



Focusing on the Unfocused: Corresponding Perspectives on Connectivity among Small-scale Non-profit Organizations Working for Street Children in Bangladesh and Their Donors

RUDAIBA ADNIN, ISHITA HAQUE, SADIA AFROZ, and ALVI MD. ISHMAM, Bangladesh

University of Engineering and Technology, Bangladesh

SAKIL SARKAR, MD. KAFI KHAN, and AFSANA MIMI, East West University, Bangladesh

SRIRAM CHELLAPPAN, University of South Florida, USA

A. B. M. ALIM AL ISLAM, Bangladesh University of Engineering and Technology, Bangladesh

Non-profit organizations (NPOs) serve marginalized communities, such as street children. Their success highly depends on donation raising and their connections with donors, where online platforms (e.g., social media, individual websites, messaging applications, etc.) play a significant role. However, small-scale NPOs face several challenges due to their resource constraints while connecting with their donors and potential donors using existing online platforms. Therefore, we performed a mixed-method study to investigate the connectivity settings among such NPOs, donors, and potential donors. Consequently, we performed semi-structured interviews with seven NPOs working for street children and 21 current donors and conducted an online survey of 42 potential donors in a developing country (Bangladesh). The findings of our study reveal influential factors pertinent to the non-profit work contexts and gaps in connectivity among the stakeholders (small-scale NPOs, donors, and potential donors). We discover that, although having an online presence positively impacts the credibility of small-scale NPOs to the donors by introducing familiarity, possessing such an online presence is challenging for the resource-constrained small-scale NPOs. We further provide several design implications for improving the connectivity settings, especially in terms of online connectivity, among the stakeholders by focusing on their essential roles and reduction of their encountered challenges.

CCS Concepts: • **Human-centered computing** → **Empirical studies in HCI**;

Additional Key Words and Phrases: Non-profit organizations, donors, connectivity, online platform, user study, interview, online survey

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Authors' addresses: R. Adnin, I. Haque, S. Afroz, A. Md. Ishmam, and A. B. M. Alim Al Islam, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh; emails: 1505032.ra@ugrad.cse.buet.ac.bd, 1017052031@grad.cse.buet.ac.bd, {1505030.sa, 1305092.am}@ugrad.cse.buet.ac.bd, alim_razi@cse.buet.ac.bd; S. Sarkar, Md. K. Khan, and A. Mimi, East West University, Dhaka, Bangladesh; emails: {sadbinsakil75, kafikewu, afsana.mimi0304}@gmail.com; S. Chellappan, University of South Florida, Tampa, FL; email: sriramc@usf.edu.

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1 INTRODUCTION

Non-profit organizations (NPOs) work for a multitude of marginalized communities. To serve such communities, NPOs have to perform several types of non-profit work, such as advertising their ventures, communicating their missions with the public, collecting donations, and recruiting volunteers [1–4]. However, while connecting with the public for those non-profit work contexts, NPOs face certain barriers, such as dealing with different stakeholders and limited resources [1, 4–6]. As digital technologies evolve and appear, another challenge is to efficiently manage those technologies while connecting with their stakeholders. For small-scale organizations, all these become even more challenging because of their resource constraints [7]. In addition, one of the most prominent differences between NPOs and other organizations is that NPOs obtain a major part of their operational budgets through donations [8, 9]. As a result, online donation collection is increasingly becoming important for NPOs [7, 10], which makes donors and potential donors of such organizations significant stakeholders in non-profit work contexts [8]. Additionally, the communication impact has been revealed as essential for ensuring donor loyalty [8, 11]. Nevertheless, often the possibilities to contact donors are not fully utilized [7, 12, 13], which raises the question for many NPOs on how they can better motivate donations online. In this regard, there exist many well-researched determinants of donation behavior [8, 12, 14]. For instance, trust in an organization is a decisive factor in the willingness to donate [8, 15], as the trustworthiness of information is important for the public [15]. Consequently, we investigate the perspective on connectivity settings among small-scale NPOs, their donors, and potential donors with a particular emphasis on the trust of donors in such NPOs.

In addition, small-scale NPOs face unique connectivity challenges in public engagement distinct from those of large organizations [7]. However, most of the prior studies [3, 4, 12, 16–18] explored the non-profit work contexts of large organizations. Consequently, there is a significant lack of available studies [7, 19] focusing specifically on small-scale NPOs. Besides, among the marginalized communities, street children represent a significant vulnerable part of our society, especially in Bangladesh, having no parental, financial, or administrative support [20–22], and the number of such street children in Bangladesh is nearly 1.56 million [23]. As a result, several small-scale NPOs work regularly for improving the lives of street children. Investigating such non-profit work contexts is essential for the design and implementation of appropriate technological solutions for small-scale NPOs so that those NPOs can efficiently provide support to street children. However, there exists hardly any research [19] that has particularly investigated such non-profit work contexts. Therefore, in this study, we specifically focus on the small-scale NPOs working for street children and their encountered challenges.

Furthermore, NPOs depend on donations for their non-profit work [7] and donors assist them in this regard by providing their valuable donations [8, 24, 25]. As a result, NPOs are required to connect with their donors [7], and donors also feel willing to donate to such NPOs so that NPOs can properly support vulnerable communities by utilizing their donation [8, 9, 24, 26, 27]. In this regard, the need to increase connection and familiarity with the donors is an issue that all small-scale NPOs face since they are constrained by limited financial resources, technical expertise,

and human resources, which motivates such NPOs to connect with their donors online to collect donations [7]. However, the perspectives of donors toward small-scale non-profit work contexts are hardly explored in the literature. Therefore, in this article, we not only focus on small-scale NPOs working for street children but also take a holistic approach to investigate the connectivity settings, especially in terms of the online connectivity among such NPOs, donors, and potential donors. Consequently, in our study, we capture the experiences and perspectives of donors and potential donors of such organizations, which is a novel contribution to the best of our knowledge. In particular, our focused stakeholders in this study include the small-scale NPOs working for street children who claim themselves as small-scale (mostly because of their conserved operational scale), donors who donate to such organizations (at least once), and general people¹ who are future potential donors or volunteers of such organizations.

Accordingly, in our study, we explore the following research questions:

- **RQ1:** *How do the small-scale NPOs, donors, and general people perceive non-profit work for street children in Bangladesh? What factors influence them to perform such non-profit work?*

Our first research question explores the motivations, goals, and influential factors for performing non-profit tasks by the NPOs. We also capture why donors donate to such NPOs. Additionally, we investigate why our focused stakeholders connect with each other.

- **RQ2:** *How do the stakeholders connect through existing online platforms? What are their challenges while connecting with each other, and what are the workarounds the stakeholders have to follow to address those challenges?*

Our second research question investigates how our focused stakeholders connect with each other and how existing online platforms contribute in this regard. Alongside this, we capture the encountered challenges by our stakeholders and their practiced workarounds to reduce those challenges while connecting with each other.

- **RQ3:** *To overcome the challenges faced by the stakeholders, what are the suggested solutions from their perspectives, and how can they be converged?*

Through our third research question, we capture the expectations of our focused stakeholders for technological interventions to reduce their challenges and connectivity barriers. Consequently, we discuss considerations and potential opportunities for technological solutions to support effective connectivity among our focused stakeholders.

To conduct a comprehensive investigation of the connectivity settings of our focused stakeholders, we performed semi-structured interviews with officials of small-scale NPOs and the donors of such NPOs and an online survey of general people in this article. Consequently, we make the following contributions through our study:

- Through a series of interviews, we study the existing practices of the small-scale NPOs working for street children. Eventually, we uncover the challenges they encounter with existing online platforms to ensure connectivity with their donors and the workarounds they adopt to reduce those challenges. As a result, our study helps the HCI community to better understand research problems in the realm of small-scale non-profit work contexts.
- Furthermore, we not only capture the perspectives of small-scale NPOs [7] but also explore the experiences of the donors and potential donors of such organizations through our interviews of donors and a survey of general people. We identify the influential factors pertinent to donation and how donors select such an NPO for donating. We further discover the

¹In our article, we use the term “general people” as people of different genders and ages living in the society. The people can be potential donors, who are not currently involved with the NPO. Besides, the general people are neither street children nor NPO personnel, and they are laypeople in our society.



Fig. 1. Street children in Bangladesh. From left to right shows (a) a child in his daily life in the streets, (b) street children, and (c) volunteers of non-profit organizations conducting their campaigns with street children.

bottlenecks the donors and general people experience in connecting with such NPOs using the existing online platforms. We also investigate the trust and credibility of such NPOs to their donors and general people. Thus, our findings inform the HCI community about the research scope for the development of technological solutions for promoting donor engagement and connectivity with small-scale NPOs.

- Based on feedback from all the focused stakeholders (small-scale NPOs, donors, and general people), we identify several gaps in ensuring effective connectivity between the stakeholders through the existing online platforms. We further propose several design insights for supporting convenience and effective connectivity among our focused stakeholders. These will inform the HCI community about the opportunities for the design and implementation of socio-culturally appropriate technologies for small-scale NPOs so that such NPOs can efficiently provide support to vulnerable communities.

2 BACKGROUND

Here, we present a detailed description of street children in Bangladesh and related NPOs. We further describe street children around the world.

2.1 Street Children and Related NPOs in Bangladesh

Researchers [20] have defined street children in Bangladesh from different perspectives including origin, residence, source of income, and survival strategies. From the perspective of residence, street children have been defined as children found sleeping on the streets, railway terminals and platforms, bus stations, parks, open spaces, religious centers, construction sites, and other public places. Particularly, they lack a permanent place to live and are deprived of the basic needs of life. Considering the source of income as the perspective, street children are defined as children attached to the occupations, such as rubbish pickers, shoeshine men or flower sellers, sweatshop workers, and beggars [20]. In addition, extreme poverty, hunger, familial frustration, a sense of disparity, physical and mental abuse, and negligence are influential factors that push children of poor families to the street [21]. They lead an extremely low-cost lifestyle and are frequently exploited by their superiors at work [22]. Due to extreme poverty, they are unable to access proper medical facilities and educational opportunities [20]. As a result, street children in Bangladesh² (Figure 1) are one of the marginalized communities that are in need of financial and administrative support. In

²We have consulted with multiple experts working with children and have read reports wherein we learned that posting pictures of children taken in public places without intent to profit is ethical and an acceptable practice [28, 29].

addition, according to the **Bangladesh Institute of Development Studies (BIDS)**, the number of street children in Bangladesh will reach 1.56 million in 2024 [23]. Accordingly, as street children are one of the most vulnerable communities in Bangladesh and consist of an overwhelming population living in inhumane living conditions, a significant percentage of the NPOs in Bangladesh work for them. For example, the JAAGO Foundation [30] is an NPO that works toward the betterment of people living below the poverty line. Apart from six orphanages and 11 schools, the Bidyanondo Foundation [31] is conducting various social initiatives including food for One Taka, a residential hotel for girls, and providing medical assistance to the refugees. **Families for Children (FFC)** [32] is another NPO working in India and Bangladesh that exists to fulfill the needs of children and young adults with physical or mental disabilities by providing housing, education, special medical care, and vocational training. Save the Children [33] has been working with children and families in Bangladesh and they have worked on promoting children's basic rights, such as good health and education. Aside from the government and global and large-scale NPOs, there are several small-scale NPOs, such as Alokito Shishu, Hashimukh, Asha, Voice of Generation, Ngorful, Souhardo, Maitreyi, Prochesta Poribar, Shobbayachi, and Spread Happiness, working regularly for improving the lives of street children in Bangladesh (Figure 1). In this light, investigating the context of such small-scale NPOs that work for street children will assist in understanding the existing challenges of those NPOs and facilitate the design and implementation of appropriate technological intervention, so that small-scale NPOs can work efficiently for the betterment of the living conditions of street children. However, there has been hardly any research [19] that explores such non-profit work contexts. This creates scope for investigating open questions, such as how the small-scale NPOs perceive non-profit work for street children in Bangladesh, how they connect with their donors, and what are their existing challenges. Motivated by this, our study investigated the non-profit work contexts of small-scale NPOs working for street children in Bangladesh and their donors.

2.2 Street Children around the World

According to UN sources [34], there are up to 150 million street children in the world who, for one reason or another, spend most of their lives on the streets. In this context, street children have been classified into two groups [35]. One is "*children of the street*," which refers to children who are homeless. Streets in urban areas are their source of livelihood, where they sleep and live. Another is "*children on the street*," which refers to children who work and live on the streets in the daytime but return home at night where they sleep, although some of them sleep occasionally on the streets [35]. Furthermore, according to UNICEF's report [36], about 28 million children are homeless globally due to violent conflict. However, the definition of the term "*street children*" varies from culture to culture and country to country [37]. For example, in the United States and Brazil [37], street children are generally identified as those who manage their territory with heavy-duty weapons and whose income sources are typically illegal. In contrast, in South Asian countries, such as India [37], street children are identified as a group who live a carefree lifestyle and are not considered to be dangerous or intimidating by others. In the context of Indonesia [38], street children are those who lack education and a decent life and are frequently engaged in unlawful acts, such as drugs and drinking. Another comparable community is people who are homeless [39, 40], which is quite familiar in countries such as Scotland, Taiwan, and the United Kingdom. These people do not have a permanent address due to high house rent or the notion of personal choice to illustrate their agency and sense of self [39]. Thus, the definition of the term "*street children*" is distinguishable around the world from the street children in Bangladesh [20] (Figure 1), who are forced to live and survive on the streets and are one of the most vulnerable communities.

Accordingly, in this article, our scope of research is small-scale NPOs that work to support street children in Bangladesh and donors and potential donors of such NPOs.

3 RELATED WORK

In this section, we present existing literature on the technology usage by NPOs and donors in non-profit work contexts.

3.1 Technology Usage by NPOs for Non-profit Work

NPOs have adopted technology, such as e-mail, databases, websites, and social media, to facilitate their non-profit work, such as volunteer management, information management, public relations, and donation collection [1–5, 16, 18]. As a result, technology plays a significant role in non-profit work contexts. In this regard, a study [16] identified six roles that computational technology plays in support of non-profit work contexts, which include information about NPOs, helping potential donors discover NPOs, enabling donations, enabling directed giving, enabling individual and community advocacy, and helping NPOs learn about technology. Human-centered algorithmic approaches have also been explored in another study [17] to automate organizational functionalities of NPOs with limited resources. The result of this study [17] demonstrated the need to account for varying fairness notions held by NPOs and related stakeholders in order to build fair and motivating algorithmic services. Moreover, social computing technologies are used by NPOs for connecting with the public; however, such technologies often fail to adequately support public engagement [3]. Researchers [6, 41] further discovered that NPOs use technology to perform intelligent campaigning and afford better donor interactions; however, they found evidence that some NPOs struggled to balance organizational practices and the adoption of technologies. In this light, NPOs with limited resources use data to develop narratives to build a case for support from grantors and other stakeholders [2]; however, data consumption is laborious for such NPOs [2, 42]. In addition, the strategies and capacities of NPOs play significant roles in social media adoption and utilization outcomes for connecting with the public [18, 43]. Although NPOs are utilizing social networking sites such as Facebook and Twitter as a tool to achieve their organization-level goals [12], they are not using them to their fullest potential [12, 13, 44, 45]. Here, the findings of a study [10] reported that Facebook seems to be a better option for displaying information and archiving events, while Twitter is for immediate interactions. Another study [46] explored how social media can be used for knowledge management practices of NPOs and discovered the value of storytelling on social media for sharing the goal of the organization and for monitoring the NPOs' reach to the public. The effects of such social media presence of NPOs and the changing patterns in interactions among NPOs and their audiences have been explored as well [47]. Despite social media sites providing useful affordances for public engagement, such as low-cost platforms, rapid information-sharing channels, and rich interactive features for small-scale NPOs [7], many of those NPOs are still reluctant to make social media a significant part of their communication plans due to lack of time, lack of knowledge, and the absence of formal policies for social media within the organization [7, 45, 46, 48]. Consequently, all these create scope for exploring open questions, such as how current online platforms assist small-scale NPOs working for the street children to connect with their donors and potential donors, which we investigate in our study.

3.2 Donors and Non-profit Work

Researchers [24, 25] have explored motivating factors of donation to NPOs and how NPOs can further increase donations. For example, a study [24] explored the influential factors such as purpose, presence, proximity, and partnership on willingness to donate toward NPOs. Another study [9] in the United States revealed the important factors for donor retention, which include

relationship building, communication impact, trust, and commitment. The findings of this study [9] demonstrated decreasing retention rates with failure to submit an impact letter to the donor. In addition, technological interventions have been reported to be useful for donation collection [49–52]. In this context, a study [51] explored opportunities for digital donations to mosques in Pakistan and proposed a mobile app for the financial secretaries of mosques. Another study [52] conducted with mosques in Bangladesh showed that simple SMS reminders have the ability to raise mosque donations. Moreover, trust in an organization has been identified as an influencing factor for donation decisions [8, 15]. In this regard, researchers [8] demonstrated the relevance of willingness to donate to NPOs with content design, aesthetics, and the usability of their websites as well as perceived trust from their websites. They further suggested paying more attention to the content design of websites and the promotion of trust. Moreover, both individual contexts, such as sociodemographic characteristics, and organizational contexts, such as accreditation and mission, work as determinants of the public's trust in the case of the non-profit work [53]. In this regard, a framework [54] was proposed for measuring the accountability of NPOs where trust and credibility were considered as reputational capital for NPOs. However, how familiarity and reputation of small-scale NPOs can impact the trust and credibility of their donors and potential donors is not investigated in these studies [53, 54], which we explore in our study.

Although the significance of non-profit work as a research entity has been established in existing literature [3, 12, 16, 17, 55, 56], much of this existing research explored non-profit work from an organizational point of view and did not focus on the perspective of donors of such NPOs. Therefore, in our study, we explore the perspectives of both NPOs and donors in non-profit work contexts to understand the connectivity situation of NPOs and donors. In addition, researchers [2, 7] discovered that small-scale NPOs face significantly unique challenges in operation and sustainability aspects compared to bigger NPOs, owing to their scale, connections, and resource constraints. In this regard, a study [7] conducted with small-scale NPOs in the United States attempted to explore their social media interactions. However, the findings of this study are relevant to the context of developed countries and cannot be fully related to the small-scale NPOs in a developing country due to the differences in the social and economic contexts, structure, and goals of such NPOs. Moreover, this study [7] did not consider the perspective of donors of such NPOs, which generates scope for investigating open questions such as how the donors and potential donors perceive small-scale NPOs for street children in Bangladesh and how they connect with those NPOs. Therefore, our study sets out to explore in-depth perspectives and connectivity experiences specific to small-scale NPOs and their donors in the context of a developing country.

4 METHODOLOGY

To understand the connectivity settings among our focused stakeholders, we performed a mixed-method study by conducting semi-structured interviews and an online survey. First, we performed semi-structured interviews with seven small-scale NPOs working for street children. Second, to discover how donors connect with such NPOs, we performed semi-structured interviews with 21 donors. Later, we conducted an online survey of 42 general people who might be potential donors of such NPOs.

The study and data collection were approved by the Ethics Committee of the institution of the corresponding author, which is named *Ethics Committee, Bangladesh University of Engineering and Technology (BUET)*. Before recruitment, the participants were notified about the purpose of our study, the types of questions they would be asked, the data collection process, and the affiliations of the researchers. Additionally, before the interviews, we sought verbal consent from each participant for audio recording. We also ensured the anonymity of the participants throughout the article.

Table 1. Demographics of the Interviewed Organizations (n = 7)

Organization Name	Main Location (District)	Member Count	Members' Age Range (Years)	Gender Ratio (Male:Female)	Interviewee's Role	Online Platform Usage
O1	Dhaka	50	21–35	1:1	Treasurer	Facebook, Individual Website, Messenger, WhatsApp, Telegram, Zoom
O2	Chittagong	35	21–25	2:1	Founder	Facebook, LinkedIn, Messenger, WhatsApp, Telegram
O3	Dhaka	120	21–30	3:2	Co-founder	Facebook, Messenger, WhatsApp
O4	Dhaka	1300	20–25	3:2	Founder	Facebook, LinkedIn, Individual Website, Messenger, WhatsApp, Zoom
O5	Nilphamari	20	17–20	1:0	Executive	Facebook, Messenger, WhatsApp
O6	Jhalokati	160	16–20	1:1	Co-founder	Facebook, LinkedIn, Messenger, WhatsApp
O7	Gaibandha	47	20–24	7:3	Admin	Facebook, Instagram, Messenger, WhatsApp, Telegram

4.1 Interviews of Non-profit Organizations

We conducted semi-structured interviews with the organizers from seven small-scale NPOs. Here, we performed two interviews via face-to-face discussions, four interviews via online conferencing service (Zoom), and one interview via mobile phone. We contacted several NPOs for an interview after collecting the contact numbers of the organizers from their public profile pages or public websites. Eventually, we selected seven organizations that identified themselves as small-scale NPOs working for street children, mostly because of their conserved operational scale. The interviewees were the founders, were the admins, or held senior administrative positions in their respective organizations. Each interview lasted around 60 minutes to 75 minutes. In our article, an organization is represented by one interviewee from that organization. Participant organizations are presented throughout the article with codes (O#) to ensure their anonymity. Table 1 lists the demographics of the participants from the small-scale NPOs. Accordingly, some of the questions we asked during the interviews of organizations to know about their non-profit work experience and practices were: *Do you face challenges while managing your organization? If yes, what challenges do you face while managing this organization? How do you ensure the credibility of your organization? Do you use any online platform(s) for your organization? If yes, why do you use the online platform(s) for your organization? Did you face any challenges while using that online platform(s) for your organization? If yes, what types of challenges did you face? What are the strategies that you follow to tackle those challenges? Do you have any proposal about the solution of your problems that can be solved with technology?*

4.2 Interviews of Donors

We recruited our participants for donors by posting in public social media groups and e-mailing to the public e-mail addresses of people who are accessible to the authors (convenience sampling [57]) and faculty members and students of different universities in Bangladesh (list-based sampling [57]). We collected the e-mail addresses of faculty members and students of different universities in Bangladesh from their institutional web pages, and therefore, this stands for list-based sampling [57]. Our target participants for donors were the people who donated at least once in small-scale NPOs working for street children in Bangladesh. Consequently, we specified the requirement for donors in the public post and e-mails, which is donating at least once to small-scale NPOs working

Table 2. Demographics of Interviewed Donors (n = 21)

Participant Name	Occupation	Gender	Age
P1	Lecturer	Female	28
P2	Software Developer	Female	27
P3	Software Engineer	Male	26
P4	Research Assistant	Female	26
P5	Student	Male	18
P6	Student	Female	27
P7	Dentist	Male	28
P8	Research Assistant	Female	26
P9	Student	Male	24
P10	Instructor	Male	23
P11	Engineer	Male	27
P12	Student	Male	22
P13	Engineer	Male	24
P14	Student	Male	23
P15	Student	Female	23
P16	Businesswoman	Female	45
P17	Student	Female	24
P18	Student	Male	24
P19	Student	Female	23
P20	Lecturer	Male	25
P21	Student	Female	23

for the street children. We eventually recruited 21 interviewees who were aged between 18 years and 45 years. They participated in 20- to 40-minute-long semi-structured interviews via online conferencing service (Zoom) and mobile phones. Out of 21 participants, 11 participants reported being male and 10 participants reported being female. Table 2 lists the demographics of the donor interviewees. Participant donors are presented throughout the article with codes (P#) to protect their identities. The interviews of donors comprised 37 questions. Some of those questions to dive deep into the donor's attitude toward small-scale non-profit work were: *What inspires you to donate to small-scale NPOs working for the street children? What factors do you look for in an NPO while donating to such organizations? Do you have any trust issues with such organizations? Did you face any challenges while using that online platform(s) to connect with such organizations? Do you have any proposal about the solution of your challenges that can be solved with technology?*

4.3 Online Survey of General People

We surveyed 42 general people aged between 18 years and 50 years. We recruited our participants for general people by posting in public social media groups and e-mailing to the public e-mail addresses of people who are accessible to the authors (convenience sampling [57]) and faculty members and students of different universities in Bangladesh (list-based sampling [57]). We collected the e-mail addresses of faculty members and students of different universities in Bangladesh from their institutional web pages, and therefore, this stands for list-based sampling [57]. Among our 42 participants, 18 reported as males and 24 reported as females. The questionnaire of the survey was distributed using a Google form, which is primarily common among the survey participants. Survey questions included both open-ended and closed-ended questions. There were 31 questions in the questionnaire. Some of the questions were: *Are you familiar with any non-profit*

Table 3. List of Themes and Descriptions Associated with the Interviews of the Organizations (n = 7) and Donors (n = 21)

Theme	Description
Purpose and influential factors pertinent to non-profit work	How the stakeholders (non-profit organizations, donors, and general people) perceive the non-profit work, and the purpose and motivation to connect with each other to perform their roles in non-profit work contexts
Connectivity among all stakeholders	How the stakeholders connect with each other for conducting non-profit work
Challenges faced by the stakeholders and workarounds	The challenges the stakeholders face while performing their roles while connecting with each other using existing online platforms, and the workarounds they have to adopt to reduce those challenges
Expectations from online platforms by the stakeholders	The expectations of the stakeholders with online platforms to reduce their encountered challenges
Special needs of the stakeholders	Special requirements of the stakeholders to reduce their challenges and connectivity barriers

organizations that work for street children? Are you willing to help any small-scale NPOs working for the street children? Do you have any trust issues with such organizations? Rate your trust over those NPOs that do not have any online presence (page/organization website/organization app, etc.)? Rate your trust over those NPOs that have an online presence (page/organization website/organization app, etc.)? Do you feel that a generic online platform is needed for such organizations? Do you feel it will be easier for you to trust the small-scale NPOs working for the street children if a generic online platform exists for them? Do you feel a generic online platform for such organizations will inspire you more to help such organizations?

4.4 Interview and Survey Analysis

All the interviews were conducted in the local language, i.e., Bengali, and audio recorded with the prior permission of the participants. The audio data were then transcribed and translated into English by two members of our research team prior to our analysis. Focusing on the experiences of the NPOs and donors, we used a qualitative approach by performing thematic analysis [58]. The transcripts were coded according to the relationship between the stakeholders (NPOs and donors). We maintained an open and flexible coding approach with continued analysis guiding subsequent interviews [58, 59]. Furthermore, we employed inductive coding [60] followed by discussion and clarification of codes. Emerging categories were continually assessed and clarified alongside new data. Our initial interview questions were focused on the perception of non-profit work, with follow-ups about the experiences, practices, and challenges of organizations and donors. Eventually, relevant themes (Table 3) emerged across different experiences. For example, we coded instances of challenges across different contexts, such as connectivity problems, credibility issues, and technological and resource constraints, enabling the need for technological solutions to emerge. In addition, to analyze the survey data, we performed statistical analysis in Python using NumPy [61], Pandas [62], and Plotly [63] libraries.

5 RESEARCH FINDINGS

Here, we present how non-profit work is practiced and experienced and how existing online platforms are being used for non-profit work responsibilities by our focused stakeholders. To do this,

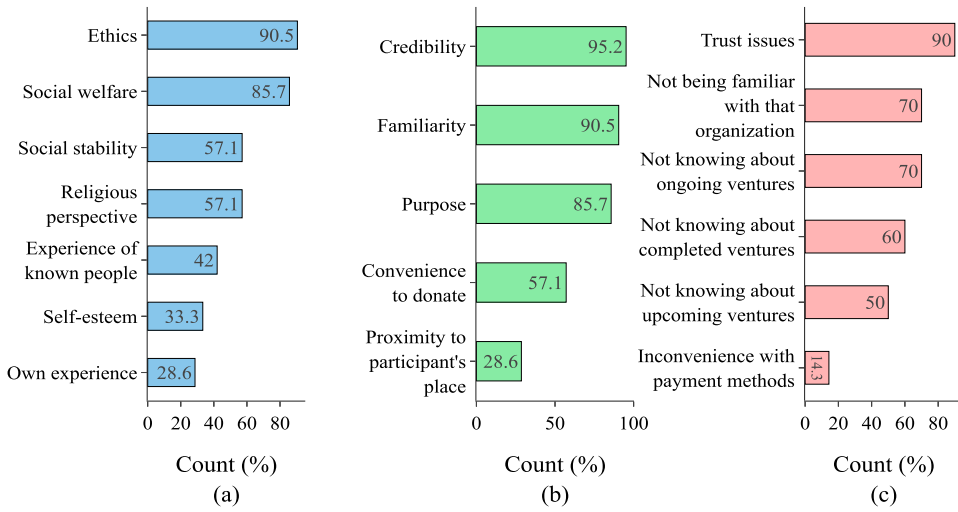


Fig. 2. (a) Influential factors that inspire donors ($n = 21$) to donate, (b) factors donors ($n = 21$) look for in a small-scale NPO before connecting and donating, and (c) problems donors ($n = 21$) encounter while connecting with small-scale NPOs.

we divide our findings into five main themes (Table 3) that were generated from the analysis of the interviews. We also present the results of the online survey aligning with the themes.

5.1 Purpose and Influential Factors Pertinent to Non-profit Work

Our interviews illuminate the character of the purposes and values pertinent to the small-scale non-profit work. HCI researchers who wish to understand such non-profit work contexts may follow these accounts.

5.1.1 Motivation and Goals. The NPOs working for street children mainly focus on meeting the basic fundamental needs of street children. The inspiration to conduct such non-profit work often comes to them while observing the vulnerable conditions of those street children. For example, O3 explains the motivation pertinent to their organization: “We were doing some research work. While performing the work, we noticed that street children are financially suffering. So, we decided to help them. After helping them that time, we felt motivated. So, we decided to start our organization to help such street children. We provide winter clothes, food, and shelter to street children. We mainly try to improve the lives of children who cannot afford to feed themselves thrice a day.” On the other hand, donations from the donors were exhibited to be the most important driving force for conducting such non-profit work. The motivations (Figure 2) of those donors to connect with NPOs to provide donations are often contextual and person specific and align with social norms. As members of society, donating to social welfare plays an important role for them and they feel a responsibility toward the helpless street children, as P13 articulates: “If the donation is utilized to make life better for the street children, it inspires me to donate. I can afford to eat through the day. I think I have a lot, but often I feel that I have a lot of things in excess amount. So, if I can help them in any way, it will be great.” Donors also admire the effort and dedication of NPOs in helping street children, yet they have doubts regarding the long-lasting impacts of such non-profit work. Nonetheless, donors show their enthusiasm to help and support organizations by connecting with them in any way possible to positively impact the lives of street children. A significant reason pertinent to this enthusiasm is having the intent to help the street children, but not having a direct opportunity to do so. NPOs provide such opportunities to interested donors, as P6 comments: “For some organizations, I know

that they take responsibility of the street children and follow up on them. But, for some others, I doubt that their projects are sustainable. Still, through these projects, the volunteers working for them are getting exposure to the lives of street children. For their personal growth, these projects can be very useful. However, in my point of view, I don't think smaller organizations, such as student organizations can create substantial impacts. Yet, we donate because we want to help street children as we don't get time to reach out personally." Donors further feel motivated to connect with NPOs for donation purposes from self-esteem and ethics. Besides, a social crisis, for example, COVID-19, triggers donors to prioritize the suffering of people.

In addition, religious perspectives play a significant role in motivating donors to donate. Having a religious mind often inspires donors to donate, as P6 comments: *"My religion says that a balance is to be maintained between the rich and the poor, and the act of donation has been given great value. I try to donate regularly during religious festivals or anytime I can. So, religious perspective is an important factor pertinent to my donations."* As a result, organizations often get more donations during religious occasions; therefore, they can help more street children during those times than at regular times. Additionally, personal experiences motivate people to donate. In this regard, P7 mentions a personal story that inspired him to donate to those in need: *"One of my friend's father became sick, and through donations from many people, it was possible to carry out his treatment. Seeing this, I became inspired to donate to the needy people in society."*

5.1.2 Collecting Street Children. Reaching out to the marginalized community plays a central role in the non-profit work of the NPOs. This is equally applicable to the NPOs working for street children. When such NPOs find street children, their first initiative is to assess several aspects pertinent to the found street children. Examples of those aspects cover how difficult is their living situation and whether they need food, clothes, education, and so forth. After this initial assessment, they typically use their different ventures to support the found street children. This search for street children also depends on the location of the members and volunteers, as O1 articulates: *"Mostly our members are students from different universities. They focus on certain areas for collecting street children. For example, we often come across children who are flower sellers. Then, we ask them about their friend circles. Those children show us where they live. Sometimes their home is in slums. We talk to them and ask them about their living situations. These take almost 3 or 4 days. Then, we give them our school's address and class time. We find out who is more interested in learning. We connect those children with more high-level organizations who work in various sectors, such as education, food supply, etc. since our resources are low. If we find the living situation very difficult, we provide them with food and some money. We get more funding during Eid. In those times, we provide them with new dresses and good food. Sometimes, donors call us saying they want to perform a program, such as feeding street children, providing them with winter clothes, or helping them with learning materials. In such cases, we collect street children and perform those programs with the donations donors provide."*

In summary, NPOs perform non-profit tasks, such as the collection of marginalized communities and assessment of their conditions, before providing support by getting motivated by prior experience or social values. Such tasks require them to connect with the public to collect donations and recruit volunteers so that NPOs can work effectively in improving the lives of street children with public support. On the other hand, donors donate and connect with such NPOs, where a multitude of influential factors (Figure 2) play significant roles in motivating donors to contribute. Interestingly, donors often connect with such NPOs to provide donations, even if they have doubts about the long-lasting impacts of the activities of such NPOs.

5.2 Connectivity among the Stakeholders

For helping marginalized communities, NPOs perform their non-profit tasks, which include publicity, member and volunteer management, donation collection, and credibility assurance. To achieve

such objectives, the mentioned online platforms used by our interviewed NPOs include Facebook, LinkedIn, Instagram, Individual Websites, WhatsApp, Messenger, Zoom, and Telegram. Moreover, they use online payment methods, such as Bkash, Nagad, and Rocket.

5.2.1 Publicity. NPOs require publicity to showcase their work to the public for volunteer recruitment as well as donation collection. As a result, when NPOs are formed, the primary task is to increase their familiarity with the public. For such publicity, small-scale organizations use both offline and online approaches to showcase their activities and goals to connect with the public. For instance, to increase publicity, members and volunteers inform their offline connections (e.g., family members, friends, acquaintances, etc.) about the goals and ventures of their organization. They also stand on the streets to reach out to new people for donations. Besides, small-scale NPOs use different social networking sites and small-scale news portals to connect with the public, as O3 comments: *“We use Facebook page and small-scale news portals since it is an easy way to publicize our work and does not cost much. We showcase our work through which the public can easily connect and join us for volunteering or provide us a donation.”* Particularly in a social crisis, for example, COVID-19, online publicity is most effective for them rather than an offline approach. On the other hand, donors mention that they often get familiar with small-scale NPOs through their offline connections (e.g., family members, friends, acquaintances, etc.). Here, online platforms, such as social media, websites, and so forth, also play an important role for donors in getting in touch with those organizations. In this light, donors may get introduced to such NPOs through their offline connections; however, they also look into the online traces of those organizations to connect with them, as P16 articulates: *“Mostly I know those organizations through friends and acquaintances. If the organization is known country-wide, I get interested and normally donate in such cases. Recently, I have seen a friend of mine donate to an organization and share that organization’s social media page. I looked at the page of that organization and its ventures. I felt I should donate there too.”* Thus, donors use both offline and online approaches to connect with small-scale NPOs where online connectivity plays a critical role.

5.2.2 Volunteer Recruitment. Volunteers are the main working force to execute the non-profit tasks conducted by the NPOs. NPOs often recruit these volunteers from the public using different techniques, such as by approaching the acquaintances of organization members in person or through posting about volunteer recruitment on social media pages. As a result, if people are willing to work as a volunteer, they can connect with such NPOs through both offline and online mediums, as O5 articulates: *“We manage our volunteers by using a messenger group. Common people can become a volunteer by texting via our Facebook page. There are no certain criteria for recruiting. Only people with good intentions are needed. We conducted a recent campaign regarding volunteer recruitment. To do this, we posted a Google link on our organization’s Facebook page. By filling up the Google form, 10 to 15 people became our volunteers.”* Some donors also have prior experience working as volunteers of NPOs and they are mostly recruited through their acquaintances, as P11 explained: *“A close friend of mine worked in this type of organization. I volunteered there with my friends and taught the alphabet to some street children.”*

5.2.3 Donation Collection. To support marginalized communities, donation is the main source of income for NPOs. In this regard, NPOs use their publicity as a tool to connect with donors and collect donations. To do so, volunteers of such NPOs often reach out to donors in person. They also collect donations from social media pages using online payment methods, as O5 comments: *“We used to ask our volunteers to reach out to people in person. But, when we needed a larger amount of money, we used to go to commissioners or officials. Furthermore, we used to ask the acquaintances*

of our members and volunteers for donations. We also use our social media page to collect donations. For that, we use online payment methods."

On the other end, while donating to such organizations, donors check the familiarity and reputation of such NPOs. To feel assured about the impact of their donations, donors look for the purposes or goals of the organization and the social and moral impact of the ventures of those organizations. Here, the online presence of such NPOs (e.g., individual websites, social media pages, etc.) plays a significant role, as the online presence of those organizations enables donors to view their goals and ventures. Donors also look for opportunities to meet the organizers in person for assurance about the credibility of those organizations. In this regard, getting familiar with an organization through offline mediums (e.g., family members, friends, acquaintances, etc.) increases their trust in those organizations. Moreover, knowing anyone personally from such organizations or knowing about a positive donation experience shared by their offline connections tends to make donors trust those related organizations, as P19 articulates: *"I try to donate to renowned organizations and mostly where someone I know is working or have previous experience of donating."* Furthermore, for assurance about the credibility of an organization, the online presence of that organization also works as a deciding factor for donors as well, as P3 comments: *"First I see if they have any website or social media page. Then, I look into their ratings and past ventures. If their overall working process seems good to me, I tend to donate."* Additionally, we discover from the survey of general people whether they are familiar with any small-scale NPOs that work for street children; 76.2% (n = 42) of them replied positively. We also investigate if they got familiar with such organizations physically or virtually, where 61.9% (n = 42) get familiar with them virtually and 14.3% (n = 42) get familiar with them physically. Besides, we discover if they are willing to donate to any small-scale NPOs, where 97.6% (n = 42) of them replied positively. We also discover if they think it would be easier for them to donate if such organizations had an online presence (website, social media page, etc.), where 92.9% (n = 42) of them replied positively. As such, the experiences of general people are aligned with the experiences of the donors.

In addition, NPOs attempt to ensure their credibility with donors so that donors can trust them to support their non-profit work. However, earning trust and ensuring credibility with donors is challenging for small-scale NPOs, as O5 articulates: *"Even our acquaintances did not trust us at the beginning. As a result, we show the results of our work to them through photographs, videos, or Facebook posts. Furthermore, we also inform them where their money was spent by showing them money receipts and calculations. We think we need more publicity to overcome the trust issues of the public."* In this regard, NPOs feel that familiarity helps them to build trust and credibility with the donors. Consequently, to build familiarity, NPOs publicize their ventures (past ventures, ongoing ventures, etc.) and goals through their online presence (e.g., social media posts, individual websites, etc.) and attempt to stay transparent about their non-profit tasks with the donors. They also attempt to stay transparent about their transaction of money with the public to earn their trust.

In summary, NPOs, donors, and potential donors connect with each other through both offline (e.g., family members, friends, acquaintances, etc.) and online (e.g., social media, websites, virtual friends, etc.) mediums. Before donating to NPOs, donors take into account important factors, such as familiarity and credibility of NPOs. For ensuring their credibility, NPOs take measures to stay transparent about their ventures and their money transactions with their donors. However, familiarity and credibility are often dependent on the online presence of those NPOs.

5.3 Challenges Faced by the Stakeholders and Workarounds

In the non-profit work environment, without proper resources, tools, and manpower, small-scale NPOs are exposed to various kinds of challenges [7]. This happens as their exposure to the public is limited and this causes several problems, such as lack of trust, lack of familiarity, and so forth,

among the donors that eventually results in a lack of donations. Small-scale NPOs further feel that larger organizations get more exposure because of their familiarity, which is not possible in their case. However, when such organizations face less exposure, they explore other additional solutions—often on their own—to address the issues. For example, they try to reach donors in person to connect with them and show their ventures to build trust by maintaining the transparency of their non-profit work. Here, a minor adjustment might be organizations' members or volunteers communicating and connecting with individual potential donors (who might be interested to donate) in person. In this regard, O1 articulates: *"We are not reaching out to more people through Facebook which we use. Since ours is a very small organization, our Facebook posts are not seen by many people as it has very few likes and shares. In our friend lists, we have many friends involved in other organizations who try to avoid our organization's posts. Many large organizations get more exposure whereas we cannot get more exposure because of the familiarity of those large organizations. As a result, we mostly have to collect donations after reaching out to the donors in person, which is a hassle."*

In addition, small-scale NPOs feel that available online solutions, such as social media, individual websites, and messaging applications, often fail to fulfill their requirements. Here, social media is used the most, since it requires less maintenance than maintaining a whole individual website. Moreover, some organizations have to use multiple online platforms [64] to connect to as many people as they can when one particular online platform does not fulfill their expectations of connectivity with the public. However, the public's lack of familiarity with the social media pages of those small-scale organizations still causes less exposure. Additionally, as the control of such a social media page is not in their hands, any unpleasant consequence (e.g., getting reported and losing all their data, creating a fake page with their name, etc.) can happen. The lost information because of such unpleasant consequences cannot be recovered, and they have to create a new social media page. Furthermore, no suitable approach is available for prospective volunteers to engage and join any organization through such a social media page. As a result, they face a scarcity of manpower. Due to such scarcity of manpower, maintaining one or multiple online platforms (e.g., individual websites, social media pages, messaging applications, etc.) becomes an additional burden for them, which demands more time and effort. On the other hand, donors also face problems with existing online platforms, which include a lack of feedback opportunities, a lack of trace-back features, and less frequent updating of the venture details on those organizations' pages. These insufficiencies of connectivity opportunities in existing online platforms cause trust issues among donors, as P7 explains: *"One of the platforms through which I donated, don't remain updated and there is no updated news of the organization. They don't do many advertisements, so I don't trust them much. There are also no options for tracing back the money I donated."* As a result, donors often hesitate to donate. However, donors also come up with workaround solutions when they are not sure about the credibility of such organizations, such as asking offline connections (family members, friends, acquaintances, etc.) about an organization to get assured about the credibility and familiarity of an NPO. These minor adjustments cause additional effort and demotivate donors to donate to those organizations. Additionally, we discover from general people that 64.3% ($n = 42$) of them feel positive about their trust issues (Figure 4(a)) with any small-scale NPOs that work for street children. We also identify if such trust issues occur with NPOs having online platforms or not having online platforms. Figure 3 shows that having an online platform reduces the trust issues of donors and general people.

In summary, small-scale NPOs and their donors face challenges in connecting with each other because of less exposure and trust issues, where existing online platforms provide insufficient connectivity opportunities. Consequently, such NPOs and their donors have to explore workarounds that cost both parties additional time and effort.

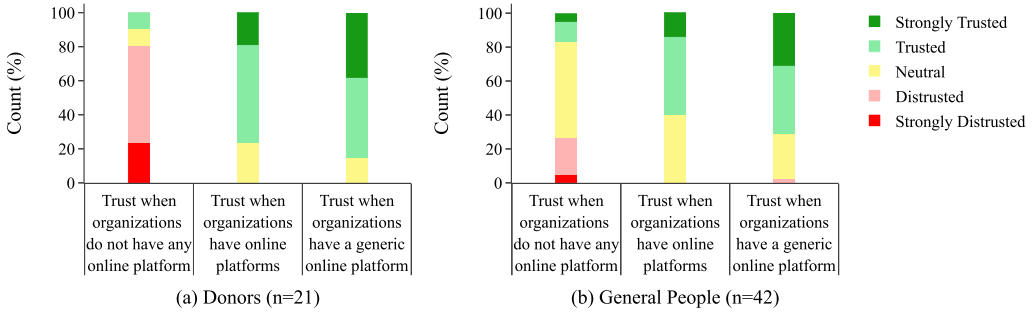


Fig. 3. Participants' ((a) donors (n = 21), (b) general people (n = 42)) trust in small-scale non-profit organizations working for the street children when they do not have any online platform, when they have an online platform, and when they have a generic online platform (Response scale: 1 = Strongly Distrusted, 5 = Strongly Trusted).

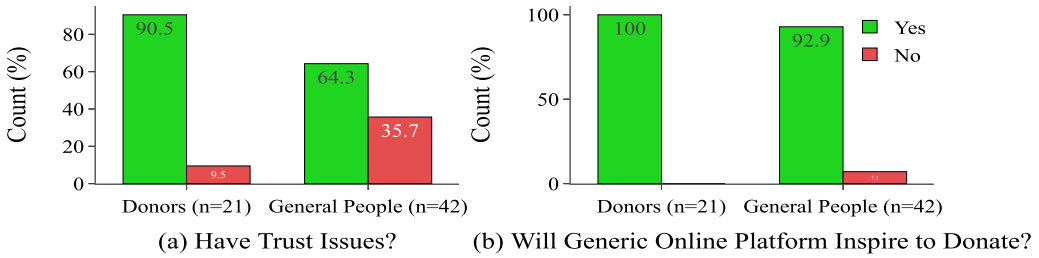


Fig. 4. Participants' (donors (n = 21), general people (n = 42)) response in case of (a) if they have trust issues with the small-scale NPOs and (b) if a generic online platform will inspire them to donate to the small-scale NPOs.

5.4 Expectations from Online Platforms by the Stakeholders

NPOs adopt a range of online platforms to connect with the public. Many NPOs use an online platform that they consider both important and feasible; however, often they also use multiple online platforms for connecting with donors, potential donors, and volunteers [7]. In this light, for the purpose of non-profit tasks, such as member management, data management of ventures, and location management of street children, they feel the need for a database management system. Additionally, most of our interviewed NPOs do not have a website of their own, and those NPOs feel that if they had a website of their own, they could have showcased their work more thoroughly and they could provide the link to their websites to the donors when donors desire to check their work details. However, maintaining a website or having a database system is almost infeasible for those NPOs since they possess low resources because they are small-scale organizations. An important underlying reason pertinent to being so resource constrained is inadequate public support and a small pool of donors. Therefore, NPOs feel the need for an effective online platform that will demand low cost and low maintenance.

On the other end, although having an online presence increases the credibility of such organizations among donors, donors often face confusion and challenges while making donation decisions. Such confusion and trust issues occur with the increasing number of social media pages of NPOs. As a result, they desire online platforms that are trusted, verified, and credible as most of their challenges originate from credibility issues with the NPOs. In addition, donors desire online presences

of NPOs that show the ventures of the organizations, regular updates, and donating opportunities using online payment methods. Donors are also enthusiastic about the opportunities to trace back their donations and stay informed about how their donations are being spent. They feel that this will inspire them to donate more, as P18 articulates: *“It would be helpful if the web page of NPOs demonstrate the details of the programs, such as which type of ventures they are conducting. It would be great if all the information about the ventures is provided on the web page, for example, how many people have donated specifically to that venture and how much I am helping. I would also appreciate it if those organizations sent feedback to me and have options for me to trace back the money I have donated.”*

When we asked the NPOs to suggest solutions that address these issues, a solution that came up from the NPOs during interviews is having a common generic online platform for all the small-scale NPOs, which will enable them to reach out to people without having the burden to maintain an entire online platform on their own. In this generic platform, such organizations can showcase their non-profit work (e.g., past ventures, ongoing ventures) and perform operational activities as well (e.g., member or volunteer management, donation collection, etc.). People can view many such organizations all together on such a platform, know about their goals and ventures, and then choose an organization for providing donations. Online payment methods through such a platform will help those organizations to collect donations, and this will also facilitate getting donations from foreign people as well. In this light, O5 comments: *“The problem is public support and an inadequate amount of donors. A common website where not just one, but many organizations are linked can solve the problem, as it will help us to get more reach to people and increase the trust of the people on us.”*

5.5 Special Needs of the Stakeholders

From the initial two or three interviews with the organizers, we come to know that most of the NPOs feel a special online platform can solve most of their connectivity problems and the platform is a common or generic online platform. Therefore, we further investigate the opinions of our focused stakeholders on the prospects, values, and challenges of such a generic online platform.

5.5.1 Prospects and Values. The main focus of small-scale organizations is on effective bridging among prospective and existing donors and volunteers and reaching out to a wider audience, to ensure more familiarity and credibility with the donors. In this regard, all the interviewed organizations unanimously express their belief that a generic online platform can solve most of their challenges, such as connectivity issues, credibility issues, and so forth. The organizations also need help from other similar organizations [56], which can be achieved virtually with less effort through the generic online platform, as O5 explains: *“Yes, a platform like this can really minimize some of the problems, such as it will require low cost and effort to connect with people. It can also provide a platform for organizations to prove themselves credible. Everyone wants to provide help. However, they cannot find a credible place to help. A generic platform would establish a connection between these people and the organizations. Furthermore, we sometimes need help from other organizations. We think this would be resolved by having a generic platform.”* On the other hand, donors express that a generic online platform will inspire them and others to connect with NPOs for providing donations. Seeing regular updates of several organizations simultaneously will inspire them in this regard, as P6 comments: *“It would influence people to donate. People may have the will to donate, but, they don’t want to go through the hassle. So, if there is a platform where you can actually ‘shop’ to donate, I would say it will be awesome. Also, if I get to know many organizations simultaneously, this will make me want to donate more by viewing their goals, such as helping street children.”* Moreover, as donors are aware that smaller organizations cannot afford to maintain their own online

platform, they feel that a generic platform will be tremendously helpful for such NPOs. In this light, many donors only know the big organizations well and they mostly donate to them. If a generic platform exists, they can also reach out to smaller organizations easily. Additionally, we discover how general people feel in this regard: 82.9% ($n = 42$) of participants feel that they will trust those organizations more if a generic online platform exists. Thus, they feel that a generic online platform for small-scale NPOs can mitigate some of their challenges, such as trust issues. Also, 92.9% ($n = 42$) of participants feel that a generic online platform will inspire them to help those organizations (Figure 4(b)).

5.5.2 Challenges. The authors investigated the probable challenges that interviewed NPOs envision in a generic online platform. Some NPOs show their concern about potentially getting overshadowed by somewhat larger organizations in a generic platform. This is a possibility, as initially, small-scale organizations have less work to showcase, which can limit the focus on them in such a generic platform. Another notable concern from the NPOs that comes to the surface is that attention from donors can become limited, as the attention will get distributed among different organizations. Donors also identify some potential challenges. An example in this regard is potential unhealthy competition among organizations, which may cause them to stray from their original goal of helping the street children and might also create some extent of confusion for the donors. Although interviewed NPOs agreed that a generic platform can reduce their current problems, not all of them will consider being part of such a platform after contemplating the potential challenges associated with such a platform. For instance, one organization O4 discarded the idea of a generic online platform for their organization. According to them, they are well established right now; therefore, they think that this type of platform may give rise to a conflict of interest that can overshadow their reputation and existing donation. In their saying: *“If there are multiple organizations working with a similar focus, competition may arise among them. Generic will be good if organizations work in different areas. Also from the donors’ perspectives, there may be confusion in deciding where to donate.”*

In summary, a special online solution, *a generic online platform*, where multiple small-scale NPOs can showcase their non-profit tasks and goals to connect with the public is appreciated by our focused stakeholders (NPOs, donors, and potential donors). However, NPOs and donors also perceive some potential challenges (e.g., getting overshadowed by somewhat larger organizations, getting donors’ attention distributed, unhealthy competition among organizations, etc.) of such a platform.

6 DISCUSSIONS

In this section, we discuss how our study fits into the HCI research paradigm and extends existing work pertinent to the NPOs and donors. Accordingly, we answer the research questions that we set out to explore earlier in this article.

6.1 Small-scale NPOs: Current Research and Going Beyond

As street children are one of the most vulnerable populations in Bangladesh and consist of an alarming percentage of the total population [23], numerous small-scale NPOs in Bangladesh work primarily to provide support to street children. We discover that prior experience or social values motivate such NPOs to perform their non-profit tasks. Among the non-profit tasks, connecting with the donors and potential donors seems to be of great importance to those NPOs for getting proper donation so that they can effectively support street children. We uncover that while connecting with the stakeholders, such small-scale NPOs face unique challenges, such as a lack of credibility and familiarity among donors due to limited reach to the public and insufficient support from existing online platforms. However, despite acknowledging the challenges and constraints

faced by small-scale NPOs, existing research [2, 7] has rarely explored the questions regarding how small-scale NPOs use online platforms to meet their goal of connecting with their donors for donation collection [7] and whether existing online platforms are enough to maintain effective connectivity with their donors. Therefore, we identify a significant research gap in the existing literature on how current online platforms are assisting small-scale NPOs and whether they are able to provide the level of assistance and connectivity with donors desired by those NPOs. Our research attempts to fill this gap by investigating the experiences of small-scale NPOs and their donors in Bangladesh. Consequently, we believe the findings of our study can motivate HCI research communities to explore this domain further.

6.2 Role of Online Platforms in Small-scale Non-profit Work

Small-scale NPOs attempt to align themselves with the trendy use of online platforms to recruit volunteers and connect with their donors. NPOs also show their goals and ventures on online platforms to publicize themselves to the public, which has contributed to prior research [46] on knowledge management by NPOs. They use existing social media pages or individual websites to showcase their goals and ventures to the public; online messaging applications to contact their stakeholders, such as members, volunteers, donors, and potential donors; and online payment methods to collect donations. These findings extend prior research [16] on the role of technology in non-profit work. NPOs further use offline approaches for their non-profit tasks. In this light, for connecting with the public to achieve publicity, they often stand on the street and speak with them in person about their organizations' goals and ventures, and they request the members or volunteers to discuss their organizations with their family members, friends, and acquaintances to get exposure. They also recruit volunteers from the acquaintances of the members, collect donations from the donors in person, and provide proof of transaction through money receipts to assure donors. Thus, the connectivity between small-scale NPOs and their donors depends on both offline and online approaches. This indicates that existing online platforms are inadequate to assist in achieving effective connectivity for such NPOs, which resembles the existing literature [3, 7] on how social media often fails to accommodate the concerns and goals of the small-scale NPOs. As a result, small-scale NPOs are not satisfied with using existing online platforms to meet their organizational needs. These findings extend prior studies [46, 65] that demonstrate that social media provides innovative opportunities for resource-constrained small-scale NPOs; however, NPO practitioners are yet to properly utilize social media platforms to fulfill their organizational goals [7, 12, 45, 66].

All the organizations we studied believe that they cannot reach a wider number of people outside their social clusters (friends, family, etc.) through existing online platforms. They further feel that they get less exposure to a wider audience, they are able to attract a good number of donors, and they feel concerned about losing data while using existing online platforms. In this light, although many NPOs, mostly the large-scale ones, opt for their own websites, websites do not appear to be beneficial to small-scale NPOs for different reasons as discovered in our study: (1) individually affording such a system with the expected features can become a financial burden for many small-scale organizations with limited budgets; (2) a simple showcasing website can present its own ventures or metadata, but creating a unique presence while more established and prominent organizations exist in the loop is difficult for a website of a new small-scale NPO; and (3) small-scale NPOs need resource planning and management at least at a minimum level, but a simple website cannot help them in this regard and it is also challenging for the donors to know about different individual organizations from different online media or individual websites. Thus, from the perspectives of both donors and NPOs, the usage of existing online media or individual websites by small-scale organizations fails to effectively connect such organizations with their donors. As a

result, small-scale NPOs are compelled to use both offline and online approaches to reach a minimum level of exposure, as only online platforms cannot support them fully to get proper publicity, which introduces additional burdens for them. However, such burdens do not demotivate those NPOs and they keep using both offline and online approaches to create their identity among the public. We consider such inclination of small-scale NPOs to connect and get more familiar with the public to create their identity, which we uncover in our study is expected naturally, by drawing from the lens of the *Social Actor Model* [67]. This lens states that organizations are keen to create their identity. We further believe that such inclination of small-scale NPOs toward technology acceptance [68, 69] can motivate the HCI community to further explore online interactions of those NPOs and design effective technological solutions to assist them in creating their identity among the public.

6.3 Donation: Influences, Decisions, and Challenges from the Perspective of Donors

Existing studies [8, 24, 26, 27] on donors do not indicate whether the behavior of donors changes with the scale of the NPOs, and if it changes, how the donors perceive the existence and activities of small-scale NPOs. Therefore, in this study, we investigate why a donor gets *inspired* to donate and the potential *factors* donors look for in small-scale NPOs to connect with them. By investigating these interpersonal factors of the donor community, we frame out why small-scale NPOs fail to reach donors and how to connect them by addressing the factors that contribute to the failure. All the donors in our study mention that they care for street children. However, as they do not have a direct opportunity to support street children, donors are motivated to provide their donations to the NPOs that work for the street children so that donors can indirectly help street children. They mainly address seven reasons (Figure 2(a)) that *inspire* them to donate. HCI researchers should incorporate these influential factors and motivations to effectively design relevant technological applications and features to encourage donors to donate [9] and connect with such NPOs [8]. Furthermore, the findings of our study complement prior studies [51, 52], which demonstrate that religious sentiments carry great significance in people's lives, as we discover that religious inspiration is one of the top inspiring factors for donors to donate. Consequently, organizations receive more donations during religious occasions. However, even though online presence appears to be influential in our context, online activities are often contradicted in terms of religious values according to researchers [70]. Therefore, it is important to focus on incorporating the concept of how technology is recommended to be used while trying to be within applicable religious bindings, since religious beliefs influence donation to a great extent in developing countries [51, 52]. In addition, we discover that purpose, credibility, familiarity, proximity, and convenience (Figure 2(b)) influence donors on their pick of NPOs for providing donations, which extends prior studies [8, 9, 24, 26] related to how donors choose an NPO to donate. Here, the factors mentioned by the donors pertinent to convenience to donate, such as access convenience, transaction convenience, and access to convenient payment methods, contribute to prior work [27] on the importance of convenience to donate. Moreover, our study extends prior research [71] where awareness is an important factor for donation decisions, as we discover that donors check on the familiarity and credibility of an NPO before donating. In this regard, they use both offline connections (e.g., family members, friends, acquaintances, etc.) and online platforms (e.g., social media, individual websites, etc.) for deciding to connect with an NPO to provide donations and to get assured about the credibility of that NPO. We further uncover that using both approaches presents significant challenges for the donors and often demotivates them to connect with those NPOs. These findings can help a designer in exploring how a system can be designed that can assist donors [8] to choose an NPO to connect with for providing donations in the context of developing countries.

6.4 Role of Online Platforms to Build Trust and Reputation of NPOs

Our findings confirm that among the different challenges reported by the donors, having trust issues with the NPOs is the top one, which contributes to existing studies [8, 9, 15] on the importance of trust for donation. Our study further identifies that both offline and online traces of such NPOs assist in building their familiarity and trust among donors. In this light, donors feel that small-scale NPOs have an insufficient online presence to ensure their credibility. As a result, donors look for organizations where their offline connections (e.g., friends, family members, acquaintances, etc.) have prior experience in donating or where their acquaintances are providing their support to get familiar with such an organization. Thus, the familiarity of those NPOs transfers from one person to another. For further connectivity, donors look for an individual website or a social media page of that organization to view the ventures and goals of those NPOs. If such an online presence exists, then donors feel assured about the credibility of those NPOs and feel that their donations are impactful in supporting street children. This assists donors to connect with the organization to provide donations or become a volunteer. These findings extend previous work [2] that explored how NPOs use their data to attain support from their stakeholders. Donors further express a low level of trust in the NPOs that do not have any online presence and a significantly higher level of trust in those that exhibited an online presence. Our survey results of general people also align with these findings from donors (Figure 3). However, despite viewing the existing online presence of such NPOs, donors still experience trust issues while donating. These issues arise due to the lack of proper trace-back mechanisms, lack of feedback, lack of communication about the impact of the donation made, and lack of opportunities for meeting the organizers in person, which only increases the confusion of the donors and often demotivates them to provide future donations. These findings extend prior work [17] on varying fairness notions of the stakeholders of NPOs. Thus, we uncover that the lack of transparency on the NPOs' part results in trust issues with donors as well as future potential donors, which extends prior research [27, 51] on the importance of timely acknowledgments and communication to the donors.

On the other end, NPOs are aware of these trust issues of their donors as well. They further feel that current online platforms are not enough to represent their trustworthy images to potential donors and they struggle in ensuring their credibility and familiarity in the presence of already renowned and established large-scale NPOs in the loop. As a result, to overcome such trust issues, small-scale NPOs perform different additional tasks incorporating both offline and online approaches, such as showing bank receipts of their spent money to the donors and meeting donors in person. However, the organizations still feel that performing these additional tasks is not enough to achieve a good level of trust and reputation among the donors, which results in limited connectivity with their donors. These findings can motivate the HCI community to focus on building the trust and reputation of small-scale NPOs among donors and potential donors while designing technological interventions to facilitate effective connectivity in small-scale non-profit work contexts.

6.5 Design Insights

In light of our in-depth findings of non-profit work contexts, we propose design considerations so that performing non-profit work may be better situated focusing on the convenience and requirements of our focused stakeholders. Designing contextually relevant technological solutions for such non-profit work contexts is valuable because (1) small-scale NPOs go through challenges that magnify their resource and manpower constraints [7, 72, 73] and (2) the donation decision of donors needs support as well [8, 74], where technological solutions can be supportive and beneficial [8, 9, 51, 52].

6.5.1 Supporting NPOs and Donors in Their Roles in Non-profit Work Contexts. We observe that NPOs emerge as essential actors in non-profit work contexts. They manage the process of supporting marginalized communities amidst a range of other activities, such as planning and implementing ventures, managing members and volunteers, collecting donations, and motivating the engagement of donors. However, we uncover that small-scale NPOs are ill-equipped to meet the expectations of their role and the existing online platforms they adopt are not specifically directed at them. In addition, it is implied that NPOs would support marginalized communities [2, 7], yet it is unclear how to best support such NPOs. In this light, our findings demonstrate a clear opportunity to design online platforms that acknowledge the role of NPOs and the members' skills, experience, and motivation in the non-profit work contexts. Such an approach to framing non-profit work has been seen in existing online platforms [7, 10]. However, even in the presence of such efforts, designing online solutions specifically designed for the non-profit work of small-scale NPOs is of prominent significance for numerous reasons. One noteworthy reason is the resource constraints of such NPOs, which is noted in prior work [7] as well. Furthermore, the public has not traditionally been made aware of NPOs' using online platforms for their non-profit work. In particular, the public is not aware of the quality of NPO-public interactions in online platforms and the complications that arise when credibility issues come across as discovered in our study and existing literature [8, 12, 75, 76]. All these may be a reflection of the opacity of NPOs' work. Such opacity can be transparent as donors are given opportunities to get insight into the practices of such NPOs through the opportunity of joining those NPOs as volunteers. On the other end, we discover that donors have a unique insight into the NPOs' work. The skills and knowledge NPOs require or NPOs' adapting to the existing online platforms leave many donors with a deeper respect and empathy. However, donors also feel a level of disappointment at how those online platforms are managed. Therefore, online platforms should support communication between NPOs and donors and reduce the opaque conception of non-profit work contexts. This could be achieved by providing an opportunity for NPOs to publicize their ventures, allowing trace-back opportunities for donors, allowing the public to participate in specific non-profit work (e.g., becoming a volunteer), and allowing donors to share personal insights they may have on their donation decisions. Thus, the quality of the relationship between small-scale NPOs and the donors as well as the capacity of the NPOs to connect with donors can be facilitated by having a specialized focus on the appropriate design and development of online platforms.

In addition, the role of NPOs is not just to connect with the donors; they further have to ensure their credibility, which increases the workload of NPOs. We suggest that NPOs should have access to an NPO-donor network so that donors can access an NPO's online platform, ask their questions, and go over resources that may better support donors in knowing about the NPO, its goal, and ventures to be ensured about its credibility. A network of this kind would be particularly valuable for NPOs with fewer members or limited resources. In this light, the informal usages of online platforms are found to be working somewhat for the donors and NPOs to a limited scale as discovered in our study and existing literature [7, 10, 46]. Designers might draw influence from these informal usages of existing social media and online platforms (e.g., social media pages, news portals, etc.) that donors engage in to gather information or resources about NPOs. These online platforms further support a localized knowledge exchange and offer them an opportunity to connect with each other from their own networks. Moreover, offline connectivity mechanisms, such as approaching and meeting donors in person, also assist NPOs in gaining their trust. In this light, a strategically designed NPO-donor support network would provide donors with valuable insights and support in their respective roles in the non-profit work contexts. This support should span technology-based alleviation to motivating people about non-profit work. We further envision that online non-profit work environments should support a

direct communication channel between NPOs and their donors as well as communication networks between groups of NPOs [56] and donors. For this, designers can consider drawing on communication over established social networks and offline methods to generate relevant NPO-donor networks that are sensitive to the resource constraints and cultural aspects of the particular community.

6.5.2 Supporting NPOs and Donors in Reducing Their Challenges. Without built-in effective technological solutions specifically designed for small-scale NPOs, the responsibility to address complex issues of credibility and convenient connectivity falls to the NPOs. In addition, from the non-profit work perspective, NPOs are responsible for requesting and managing their own resources and operational works [2, 17, 77]. However, unfortunately, they may not have the manpower or resources to adopt online platforms to connect with donors and volunteers as discovered in our study and prior work [7]. As a result, NPOs provide additional effort to adopt different workarounds and needed adjustments by employing their own time and effort to engage in self-advocacy and manage existing online platforms within their reach. In this light, they provide whatever effort is necessary by considering that connectivity is enclosed within that effort. Therefore, they perform their connectivity responsibilities with additional efforts in their regular non-profit tasks. According to them, these efforts are supposed to produce good non-profit work by ensuring effective connectivity with the public, which eventually makes the additional work of such NPOs invisible. The cost of this invisible work is paid by the NPOs in time and effort to ensure their organizations' goals are met while accepting connectivity and credibility issues. On the other side of the ecosystem, donors also put in additional effort to reduce their trust issues with those NPOs by trying their best to be empathetic, rational, and considerate in their donation decisions. In this light, we consider the emerging challenges generated from the trust issues of donors in connecting with small-scale NPOs that exist by default by drawing upon the lens of the rational approach of trust [78]. This lens [78] admits that trust is selective and is based on a system that considers that familiarity and self-advocacy increase trust [79, 80]. By framing with this lens, the discrepancy between trust issues of donors with large NPOs versus small-scale NPOs becomes evident.

As uncovered from the expectations of NPOs and donors, the barriers to attaining credibility are difficult to overcome [8, 81, 82], and the assistance the small-scale NPOs receive with existing online platforms is inadequate. This discrepancy becomes evident through the time and effort provided by such NPOs to make connections with donors and the workaround they adopt to reduce connectivity issues with existing online platforms. Thus, these findings indicate opportunities for HCI researchers in designing technological solutions to increase small-scale NPOs' familiarity and trustworthiness among donors focusing on relevant credibility issues, connectivity limitations, and resource constraints.

6.5.3 Designing a Generic Online Integrated Platform. Small-scale NPOs use existing online platforms (especially social media pages) that are not specifically designed for them to perform their operational goals [7, 10]; however, such usages present several challenges to such NPOs as confirmed by our study. To overcome those challenges with the existing online platforms, such NPOs call for a system that not only resolves the issues regarding connecting with the stakeholders (existing donors, potential future donors, volunteers, etc.) and their credibility but also includes them in the realm of sustainable operations. We note the preferences of our stakeholders toward a notion of a generic online platform where all small-scale NPOs will have opportunities for effective interaction without requiring high maintenance costs integrating necessary features as desired by our focused entities (Section 5.4 and Section 5.5).

According to the NPOs, such a generic online platform can assist in connecting with the public because they have resource and manpower constraints to maintain their own individual websites. As small-scale NPOs generally have fewer non-profit ventures to showcase than larger organizations, those NPOs feel such a platform will decrease their chance of being overshadowed by larger organizations. As a result, they believe that such a generic online platform can drastically decrease their credibility issues. The views of donors are also aligned with such views of NPOs. Based on these aspects, we explore the concept of *social interaction* [83], where the interaction can occur in five different forms: (1) exchange, (2) competition, (3) conflict, (4) cooperation, and (5) accommodation. The suggested integrated platform shows the potential of incorporating all five concepts of the social interaction theory. The desired platform can *accommodate* the small-scale NPOs working for the street children and bridge the interaction gap among the stakeholders of the ecosystem through *cooperation*, and fulfill the identified requirements by credible exchange of information among them. Several studies [24, 84] reported that the collaboration between the two organizations can expand the brand reach. Backed by these studies, and from the opinions expressed by our participant organizations, we discover that a generic platform has the potential to promote collaboration and *cooperation* between NPOs. On the contrary, as mentioned in Section 5.5, one organization O4 discarded the idea of a general online platform for their organization because they are well established and do not want to risk a probable conflict of interest with hosted NPOs in such a generic online platform. This is an interesting case that also supports *conflict* and *competition* concepts of *social interaction* [83]. In this light, the explicit difference between O4 and the other six organizations is organization size in terms of member count. They are on the verge of establishing themselves as a prominent organization and thus developed a sense of self-interest in a certain sensitive area (donors and donations). As a result, we can infer two things. First, small and financially challenged organizations want to come under one specially designed platform that can only meet their requirements. Second, small but financially less challenged organizations are reluctant to this proposal. Therefore, future designers need to think about how a social system can be designed by optimizing *conflict and competition* and by ensuring *accommodation, cooperation, and exchange*.

In addition, donors show concern that such a platform can raise competition among organizations; for newer and smaller organizations, getting overshadowed is a possibility. In this light, NPOs also feel concerned that donors' attention may get distributed among numerous small-scale organizations with such a platform. These perspectives raise an interesting challenge for the HCI community when designing socially inclusive interactive systems for small-scale NPOs. Thus, designers and researchers should consider these perspectives while developing a generic platform for small-scale NPOs and also focus on meaningful and trustworthy content [8, 15] for the public.

7 LIMITATIONS OF THE WORK

We faced limitations in ensuring the diversity of the interviewees. For instance, we interviewed one participant from each organization. We might have gotten more diversified insights if we could manage more interviewees with different management roles in each organization. In addition, when we approached the 1,300-member NPO (O4), they claimed themselves as small scale because of their conserved operational scale, such as being situated only in a particular location or performing a specific type of venture. Therefore, we considered them in our study. However, as O4 has a larger member count than the other organizations considered in this study, it may have introduced self-report bias in the study results. Moreover, in our analysis of interview data of the organizations, we did not consider the data collection differences related to the three characteristically different modes of interviews, such as face to face, Zoom, and mobile phone. Also, we did

not consider the classification of donors based on their donation frequency in our study. As the interviewed donors were mostly in the age range of 22 years to 30 years (Table 2) with a mean of 25.52 years and a standard deviation of 4.92 years, this may have impacted our result by introducing selection bias. Furthermore, some donors and general people were recruited by e-mailing the people who were accessible to the authors. This may also have introduced selection bias in the results. Finally, the opinions from the interviews and the survey may not represent the collective view of small-scale NPOs and donors of the whole nation. The opinions may also not represent the non-profit work settings of other nations because of existing sociocultural differences. Despite these limitations, the findings of our study will be useful in understanding small-scale non-profit work contexts and encountered challenges.

8 SCOPE OF FURTHER RESEARCH

In the future, we plan to expand the scale of our research by incorporating more NPOs as well as more donors and general people in our user studies. We also intend to extend our research across the border by taking organizations from other countries on board and exploring the differences. Moreover, based on the findings from the interviews and the survey, the next steps can be designing, implementing, and evaluating a generic online platform for the small-scale NPOs working for street children. The findings of the evaluation phase of such a generic online platform will provide valuable insights into the connectivity settings among the stakeholders. In addition, leveraging the proposed generic online platform, we plan to explore the possibility of integrating interactions with the street children being served by the organizations. Such integration may bring the voice of the service recipients to the surface, eventually enabling a 360-degree interaction of overall stakeholders of the non-profit ecosystem. We further believe that our work can influence, facilitate, and assist in the ongoing and future social welfare projects [85] by the government of Bangladesh, such as the implementation of training and rehabilitation centers for destitute children [86] and providing assistance and funding to organizations working for the welfare of unprivileged children [87]. Our findings can assist such projects by providing insights into the existing connectivity settings of the NPOs and donors and the challenges of the non-profit work contexts, and by facilitating the onboarding of small-scale NPOs in those projects.

9 CONCLUSION

In this article, we performed a mixed-method study to explore the influential factors, challenges, and existing connectivity settings in small-scale non-profit work contexts among NPOs working for street children, donors, and general people in a developing country. Therefore, we conducted semi-structured interviews with such NPOs and donors and an online survey with general people. Consequently, we uncover the unique challenges of such NPOs and their donors and the workarounds they follow to reduce those challenges when connecting with each other. We further discover that to overcome the resource constraints and challenges in establishing trust and credibility, such NPOs attempt to embrace both online and offline approaches to connect with the public. However, it is also challenging for donors and general people to familiarize themselves with such NPOs and trust them enough to provide donations. Finally, to support effective connectivity among such NPOs, donors, and general people and reduce their challenges, we discuss considerations and potential opportunities for technological solutions based on our findings to overcome their connectivity barriers, which include supporting NPOs and donors in their essential roles in non-profit work contexts and supporting them in reducing their encountered challenges. Overall, our findings and discussion shed light on opportunities for future research and development of technological solutions in small-scale non-profit work contexts.

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