Putting the *Waz* on Social Media: Infrastructuring Online Islamic Counterpublic through Digital Sermons in Bangladesh

Mohammad Rashidujjaman Rifat
University of Toronto
Canada
rifat@cs.toronto.edu

Hasan Mahmud Prottoy
University of Maryland, Baltimore
USA
hmprottoy@umbc.edu

Syed Ishtiaque Ahmed
University of Toronto
Canada
ishtiaque@cs.toronto.edu

ABSTRACT

While the presence of religious content is rapidly increasing over digital media, the HCI literature on digital media production has remained mostly limited by its focus on secular contents and analyses. Hence, the production, politics, and impact of such religious videos from the Global South have remained understudied in HCI. In this paper, we shed light on this topic through our nine-month-long ethnographic study on the production, sharing, and consumption of Islamic sermon videos (locally known as *Waz*) in Bangladesh. We report how faith, informal learning, local collaboration, creativity, and care play crucial roles in creating Islamic sermon videos and their proliferation online. We discuss how the sermon videos create a religious counterpublic in Bangladesh. We further discuss how such faith-based media production makes important lessons pertinent to the national grassroots politics in the Global South, politics of social media platforms, and HCI4D scholarship.

KEYWORDS

Islamic media; waz; grassroots; counterpublic; politics; content creation; infrastructuring

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1 INTRODUCTION

HCI has long been concerned about grassroots political movements and their connection to technologies around the world [43, 44]. On the one hand, computing technologies create opportunities for marginalized communities to raise their voices to participate in a democratic culture [42, 44]. On the other hand, the same technologies can thwart marginalized voices because of power structures, value conflicts, and other social and political barriers [43]. While a rich body of HCI scholarship has significantly contributed to HCI's understanding of the interaction between grassroots politics and technologies, it is often limited by their secular analysis. As a result, HCI often fails to capture the grassroots movements rooted in religious spirit and the complex relationship between religion and digital media. However, the use of computing for religious purposes has been steadily growing around the world [32, 65], and the political aspects of such religious interactions with online social media require careful attention from CHI scholars.

To this end, we focus on the online Islamic content shared on video-sharing platforms and social media. Recently, there has been a proliferation of Islamic media content over social media platforms, including Facebook, YouTube, TikTok, and Twitter [8, 118]. These online Islamic audios and videos come in different formats, including music, lectures, discussions, and questions-answers. Before the Internet era, cassettes and CDs were the main media for disseminating Islamic contents, most of which were lectures of Islamic preachers that invited Muslims to purification (da'wah) [54]. As the Internet has become available worldwide, the portable formats of Islamic media are being replaced by large-scale production and sharing of audios and videos online. Besides the Islamic contents broadcasted through TV and radio programs [15, 113] and the videos created by Islamic preachers in a formal setting (similar to the videos created by televangelists [88]), grassroots Islamic content creators are also creating videos from Islamic religious sermon events. The ever-increasing number of users of social media, especially in many Muslim majority countries [16, 17], has accelerated Islamic media sharing practices. The increasing demand of Islamic media has given rise to a worldwide Islamic media market among Muslims. The Islamic media consumption is giving rise to many political [5, 54, 59, 66], moral [54], legal [115], and social [66, 115] concerns around the world. However, digital Islamic sermons have mostly remained understudied in HCI literature. This paper aims to address the gap by studying the digital Islamic sermon and advancing HCI's literature on infrastructure and politics.

This paper reports the findings from our nine-month-long original ethnographic study of the infrastructure, politics, and social practices related to the Islamic media production and sharing ecology in Bangladesh. Drawing on our findings and the analysis of diverse literature, including infrastructuring, politics, and public, we make the following three core contributions to HCI:

- Our study contributes to the intersection of HCI and faith-based infrastructuring. Building on the literature on infrastructuring, we present five aspects of faith-based infrastructuring: faith; informal learning; collaboration and negotiation; creativity, arts, and skills; and maintenance, fixing, and

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Figure 1: From left to right: (i) A YouTube video uploaded on November 2017, which has a "view" count of more than 27 million as of September 09, 2021. In this video, a popular Bangladeshi preacher is talking about making successful prayers to God. (ii) This YouTube video has more than 19 million "views" as of September 09, 2021. This preacher is speaking about the resurrection day in Islam. He is sharing the stage with his fellow speakers in the sermon event.

care. We show how grassroots religious communities overcome challenges guided by religious values and practices in infrastructuring digital content creation.
- Building on the anthropology of sensual reason, we contribute to a better understanding of the interaction of HCI and politics. We show how Islamic sermon media engages Muslims in online and offline conversations and creates a political and moral counterpublic. We further discuss the politics of social media platforms unfolded through Islamic media sharing practices.
- Our study contributes to HCI, HCI4D, and international development by explaining how Islamic media increases the adoption of computing technologies and digital literacy among Islamic faith-based communities to make HCI more inclusive of religious communities. Further, we note a transition of the Global South population from 'passive users' to 'producers' of digital content and draw HCI's attention to this emerging trend.

We believe that our research will advance HCI literature on politics, infrastructuring, and development with their connection to technology and religion.

2 LITERATURE REVIEW

2.1 HCI, Grassroots Politics, and Religion

The grassroots communities are the groups of people who advocate and work together for their common goals. Such groups usually take a bottom-up approach to achieve their goals (see, for example, [11]). The HCI literature about grassroots gives insights into the infrastructure and politics of grassroots movements and their implications for computing technologies [72, 96, 135]. One strand of HCI research explores how technologies democratize grassroots political participation and create opportunities for grassroots communities to influence social and political changes. For example, Crivellaro et al.'s empirical study of a Facebook group inform how grassroots expressions, memories, and everyday politics challenge traditional ideas of politics [26]. In a similar vein, Vlachokyriakos et al. argue that grassroots technologies can reinforce existing political structures if the design does not dedicate close attention to the governance and transparency of the technologies [129]. The above and other studies in HCI [36, 39] show how technologies can empower grassroots voices to make a democratic public space. However, HCI has also found that technologies sometimes stay at odds with grassroots movements. For example, Ghoshal et al. find that financial, usability, and technical challenges [43] distort grassroots values [43]. Felt et al. show how social media creates various obstacles in grassroots movements instead of empowering them [38]. The above and other studies [36, 43] demonstrate how technologies often constrain grassroots activism. However, the aforementioned studies examining the grassroots politics in HCI are primarily focused on Western secular political changes and cannot capture various forms of religious and social movements around the world.

Outside of the Western secular world, religious communities in the Global South often organize movements at the grassroots level [54, 88, 118, 136]. Such religious movements are not organized for political or economic confrontations; rather, many of them are organized for moral imperatives and social reforms [10, 37, 40, 82, 92]. While it is undeniable that such religious movements toward social changes also often engage in political debates, we separate them from two types of movements to distinguish them from other grassroots-level movements. First, these movements are separate from other forms of religious movements that are more directly targeted toward mainstream politics. In many countries, both in the West and in the Global South, there are political parties

that are founded on clearly declared religious philosophies and agendas [137]. Movements led by such political parties associate religious values with direct political actions that are very much 'material' in nature [81]. On the other hand, the religious movements that we are interested in are led by religious leaders who inspire the community to follow religious rules and focus more on non-material benefits (in their afterlife [19]). While there may sometimes be an overlap between these two movements, the latter is almost never focused on capturing political power. Second, religious movements are also different from social justice and philanthropic movements in the Western world. Movements for racial justice or climate change, for example, are motivated by actual material changes in the structure of society and the environment that will benefit individuals in their lives on earth [126]. On the other hand, the religious movements that we study may promote such changes only if those are aligned with pre-existing religious values. Hence, the organization and function of these religious movements do not occur around 'anger' or 'fear,' but around a divine spirit that can only be explained through religious affect [67]. These differences are important to delineate for understanding how such religious movements impact individuals in a way that is hard to perceive through material analyses that are common in HCI literature.

Although many Muslims do not perform mandatory religious practices, they nevertheless show their religious devotion through their pious sentiments and everyday actions [58]. Islamic fiction, literature, activism, and preaching movements have increased the political sensitivities of Muslims in the public spheres [57, 98, 103]. Such political sensitivities have been amplified with the increased use of social media and video-sharing platforms that give grassroots the opportunity to connect to other Muslims and engage in political discourses [24, 27, 107, 114]. Many governments around the world have tried to exploit the influential roles of videos, TVs, and social media to reshape grassroots political discourses in the service of their own political interests (see, for example, the case of the Turkish government [68]). However, religious grassroots movements and their connection to technologies are barely present in HCI. Such marginalization of religious grassroots politics from HCI has blindsided the grassroots religious movements and their use of technologies (e.g., da'wa movement in Egypt [54]).

The inclusion of organically grown religious grassroots political movements can advance HCI in two primary ways. First, a deeper understanding of the partnership (and often tensions) between religious grassroots movements and technologies can contribute to understanding the public spheres. This better understanding of the role of grassroots religious movements in the public sphere can advance HCI's agenda of designing for the political [34]. Second, HCI can mobilize grassroots politics in designing for religious communities. Such a contribution also aligns with the line of research related to aspiration-based computing that calls for HCI's attention to find political consensus among secular and religious communities for designing technologies to support social actions [104, 124]. Broadly, this paper addresses HCI's calls to include the missing pieces of grassroots politics in HCI [43].

2.2 The Making of Islamic Counterpublics

2.2.1 Design, Secular Public, and Religious Reasoning. Next, we turn our attention to social sciences, design, and media studies literature to understand the interplay among pervasive media sharing, religion, morality, and politics. We start this discussion by explaining the notion of *the* public and its connection to design. The notion of the public – "an entity brought into being through *issues* for the purpose of contending with these *issues* in their current state and in anticipation of the future consequences of these issues" (DiSalvo [33] drawing on Dewey [29]) – has appeared significantly as an analytical and design concept in HCI. Building on Dewey's notion of the public and later Weibel and Latour's [131] inquiry into the same, DiSalvo shows how the processes and products of design initiate political action and bring a public (or many publics) into being [35]. The literature in HCI builds on DiSalvo and uses the notion of the public to design technologies and explore politics embedded in various designs. For example, Le Dantec and Edwards conduct an ethnographic study in social service outlets and explore organizational politics and power structure in organizations' adoption and use of ICT across public boundaries [76]. In another work, Le Dantec et al. design a system to support two interconnected publics–staff and residents in a shelter for homeless mothers [77]. In doing so, they argue that design should support the politics of a public rather than encoding the already existing institutional political power structures. Similarly, DiSalvo et al. argue that HCI needs to step back from solution-centred design and focus more on understanding the public issues to give form to a political condition of the particular public [35]. The commonalities between the above and other works [7, 69] are that the notion of their public builds on John Dewey's concept [30], in that the public forms as a result of *"the impact of particular actions and the formation of problems and common interests [80]."*

However, the concept of *the* public has gone through significant scrutiny, which is relevant for us in understanding the religious public and their politics. One such scrutiny starts from Habermas's account into the bourgeois conception of the public sphere (Fraser cites Habermas [39]). Two of the primary assumptions of the bourgeois public are social equality and a single public sphere [39]. The assumption of social equality brackets the status differential in society as if everyone in society is equal. Since bourgeois publicity assumes that everyone is equal in society, it prefers a single public with the hope of greater democracy. However, Fraser draws on a series of historiography to argue that the assumption of social equality and the singular public does not work in democratic practice. Rather, because of its blindness to social status, the bourgeois public sphere marginalizes various social groups based on gender, race, ethnicity, property, among other factors [39].

In a similar vein, there is a line of scholarship that inquires into the marginalization of the religious public from the modern democratic public sphere and provides suggestions for the inclusion of religious publicity in modern democratic public spheres. In the modern democratic public sphere, as shaped by Dewey, Rawls, and other political theorists [31, 56, 100, 101], liberal politics does not depend on the religious justification of public reasoning. Such a political ignorance of religious reasoning has been criticized in political theories and creates the need for more serious engagement

with religion [48]. For example, Habermas opposes "the *institutional* separation of religion and politics into an undue *mental* and *psychological* burden for those of its citizens who follow a faith [48]." Although Habermas suggests that religious communities are expected to learn secular reasons, he recommends that state politics should also give religious communities the right to express their reasoning through religious languages [48]. Such arguments about religious reasoning do not necessarily suggest weighing religious or secular reasoning against one another in public spheres. Rather, what such scholarships recommend is to find a "translation" between religious and secular reasoning [48]. The importance of such calls for the inclusion of religious reasoning in public spheres is further substantiated by the already significant impact of religion in civil societies and politics worldwide [14, 20, 73, 78, 85, 86]. In this paper, we draw on the literature above and argue that deeper insights into the religious affect in the public sphere will help us better understand the political and social implications of Islamic media sharing in HCI.

2.2.2 Islamic Counterpublics, Media, and Politics. To better understand the religious public and their politics, we draw on a notion of the public, namely the counterpublic. In his celebratory work, *Publics and Counterpublics*, Michael Warner introduces the counterpublic as a social totality that comes into being in relation to the media. Works in diverse disciplines, including HCI, have drawn on this concept of social totality and extended the scholarship on the counterpublic. We draw on this scholarship to illustrate some essential attributes of the counterpublic. First, the counterpublic often comes into being from imagined belongingness among people. For example, Lindtner et al. describe that a counterpublic comes into being from imagined belongingness among people from their responses to a media object [80]. To illustrate, the authors mention that people who read an issue of *National Geographic* may think to themselves that "this is aimed at people like me [80]." This imagined belongingness as a part of a larger group constitutes the counterpublic. Building on Warner's conceptualization of the counterpublic [130] and a deployment study of MOPIX, a mobile photo-sharing application in a youth housing community, Lindtner et al. show how counterpublics are constituted through the users' production and consumption of media, such as photos in this case [80]. Second, a counterpublic may arise from resistance to another public. As an instance, Fraser explains how the exclusion and marginalization of women in the public sphere led late-twentieth-century U.S. feminists to group together and form a counterpublic. In this case, the opposition to the bourgeois public sphere constituted the "imagined belongingness" for feminist groups and worked together towards their identities, interests, and needs. Fraser calls such "alternative publics [39]" the subaltern counterpublic. The above two accounts from Lindtner et al. and Fraser explain that conflict or opposition to another public is not a necessary condition to constitute a counterpublic, but conflict could be one factor among others that may bring together people and constitute a counterpublic. For the reasons above, Lindtner et al. further clarify, *'counterpublics are not opposed to publics; the term "public" encapsulates both [80].'* In this paper, we draw on the concept of the imagined belongingness of a counterpublic, while we uncover how some alternative and opposing politics, norms, and materiality of the Islamic religious contents constitute an Islamic counterpublic.

The literature on the anthropology of sensual reason further strengthens our insights into the formation of a religious counterpublic. In his book *"The Ethical Soundscape: Cassette Sermons and Islamic Counterpublics"*, Charles Hirschkind describes that the Egyptian cassette sermons form an Islamic counterpublic through entwined deliberative and disciplinary practices [54, pp. 105–108]. As Hirschkind describes, the intended goal of the cassette sermons is to extend the authoritative religious discourses; however, the intersubjective reasoning (i.e., the discursive practice) is a modality of the cassette sermon's disciplinary practice. Such interdependency between the disciplinary and deliberative role of Islamic sermons overcomes the structural blindness of the singular secular public and constitute an Islamic virtuous "imagined community". Hirschkind further describes that the members of this counterpublic are the *"coparticipants"* [54, pp. 105–142] with the cassette sermons; the sermons give them a discursive vehicle in public debates and arguments. With a religious set of reasoning constituted by Islamic values, the counterpublic re-politicizes modern choices by challenging and debating them [54, pp. 105–142] through a listening culture of Islamic media. Building on Hirschkind and an in-depth ethnographic study in Bangladesh, Max Stille analyzes the aesthetics, melodies, and linguistic features of Bangladeshi Islamic sermons and argues how public piety shapes Islamic civic awareness and political valuations [118]. Similar scholarship across various disciplines shows how the politics and moral reasoning in Islamic communities come into being to form Islamic counterpublics [18, 64, 109]. Altogether, these studies provide an analytical lens to understand how pervasive Islamic media sharing contributes to creating a political counterpublic in our studied communities.

2.3 HCI, Infrastructuring, religion, and Democratization of Media

A strand of research within HCI reports on creating and sharing digital content. This body of work advocates for technology and policy intervention to make digital content creation democratic. An admirable effort from media and chip engineers [23], the advancement of camera technologies [112], and the availability of fast internet in most geographical regions [63] have created the opportunity to democratize digital media creation. Despite HCI's significant attention to digital media [70, 71, 91] and its democratization, HCI and related disciplines have listed several challenges for digital content creation. For example, O'Neill [91] reports that people do not actively engage in digital content creation in the Global South. Disparities in socio-economic background [49, 111] and inequalities based on education, race, income, ethnicity, and gender [111] are salient barriers for some communities that are lagging behind in digital content creation. Altogether, the findings above indicate that mere access to technologies does not democratize creative content creation; instead, digital content creation is conditional upon the social and economic situation of an individual. Existing studies in HCI show that religious communities often encounter similar social challenges. Historically hostile relationships with technologies, online ridicule, and social tags as being backdated and non-progressive [9] stigmatize religious communities

that further demotivate these communities to engage with digital technologies. Within this backdrop of technological marginalization, our interest is in asking how Islamic content creators are working as prolific producers of sermon audios and videos despite the limitations described above.

Next, we turn to the HCI literature on infrastructuring to explore what human and material conditions enable the religious communities to create Islamic media. The work of "improving" or "reorganizing" an infrastructure (i.e. infrastructuring) is usually considered beyond "professional" design activities and done by users of an information system [97]. The literature about infrastructuring within HCI4D has shown that foreign technologies often add an extra layer of difficulty related to infrastructuring for the users in the Global South [60]. Despite the difficulties, people come up with innovation and creativity aligned with their needs, capacities, and culture [2, 61, 62]. For example, Jack et al. show how people in Phnom Pheng turned Facebook into a platform for conducting their businesses [61]. Jang et al. show how repairers in a resource-constrained Indonesian rural village overcome their limitations by creating the infrastructure for their tasks [62]. Ahmed et al. demonstrate how slum dwellers meet their local needs by hacking the infrastructure around them [2]. Such insights from infrastructuring studies follow from Sambasivan and Smyth's work on human infrastructure in ICTD [110]. Sambasivan and Smyth report that shared social norms, the flow of information and materials, and creative processes are some of the essential components to constitute the human infrastructure in resource constrained regions [110]. A solid social substrate often compensates for the lack of material resources arising from the conditions created by low-literacy [83], residual mobilities [2], and insufficient resources [21]. These findings explicate that despite lacking skills, agency, power, and resources, people in the Global South show creative uses of technologies by "infrastructuring" human resources. However, the literature about infrastructuring is inadequate in explaining how a faith-based infrastructure is helping Bangladeshi Islamic communities to overcome various challenges and create digital content. We build on this literature of infrastructuring and extend it by explicating the faith-based infrastructure for digital content creation.

3 METHODS

To explore the Islamic media sharing ecology, we conducted a nine-month-long ethnographic study (October 2019 - June 2020) in two Bangladeshi cities, Dhaka and Tongi. However, our familiarity with mosque communities, media selling markets, and overall Islamic culture has been developed over more than six years as we previously conducted ethnographic studies with some overlapping communities and continued our connection with them. The ethnography in this research involved in-person semi-structured and unstructured interviews, observations, contextual inquiries, photography, and active participation in Islamic content creation. In the first week of March 2020, our research ethics board instructed us to stop any form of in-person activities due to the COVID-19 outbreak [133]. Following this instruction, we narrowed down our activities to remote semi-structured interviews over WhatsApp, mobile phones, or any other communication devices available to our participants.

The ethnography primarily took place in four locations: Kataban, Gulistan, Mirpur, and Tongi. Kataban and Gulistan are in the downtown of Dhaka, and Mirpur is in Dhaka's periphery. Gulistan is well-known for selling good-quality Islamic media available in different material formats, including CDs, DVDs, and microSD cards. We chose Mirpur because of its popularity for organizing Islamic sermons. Tongi is a suburban city that is about 20 kilometres away from the downtown of Dhaka. Tongi is popularly known for organizing the second-largest Islamic congregation event (*ijtema*) [25]. There has been a rise of entrepreneurs who create and sell Islamic sermon videos in all four locations.

Before discussing our methodology in detail, we give an overview of the Islamic sermon event, which is the primary source of the Islamic media we discuss here. Madrasahs (Islamic schools) and mosques organize most sermon events annually. Mosque and madrasah committees and local community leaders play a steering role in organizing the sermons. The organizers advertise the sermons through posters, social media, and announcements over a microphone. The typical venues are the premises of the madrasahs and mosques, but bigger events are arranged in large fields, stadiums, and other open spaces. The venues of the sermon events are prepared with electric lights and tents and the organizing neighborhood is decorated with coloring lights. The preachers are almost always male; however, a few female speakers have started attending the sermons recently. Standard sermon events are one to three nights long, while some are even longer.

3.1 Recruitment and Procedures

We identified four sets of communities to study the Islamic media ecosystem: (i) organizers of the sermons, (ii) informal media firms and amateur content creators, (iii) small and medium business entrepreneurs, and (iv) listeners of the Islamic sermon media. We determined information about the venue, contact number, and event time from the events' posters or social media posts. Following the information on the posters, we made phone calls, introduced ourselves, and briefly explained our interest to meet the organizers. Eight participants came from such phone calls. Our known Islamic clerics introduced us to three more sermon organizing committee members. After the initial connections and the exchange of the research information with the organizers, we visited the sermons in person, stayed in 10 sermons overnight, and videotaped the sermons (with the organizers' permission) alongside the Islamic content creators. We conducted 11 semi-structured interviews with the organizers. The questions involved the motivations for organizing Islamic sermons, selection and invitations of Islamic preachers, stakeholders and tasks involved in organizing the sermons, and recording and sharing digital sermons online. In addition, we took more than 100 pictures and more than 20 contextual inquiries. The contextual inquiries complement our insights from the interviews.

During our stay in the overnight sermon events, we got introduced to the digital Islamic content creators and exchanged our contact information. The groups self-identify as "the media". Following their community norms, we use the term media firms in this paper to refer to the community of Islamic content creators. Additionally, we collected contact information of media firms from their Facebook pages (with at least $10k$ "like" counts) or YouTube

Figure 2: Clockwise from the top-left picture: (i) Advertisement posters of Islamic sermons on a neighborhood roadside wall; (ii) Media firms have set up cameras in front of a sermon stage; and (iii) - (iv) Two sermon venues have been decorated with lighting and sitting matts.

Channels (with at least 10k "view" counts). We called all of them and recruited 8 media firm workers through our in-person communication and 6 through phone calls. Besides this, we informally interacted and exchanged opinions with 21 media firm employees. We asked questions about the politics, materiality, and infrastructure for recording, editing, and sharing Islamic content in the semi-structured interviews. The unstructured interviews and contextual inquiries happened during our night-stay in the sermons working alongside the content creators. The questions and inquiries involved their communication with the organizers and preachers during recording and their accommodation and other logistics as they travel far to record a sermon event.

We initially got connected to Islamic media sellers through the content creators, who sell their media to the media shops or the mobile carts. Most of the Islamic media businesses are co-located with mobile phone shops, computer markets, and repair shops. We found three Islamic sermon media selling businesses in Islamic book shops beside some community mosques. In addition, we found wheeled vans or rickshaws as the moving carts for selling the Islamic media. The vans stay in crowded roadside locations or in front of big mosques. After introduction, we regularly visited their shops, stayed with them to observe their activities with their customers, asked contextual questions, and conducted unstructured and semi-structured interviews. This ethnography with people in the Islamic sermon media businesses resulted in 16 semi-structured interviews, more than 150 pages of field notes, 200 selected photos, and 30 contextual inquiries from video sellers and customers. The questions in semi-structured interviews involved the sources and costs of the Islamic sermon videos, their categorization of sermons, their networking with content creators and consumers, and their overall business strategies.

We started semi-structured interviews with the digital sermon listeners from our existing connections who regularly listen to such media. We extended our participant list through snowball sampling [47] from the suggestions of our known participants. We conducted 21 interviews with Islamic sermon listeners. The questions for the semi-structured interviews with this participant group involved listeners' consumption habits of Islamic media, their preferences of Islamic preachers, their political opinion formed through the sermon listening habits, and their offline and online discursive engagement with other sermon listeners.

Overall, our ethnographic studies with the four primary groups generated 62 semi-structured interviews, 12 unstructured interviews, more than 400 photographs, approximately four hours of videos, more than 300 pages of field notes, and many contextual inquiries. We should mention that we had to conduct 16 interviews over the phone and WhatsApp following the COVID-19 outbreak in Bangladesh [132, 133]. Among them, 9 interviews were with Islamic sermon listeners, 3 were with sellers, and 4 were with organizers. Our questions, observations, and contextual inquiries involved an

The Study at a Glance				
Category	**Organizers** n = 11 PC1 to PC11	**Content Creators** n = 14 ME1 to ME14	**Businesses** n = 16 WB1 to WB16	**Listeners** n = 21 WL01 to WL21
Location	Dhaka=6; Tongi=5	Dhaka=9; Tongi=5	Dhaka=11; Tongi=5	Dhaka=12; Tongi=9
Educational Background	Mainstream education=4; Madrasah education=7;	Mainstream education=6; Madrasah education=8;	Mainstream education=9; Madrasah education=6;	Mainstream education=8; Madrasah education=13;
Gender (self-identified)	Male=11; Female=0;	Male=14; Female=0;	Male=15; Female=1;	Male=15; Female=6;
Highest Education	H.S.C. = 2; Bachelors=7; Masters=2;	Less than H.S.C.=3 ; H.S.C. = 9; Bachelors=2; Masters=0;	Less than H.S.C. = 6; H.S.C. = 8; Bachelors=1; Masters=0;	Lass than H.S.C. = 7; H.S.C. = 9; Bachelors=4; Masters=1;

Table 1: The demographic information of the participants.

Figure 3: From left to right: (i) A temporary media cart in front of a prominent Bangladeshi mosque selling the *waz* videos loaded in memory cards; (ii) an electronics shop is selling *waz* videos to its customers.

exploration of the motivations for Islamic content creation and doing sermon media business; the material and religious aspects of navigating issues related to trust, Islamic norms, policies, and infrastructures; and the affective, political, and moral aspects related to digital Islamic sermon listening habits. We conducted our study until we reached the theoretical saturation [94]. Each interview lasted 30-35 minutes. Participation in our study was voluntary, and participants did not receive any compensation. The age range of the participants was 18 to 65 years. We conducted our study in Bengali. The interviews and other study materials were audio-recorded, which were translated and transcribed by two researchers to aide our analysis. Our research protocol was approved by the first author's institutional research ethics board for human subject research. We followed their ethical guidelines in participant recruitment, data handling, consent, risk communication, and COVID-19 procedures instructions.

3.2 Data Analysis

We analyzed our data following a general inductive approach [119, 123]. The analysis starts with multiple rounds of reading of the transcripts. We then conducted open coding and axial coding that generated themes. We had a set of a few predetermined themes informed by our reading of relevant literature on media sharing, infrastructuring, and the politics of the public. The research team met once a week to discuss the predetermined and emerging themes from the data. The findings reported below combine the predetermined themes as well as the emerged themes.

3.3 Positionality

All authors in this paper were born and raised in Bangladesh. The authors have a Sunni Islamic background. All authors are familiar with Bangladeshi Islamic rituals, social practices, and local norms. The authors have previously attended Islamic sermons. As native Bangladeshis, the authors have observed the transformation of Islamic sermons in digital forms on the Internet. The authors are formally trained in computer science, information science, and South Asian study. Two authors have worked with Bangladeshi religious communities over the past eight years. Such backgrounds helped the authors engage with the Islamic sermon communities deeply and appropriately interpret the findings in this study.

4 FINDINGS

We start our findings by reporting the ecology of Islamic sermon videos. We explain the processes of creating Islamic videos by Islamic media firms and Islamic content creators, followed by Muslims' consumption of Islamic digital content. We then discuss five aspects of infrastructuring grassroots movement of Islamic content creation: faith; informal learning; collaboration, negotiations, decision-making, skills, arts, and crafts; and breakdown and maintenance. Altogether, we explicate the affect, infrastructuring, and politics related to Islamic sermon videos.

4.1 Islamic Sermon Media Production

4.1.1 The Sources of Digital Islamic Content. There are different types of Islamic sermons, such as Friday sermons, yearly mass gatherings of Islamic lay preachers (*ijtema*), and occasional congregations in mosques (*jamat*), to name a few (see [118] for a list of other preaching types). The specific genre this paper discusses is a form of congregation event known as the *waz mahfils* [117, 118]. This type of Islamic sermon event happens on a larger scale and in different formats, places, and times. This is typically an outdoor event organized more frequently in Winter so that there is no monsoon, and it is appropriate to organize outdoors. The sermons take place at night, some spanning the whole night with the participation of several preachers. These sermons are prevalent both in rural areas and big cities. Islamic preachers travel to different places, often covering $2-3$ sermons in a day. The frequency of these Islamic sermons and their easy accessibility make it possible for grassroots content creators to create videos from this type of sermon.

Two primary sources of online Islamic sermon videos are informal media firms and amateur content creators. The most popular Islamic video sharing platform in Bangladesh is YouTube. The content creators upload and manage the Bengali sermon videos from their YouTube channels. People also share the videos on social media platforms. Our participants mentioned that they manage groups and pages on Facebook to draw users from social media and give them regular updates on new videos. The videos get millions of views on video-sharing platforms and social media. The videos also draw public conversations on the platforms.

4.1.2 The Process of Creating Digital Sermon Videos. The sermon committee members initiate the process of sermon organization by finalizing a list of the potential speakers and reaching out to them. However, sometimes it is difficult for them to obtain the schedules of popular preachers, who regularly appear on YouTube videos and social media. During the winter season, the preachers' schedules get filled up with invitations from around the country. Our participants informed that some popular speakers cover more than 3-4 sermons in a single day. Moreover, the "famous" preachers often prefer bigger sermon events.

Meanwhile, the content creators start contacting the sermon organizers to obtain their permission to videotape the sermon event. The content creators use a checklist before going to record an Islamic sermon. Common items on the checklist include deciding which sermons and speakers they will cover, obtaining permission from the organizing committee, and preparing recording materials and travelling logistics with them. Most of our participants did ($n = 10$) inform us that the committee rarely prohibits recording of the sermons (with a few exceptions) even if the content creators did not obtain permission upfront.

After capturing the video, the media firms sort and edit the videos to make sure that the shared videos are of the highest quality, interesting for the audience, and serve the purpose of Islamic preaching. In the next step, media firms upload the videos online. Following the upload, the content creators regularly monitor for if they receive any complaints from the viewers and the preacher in the video. For example, some preachers had complained to some of our participants that their videos had been inappropriately edited. In addition, the content creators get regular complaints about duplicate videos. In such cases, the content creators take measures from making a clarification to the preachers to deleting the videos from their channels.

4.1.3 Islamic Sermon Media Business. Our study finds two types of Islamic digital sermon media businesses: (i) businesses co-located with repair and electronic shops and (ii) Islamic sermon media selling carts. The first type of business is more prevalent in Tongi than in Dhaka. Most electronics shops in Dhaka are too busy to accommodate the digital *waz* selling business. On the other hand, repair and electronic shops in Tongi have a lower number of customers than Dhaka, and people have extra time besides their repair activities. The shops invest the extra time in selling the *waz* videos, as this brings them extra money with a low financial investment. Both types of shops sell Bengali dramas, movies, and even downloaded football matches along with the digital Islamic sermons. Our participants informed us that people are buying more *waz* videos than the other types of content in recent times.

In our ethnography, we found both wheeled and stationary *waz* selling carts. The carts sell only *waz* media. The wheeled carts ($n = 6$) move around in crowded locations such as walkways and mosques. After prayer times, the carts gather around a mosque so

that the people coming out of the mosque can buy their videos. We also found some stationary carts in front of some prominent mosques ($n = 4$). For both stationary and moving carts, the cart owners take permission from the mosque committee to conduct their businesses around the mosques.

The video sellers get and buy videos from two sources: (i) downloaded videos from YouTube and other third-party websites, and (ii) "unpublished" videos from media firms. Most of our participants ($n = 14$) download videos using a downloading software named IDM. However, the sellers complained about the speed and prices of the Internet packages. The video sellers download 15-20 videos a day that are on average 45 minutes long. Some shops buy videos in bulk from the "wholesale" shops in Gulistan, Dhaka. Due to regularly buying videos, the content creators and sellers generate rapport with each other, which further helps to sustain this business.

4.2 Islamic Video Consumption

The availability of the Islamic sermons online and the low prices of microSD cards make listening to the sermons a habit for our participants ($n = 17$). Because of the availability of "on-demand" media content, our participants ($n = 11$) reported that many abandon cable TVs and buy ($n = 7$) an "LED TV" (they mean smart TVs) so that they can use their SD cards and the Internet to play whatever they want on their TVs. Although NetFlix is available in Bangladesh, it does not have enough Bengali and Islamic content. During our ethnography, we found people listening to *waz* in public places such as cafes, snack shops, tea stalls, electronic shops, markets, grocery shops, pharmacies, among other public places. Below is a case from our ethnography in Tongi, where a snack shop in a busy alley plays the *waz* on a loudspeaker,

> Case 1: This is a comparatively quiet time in the afternoon, though the alley is still busy with people. We are looking for a convenient snack shop to sit and have some snacks. We enter a shop and see they are making Singara [a Bangladeshi snack, similar to the Samosa]. This is a mid-capacity restaurant that can accommodate at most 20 people. A person nearby, dressed in a t-shirt, is eating Singara. The shop owner is playing a *waz* audio on a loudspeaker. Another person nearby seems to listen to it very calmly. We finish our food and go to the counter to pay. The manager of this shop is a middle-aged person. We introduce ourselves. After some small talk, he says, "this is the afternoon time, which is why you do not see many people. Come back tomorrow at noon; you will see my hotel is packed. I always play *waz* for them. I have a good collection. People come to my hotel to have a good meal, have a good time listening to their favourite *waz*. I do it for them. I spend some money to buy internet packages to play the *waz*. But you know, it is worth it. If my customers are learning and being happy, I am happy, too. I am spreading Allah's words that may make my customer's mind softer. Who knows, I can go to the heaven only for doing this!"

This snack shop receives some regular customers, mostly workers from nearby offices. Our findings show that many customers stay for an extended time after their meal, sit together with their friends, and talk about what they heard in the sermon videos. The manager of the shop often joins them. We rarely found someone playing songs or random videos on their phone that did not go with the restaurant's ambience. Such informal rules are not written anywhere in the shop, neither do the shop owners prohibit anyone from doing this. Yet, the customers of the shop "know" what not to do in the shop when the *waz* was playing. This is one of several other examples in our ethnography that show how digital Islamic sermons are creating public affection and pious disposition among the *waz* listeners.

Our participants ($n = 12$) discussed how the habit of listening to Islamic sermons led them to increased digital literacy and helped to learn sophisticated technology operations. Before starting to watch Islamic videos, seven of them knew about Facebook and YouTube and had occasionally visited the sites when friends or family members opened the applications on their mobile phones. However, the participants did not regularly visit the platforms because they did not find any interesting content for them as "pious" Muslims. Some of the participants ($n = 5$) did not use these technology platforms before because of their fear of encountering *haram*. They explained technology as a *"thing for the youth"*, *"a place for wasting time"*, *"inappropriate for [their] values,"* *"easy mean for committing sins"*, *and "difficult to use."* The comments show, there are stereotypes among the participants about social media and video-sharing platforms. The *waz* media was the first compelling content for our participants to start using technologies.

Over time, through an everyday habit of listening to the *waz*, the participants ($n = 16$) mentioned their improved literacy in using mobile technologies, installing and using different applications on their mobile phone, learning to navigate the internet, searching content, and simple troubleshooting of their devices. Seven participants learned to use Facebook and YouTube with their family members' help. Five participants did not know how to buy internet packages; three used to go to mobile recharge points and asked them to buy an appropriate package. Two of them learned to recharge and buy internet packages online. Two participants also learned how to convert a video file into an audio file. Five participants loaded their mobile phones with the Islamic sermon contents from a local shop. They all described that the local shops are helpful and do minor troubleshooting for them.

> One day, I could not see any of my *waz* videos. I took my phone to a person in the *waz* shop, who is an expert [he meant the repairer, who also sells *waz*]. He formatted my memory card and taught me how to do this by myself. After that, every time the same problem happens, I format the card.[WL07, 52-years-old security guard in an apartment complex]

After getting skilled, participants informed us that they passed their troubleshooting knowledge on to their friends, too. They reported that they learn from each other as their friends around them also had similar experiences.

Our ethnography shows that the digital Islamic sermon has become a deeply cultural component and source of political reasoning

and learning. Our participants (n = 17) often seek credible Islamic reasoning in their day-to-day life to mitigate real-life conflicts. Because of this, they look for Bengali subject-wise sermons online (n = 16). Some reported (n = 7) searching for Bengali content to understand Islamic regulations to make their critical day-to-day decisions. Below is a case from our ethnography of using Islamic reasoning from a sermon video,

> Case 2: WL17, a 28-year-old employee of a company explaining his use of some *waz* media to provide reasoning of a profession that his friend has taken.
> "I have a friend who says his prayers regularly (*salat*) while at the same time has a music band. They earn money by making music. Now, I thought this is prohibited (*haram*); you cannot say you are in the right (*sahih*) Islamic path while you also have a [music] band. My friend asked me for evidence. I did not have one at that time. I am not an Islamic scholar (*alem*). One day I searched YouTube for subject-wise sermons. I also went to a memory shop for suggestions; they know because they sell it. Collecting some videos, I put them on a memory card and gave them to my friend. You know, I do not have to tell him anything and hamper our friendship through debates; Islamic scholars (*hujur*) will tell him everything [in the videos]. If he still has confusion, we will talk to each other. He might have some reasoning, too, right?"

The case above is one of the many other cases in our ethnography where digital sermons are source of religious as well as political reasoning for Muslims. We have found people seeking similar resources from *waz* to debate and discuss various government policies, Islamic rituals, professional decision-making, charitable donations, among others. The videos often spur heated public [125] discussion on the national level. Mainstream TV and news media report on the political and moral commentaries of the preachers as well as the confrontation of the preachers with political leaders and law enforcing agencies (see, for example [12, 102]).

The topic-wise sermon videos often present conflicting views on the same topics. Different preachers present the same topic in their distinctive ways and based on their interpretations of holy texts. The conflicts in topic-wise sermon videos often create confusion for listeners. For example, one participant explained his confusion about whether it is permissible for Muslims to attend religious festivals of other religions. From one sermon video, the participant used to know that it is not harmful (from the divine perspective) to attend festivals of non-Muslim communities. However, a recent video has strictly prohibited a Muslim from going to the religious festivals of other religious communities. Similar conflicts on practicing social norms and observing Islamic rituals often arise from sermon videos. Such confusion provokes the listeners (n = 7) to look for more scholarship on the topics. Our participants mentioned that they read books, talk to the local Imams, and sometimes post to Facebook for clarification and resolving conflicts. Thus, the digital Islamic sermons are creating a discursive space for Bangladeshi Muslims.

5 INFRASTRUCTURING DIGITAL ISLAMIC SERMONS PRODUCTION

The section above shows the ecology of the Islamic sermon video production, consumption, sharing, and businesses. There is no infrastructural support for this kind of Islamic media production. For example, popular Bangladeshi media production enterprises (e.g., Impress Telefilm [134] for music, drama, film, and documentary) do not engage in Islamic videos production. As a result, Islamic sermon content creators do not get access to the workshops and other technical learning resources from the media enterprises to improve their skills. Many Islamic content creators come from a madrasah background and hold limited mainstream educational knowledge. Government and non-government sponsors are also absent in supporting the informal Islamic content creators. The content creators are also constrained by limited knowledge in using sophisticated technologies (particularly in the beginning of their content creation career) and lack human resources. Most people working in this domain are poor. Despite the limitations above, the Islamic content creators perform important and interesting practices of infrastructuring work. There is no particular mainstream political motivation behind this work; rather, the content creators engage in this work out of their devotion to God and affection for religious principals (which Charles Hirschkind calls the "pious disposition [p 106][54]")

In our study, we found that the people at the grassroots create an infrastructure of producing Islamic media and thus contributing to the online Islamic counterpublic through their faith; informal learning; collaboration and negotiation; creativity, arts, and skills; and maintenance, fixing, and care. We describe each of them in the following subsections.

5.1 Faith

Faith, faith-based networks, and divine motivations are the primary factors that create and sustain the *waz* media ecology. For example, the organizing committee's main motivations for videotaping the Islamic sermons are spreading holy words (n = 11), guiding people toward Allah's path of blessings (*hedayat*) (n = 9), and hereafter peace (n = 11). Most sermon organizing committee members we studied are also members of mosques, madrasahs, Trusts, and other religious organizations in their neighbourhood. A sermon is an advertisement for their affiliated religious institutions and increases their institution's visibility (n = 7), which leads to more donations for the religious institutions. Some organizers (n = 6) expressed their frustration about the lack of Bengali Islamic content on the Internet, and they used the sermon videos to increase this Islamic content online.

The content creators and *waz* listeners show similar divine motivations for coming to Islamic content creation. Besides the financial interests from the uploaded videos (n = 14), the content creators and media firms create videos for promoting young Islamic scholars (n = 14), hobby (n = 9), passion (n = 10), the hereafter benefits (n = 13), and showcasing Islamic scholarship online (n = 12). Five participants reported that they started the Islamic sermon content business transitioning from better-paying jobs. Three participants reported that they started the business by being inspired by an

Islamic scholar (*alem*) that they would regularly follow. One participant was explaining this to us,

> Brother, Allah has blessed him [a scholar that he follows] with much knowledge (*elem*) and blessings. What they have done for Islam, I might not be able to do that in my entire life. If I can record his videos and pass them to other people, for me, it is compensation for not doing anything for Islam. [ME4, 22-year-old media firm worker and a student]

Three participants mentioned that online popularity is another motivation for them to stay in the Islamic media business. While we had an assumption that more participants might have this same motivation, the rest of the participants did not articulate it. One participant said,

> Well, some people may like it. But you are popular after you are established [in the business]. No one knew me when I started, right? However, becoming popular is not bad either. You know [a Bangladeshi popular drama director], right? Now, if I become popular like him, people will know me as well. But the best part is, I will then be able to reach more people to spread the Islamic content. Is that not a good thing? What is better than spreading Allah's words. [ME08, 35-year-old media firm worker]

Some media firms ($n = 3$) reported that they switched to the *waz* media business from other entertainment media businesses. In other businesses, they would sell pirated music, songs, and dramas. Businesses selling pirated media are normalized in Bangladesh, and legal actions against such businesses are rare. However, our participants changed their business to Islamic media as they thought this would potentially give them the chance to make more money in a more credible (*halal*) way (that is approved by Islam). The *waz* listeners ($n = 17$) mentioned Islamic rituals, knowing about the hereafter, getting instructions for leading an Islamic lifestyle, Islamic guides for addressing conflicts in daily life, and inspiring themselves to become regular in their prayers. Furthermore, the participants expressed their emotional feelings about listening to the *waz*, such as happiness, anger, confusion, attraction, enchantment, refusal, disappointment, and fulfillment. This diverse set of emotions reflects their pious dispositions of becoming Muslims.

Altogether, our ethnography shows that faith is the central motivation for the Islamic content creators, organizers, and *waz* listeners alike. Despite negligible material benefits, the organizing committee members put on efforts so that they can organize a sermon and help media firms to create content from them. The media firms come and stay in the *waz* business despite various financial and social challenges because of their divine motivations. The listeners listen to *waz* to show their pious disposition and learn about Islamic scholarships.

5.2 Informal Learning

The Islamic media firms and amateur content creators go through a series of learning processes related to apprenticeship, mimicking, trial and error, and other forms of experiential learning. In the beginning, most content creators ($n = 13$) did not have sophisticated cameras and editing equipment. To cope with the initial entrepreneurial challenges, some media firms ($n = 5$) start small, from an individual effort as a freelance worker. They start video recording with available low-cost mobile phone cameras and upload the videos after doing some basic edits doable with their mobile phone software. The videos, in the beginning, do not get sufficient views to bring any revenue. As a result, the content creators are forced to learn how to make their content "view-worthy" despite the low quality of the videos. This leads the content creators to learn to accurately and efficiently compartmentalize the topics in the video; exploring what types of video content bring more "likes," "views," and subscriptions; and choosing speakers in a way so that they can make a sustainable connection with emerging speakers to work with them in the future. As new content creators, it also takes time for some participants ($n = 3$) to get familiar with the strategies for boosting their *waz* media online.

Our participants also learned some marketing techniques to overcome their financial challenges. Besides uploading the content online, the content creators ($n = 7$) start going to small video shops and market their videos as "unpublished" (on the Internet) and exclusive *waz* media for the shop. This brings some money initially for some media firms, which cover their transportation and logistic costs. For transportation, they need 500 to 2500 BDT [1] per trip for a two-member group to cover a program depending on the distance they travel. For the most necessary equipment (such as camera, lens, memory card, microphone, tripod), the media firms invest 40,000-100,000 BDT depending on their ability and the desired video quality.

The Islamic media firms go through some social challenges and learn to overcome them through their perseverance and divine motivations. The initial lack of revenue often creates frustration among content creators and their friends and families. Earning from YouTube and selling Islamic videos is not yet a familiar business tradition in Bangladesh. Because of this, friends and families of the Islamic content creators feel insecure about this profession and often advise the media firm workers to leave the business. The content creators do not get any training and support from the government since this profession is not yet "institutionalized." As such, the content creators learn to navigate such social tensions with their perseverance and divine motivations to stay in this business.

Once our participants start earning revenue from Islamic content, they learn more sophisticated technologies beyond simple software operations. They start browsing resources from the Internet ($n = 20$) and reading books ($n = 5$) to research what technical and technological arrangements can help them make better quality videos. Eight participants reported that they regularly read blogs and visit Facebook groups of videographers to learn new video recording and editing technologies in Bangladesh. Eight participants reported that they lost their videos at least once because of computer hard disk problems. The content creators learned how to recover videos in such cases, or where they can keep a backup of their content at a lower price.

Learning to build a relationship of trust and care is an essential part for both content creators and retail media selling businesses. This involves learning customers' background and their purchasing capabilities. For example, the content creators and media firms in

[1] 1 USD = 85.84 BDT (as of December 23, 2021).

Tongi informed us that they prepare especially well during the time when the nearby garment factories give salaries to their employees, as the customers buy more Islamic sermon videos during that time. As many customers are regular to the Islamic video shops, the sellers maintain a good relationship with them. The sellers show their care for customers in choosing their favourite content and keep track of customers' preferences of sermon speakers. Learning the customers' video listening behaviour takes time and conscious efforts on the side of the video sellers. We have also seen video sellers offering customers minor repairs of their phones, offering tea, and chitchatting about the preachers and contemporary national political issues during our ethnography. Some sellers ($n = 6$) informed that they took formal training from a repair shop so that they could combine their Islamic video selling business with the repair business. Through such social, contextual, skill-based, and situated learning, the content creators and video sellers are able to establish a relationship of trust and friendship besides their business relationship with their customers.

5.3 Collaboration and Negotiation

The process of creating and doing businesses with *waz* media is a multifaceted task. It involves a diverse set of collaboration, negotiation, prioritization, and decision-making processes among the preachers, organizing committee members, media firms, and amateur content creators. This process starts with the organizing committee selecting the preachers for a sermon. The organizing committee members usually prioritize some preachers in their list who have popularity in local communities and online. Some preachers prefer to be video recorded while preaching, while others do not. Some other preachers are controversial, who also happen to be more popular online. The various trade-offs guide the committee members' preferences for "good" and "news-worthy" speakers who can bring affection to the audience.

Popular preachers have their own technical crews to record the videos and upload them to the preachers' own channels or Facebook pages. The organizing committees usually appreciate such arrangements from the preachers' side as it reduces their workload to not have to video record the sermons. However, some committees also prefer to keep the right of recording their sermon and do not permit preachers to bring their own crews. In such conflicting cases, the organizing committee and the sermons make an informal deal regarding who will videotape the speeches.

Some sermons are combined with other events, including prayers, which are not "online-worthy". Organizing committees prefer such events to be quiet as they often accompany rituals. Such sermons avoid any disruption and disturbance. In one situation during our ethnography, the sermon event was co-located with the graduation program of the organizing madrasah students. So the committee did not allow any media firm to film except for the time when the commencement took place. Overall, the organizing committee members go through such prioritization processes, deciding who will record the sermons, collaborating with the media firms and the preachers, and ensuring that the content creators follow Islamic norms while recording the videos.

The media firms go through a number of contractual negotiations, competition, and collaboration processes with the preachers, organizers, and other media firms. The media firms have different types of contracts with popular and less popular speakers. In the case of popular speakers, the media firms do not take any money to videotape the speeches. The firms do it because the videos of popular speakers get good "views" on YouTube and bring money to the firm. However, when a media firm makes a deal with a preacher, the firm gets exclusive permission for videotaping the preacher, and other firms are not allowed to videotape the preacher. The popular speakers also help the media firm workers by making special arrangements for food and accommodation. The media firms compete with each other to get such offers from popular speakers. The speaker chooses to make a deal with a firm based on their quality of work, trustworthiness, and dedication to cover all of the preacher's speeches. For less popular speakers, our participants ($n = 9$) informed us that big media firms usually charge money based on the time they record. One media firm participant explains this to us,

> If the speaker is an average one [he meant less popular], we ask them to give us the transportation costs. But if the speaker is new, we usually record them for about half an hour to an hour, and I take a minimum of three thousand taka. You know, someday they will be popular because of our videos and get more calls from bigger sermons. They [the new preachers] happily pay us this small amount because of that [the hope of getting popular online]. [ME09, 27-year-old media firm worker]

The selling price of the videos is fixed through a negotiation between the content creators and the video shops. The content creators keep track of which videos they are uploading online and which ones they are selling to video shops. The content creators and media firms together often make informal deals with local SD card suppliers. When the number of memory card sold is higher, the local SD card suppliers sell their products for a lower price. This creates an implicit impact on the side of content creators and media firms to produce better quality videos so that people buy them more from their shop instead of buying Internet packages and watching the *waz* videos online. The prices of the *waz* videos are fixed through this collaboration and negotiation processes. If a customer buys more, they get discounts. Furthermore, when customers buy a memory card, they get another discount. The customers can load videos onto their own SD cards or buy a loaded SD card from the shops. The shops load a 32GB memory card for about 250 BDT and sell a 32GB loaded memory card for 450 BDT. A customer gets 140 to 160 *waz* videos and 400 *waz* audios on a 32GB memory card. The sellers customize the quality of the videos depending on a customer's preference. For example, if a customer plays the videos on a TV, the sellers take about 30-40 minutes to prepare the videos so that the video quality is good for a TV, whereas the sellers do not have to put in extra effort if a customer plays the videos on their mobile phones. Because of the better quality, a customer gets only 40-60 if they buy them for a TV.

Overall, the findings above show how the collaboration, negotiation, competition, and decision-making processes impact creating *waz* videos and doing business with that. Such collaboration happens mostly within the faith-based community as their motivations,

networks of support, sources of digital content, and business types are distinct from the other modes of Internet content (such as songs or movies).

5.4 Creativity, Arts, and Skills

The content creators learn various creative arts and skills in recording, preparing, and uploading sermon videos on appropriate platforms. In doing that, the content creators learn the skill of what types of decoration, lighting, and camera positioning can produce good quality videos. To learn this skill, the content creators regularly monitor their uploaded videos to note what video features indicate increasing view counts online and incorporate them while preparing to record a sermon. In addition to the technical skills, the media firms also note down the constraints from the preachers, such as the recording positions in front of the stage and regional norms of communicating with the local sermon attendees. As the media firm workers often cover several sermons in a single trip, sometimes it is difficult for them to ensure an appropriate recording environment. The more skillful content creators with hands-on experience in handling such situations are able to overcome such constraints arising from limited time and resources. One participant was explaining such challenges of negotiating the quality of videos vs. resources,

> We take the instantaneous decision. Say, if the light is not enough around the stage, we may quickly talk to an electrician to buy a bright light and install it near the stage. When we run out of the memory card, I ask my friends [other media firm workers] if they have an extra one. I could keep already recorded videos on a hard drive or upload them to the Internet. But how many things you can carry. The Internet is also not good in rural areas. [ME13, 24-year-old full-time worker in a media firm]

Thus, preparing for the recording of a sermon comprises a set of technological and social skills, which are often subject to resource constraints, power dynamics, safety, and security. The skills and capabilities of the media firms to cope with the challenges improve with time.

After capturing the videos, the content creators bring a diverse set of creative skills in sorting, editing, and sharing the videos. Throughout the process, the media firms make sure that the shared videos are aesthetically pleasing, interesting for the audience, and serve the purpose of Islamic preaching. Each of these activities depends on the content creators' technological experiences, religious knowledge, and the sentiments of users online. To sort the videos, the media firms use their historical data from "view counts" on YouTube videos or "likes/shares" of Facebook videos to analyze what types of videos might be a "hit." Our participants describe a "good" video by what *"moves people", "connects deeply", "sounds sweet and non-monotonous", "shakes the mind", "makes people cry", "have the courage to speak against powerful people", "draws to Allah",* and *"has something to learn in life"*. For editing the videos, the media firm workers apply some topic-wise Islamic knowledge. They either learn about Islamic topics from the Quran and Hadith or learn them gradually as they listen to the *waz* media regularly. Since learning such skills involves a significant degree of Islamic knowledge, content creators cannot learn the arts and crafts of editing videos elsewhere outside their communities. This is easier for the workers who already have come from a madrasah background. One media firm participant explained their editing strategies to us,

> Say I have some videos by [a speaker]. It has some parts like on Qurbani, namaz, or fasting; they do not usually discuss one topic all the time in the speech. When I listen to the discussion, I can understand which parts are about the prayers or which part is about the Qurbani. If the video is long, then I get more topics from that. [ME4, 22-year-old media firm worker and a student]

The content creators use similar arts and creative ideas when uploading the videos. As revenue comes primarily from YouTube "views" and subscriptions, media firms benefit from setting catchy titles as this is often the first feature of a YouTube video that attracts new viewers/subscribers. On the other hand, catchy titles are often demeaning to the preachers. The firms do not forget that the speakers are culturally respectable people and media firms produce videos from their lectures. Considering this, media firms described their strategies to select a title as *"being true to the topics", "taking phrases from the waz", "keeping up with the topics", "choosing a template title comprising of the speaker's name followed by a date", "reflecting the context of the video", "avoiding controversy"*, among others.

The video sellers in the carts or shops also learn a set of social skills to build a relationship with their customers and sustain their business. When video sellers download videos from YouTube and third-party websites, they download them in whatever format is available. However, different customers hold different phone models. Some do not even have video playing software on their phone. Some regular customers purchase videos to play on their TVs. The *waz* media sellers take all of these constraints into consideration and take time to convert videos according to customers' needs. Even though it takes more time for the video sellers, they do it without charging extra money. The video sellers often suggest their customers upgrade their phones to a "China" phone [smart phones] so that they can easily play the *waz* videos. The video sellers show their care to customers with extra time and effort to accommodate their needs. Beyond video seller's business interests, it also helps them grow their connections and make new friends. These loose ties become valuable not only in their businesses but also in their personal life.

Altogether, the findings above show how the Islamic media firms apply their skills, arts, and creativity from recording to uploading their videos online. Such informal skills and creativity – such as identifying the aesthetics and affective features of a video to edit them, breaking a video into specific topics, crafting titles for uploading a YouTube video, among others – do not usually come from abstract or institutionalized knowledge; rather, for the Islamic content creators, the craft gradually improves as the media firms learn the technicalities of content creation and create a balance between Islamic socio-cultural norms of respect and doing business with the digital sermon.

5.5 Maintenance, Fixing, and Care

Our participants perform various high-level "fixing" and maintenance activities ($n = 17$) due to communal care and care for their religion. Alongside recording and editing videos, media firms have to be very active on YouTube and Facebook to boost their videos. After the videos are shared on popular social media platforms, the firms regularly communicate with the preachers and viewers about ethical issues, duplicate contents, and copyright issues. Nine content creators informed us that they regularly review users' comments on all platforms where they share the videos. If a preacher preaches anything controversial, the media firms try to reach out to the users, preachers, and anyone else related to the video to discuss this. If the preacher cannot give a plausible explanation to the complaints, the media firms take down the videos or edit them to cut the controversial portions. Some media firms have reported partnering with Islamic scholars (*alems*) to address controversial issues. The media firms do it to increase their credibility online.

There has been a common complaint that some media firms edit the videos in a way so that the videos get viral by creating controversies. While agreeing with this to some extent, our participants also indicate other possible sources of this controversy. One media firm participant was explaining this to us,

> Some YouTube channels and Facebook groups often cut our videos and make them funny. The next time you look at a funny video or meme, try to see where it is coming from, those meme-makers or us. We do not know how to control all of these derogatory Facebook pages or YouTube channels. Since the government or law enforcement agencies are inadequate to monitor such defaming contents, they are seemingly beyond our control. Despite this, we do whatever we are able to do within our boundaries. [ME03, 37-year-old media firm worker and a businessman]

Copying videos and copyright issues are two other common problems for media firms. All of our participants reported that their videos were copied in at least five cases. On the other hand, as our participants reported ($n = 9$), the *waz* media do not have any copyright in and of itself, as many media firms often videotape the sermons from the same events. For this reason, media firms cannot do much about copyright and copying issues. One participant was explaining this issue, whose firm does not care if their contents get copied,

> During 2017 this happened a lot; a lot of good channels were closed down. If 40 media/content creators are recording the same sermon and all upload the same content, it becomes a conflict about copyright issues. The contents that look a bit generic get attacked. What can you do about this! If you have bad luck, it will happen! [ME12, 35-year-old media firm worker]

Some media firms ($n = 6$) informed us that they report a video if they identify that it has been made from their videos. Other channels do not take any serious measures until it seriously impacts their "view" counts and subscriptions.

In summary, the findings above show that our participants deal with various broken policies and ethical issues related to the Islamic sermon videos. Since the copyright policies for the *waz* content are weak, the *waz* content creators cannot take any legal or formal steps in the cases that their content gets copied. Instead, they address the issues through increasing their communication with viewers and preachers, making negotiations, and doing trivial fixes (such as deleting videos). From a logistic and legal sense, such maintenance and fixing activities are not important for the content creators, and the tasks are easy to ignore. Despite this, the content creators passionately do the tasks because of the care for the video consumers and their responsibilities to their religion.

6 DISCUSSION AND CONCLUSION

In the sections above, we have presented our findings on the ecosystem of digital Islamic media in Bangladesh. First, we have demonstrated the process of producing, sharing, selling, and consuming Islamic sermon videos. We have reported the faith-based community norms, practices, and diverse activities in the four groups at this ecosystem: (i) Islamic sermon organizers, (ii) the media firms, (iii) the sermon media businesses, and (iv) the sermon video listeners. Second, we have presented five aspects of infrastructuring Islamic digital content creation: faith; informal learning; collaboration and negotiation; creativity, arts, and skills; and maintenance, fixing, and care. We have presented various challenges faced by the Islamic content creators and explored how faith-based motivations, networks, and resources help the communities overcome these challenges.

Our work joins previous HCI studies that investigate how the creation (or hacking) of infrastructure is a creative action, where people explore demand-based and pragmatic use of technologies and reorganize their existing material conditions [2, 61, 87]. Exploring the "backstage" [116] of such an infrastructure requires making visible the invisible labors [61], which often are underappreciated and remain untouched in design efforts. Our study shows how creating the Islamic media content is a collective effort, which involves the human (such as the organizers) and non-human (such as faith) actors that shape how Islamic digital content is created and shared among Muslims. We suggest designers in HCI better engage with such faith-based infrastructural actors and mobilize resources for interventions. In the remainder of this section, we explain the key takeaways from our findings for the HCI and related communities.

6.1 Faith in Infrastructuring

Our study makes an important contribution to the intersection of HCI and infrastructuring by explicating the process of creating the faith-based infrastructure for digital content creation. The faith-based communities face diverse financial, technological, political, logistic, social, and safety-related challenges in producing Islamic digital content. Islamic affects and the faith-based infrastructure help the Islamic content creators overcome technological and social barriers. Our ethnography shows how strong divine motivations of the organizers, content creators, and listeners create the demand for Islamic digital content. Such an affect of faith is so strong among some content creators that it often convinces them to switch their better-paying jobs to adopt Islamic content creation as their profession despite some serious financial challenges. The knowledge about holy texts and the Islamic sermon listeners' religious background is central to various creativity, arts, and skills to sustain

the digital Islamic sermon business. The content creators and the preachers overcome the social and economic barriers by collaborating with each other and negotiating financial contracts for video recording the sermons. In their collaboration and negotiation, the preachers, sermon organizers, and content creators prioritize religious values (such as respect, trust, credibility) over the secular interests of making more profit. Altogether, faith and religious practices, networks, and motivations constitute the social substrate of the human infrastructure of Islamic digital content creation.

In HCI literature, faith has not yet been strongly considered as an important factor in infrastructuring. We argue that faith and its associated practices are vital components of the sort of infrastructuring we present in this paper. We argue that taking faith seriously will equip HCI researchers with tools and techniques to effectively engage with the faith-based communities online. Our findings demonstrate how the production and sharing of Islamic sermon videos, for example, involve faith-based rationalities that are hard to explain through economic output or political benefit. Similarly, the negotiations between different groups involved in producing Islamic sermon videos further demonstrate how faith could solve critical challenges in infrastructuring processes and collaborative works. We believe that a tighter engagement with faith-based infrastructuring will help the HCI researchers to develop better technologies with the religious communities, which are absent in the current secular space of computing [87, 106].

6.2 Faith and Platform Politics

We join the literature about platform politics [45] and show how faith-based infrastructure imposes some unique challenges at the policy level for global technology platforms, such as YouTube. The negotiation and contract between content creators, sermon organizers, and preachers is often informal. As a result, more than one content creator may record the same sermon and upload them online, resulting in duplicate sermon videos on YouTube and other social media platforms. When a content creator receives a complaint about a duplicate video, one way to resolve the conflict is to claim the copyright of their video. However, the content creators often face difficulties interpreting YouTube privacy and policy issues because of their lack of knowledge and the absence of an easy way to learn the copyright policies. Because of the difficulties in understanding copyright policies, the content creators just delete their videos from YouTube when they receive any copyright-related complaints. Further, the content creators face challenges due to their limited digital literacy and language-related barriers in navigating the features of online platforms.

Such findings challenge YouTube's overarching vision for being a "universal" space for videos. Our participants expressed their interest in localizing the platform for uploading religious content in the Bengali language. The localization of such a global technology platform has been a solid indicative factor in sustaining infrastructure in the long run [108]. Finding an optimal policy solution between the two opposing directions – one for customizing a global video-sharing platform that conforms to the faith-based infrastructure and another for generalizing a video-sharing platform for all – will involve exploring the "cost" [108] for supporting one direction or another. We suggest engaging with the faith-based infrastructure explained in this paper to explore the "cost" and finding optimal platform policies to support faith-based communities and make the video-sharing platforms more faith inclusive.

6.3 The Emerging Online Religious Counterpublics In Global South

There is a strand of HCI literature that examines how political counterpublics are created through the influence of political figures [46]. For example, many followers of Indian political leaders pick up negative behaviors when influenced by the antagonistic messages of the politicians [46]. The online connections and communication among Indian parliamentarians suggest that the parliamentarians engage (through retweets and replies on Twitter) more with other parliamentarians from their own caste system [127]. These and other works [74, 89, 93] show how social media works as a platform for politicians to create and mobilize their followers. The counterpublics are driven by prominent politicians or popular influencers in the examples above. We complement this literature by discussing how people at the grassroots also create online religious counterpublics through faith-based infrastructuring.

The findings from our ethnography and the insights drawn from the anthropology of sensual reason [54] show how the grassroots Islamic content creators are facilitating sermon videos to create an "imagined community". Islamic content creators, sermon organizers, preachers, and sermon listeners create the community through the process of faith-based infrastructuring to circulate sermon videos and create communities of listeners who engage through discussion both online and offline. The online sermons inspire small talks, discussion, and debate about quotidian lifestyles, habits, thoughts, peace, hope, or public policies–in short, whatever a citizen in a modern "public" sphere possibly discusses. The YouTube comments or Islamic sermon sharing groups on social media are rendering an opportunity for Islamic scholars and Muslim communities alike to engage in an elaborate and in-depth discussion about everyday political identities, priorities, and expressions. Thus, the online sermons here are creating the opportunity for faith-based reasoning and discourse for our participants. In other words, Islamic sermons are creating the online space for democratizing religious authorities.

Creating the counterpublic sometimes involves constituting alternative community norms, techniques, and standards. As our findings have shown, the alternative community norms sometimes emerge in opposition to other publics. For example, the lack of accessibility to the popular media outlet infrastructures leads the Islamic content creators to create online and offline communities of their own. Such communities create their own set of skills, creativity, collaboration techniques, and problem fixing mechanisms. Secular contents have marginalized many "pious" Muslims from social media and video sharing platforms due to the Islamic sensibilities to "permitted" and "prohibited" contents [105]. As opposed to the "prohibited" contents online for the "pious" Muslims, the Islamic contents online create an alternative online space for the marginalized religious communities by sharing the sermon videos. Our findings further show how sermon videos are the resources for sermon listeners to debate secular and state policies. Such insights from our study demonstrate how the Islamic content creators

and sermon listeners create a faith-based counterpublic in resistance to the secular and liberal publics and media outlets. As a whole, the grassroots political movement of producing digital Islamic sermon media is creating an imagined community among the content creators, sermon organizers, and sermon listeners through the embodied sensibilities of the online sermons.

In line with existing literature [74, 89, 93], we also recognize that the creation of the counterpublic is not absolutely devoid of the already existing power and influence that Islamic political leaders hold in the Bangladeshi political sphere [50]. The Islamic sermons are sometimes a popular venue for Islamic preachers to manipulate their less-literate listeners by inspiring them to spread misinformation [122], for example. Nevertheless, the videos created from the Islamic sermons work as "political microphone" [46] to create Islamic public opinion in the political sphere. The emerging development scholarship within HCI has been trying to marry religious politics (in terms of everyday life experiences) and development (see, for example [87, 106, 121]). We argue that our works advance HCI4D literature by showing how such a marriage already exists between the grassroots counterpublic and technology. HCI design and intervention can benefit from such insight and strengthen our understanding of the Global South's politics in their connections to technologies.

6.4 Sermon Videos and International Development

Our work makes two contributions to the literature of HCI4D. First, we demonstrate that the Islamic digital media embodies a "pious disposition" and increases the adoption of computing technologies and digital literacy in a historically hard-to-reach faith-based community in the Global South. The faith-based communities often hold a negative perspective about computing technologies due to value conflicts and stereotypes [104]. Previous studies find that some Islamic clerics describe technological artifacts as evil machines and the mobile phone as the destroyer of their children's morality [104]. These and other similar stories [87, 106] demonstrate the challenges of HCI4D communities to adopt computing technologies and facilitate ICTs for social development. On the contrary, the mass consumption of online Islamic sermon videos suggests that it is possible to break the stereotypes, promote digital literacy, and program more significant projects in HCI4D with faith-based communities by embedding pious dispositions into computing technologies. Existing research in ICTD has suggested exploring the possibilities of ICT beyond their overtly utilitarian purposes [6, 22, 71, 91, 99]. We join this literature and extend this by arguing that HCI should bring religious values and affects to the forefront of design to be more inclusive of the faith-based communities.

Second, we draw the attention of the HCI4D community to recognize the Global South population's transition from the 'passive user' to the producer of digital media. HCI scholarship has made significant progress in overcoming several challenges in increasing access to digital technologies for users in the the Global South [3, 13, 28, 52, 83, 84, 124, 128]. With increased access to digital technologies, people in the Global South are engaging in more sophisticated digital tasks, from producing digital artifacts to fixing broken technologies. Our ethnography shows that Islamic content creators are producing digital content despite their lack of resources and skills. Our participants troubleshoot software and hardware problems, use video editing software to edit videos, and learn new skills to attract more viewers for their videos. Such a trend indicates the Global South population's progress as consumers of digital technologies. However, we also report a lack of resources for them to fully engage in digital content production. We hope that the future work in HCI4D and ICTD will address the challenges of digital content creation by marginalized communities in the Global South.

6.5 Limitations

Finally, we acknowledge two limitations of our study. First, our study is heavily biased with male participation in the groups of sermon organizers, content creators, and Islamic media business people; although, we could conduct our study with six female Islamic media listeners. In our study, we observed and learned from our participants that female participation in sermon organization and content creation is traditionally absent. The spaces for men and women are segregated in only a handful of sermon events, and women participate in the sermons as listeners in the events; however, women neither preach in nor organize the sermon events. Our participants informed us that there is a different form of all-female sermons (locally known as *talim* for women), where the organizers, preachers, and listeners are only female. However, since the female sermons rarely happen, we could not get connected to any female organizers. However, the female voice is not entirely absent from our study, given our reasonable engagement with female digital sermon listeners. We acknowledge that more female participation could have given different or diverse gender perspectives, especially related to our analysis of politics. As women's participation in sermons and their digital activities increases, we hope to capture the gender-based interpretation of Islamic politics in our future research. In doing so, we will follow Islamic community norms and work with a female colleague to conduct our future ethnographic studies with Muslim women. Despite this, we present the low participation of women as a limitation of our study.

Second, do we suggest that our arguments are generalizable elsewhere? We draw on scholarship within HCI [106] and beyond [4, 51, 75, 79] to emphasize that Muslims worldwide differ in their interpretations of holy texts (such as [1, 41, 90]) and, as such, generate various cultures of observing rituals and creating social values. For example, the Bangladeshi Muslim community's value systems might be different from that of Saudi Arabian Muslim communities in various aspects. Even within the same geographic locations, there are different trends of Muslim cultures (such as Sunni and Shia Muslims in Bangladesh, who often engage in ideological debates [120]). Because of such pluralism in Islam, which is also not uncommon in other religions [53, 55, 95], we take a cautious position about the generalizability of our findings. We join existing research in HCI [106] to present our insights as suggestive. We caution HCI researchers to deeply consider their particular context and religious practices to interpret the arguments in this paper. Moreover, we hope that our study will inspire future research in the intersection of new media and religion and advance HCI's scholarship on HCI design and develop novel technologies to help marginalized communities.

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