



In addition, the study also created three other treatment arms: (i) a group where the Rohingya bot's performance was enhanced to 150%, and (ii) a group where the Rohingya bot's performance was reduced to 50%. These two groups were designed to examine how variations in the attributes of Rohingya refugees, such as performance level, influence the effects of virtual interaction. Finally, (iii) a group where the interaction with the Rohingya bot is reduced to 40% of the main treatment group. This treatment aimed to assess whether sustained virtual contact is necessary for effectiveness, or if even brief exposure can yield meaningful effects.

The baseline survey was conducted at the time of registration for the game, and completion of the survey was a prerequisite to participation in the game. The follow-up survey was conducted shortly after the final game round concluded, and its completion was required to receive the earned reward. The response rate was 78%. In both the baseline and follow-up surveys, the incentivized experiment, same as Higuchi et al. (2025), was conducted to measure the level of hostility.

Findings

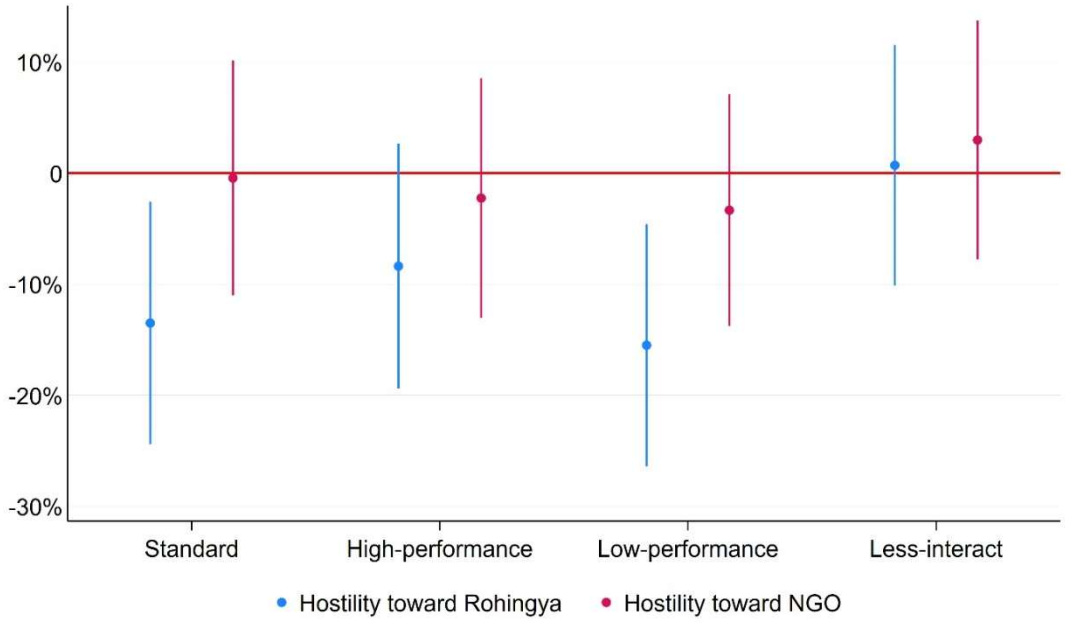
A month-long virtual interaction with players assumed to be Rohingya refugees led to significant improvements in perceptions and willingness to engage with the refugees. Compared to the control group, participants who engaged in the game-based interaction showed a 15% reduction in hostile attitudes toward Rohingya, suggesting lower social tension between the host and refugee populations. Their overall attitudes toward social cohesion with Rohingya also improved by 12–18%, as measured through self-reported survey items. Notably, even though the activity took place entirely online,

participants in the treatment group were 10% more likely to express willingness to meet and interact with Rohingya in person. These findings suggest that virtual engagement can be a powerful tool for fostering empathy and promoting greater inclusion of refugees within host communities.

The survey also examined how the impact of virtual interaction varied based on the performance level of the Rohingya bot and the duration of engagement. When Bangladeshi participants interacted with a lower-performing Rohingya bot, the effects mirrored the primary findings, reduced hostility toward the Rohingya, and improved attitudes toward social cohesion. However, interactions with a high-performing Rohingya bot did not yield statistically significant improvements. Notably, this does not imply a negative response; the directional effects remained positive but appeared weaker. One possible explanation is that engagement with more capable refugees may have elicited feelings of competition or envy, thereby diminishing the overall effect.

Finally, when the duration of the game-based interaction was reduced by 40%, the intervention no longer produced significant improvements in attitudes. These finding highlights that having sufficient time and engagement are essential for virtual interactions to improve social cohesion meaningfully. These results are consistent with existing research, which shows that sustained engagement is more effective than brief exposure in reducing prejudice and building social ties (Steinmayr, 2021).

Figure 3: Reduced hostility towards Rohingya and NGOs



Since the game involved reducing donations to an NGO supporting Rohingya causes, the researchers also tracked donation reductions to an NGO unrelated to Rohingya issues as a placebo comparison. This figure illustrates that the game did not affect attitudes toward NGOs (as shown by the red bar), but did alter attitudes toward the Rohingya population (as indicated by the blue bar).

Discussion and recommendations

This study finds significant positive impacts of virtual interaction in improving social cohesion between Bangladeshi nationals and Rohingya refugees. It suggests that online games can serve as a useful policy instrument to enhance social cohesion between the two groups.

While the game in this study was developed for research purposes – to allow for manipulation of bot performance - existing games could also be utilized for real-world policy implementation. Furthermore, the game used in the study was simple, where players picked up fruits for monetary rewards; using more engaging games could attract broader participation. Games could even be introduced in schools.

The use of online games offers a relatively low-cost tool to help strengthen social ties between Bangladeshi host communities and Rohingya refugees. To maximize their effectiveness, the following approaches are recommended:

- Promote fun and engaging online games that facilitate interaction between host communities and Rohingya refugees to build mutual understanding and improve social cohesion.
- While virtual interaction reduced hostility, integrating face-to-face activities, such as community service, joint cultural events, or youth exchanges, can deepen empathy and reduce misconceptions. For example, humanitarian actors could organize cooperative tasks in learning centers or community centers in or near camps.
- Pilot programmes where host and refugee youth engage in collaborative learning can replicate the game's cooperative model and promote positive early-age perceptions. This could be scaled through Learning Centers in camps and adjacent host community schools.
- Such interactive gaming approaches can be extended beyond host communities to broader local populations and have the potential for global application across other refugee contexts. Collaborating with the private gaming sector can enhance both the engagement and effectiveness of these interventions.

References

Allport, G., 1954. The Nature of Prejudice. Addison-Wesley, Oxford, England.

Higuchi, Y., Higashida, K., Hossain, M.M., Sujauddin, M., Takahashi, R., and Tanaka, K. 2025. From Hospitality to Hostility: Impact of the Rohingya Refugee Influx on the Sentiments of Host Communities, *Economic Development and Cultural Change*, 73(3).

Steinmayr, A., 2021. Contact versus exposure: Refugee presence and voting for the far right. Review of Economics and Statistics 103 (2), 310-327.

Takahashi, R., Higashida, K., Higuchi, Y., and Hossain, M.M. 2025. Gaming for Cohesion: A Study on Integrating Refugees Through Virtual Intergroup Contact, *SSRN Working Paper*. Available at https://paper://papers.ssrn.com/sol3/papers.cfm?abstract_id=5112411