Gendered, Collectivist Journeys: Exploring Sociotechnical Adaptation Among Afghan Refugees in the United States

AMNA BATOOL, School of Information, University of Michigan, USA
TAWANNA DILLAHUNT, School of Information, University of Michigan, USA
JULIE HUI, School of Information, University of Michigan, USA
MUSTAFA NASEEM, School of Information, University of Michigan, USA

This paper presents findings from an empirical study that uncovers the economic, psychological, and socio-cultural adaptation strategies used by recent Afghan refugees in a Midwestern U.S. state. Through 14 semi-structured interviews conducted between February and April 2023, this study investigates how Afghan refugees utilize technology, tools, and skills in their resettlement process, and builds upon Hsiao et al.'s conceptualization of sociotechnical adaptation. The findings reveal (i) gender and collectivist cultural values play a big role in determining the types of adaptation strategies used by men versus women, (ii) strategic choices in terms of the type of support sought depending on shared versus non-shared identity of host community members, (iii) a notable tension between economic adaptation and preserving socio-cultural values is observed, and (iv) creative, collective solutions by women participants to address economic challenges, contributing to the discourse on solidarity economies in HCI. Key contributions include (a) design implications for technological products that can aid in psychological adaptation, fostering solidarity economies, and creating digital safe spaces for refugees to connect with shared-identity host populations, and (b) policy and program recommendations for refugee resettlement agencies to enhance digital literacy among refugees.

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

Additional Key Words and Phrases: Refugee, Immigrants, Sociotechnical, Economic, Psychological, Socio-cultural, Adaptation, Gender

ACM Reference Format:
Amna Batool, Tawanna Dillahunt, Julie Hui, and Mustafa Naseem. 2024. Gendered, Collectivist Journeys: Exploring Sociotechnical Adaptation Among Afghan Refugees in the United States. *Proc. ACM Hum.-Comput. Interact.* 8, CSCW2, Article 498 (November 2024), 32 pages. https://doi.org/10.1145/3687037

1 Introduction

The United States (U.S.) continues to be a focal point in the global migration narrative [22], serving as a sanctuary for refugees seeking safety and a fresh start. With projections indicating an increase in refugee arrivals in the coming years [56], this role imposes distinctive demands on the nation's social, economic, and technological frameworks to successfully integrate these diverse populations into the American societal fabric. This integration process is intricately linked to the three critical stages of migration: (1) pre-migration, which may span from a few days to several years, providing

Authors' Contact Information: Amna Batool, School of Information, University of Michigan, Ann Arbor, USA, abatool@umich.edu; Tawanna Dillahunt, School of Information, University of Michigan, Ann Arbor, USA, tdillahu@umich.edu; Julie Hui, School of Information, University of Michigan, Ann Arbor, USA, juliehui@umich.edu; Mustafa Naseem, School of Information, University of Michigan, Ann Arbor, USA, mnaseem@umich.edu.

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the owner/author(s).
© 2024 Copyright held by the owner/author(s).
ACM 2573-0142/2024/11-ART498
https://doi.org/10.1145/3687037

varying degrees of preparedness; (2) the actual migration, often fraught with uncertainty and hardship; and (3) post-migration, which involves settling into a new cultural and social environment [73].

Refugees do not merely migrate *physically* to the U.S.; they bring rich cultural identities, values, and traditions that significantly shape their adaptation processes. Among these migrating groups, Afghan refugees are particularly notable due to their growing numbers and the complex geopolitical factors that drive their displacement [17]. The resettlement journey for Afghan refugees presents numerous challenges that test their resilience and ability to maintain their cultural traditions while assimilating into American society. These challenges encompass economic hardships, such as securing employment and housing; psychological concerns, including managing trauma and stress; and socio-cultural adjustments required to navigate and integrate into new community norms while preserving their original cultural identity.

Within the realms of Human-Computer Interaction (HCI) and Computer Supported Cooperative Work (CSCW), there is a growing corpus of research focused on the role of technology in global migration, particularly for those forcibly displaced by conflict, persecution, economic crises, and natural disasters — collectively defined as refugees in prior studies [13, 30, 45, 58, 65, 87, 90, 91]. A comprehensive literature review by Sabie et al. of refugee-related publications in HCI between 2010 and 2019 reveals a diversity of foci ranging from general ICT access, social inclusion to service access. This review highlights a shift from addressing migrants' practical needs to also supporting their emotional and social needs [57]. This shift underscores the importance of understanding refugees' complex needs in the medium to long term settlement processes, including cultural adaptation, family unification, identity issues and everyday life adjustments, presenting an opportunity for researchers to explore how sociotechnical systems can support such multifaceted needs.

This paper investigates the specific adaptation strategies employed by Afghan refugees in a Midwestern state of the U.S. within the first few years of resettlement, focusing on their economic, psychological, and socio-cultural adaptation. The research questions we explored for this study are: 1) How do Afghan refugees adapt to *economic strain* in their new environment, and what strategies do they use to find suitable employment and financial stability? 2) What migration and post-migration *psychological stressors* are faced by recent Afghan refugees [1] and what are their subsequent emotional adaptation strategies? and 3) What adaptation strategies, if any, do Afghan refugees use to overcome *socio-cultural* challenges caused by resettlement in a very different culture?

We build on the work of Hsiao et al. [40] who coined the phrase sociotechnical adaptation to mean the use of technologies, tools, skills and willingness required to use technologies to adapt when relocating. Our findings reveal that culture, language, and gender collectively influence how Afghan refugees adapt and integrate into their new environment. Our main findings are that (a) Afghan refugees show a willingness to use technology, tools and skills towards economic and socio-cultural adaptation, but rarely towards psychological adaptation, (b) we uncover that when it comes to host community members with- and without shared-identities, our participants are strategic in terms of who they asked for what type of support, (c) we find that our participants feel a friction between economic adaptation and holding on to one's socio-cultural values, (d), we uncover evidence of creative and collective solutions by women participants to overcome economic challenges, building on prior work on solidarity economies in HCI [26, 48] and lastly, (e) we observed stark differences between the adaptation strategies of men and women, influenced by society's predefined gender roles. This last observation underscores the critical need for gender-specific resettlement policies

[1]We define recent as within 1-3 years of migration, as it is long enough for adaptation strategies to emerge, but short enough that recollection of migration stressors is relatively fresh

and programs needed at the refugee resettlement level, given that successful integration into the United States requires acknowledging and addressing unique socio-cultural intricacies Afghan men and women face as they navigate their new lives.

While we caution against technological determinism, we present numerous design recommendations through which digital technologies can help Afghan refugees uphold socio-cultural values while navigating tough economic and psychological challenges. For instance, remote work opportunities for women, using online communities to educate host-communities on refugee needs such as Halal food, use of women-only digital safe spaces to provide peer support to overcome psychological stressors, as well as the creation of digital safe spaces with same-identity host communities to help navigate culturally sensitive challenges. Beyond the design implications for creating technological solutions that aid in the psychological adaptation of refugees and encourage solidarity economies, our main contributions to the HCI literature are as follows:

- Empirical findings that reveal the varying levels of willingness by Afghan refugees to use technological tools and skills as part of their economic, socio-cultural and psychological adaptation strategies
- Our research goes beyond immediate refugee concerns upon arrival in host country, and uncovers longer-term complex needs of refugee resettlement findings with the experience of refugee resettlement to these parallel contexts.
- Theoretical implications that extend the sociotechnical adaptation conceptualization to include an explicit gender lens, as well as expand the unit of focus from the individual to also include the household and communal level.
- Policy and program recommendations geared at refugee resettlement agencies towards approaches to increase refugee digital literacy

2 Background

Afghanistan is a country rich in cultural diversity, shaped by its multiple ethnic groups and complex history. The major ethnic groups include the Pashtuns, Tajiks, Hazaras, and Uzbeks, each contributing unique cultural practices, languages, and traditions to the national tapestry. This ethnic diversity is often mirrored in varied cultural norms, religious practices, and social structures across the country. Gender norms in Afghanistan are particularly pronounced, with traditional roles deeply ingrained in society, although this varies significantly by region and community.

Compounding these internal challenges over 40 years of military conflict, poverty, insecurity, and natural disasters have severely tested the resilience of most Afghans. Threats to safety, amid increased gender-based oppression, the reversal of gains in democratic and human rights, and other sources of instability in Afghanistan, have resulted in a continuing refugee crisis, making Afghan refugees the third-largest displaced population in the world after Syrian and Venezuelan refugees [34]. According to the United Nations Refugee Agency (UNHCR), more than 8.2 million Afghans have been displaced as a result of the conflict over its entirety. While a majority of Afghans are internally displaced and remain in Afghanistan, around 3 million have been forced to leave the country and live as refugees across 102 countries [37]; the vast majority of refugees live in Pakistan, which hosts more than 1.3 million refugees, and Iran, which hosts more than 780,000 refugees [46]. Of all displaced refugees, the impact of the conflict has been hardest on women and children [76], whose rights have been dangerously eroded, and thus make up 70-80% of forcibly displaced Afghans.

The Afghan refugee crisis of 2021 started on August 15th, when Taliban fighters entered the capital, Kabul, and President Ashraf Ghani fled the country, leading to the collapse of the Afghan government [46]. Between August 15th and August 31st, the U.S. and its allies airlifted 124,000

people from Kabul airport, including foreign nationals and Afghan citizens who had worked closely with the U.S. military and its allies during the war on terror [52]. The evacuation operation was one of the largest airlifts in history and led by U.S. Central Command to the moving of at-risk Afghans from the Kabul airport to military airbases in the Middle East (including Al Udeid Air Base outside Doha), where evacuees were vetted against the National Counter-terrorism Center's terrorist watch list [35]. A number of evacuees were then moved to military bases in Europe (Ramstein Air Base in Germany), where evacuees went through medical screenings and were biometrically scanned before they were allowed to enter the U.S. Within the U.S., the Afghan refugees were temporarily housed at 4 military bases in Virginia, Texas, Wisconsin, and New Jersey, as they were assigned to the refugee resettlement program [64].

Distinctly different from typical U.S. refugee camps, which are managed by various humanitarian organizations providing long-term services and support, the military base camps established for the 2021 Afghan cohort served primarily as emergency response facilities. These camps were rapidly set up to manage the sudden influx of evacuees during a crisis, characterized by their structured and highly organized environments that leveraged military logistics to meet immediate needs such as shelter, food, and medical care. Unlike traditional refugee camps, which focus on long-term cultural integration, community building, health and education; these military bases were not intended for prolonged residence. They were focused more on short-term resettlement processing and addressing basic survival needs, lacking the community-oriented features of established refugee camps that facilitate smoother transitions into society.

In the broader context of refugee support in the U.S., the refugee resettlement in the U.S. is a federal program that collaboratively works with local refugee resettlement agencies to facilitate integration into American society [20]. Refugee resettlement agencies are non-profit organizations, often affiliated with national and international bodies, that assist refugees in their transition to a new life in the host country, providing services such as housing, employment assistance, language training, and cultural orientation [70]. By working closely with government bodies, local communities, and volunteers, these agencies aim to support refugees in achieving self-sufficiency and integration into their new communities, emphasizing the overall well-being and human rights of the individuals they serve. These agencies play a crucial role not only in initial settlement services but also in long-term support towards self-sufficiency and assimilation, thereby acting as a bridge between the refugees and their new communities.

In the last fiscal year of President Obama's administration (2016), the U.S. admitted approximately 85,000 refugees [11]. However, under President Trump's administration, the annual refugee cap was drastically reduced, reaching a historical low of 15,000 for the fiscal year 2021. This reduction in the annual refugee cap meant that refugee resettlement agencies had to undergo many rounds of layoffs, as their funding from the federal government is tied to the number of refugees they resettle each year. When the Afghan refugee crisis of 2021 hit, refugee resettlement agencies were ill-prepared to handle a crisis of this order, bringing more suffering and uncertainty for many Afghans, who had already been displaced from military camp to military camp for up to 4 months before being assigned to a refugee resettlement agency. This also meant that a number of Afghans were left to fend for themselves, and had to use technology to get access to social services, driver's licenses, and finding a job.

3 Related Work

3.1 Refugee Response in HCI

HCI researchers have outlined various directions to better support refugee resettlement, particularly opportunities for technology design to ease the challenges of finding and accessing critical resources,

like housing, transportation, and education [5, 21, 28, 66–68, 82, 86]. This research spans the various stages of refugee response, including initial disaster response, on-the-ground relief, and resettlement [6–8]. Despite the growing interest in supporting refugee-related research in HCI Sabie et al. found that the limited research on the resettlement stage primarily focuses on pragmatic needs, such as access to transportation and language learning [57].

More recently, researchers have called for a more holistic understanding of resettlement experiences in host countries as a crucial step towards identifying sustainable interventions [6–8, 61]. While pragmatic resources are critical, they only address surface-level aspects of resettlement. Resettlement is often a jarring and confusing experience that requires long-term reorientation to new cultural norms and ways of living [8]. More recent research outlines factors that HCI designers and researchers should account for when working with refugee populations, including cultural backdrops (e.g., religion, lifestyle, language), displacement-related stressors (e.g., mistrust, fragmentation of family), and available social resources (e.g., neighbors, NGOs) [6–8]. For instance, topics like emotional support for men are lacking [57]. While HCI researchers have studied the emotional experience of resettlement among women [49, 72], few have broached this topic, particularly as mental health is often a taboo subject among Middle Eastern and Asian men, who make up a large percentage of the refugee population [57]. Others highlight the importance of addressing the gendered differences in resettlement support, calling for more research on socio-economic adaptation for women [57]. The majority of research with refugee women has focused on women's health and relationships with their families as women are primarily seen as domestic support for their individual families [3, 38]. Thus, engaging refugee women in resettlement efforts could be interpreted as improper, given cultural gender dynamics.

Our work builds on this prior work by providing a case study of how these understudied factors impact sociotechnical adaptation among Afghan refugees in a U.S. context. Those who have studied longer-term complex needs of refugee resettlement have focused on non-U.S. contexts, such as Australia and Europe, where social services and community engagement are sometimes more comprehensive compared to the U.S. [5, 23, 38, 59]. For instance, HCI researchers in Australia have studied a maker space in Australia for refugee and migrant women to use community-led design to support women in building confidence, mental well-being, and social relationships [38]. Other HCI papers have highlighted similar findings on the value of community hubs in providing resources and a place to build connections with others experiencing similar challenges [88]. Other researchers in Germany have developed an online platform to aid them in resettlement, including finding language courses, housing, and education [82]. While refugee research based in the U.S. has explored similar topics, our research goes beyond immediate refugee concerns upon arrival in the host country and uncovers adaptation strategies used by refugees to overcome economic, psychological, and socio-cultural challenges. We hope to extend prior research that uncovers longer-term complex needs of refugee resettlement by comparing our findings with refugee resettlement experience in these parallel contexts.

3.2 Forms of Adaptation and the Emergence of Sociotechnical Adaptation in CSCW

Societal adaptation is described by Korel as the adjustment of a social system (which could be an individual, group, organization, or even an entire civilization or society) to both internal and external shifts [42]. Such adjustment includes changes in practices, social behaviors, values, and how reality is perceived, interpreted, and constructed [32]. Migrant societal adaptation entails engagement with the new host society, development of new behavioral patterns, norms, values, and practices, and re-imagining a social reality based on these new experiences [32]. Not only is adaptation a dynamic activity that brings about internal changes within individuals or groups, it is an activity that transforms the environment around them [32]. Searle and Ward critically examined

cross-cultural transitions literature to substantiate two distinct forms of adaptation among migrants: psychological (emotional/affective) and socio-cultural (behavioral) forms [60].

Psychological adaptation often refers to one's ability to *navigate* difficult everyday situations [12], and thus is related to psychological and emotional well-being [80]. It is influenced by personality, social support, life changes, and coping styles [80]. Socio-cultural adaptation refers to behavioral competence and is more strongly affected by factors such as cultural knowledge, the duration of stay in the new culture, interaction with host nationals, cultural differences, language fluency, and acculturation strategies [60, 78, 79, 81]. Ward asserts that we can most effectively understand psychological adjustment using a stress and coping framework [77] and argues that socio-cultural adaptation should be understood by adopting social skills or a culture learning paradigm [77]. While socio-cultural adaptation has been used to investigate employment and financial status [39], a third category of adaptation is economic adaptation, which involves the process of integrating into the host community's economic system [12, 32]. Because economic adaptation aims at realizing initial stages related to economic survival and the last stages associated with achieving material well-being, it entails job acquisition or starting a business and career advancement, ideally advancing economically [32]. Thus, Aycan and Berry suggests that economic integration is not limited to economic adaptation but full integration into the social and economic structure of the host country [12].

Hsiao et al., motivated by these three forms of adaptation discussed in prior migration literature [16], expand on them and introduce the term "sociotechnical adaptation" to describe how people, particularly recent migrants, use technology to navigate relationships with others and groups to thrive in new cultural contexts [40]. They carefully distinguish between sociotechnical and socio-cultural adaptation—the latter focuses on language development, social networks, and adjusting to living in a new place. By contrast, sociotechnical adaptation emphasizes the tools, willingness, and skills required to use technologies when relocating. Hsiao et al. primarily focuses on recent migrants' involvement in community commerce and their trust in different actors of community commerce. The authors also acknowledge the limitations of their work [40]. First, their work does not extensively explore migrants' willingness to migrate, their legal status, or their social identities in the host country—factors they acknowledge as critical to determining post-migration experiences of such individuals [40]. We address such limitations in our work by examining how their pre-migration lived experiences and realities impacted their post-migration adaptation process. Finally, Hsiao et al. underscore the necessity for future research to explore long-term needs and assess how migrants' sociotechnical adaptation evolves [40], a gap that our study also seeks to address. While not acknowledged as a limitation, we believe that sociotechnical adaptation in this work has extensively examined the individual level, leaving an opportunity for further development of the theory into a communal perspective, exploring how refugee families, who often become cohesive units, adapt to new environments. Our work investigates how responsibilities are divided, what changes are necessary for such adaptation, and the strategies they employ to achieve it.

3.3 Technological Efforts to Support Economic, Psychological, and Socio-cultural Adaptation

Technology has emerged as a crucial factor in aiding the resettlement of immigrants in new environments. Exploratory, participatory, and co-design methods, involving collaborative efforts between researchers and participants, have been employed to engage refugees and gather feedback on the utility of technological interventions fulfilling specific adaptation needs of refugees [5, 25, 31, 55, 65].

In terms of economic adaptation, research by Lee et al. indicates that Afghan refugee and asylum-seeker (RAS) entrepreneurs leverage digital technologies for personal and business skill

development [43]. The authors mention using digital platforms such as social media, Fiverr, Skill Share, and YouTube for marketing, networking, upskilling, and professional development [43]. According to the authors, these digital resources are pivotal in overcoming language, cultural, and socio-technical barriers, contributing to entrepreneurial success. In addition, Yafi and Said discussed how communication technologies like WhatsApp could be used for facilitating business activities and entrepreneurial efforts in addition to communication and social networking among refugees [87].

Leung [45] discussed the psychological well-being of refugees in relation to their access to communication technologies. This study highlights how the ability to stay connected with family and friends through telecommunication, particularly through telephones, is critical to sustaining the emotional well-being of refugees during displacement. Leung emphasizes that access to these communication tools can be a lifeline for refugees, offering them a way to confirm the safety of family members and manage the emotional challenges of displacement. Similarly, Schelenz et al. emphasized the crucial role of digital technologies in aiding women's psychological well-being by enabling access to emotional support, language training, and spiritual practices through online platforms [58]. While serving as a gateway to spiritual practices, technology enables individuals to engage with digital content such as online videos of religious leaders reciting the Quran, thus providing a virtual connection to religious activities without being physically present in a mosque [4, 58].

Regarding sociocultural adaptation, prior work focuses extensively on language, transportation, and support networks. Wulf et al.[85] conducted a study exploring interactive technologies' use to support the cultural integration and language learning of young refugees. One specific example is developing a mobile application that provides language lessons through interactive games and quizzes, which are culturally contextualized and designed to be engaging for young learners. This approach not only aids in language acquisition but also helps familiarize refugees with the cultural nuances of their new host countries. Other efforts include the independent use of various digital resources, including language apps like Duolingo [29], Rivrtran [21], and Voxy [75] to help overcome communication barriers.

In Germany, local administrations have leveraged technology to foster ICT-based social inclusion by deploying various apps that deliver accurate and timely information to refugees in multiple languages through a centralized platform [59]. This approach exemplifies how digital solutions can enhance communication and accessibility for displaced populations. Similar efforts include the development of a chatbot designed to facilitate interactions between refugees and services [23] and a prototype website in Australia that connects refugees with NGOs [5], both aimed at reducing information and social isolation gaps. It is important to note the differences in support structures across countries that have hosted refugees following the Syrian conflict. While local governments in Germany, Canada, and Australia actively invest resources to integrate refugees into host communities, the approach in the United States is markedly different. In the US, refugee resettlement is predominantly federally funded, with minimal local government assistance, providing support to refugees typically for the first 30-90 days post-arrival [83]. In contrast, Germany offers up to five years of support based on eligibility criteria, and Sweden's refugee resettlement program spans two years [83].

Moreover, Baranoff et al.[14] introduced the "Lantern" project, a community-driven, Near-Field Communication-based system designed to help refugees navigate their new environments using simple, accessible technology. The technology allows refugees to access digital tags placed in strategic locations around the city, which provide localized and relevant information directly to their mobile devices. This project is an example of utilizing existing technology in novel ways to aid integration and mobility.

While technology-based solutions for refugees offer considerable benefits, they often lack the necessary contextual understanding—such as language, cultural norms, literacy, and socio-economic factors—crucial for determining their effectiveness and use [14, 47, 65]. Therefore, future studies and developments must prioritize the exploration of alternative information presentation methods that are tailored to the diverse literacy levels and contextual preferences of refugees—such as pictorial-based layouts [47], audio messages, real-time assistance, intuitive commands, and simplified registration processes. These innovations should aim to enhance usability, trust, safety, and accessibility, ensuring that digital tools not only reach their intended audiences but also effectively support them in their resettlement journeys [47].

Our study explores how cultural norms influence the use of technology among refugees. CSCW literature has advanced our understanding of how cultural norms and practices shape how technology is perceived, accepted, and utilized. Our work builds on previous studies by showing how cultural nuances impact technology's effectiveness in supporting refugees' long-term adaptation. For instance, variations in literacy levels, language proficiency, and previous exposure to technology can affect user engagement and the overall utility of digital solutions. Furthermore, cultural sensitivities related to gender roles and religious practices often dictate the accessibility and appropriateness of certain technologies [50]. By focusing on these aspects, our work aims to uncover critical insights into the long-term adaptation needs of our participants. This approach will allow the HCI community to develop tools that are not only technically sound but also culturally congruent and supportive of the users' lifestyles and values.

4 Methods

We conducted 14 semi-structured interviews with Afghan refugees who arrived in Michigan, U.S., to address our research questions. Our interviews, conducted both virtually and in person, aimed to gather data and insights into the experiences and challenges the refugees face as they settle into their new lives in the United States. Our study was approved by our university's ethical review board. Participation was voluntary, and all participants were given gift cards worth $20 as a token of appreciation. The study was conducted between February and April 2023.

Furthermore, during training sessions held at a partner resettlement agency, we conducted follow-up informal interactions with the same participants between September and November 2023. Verbal consent was obtained from all participants. These interactions were not recorded, adhering to the training administrators' request to refrain from recording; instead, detailed notes were taken by the authors. In our findings, we use exact quotations when sharing data from interviews conducted between February and April 2023 and present scenarios in square brackets [] that were abstracted from notes from informal interactions between September and November 2023. This section describes the methodology we followed in conducting the interviews and analyzing the data we collected.

4.1 Participant Recruitment and Sampling

To recruit participants for our study, we employed a combination of purposive, convenient, and snowball sampling techniques [24]. We collaborated with a resettlement organization in Michigan, a midwestern state in the U.S., that assists Afghan refugees. We recruited participants who attended training and workshops at the organization. We then used snowball sampling to connect with other potential participants who met our eligibility criteria. This technique is commonly used in qualitative sociological research when a population is difficult to reach [24]. To meet the eligibility criteria for our study, participants were (a) required to have migrated to the United States from Afghanistan as a refugee, asylee, or on a Special Immigrant Visa (SIV); (b) have lived in the United States for at least one year; and, (c) be at least 18 years old at the time of migration. While not an

explicit eligibility criteria, we screened for participants who had experienced significant adaptation milestones, such as navigating public transportation, job searching, and accessing state benefits. Eligibility was verified through targeted questions during initial interviews that assessed their experiences with these key aspects of cultural adaptation. We aimed to ensure gender diversity among our participants and included both men and women participants. However, due to the religious and cultural context of Afghanistan and the potential safety risks to our participants, we chose not to diversify our participants to non-binary or transgender persons.

4.2 Study Guide and Procedure

Our study used a semi-structured interview approach informed by prior user studies with immigrants [40, 57]. Our interview protocol was designed to investigate our research questions, which centered around the experiences and challenges Afghan refugees who arrived in Michigan faced. We categorized our interview questions into four main themes to facilitate our investigation. The first theme focused on participants' migration experiences, including any obstacles they encountered during the transitioning period. The second theme focused on their sociocultural adaptation needs and challenges upon arriving in Michigan, such as language and communication barriers, navigating the system (e.g., transportation, education, shopping, social support), and other related issues. The third theme addressed their economic adaptation needs and challenges, including job searches and managing finances. The final theme explored their psychological needs and challenges, such as dealing with migration trauma and adapting to a new settlement. Throughout our interviews, we examined how cultural factors influenced participants' perceptions of these experiences and challenges. By exploring these different aspects, we aimed to comprehensively understand the participants' experiences and provide insights to support their resettlement and adaptation in the United States.

To ensure that our study was conducted with transparency and informed consent, we provided all participants with a study overview and explained the interview process and questions at the beginning of each session. Additionally, at the end of the interview, we offered participants the opportunity to provide feedback on the study and the interview script. We sought and obtained permission to record audio and not video, in order to respect the privacy preferences of our participants. We collected 18 hours of recorded interviews from 14 interview sessions. Each interview lasted 50 to 120 minutes. To ensure that our participants could express themselves comfortably, we conducted interviews in the languages they were most proficient in English, Urdu, and/or Dari. The authors who conducted the interviews were proficient in English and Urdu, but given our limited proficiency in the Dari language, we hired a translator for interviews conducted in Dari.

4.3 Data Overview

We conducted semi-structured interviews with 14 recent Afghan refugees, consisting of 8 women and 6 men. Demographic information can be found in Table 1. Most participants aged between 25 and 35 arrived in Michigan in 2021. Regarding their current occupation, most held low-income jobs such as truck driving, car detailing, labor work, babysitting, teaching, facilitation, housework, and student positions. Of the participants, four held Master's degrees, five held Bachelor's degrees, three had college education, and two had no formal education. Before coming to the U.S., some had high-income government and non-government jobs, including parliamentary positions, journalism, entrepreneurship, and membership in non-governmental organizations. This diverse range of educational and occupational backgrounds provided valuable insights into Afghan refugees' experiences and challenges in Michigan.

4.4 Data Analysis

Our dataset included 18 hours of audio-recorded interviews and discussions and notes and memos taken during interviews and reflection sessions. All recordings were transcribed verbatim to accurately represent the participants' experiences and perspectives. We used inductive and deductive approaches [19] to analyze our data. Initially, we conducted open coding in an inductive manner, generating 150 preliminary codes including 'Feeling of Helplessness,' 'Bureaucratic Complexity,' 'Cultural Coping Mechanisms,' and 'Educational Accountability.' In the subsequent deductive phase, we categorized these codes into clusters based on (i) socio-cultural, economic, or psychological categories, and (ii) whether the quote was about a stressor or an adaptation strategy. Within each category, we used codes such as challenges (related to each type of adaptation, such as communication barriers, transportation barriers, job concerns, financial management, trauma types, manifestations, and coping mechanisms), shifts in responsibilities, gender role reversals, and sociotechnical adaptation.

Throughout the coding process, the authors wrote reflective memos [18] to ask analytic questions about emerging thematic categories and to make connections across themes. These memos were informed by the authors' experiences conducting the interviews, their contextual understanding of the culture, and the observations made by the authors while conducting the interviews.

4.5 Positionality Statement

The research team at the university consisted of diverse members varying in race, gender, nationality, and academic status, with none originally from Afghanistan. However, two authors share cultural and religious ties with the Afghan refugee community. Moreover, one author has been actively involved with the Afghan refugee community in the U.S. for six years, assisting with their adaptation processes. The first author, who conducted the interviews, has over ten years of experience conducting qualitative research with South Asian communities on critical health and privacy issues Two authors bring extensive experience in community-based participatory research with vulnerable populations, collaborating with government, civil society, and non-profit organizations both within and outside the U.S. These varied and extensive backgrounds equip the authors well, providing the expertise required for this study.

5 Findings

5.1 Economic Adaptation Strategies and Role of Technology

Aycan et al. posit that socioeconomic integration goes beyond mere economic adjustment, encompassing immigrants' comprehensive integration into the host country's social and economic fabric [12]. In this section, we shed light on the multifaceted ways Afghan refugees navigate economic integration in a new environment.

5.1.1 Economic Adaptation Among Men: Navigating Expectations and Managing Personal Dignity: We found that our participants experienced significant economic shocks following their migration from Afghanistan to the United States. Consequently, they implemented various strategies to adapt to their new situation and secure their economic well-being. Three of our male participants reported holding managerial or directorial positions in Afghanistan. Following the fall of Kabul to the Taliban, they were forced to sacrifice economic comforts in exchange for physical safety. As one participant described the profound contrast between their past and present circumstances:

> "My life here cannot compare to Afghanistan. I don't have 1% of what I had in terms of luxury. We had a big house, backyard, cars, driver, maid, executive jobs... I don't have anything here. But security-wise, I have everything. 100% [security] here (P1)."

ID	Gender	Education	Ethnicity	Current Occupation	Occupation in Afghanistan	Marital Status	No.of Children
P1 (I)	F	Masters	Arab	Facilitator	UN representative for Women	Married to P5	4
P2 (I)	F	Undergrad	Tajik	Homemaker	Homemaker	Married	2
P3 (I)	F	Undergrad	Tajik	Homemaker (looking for part-time remote work)	Homemaker	Married to P6	3
P4 (I)	M	Completed High School	Pashtun	Car Detailing	Driver	Married to P8	3
P5 (I)	M	Masters	Uzbek	Bank Official	Director	Married to P1	4
P6 (I)	M	Masters	Tajik	Fellowship Student	Manager	Married to P3	3
P7 (I)	F	No formal education	Pashtun	Homemaker (looking for part-time work)	Homemaker	Married to P4	3
P8 (I)	F	Undergrad	Pashtun	Student	Judge	Married	3
P9 (I)	F	Undergrad	Hazara	Facilitator	Teacher	Married	3
P10 (I)	F	Undergrad	Pashtun	Facilitator (looking for part-time work)	Student	Unmarried	NA
P11 (I)	F	Masters	Pashtun	Teacher and Student (looking for work)	Teacher and Student	Unmarried	NA
P12 (I)	M	Undergrad	Hazara	Student	Student	Unmarried	NA
P13 (O)	M	Undergrad	Pashtun	Bank Official	HR manage	Married	NA
P14 (O)	F	No formal education	Pashtun	Homemaker	Homemaker	Married	NA

Table 1. Participants' Information [I = Interview Participant, O = Observation Participant, NA = Not Applicable]

Although the participants reported anticipating the transition from stable lives to a significantly lower income, the reality of the high cost of living in the U.S. was unexpectedly harsh for them. Thus, to make ends meet, all male participants in our study initially took on blue-collar jobs, such as working in a Halal butcher shop or a car detailing [thorough deep cleaning] facility. As one participant commented:

> "I knew beforehand that the entry-level job I would be getting when I land in the U.S. would not be anywhere close to what I had in Afghanistan. But they all do it [blue collar jobs] to sustain in the new environment, so I'll have to do that too (P5)."

As they navigated low-income, labor-intensive jobs, trying to run a single-income household with multiple children became overwhelming. The financial strain compelled our male participants to reassess their roles as family providers, prompting them to seek assistance from their wives in generating income. One male participant emphasized the need for cooperation and support between spouses to successfully navigate the challenges of the new environment:

> "When I came to the United States, I told my wife [that] living in the United States is so different than Afghanistan. I would like you to learn English, I would like you to help me [earn a living], and I would like you to be like a co-worker and a partner. We have to work together, and we have to divide the job between us" (P6).

While most women adapted well to these changes, the sudden shift also sparked feelings of frustration among some women who had previously been restricted from working. These women reported that back in their homeland, family support systems allowed them the freedom to pursue employment while still managing domestic responsibilities. However, in their new environment, without such support, the dual burden of managing both home and work responsibilities can be challenging.

> "My husband didn't allow me to do a regular job in Afghanistan, and then here, he told me when in Afghanistan, you talk about a job, job, job. Now here you can find a good job for yourself...Then I had to tell him that there (in Afghanistan) I had my mother-in-law to take care of our kids so I could work, but here there is no one." (P7).

These economic challenges tended to introduce tensions within families. Previously discouraged from working, women found themselves thrust into the workforce, resulting in a complex interplay of greater financial freedom, frustration over additional burdens, and a change in family dynamics.

Continuous Learning and Step-wise Career Advancement: We identified another economic adaptation strategy among our participants that demonstrates resilience and a persistent desire to learn to regain the status they once held in their hometown. Even though our participants began with minimal savings or social connections, we observed a that they go through a *step-wise career advancement*, a term we've used to describe the series of distinct employment stages observed among our participants. Step-wise career advancement for refugees involves a strategic progression starting with entry-level positions. This journey includes gradually climbing the proverbial career ladder achieved by acquiring new skills, gaining experience, and receiving support from the host community. The process enables refugees to move into roles with greater complexity, responsibility, and often higher levels of social status that come with office-based jobs. For instance, consider the following scenario of P13:

> [He was an HR manager at a security firm in Afghanistan that worked closely with the U.S. Army. He oversaw payments to 2,400 security personnel that worked for that firm, however, everything was done manually and on paper. When he first arrived in the US, the first job he could find was at a Halal butcher shop, even though he had no prior experience working as a butcher. While he worked long hours and had to help care for kids when he got home, he invested his spare time in improving his English and acquiring basic digital literacy skills on a donated laptop. He eventually transitioned to a bank teller job with the help of one of the customers at the butcher shop and eventually got promoted to a loan officer (P13).]

Initially, our participants engaged in positions that are accessible with minimal prior experience in the U.S. labor market. These positions, which we term *"entry-level,"* include roles such as truck drivers, factory workers, and restaurant staff. The term "entry-level" reflects the accessibility of these jobs to new entrants in the job market rather than implying any lesser degree of skill. Our findings indicate that securing these positions often relies on social connections and proactive search strategies, including online searches for "High-Paying, Entry-Level Jobs for Refugees in the U.S." One participant described his method for finding an entry-level but high-paying job as follows:

> "In addition to asking around, I did a Google search for *'what are the entry-level and high-paying jobs in Michigan for refugees?'* and learned about the Commercial Driver's License (CDL). Then I asked around about the CDL and came to know that it was actually a high-paying job but needed a license. So I went to the license office and there found another refugee who told me where to get free classes to obtain this license, and that's how I got it. Now, I tell everyone who asks about this (entry-level but high-paying job)."

After acquiring experience, resources, skills, or social connections in entry-level positions, refugees frequently advance to *intermediate roles* such as data entry operators, front desk officers, or Uber drivers, typically within 6 months to 2 years of starting in entry-level positions. This transition reflects their ability to leverage initial gains for further opportunities. A woman participant exemplifies this progression:

> "My brother worked in [a car detailing company] for a year, and we saved money for my father to get a car...Now, we have a car, and he (father) does Uber deliveries on that. My brother still works at that company, but now he is studying as well (P11)."

In this critical phase of step-wise career advancement, we found two distinct types of assistance the host community provides. We found that the shared-identity host community played a crucial role by assisting refugees in navigating online job applications and crafting effective cover letters, emails, and resumes. However, when it came to providing job recommendations, refugees approached the non-shared-identity host community. By strategically leveraging these diverse networks, refugees not only gain access to a wider range of employment opportunities but also integrate more deeply into the economic fabric of their new environment. This strategic expansion of their social capital allows them to ascend beyond entry-level positions and secure roles that better match their skills, education, and aspirations.

After spending approximately 1-2 years in intermediate job roles, we found that refugees often aspire to attain *advanced roles*, such as loan approval executives or budgeting officers. Upon securing a stable job, they then focus on acquiring technology skills to improve their performance. In pursuit of these elevated positions, refugees actively seek referrals from their professional networks, recognizing the significance of connections in accessing higher-level job opportunities. We found that such referrals often come from non-shared identity host community members who are well-established in the new environment and have robust connections with potential employers. For example, a participant (P10) shared that an American woman who volunteered for refugee resettlement facilitated her appointment as a school teacher due to her connections with the school administration. Furthermore, another participant (P12) reported how an American family assisted him in securing a full scholarship at a prestigious educational institute to resume his studies. He expressed:

> "This American family contacted me to attend a seminar on refugees at the university their son was studying in and give a presentation about my experiences... After finishing my presentation, a professor approached me and offered me a fully funded scholarship to study here (P12)."

The step-wise career advancement is evident in the following scenario, where a man participant (P5) engages in frequent job transitions, primarily seeking a better salary or, in his words, "a more respectable profession" :

> [P5, who had been in the U.S. for only 18 months at the time of the interview, had undergone four job transitions. While he held a director position in the Afghan parliament, he had no prior experience with computers. He started off at a car detailing

facility, getting a Commercial Driver's License (CDL) in the hopes to get a higher paying job, but switched to a data entry role at an organization as this was a more respectful profession according to him. At the time of the interview, he managed the budget for his organization, and had three people reporting to him. His journey, too, involved reaching out to the host community for assistance in learning Excel to achieve the desired position.]

5.1.2 Women's contributions to economic adaptation. In addition to men, we found that women also actively contributed to economic adaptation in diverse ways, encompassing financial management and active participation in income generation within their new environment.

Managing Finances: We found that women were pivotal in overseeing family finances to meet survival needs within budget constraints. They led financial decision-making, strategically identifying necessary purchases and exploring economical options. As one participant (P9) reported:

> "Because we are refugees, there are a lot of resources that provide us with clothes and everything. I try my best not to spend $1 on things that I can find free... mostly I'm spending money on tissues, toilet paper, shampoo, like basic groceries... (P9)"

The same woman also reported that the host community assisted in managing finances by helping them find shops offering essential items like winter clothes and halal groceries for free.

> "This Indian lady introduced me to [a thrift store], where you can obtain clothes, cookies, and other groceries at no cost. She informed me that I could visit there, and they would assist refugees. She sent me the address and mentioned her friend there (P9)."

We also discovered that online shopping plays a crucial role in managing finances, with women using budget-friendly platforms like Temu [2] and Shein [1] to identify deals and share coupons with each other. However, to balance modern convenience and cultural traditions, these women employ unique strategies, such as creating *dummy accounts* dedicated to browsing and saving items in the online shopping cart. These dummy accounts intentionally lack addresses and payment methods, aligning with cultural norms emphasizing the need to obtain final approvals from husbands in family-oriented decisions. One woman, while explaining this approach, stated:

> "I have added these items to my cart. Now I'll show them to my husband, and then we will decide what we need. My husband also has an Amazon account, and that account has an address and payment method installed, while mine does not. So, I freely put stuff in my cart without any fear of accidentally buying anything without asking him (P14)."

While online shopping aids them in managing finances, women have also voiced concerns about the process, like missing deliveries by 'porch pirates' (a term borrowed from Forbes) [33]), poor customer service, and package theft. One woman specifically highlighted package theft in their area, stating:

> "Our area is not safe, and many homeless people live here and there. So sometimes when our package arrives, it gets stolen before we even know about it... Now, I don't order my packages to my address anymore. I get them delivered to a host community family who lives in a better area (P1)."

We also discovered that close-knit friend circles, typically comprising two to four friends, play a pivotal role in managing finances. According to our participants, these circles are valuable conduits for sharing information about affordable shopping options and discounts. Private WhatsApp groups emerged as a crucial platform for exchanging information within these close friend circles. Women leverage these private groups to share insights into budget-friendly shopping opportunities, share

discount codes and nearby stores offering economical options, and even coordinate to share delivery charges for online shopping. For instance, one participant (P1) shared an experience where her closed WhatsApp group, consisting of three friends, regularly exchanged Temu discount codes. She reported the following scenario:

> [She collaborated with two of her friends to avail shopping discounts. Each participant would share the products they wanted to buy in a WhatsApp group, with the goal to avail a specific threshold for a discount, such as getting $20 off for a $60 purchase. Then, they pooled their shopping list together into a single cart to meet the $60 threshold, allowing them to avail the discount. Once the products arrived, they split the costs amongst themselves (P1).]

These strategies used by Afghan women demonstrate their ingenuity and underscores their vital role in maintaining financial stability while fostering community connections to navigate their new environment. Through innovative practices like using dummy accounts for online shopping and forming supportive networks in private WhatsApp groups, they walk a fine line between adherening to traditional norms and use of digital technologies.

Income Generation: We found that given the high cost of living, women also actively contributed towards income generation. However, both men and women in our study reported various concerns regarding women working outside the home. These concerns include trust issues, such as falling victim to online scams posing as legitimate job ads, worries about harassment and the work environment for in-person jobs and challenges in managing home, children, and work responsibilities simultaneously.

Considering that women often need to balance childcare and household responsibilities alongside work, they tend to gravitate towards flexible employment opportunities such as online and part-time jobs. However, our findings suggest that cultural unfamiliarity and concerns about the legitimacy of online opportunities may make some refugees, particularly women, reluctant to apply for jobs online. Therefore, they tend to seek employment through personal connections and direct referrals, favoring these trusted networks over the impersonal nature of online job postings. One woman expressed her cautious approach to online job applications:

> "We are new here. We don't know the culture, we don't know how much trust to put in these online platforms for jobs. We don't have anything like this back at home. I would not apply online for any job unless someone I know endorses it... (P11)."

Echoing this sentiment, another woman recounted a conversation with her husband that highlighted similar concerns:

> "Like the other day, I was discussing with him a job I saw online, and he told me not to trust everything I see online. He said if someone refers me to this job, then I can apply online, but without a reference, don't apply for anything. Not everything is good here, and not everything is for us (P2)."

These apprehensions are somewhat rooted in the experiences of their husbands, who often find themselves in male-dominated, lower-skilled, manual labor positions—the most common employment available to many immigrants and refugees upon arrival [10]. These experiences have shaped their perceptions of the job market, particularly concerning the safety and suitability of work environments for women. Consequently, they tend to discourage their wives from seeking such positions and advocate instead for pursuing education and training for higher-skilled and more respectable roles. One Afghan woman illustrated this protective stance, sharing her husband's specific concerns about the work culture at a particular company:

> "My husband told me that the work culture at [the current low-skilled car parts manufacturing job] is not good for women. The men there are not educated enough, and they talk about women [women's appearance] during their work and make fun of them whenever a woman passes by them. My husband certainly does not want them to talk about me in such a way. Therefore, he asked me to focus on learning English and finding a good and respectable job (P8)."

When staying home and working on improving their qualifications was no longer viable due to economic constraints, we found a shift in the attitudes of men towards their wives working outside. However, this acceptance comes with stipulations that uphold cultural norms. Men generally prefer that their wives work in environments such as childcare nurseries where only women are present, avoiding collaboration with Afghan men, and adhering to wearing the hijab. This balance between economic necessity and cultural adherence was illustrated by one woman's experience shared in the study:

> "He (her father) told me that even though we are in America, I should not forget my culture and should go to work fully covered like this (pointing towards her hijab)... I also feel comfortable going out like this... (P10)"

To address concerns expressed by their male counterparts, women prefer roles with limited to no interaction with men, emphasizing the importance of maintaining cultural norms. Moreover, they lean towards job opportunities through trusted connections rather than random online job searches, placing a premium on reliability and respect.

5.2 Psychological Adaptation: Uncovering Pre-Migration, Migration, and Post-Migration Stressors and Coping Mechanisms

As we explored the experiences of refugees, we uncovered numerous challenges arising from migration trauma that intensify their journey toward psychological adaptation to a new environment. This trauma encapsulates the process of leaving behind homes, affluent or stable lifestyles, and identities and bidding farewell to family members, especially elderly parents who depend on them in their old age. It further includes the harsh realities of refugee camps and the pervasive anxiety associated with adapting to a myriad of unknowns faced while resettling in an unfamiliar environment. In this section, we use Ward's stressors and coping mechanism framework [77] to uncover psychological adaptation strategies used by our participants. The Afghan refugee crisis was unique in that over 100,000 refugees were airlifted within a short span of 2 weeks [46, 52]. The sheer number of refugees and the short amount of time to evacuate them meant that the refugees had to undergo extreme stressors during the migration process. Therefore, we divide the stressors into two subgroups: migration and post-migration stressors faced by this population. We then list the coping strategies used by our participants to deal with both types of stressors.

5.2.1 Pre-Migration and Migration Stressors. We take an in-depth exploration of the intricate facets of migration trauma, specifically focusing on the traumatic experiences within refugee camps and their repercussions on the mental and physical health of our participants.

Limited Living Space and Restricted Mobility in Refugee Camps Limited living space and restricted mobility in refugee camps had severe mental health impacts on our participants. One participant vividly described the challenging conditions in military camps, stating:

> "...a lot of people from different cultures and backgrounds living around in one room, like 20 people in a very, very small room. It was really hard (P5)."

Another participant (P1) highlighted the cramped living conditions, mentioning that her family lived in a space equivalent to three small desks, struggling to sleep comfortably. The experience

was compared to *"a jail"* by another participant (P8) due to the restriction of movement; they were not allowed to leave their containers. For individuals who once enjoyed an affluent lifestyle in their home country, the sudden and prolonged confinement in such congested spaces has taken a severe toll on their mental well-being.

Challenges Faced by Pregnant Refugee Women In Refugee Camps Our women participants reported encountering notable health challenges during their migration while pregnant, including issues of malnutrition and insufficient maternal care. The absence of access to nutritious food, proper hygiene, and maternal care has left enduring impacts on their mental and physical health, challenges they continue to grapple with 1.5 years after migration. In addition to expecting mothers, new mothers also faced a lack of access to proper postpartum care for them and their newborns. This issue is further exacerbated by the lack of access to sanitary products, making it challenging for women to manage their menstrual cycles. One participant (P1) became emotional while recounting her situation 1.5 years ago in a refugee camp:

> "At the time of migration, we were not allowed to carry any personal belongings with us during the transition. I was two weeks into postpartum when we migrated. I was bleeding all the time... Due to the lack of access to any maternal hygiene products or medicine at the camps, my bleeding continued for six months after giving birth (P1)"

Similarly, another participant who was pregnant at the time of migration reported:

> "The food they provided was so different that I couldn't eat it at all. I felt nauseous all the time due to the smell of the food they used to give. I literally starved, and I would sleep by tying both my hands around my belly in an attempt to alleviate the hunger cramps (P8)"

Trauma among Children Due to Military Presence in Refugee Camps Besides themselves, participants recounted how the migration process, the presence of military and police, and the continuous displacement from one refugee camp to another impacted the mental health of their children. The constant exposure to law enforcement had a lasting impact on the children, causing them to become anxious and distressed even after leaving the camps. A mother described her child's traumatic experience in the refugee camp, saying that *"refugee kids have been traumatized by police, black dogs, and large vehicles (P2)."* For some children, the trauma of displacement continued to linger in the present as well. One mother shared how her eldest son's traumatic experience had affected him to the point where he still thought they were living in a camp even after a year of living in their new home. She explained:

> "During that time, we were constantly packing up and leaving after just a few days or weeks at each camp... It had affected my children to the point that a few weeks ago, when I was packing up summer clothes and taking out winter clothes due to a change in weather, my son started crying and collecting his toys, like Spider-man and his favorite cars, asking me if we could take them with us. I asked him where would we take them, and he said, 'Please let me take them to the new camp.' Even after a year of living in this house, he still thinks that we are living in a camp (P1)."

5.2.2 Post-Migration Stressors. Simultaneously grappling with pre-migration and migration trauma, our participants have reported facing challenges in the post-migration phase. Previous work [4, 5, 40, 57–59] highlights some of these challenges, such as language barriers, transportation difficulties, navigating unfamiliar driving routes, understanding and applying for government-supported benefits, and adapting to various aspects of everyday life in a new environment. We also uncovered other challenges not reported in the literature, such as fear of using public washrooms for women (considerations for spy cameras and personal safety), not knowing how to utilize

changing stations in public restrooms, coming to terms with not being able to hear the call to prayer (*Azaan*), concerns about the religious upbringing of their children, and adapting to the level of planning involved before going grocery shopping (such as buying water in bulk and doing a single grocery run for an extended period rather than buying groceries every day from the nearby store in Afghanistan). Additionally, participants faced additional stress related to paying bills online, understanding how to use the mailing system, comprehending addresses and zip codes, and navigating the school system. One participant conveyed his frustration:

> "We didn't initially realize the cultural changes and other challenges. After two, three, and four months, as the honeymoon phase was ending, we realized that everything was so different and expensive. We encountered numerous challenges while settling in. At times, I found myself regretting why I came to the United States (P6)."

Fear of Police and Deportation: A notable aspect we uncovered in our data was the persistent fear and anxiousness of police encounters, particularly linked to the threat of deportation. Even though some of these threats were unfounded, such as fear of being deported for minor traffic offenses, they appeared real to our participants and caused great angst. This apprehension can manifest during various situations, such as driving, expressing concerns to resettlement organizations, or merely spotting a police car. For instance, one woman vividly recalls feeling frightened of the police ever since witnessing a police car at the scene of an accident. While expressing her fears, she told us:

> "And I'm really scared of police. Whenever I go outside, and my husband is driving, I see a police car beside us, I keep telling my husband to just slow down (P7)."

Similarly, another participant shared that he was initially scared of driving in the United States due to concerns about breaking traffic laws and facing penalties or even imprisonment, which could impact his immigration status:

> "But driving in the United States was hard for me at first because I was scared as some people told me that if you don't pay attention to the sign if you don't pay attention to traffic law, the police will stop you and will put penalty and will even put you in prison… So I was so careful because I am a refugee. I wanted my record to be clean. Because any problem will affect my case, and I can be deported back (P6)."

Such fears among refugees can sometimes be exacerbated by misunderstandings or miscommunications. For instance, one participant reported an instance where a refugee resettlement agency case worker instilled an unnecessary fear of deportation simply for using an irritated and stern tone in an email. She recounted an incident where one time, after repeatedly being late for her children's school pick-up, the school bus driver called child protection services, who subsequently involved the police. Her refugee resettlement case worker had initially promised to pick up her kids if she took on a job but later reneged on their commitment. This caused repeated delays in picking up her children on time. When she expressed her frustration over email, the case worker threatened her with deportation. She said:

> "And then I sent a very long email to my caseworker in anger... I told them that they were the cruelest and most irresponsible people in the world. I was losing my kids, but they were only concerned about me being polite in my emails. They told me I was getting credit for not being a native English speaker, but that didn't matter to me. I couldn't write a polite email when I was losing my child. I asked them, 'Do you come to court to defend me?' No, they didn't. So why were they so concerned about the tone of my email? Should I write, 'My kid is in the police station, can you please kindly help me take her back home, I highly appreciate it'? I couldn't do that. I'm a mom, and

> I'm losing my child. I'm very angry. That was the most polite email that I could send [in that moment]. I have no regrets, even if I'm being sent back to Afghanistan for that email. I came to the USA from Afghanistan, suffered so much, and lost everything. Now I'm losing my child here in the USA. Why? (P1)"

5.2.3 Coping Mechanisms. The experience of leaving one's home country and adapting to a new culture can be traumatic, especially for individuals from a communal society like Afghanistan. Our findings reveal a profound impact on their mental health, particularly affecting women who frequently assume the role of housewives and rely on strong familial support for managing daily tasks. In coping with this trauma, our participants mentioned applying various strategies, which we elaborate on below.

Emotional Discharge: One frequently employed coping strategy highlighted by our participants to deal with migration trauma is emotional discharge, expressed through crying, wailing, venting, and seeking spiritual healing. This strategy is notably prevalent among our participants, particularly women. For instance, an Afghan woman who migrated with her husband and children often breaks into tears while watching the news about the changes in her hometown or during video calls with her parents. Her family did not want her to cry, so she used to hold back her tears in front of them and then did her emotional discharge in the form of wailing when alone. She said:

> "My husband used to say to me, 'What would I do without you here if you act like this or go crazy? Please don't cry a lot.' I said okay, and I tried a lot don't cry in front of my husband. Sometimes, when they are outside, I cry a lot, and sometimes when I don't cry for months, I want to take it out, so I cry when they are not home very loud with sounds like *bhaa, bhaaa* to take that all out of myself and to feel better (P9)."

Another refugee shared the experience of having to gather herself by herself despite the mental breakdown, as she had a family to watch. She reported that *"the societal expectation imposed on women compels them to collect themselves by themselves"* and too quickly, given their assumed larger responsibilities for the family. This often results in the neglect of their mental health, which can manifest more prominently and aggressively at a later stage.

Venting is another emotional discharge coping mechanism employed by these women to deal with their migration trauma, and they reported doing so within the shared-identity host community after arriving in a new environment. One refugee woman described her venting process:

> "She (a former refugee in the new settlement) used to invite me for tea quite often when we arrived here, and I used to rant a lot about the circumstances that caused us to leave our country. She spoke the same language and was Afghan herself, so it was very easy for her to relate to me. We used to talk for hours, which made me feel better at times."

In addition to the shared-identity host community, our participants also highlighted the willingness of a diverse-identity host community to be receptive. However, our participants found seeking emotional support from Americans somewhat *awkward*, as according to them, many Americans express *sympathy and empathy* without fully comprehending the emotional depth of leaving one's home and loved ones in a chaotic situation. One woman reported:

> "An American woman used to visit us regularly; she provided us with so much support, like providing food in the initial days and a job for me and my sister at a school... She also tried to provide emotional support by listening to our migration experiences. She would sit with my mother and cry for what we have experienced. We hardly knew English back then, and she didn't know Dari at all. I found it very strange to process

> my grief in this way with her, as I don't think anyone who hasn't gone through such situations can empathize to an extent that they start crying. I found it awkward."

Another woman, while reporting along the same lines, expressed that what's truly needed is someone to sit with them and undergo catharsis, knowing they truly understand their experiences and feelings:

> "For venting, we need someone who understands our language. I can't vent with an American who speaks and understands English because I am not good at English. So how can I vent in a language that I can't speak properly?"

Adjusting Expectations and Creating Realistic Goals: Adjusting expectations and displaying flexibility emerge as strategies to cope with women's emotional states. These coping mechanisms play a crucial role in alleviating conflicts, fights, and arguments between couples throughout the demanding migration period and were observed to be prevalent among men. Participants stressed that the emotional and psychological distress experienced by women often gives rise to disagreements and conflicts with their partners. In response, men in the study demonstrated adaptability, recognizing the importance of considering women's emotional well-being and health concerns. This flexibility becomes especially vital as four of our women participants reported going through the migration period immediately after or during pregnancy, dealing with antenatal and postpartum depression alongside the challenges of migration trauma. One of our men participants explained these circumstances as follows:

> "We had a lot of arguments, especially my wife, who was struggling with the trauma and postpartum depression at the same time. It wasn't easy for her. I cannot relate to or even compare myself with her struggles. I tried my best to be understanding, but it was still a difficult situation for both of us (P5)."

Another woman shared how she communicated to her husband the need for adjusting his expectations during the adaptation phase. She expressed:

> "I have conveyed to him that I will learn things at my own pace. I have been through a lot and am unable to handle any additional stress from learning new things (P7)."

Avoidance Coping: Our participants employed avoidance coping strategies to deal with migration trauma, choosing to evade or suppress stressors rather than directly confront them. This manifests through behaviors such as immersing themselves in exhaustive workloads, regulating news consumption by limiting or increasing it and refraining from video calls with family members back home.

Work engagement emerged as a prominent avoidance coping mechanism in our study, offering distraction and emotional shielding against migration trauma. P1 highlighted the intensity of work engagement as a conscious effort at distraction to avoid confronting emotional challenges. She shared:

> "For one year, I was working with ten different organizations... My focus was solely on work. When I came home, I had to be so tired that I would just sleep. I didn't want to have enough time to think about the things that make me cry, make me sad (P1)."

While the initial engagement in relentless work was a protective barrier against distressing memories, unintended consequences began to surface over time. A participant reflected:

> "So life was like this for a few months, and I began to realize that I'm losing my husband and my kids with all that drained energy. To be honest, they want a mom who is refreshed, always available for them with a clean house (P1)."

Avoidance coping was also evident in refraining from video calls with family back home and limiting news consumption on social media platforms, a trend more prevalent among women. In

contrast, men actively watched the news in refugee camps to process trauma and stay informed. They engaged in online tutorials, watched YouTube videos, and played mobile games as coping mechanisms and tools for learning new languages and skills. One man participant mentioned:

> "I tried to keep myself busy by listening news on social media about what is happening in Afghanistan once we left... I couldn't speak English very well when we migrated so I used to watch YouTube videos to improve my English in refugee camps... I also tried learning Excel through YouTube (P5)."

Peer Support and Problem-Solving Approach: In contrast to Afghan women, men often have greater mobility within refugee camps, allowing them to converse with peers, share experiences, and collaboratively navigate the intricacies of the transition process. This free exchange of ideas aids men in processing their grief, fostering a supportive community where individuals with similar experiences can collectively work towards figuring out the next steps upon reaching their new destination, as reported by a participant:

> "Honestly, I was not thinking much about what had happened to us or what is happening with our families back home because I was concerned about the future and its challenges that we have to face."

Our participants reported forming WhatsApp groups within refugee camps to share essential information about the adaptation process and other critical details, including obtaining SSNs, driving licenses, language classes, and opening bank accounts. Unlike women (who share information within close-knit WhatsApp groups consist of two to four members, as explained in Section 5.1.2), these WhatsApp groups are much larger and consist of 50 to 200 members in the group, with the explicit intent to share mutually relevant resources. By sharing resources and asking for help, our participants took a problem-solving approach to adapting to an extremely stressful situation.

5.3 Sociocultural Adaptation and the Role of Social Connections

Refugees arriving in a new country require substantial support to adapt to their new environment, typically provided by resettlement organizations. However, our findings revealed that due to the high demands placed upon them, resettlement organizations often find themselves overwhelmed and unable to provide comprehensive assistance to every individual. This shortfall in support forces refugees to seek alternative means of establishing connections in their new environment, which is crucial for their adaptation and well-being. Our findings show that refugees seek differing support from different host community members. To explain these differences, we divide the host community into *shared-identity host community members* and *non-shared-identity host community members*. Given our participants are Afghan refugees, for the sake of simplicity and to stay true to our data, we limit shared-identity host community members to (a) other Afghan Americans who have been living in the host community for a long period of time and (b) American-Muslims residing in the host community (e.g., Lebanese, Pakistani, or Egyptian Muslims). Host community members with non-shared identities would be Americans of other ethnicity (White, Hispanic, Black, Asian Americans, etc.) as well as any non-Muslim Americans. We acknowledge the limitations of this definition, given there are ethnic differences within Afghans (Pashtun, Hazara, Tajik, Uzbek, etc.) as well as sectarian differences within Muslim communities (Sunni, Shií Muslims, etc.) and that there are often frictions within these Afghan and Muslim communities.

5.3.1 Fostering Sociocultural Adaptation through Shared-identity Host Community Members: Our participants stress the significance of their friends and family networks within the United States, serving as crucial pillars for practical assistance with various initial needs. This includes airport pickups, navigating the new environment, and providing comprehensive information on crucial

matters like obtaining a driver's license, connecting with relevant organizations, exploring initial job opportunities for refugees, and accessing education for their children.

> [For instance, one participant (P1) emphasized the extensive aid offered by her sister, who had migrated to the U.S. over a decade ago to pursue educational opportunities. Her sister played a pivotal role by providing vital administrative, logistical, and transportation support during the crucial initial months of settlement. Furthermore, another account emphasizes the collaborative efforts of the husband's friends (Afghan Americans) in ensuring a smooth transition for the family, helping with school interactions, housing arrangements, and essential amenities like furniture and food.]

We found that proactive participants without family connections in the new settlement actively sought connections in refugee camps or used online resources, such as social media platforms and websites specific to their designated areas. As articulated by a student participant (P12) in describing their strategy to connect with the Muslim Student Association in a large state university in the Midwest:

> "The good thing about this association is that there is a website...I sent them my email, explained my situation and background, and asked them to reach out to me, and I received an email back from them (P12)."

We also observed varying degrees of industriousness among our participants in establishing connections for adaptation. This industriousness is often influenced by multifaceted barriers, including language disparities, lack of awareness about volunteerism, hesitance in seeking assistance, and cultural and gender-specific hurdles. Within this spectrum, refugees encountering these obstacles often build their network by leveraging shared identities and finding comfort in the lowered barriers when engaging with communities of similar ethnicity or religious affiliation. Our findings show that among Afghan refugees, those who find common ground within shared identities often connect with fellow Afghans living in the United States. One prevalent strategy that emerged from our interviews involved refugees visiting nearby mosques to foster connections rooted in shared identities. A participant shared their experience, stating:

> "And they have Jummah (Friday) prayer, so I just went there, and that's how I met all my friends. I mean, I didn't need to explicitly reach out to anyone (P12)."

The support derived from these shared identity connections typically includes culturally appropriate clothing that adheres to religious norms of modesty and purity [**?**], as well as food choices aligning with Halal dietary needs — reflecting a preference for culturally and religiously appropriate assistance. For example, a woman participant highlighted her preference for receiving free winter clothes from the Muslim host community for religious reasons, stating:

> "We needed winter clothes when we came here, and many families offered us clothes. However, we need to be mindful of any stain of alcohol or pork on them, as we can't afford to wear such things since we have to offer prayers. Therefore, I avoid taking this help from Americans (P9)."

According to our participants, this deliberate choice stems from their experiences of grappling with a non-Muslim host community's limited understanding of the religious boundaries of Muslim refugees. One woman recounted an incident where an American resettlement organization offered a group of Afghan refugees pepperoni pizza, unaware of the prohibition of pork consumption in Islam. She shared:

> "During the orientation, pepperoni pizza was served, and everyone ate it. When I found out that the pizza contained pork, I became very furious and reported the incident to the organization, emphasizing the importance of being mindful of our dietary restrictions.

> I also advised the incoming cohort of women to be very cautious, telling them that not all meat is halal here (P1)."

This limited contextual understanding of the local community outside their shared identity compels Afghan refugees to rely on themselves or seek assistance from host communities that share their identity.

> "When I go grocery shopping, and my kids want to buy something unfamiliar, I google the ingredients to check if the product is Halal. Sometimes, I send a picture to my friends' WhatsApp group and ask them if the product is halal. All my friends in this group are Muslim women, so if they confirm it's halal, I buy it; otherwise, I don't (P9)."

However, there are inherent limitations to the nature of support offered within connections with shared identities, as mentioned by our participants. The shared-identity host community members also encountered their own resource constraints, which subsequently limited the scope and depth of the assistance that these shared-identity networks could provide. For instance, one participant reported how his friend, who was already here, assisted with logistics but had limitations in helping him find a job. He reported:

> "He provided a lot of help in logistics—connected us to organizations, helped enroll our kids in school, assisted with learning to drive, and gave his car for driving test. However, he couldn't do much for the job aspect as he was also searching for one himself (P6)."

We also found that while shared-identity host-community members were willing to provide referrals to help find an initial source of income, these referrals were often limited to other shared-identity individuals, such as a Muslim butcher. They were also limited to low-income jobs, such as a mechanic assistant at another Muslim's auto-body workshop. We found that refugees often approached individuals with non-shared identities for referrals to higher-income jobs. Given that we only spoke to refugees and not to shared-identity host community members, it is unclear from our data as to whether the shared-identity individuals lacked access to social connections in high-income jobs or were hesitant to activate them.

5.3.2 Fostering Sociocultural Adaptation through non-shared Identity Host Community Members: Recognizing these limitations within shared identity networks, we found that our participants actively seek assistance from a more diverse spectrum of ethnicities, extending beyond those with shared identities. This expanded outreach encompasses engagement with Americans and individuals from varied backgrounds, allowing access to a broader pool of support and resources. The support refugees seek from these diverse ethnicities includes navigating intricate job searches, offering insights into housing options that suit their needs, providing material support like rent, and facilitating educational prospects. One participant (P12) shared his experience when he faced challenges finding suitable housing and reaching out to his American friend for guidance. He recounted:

> "...that apartment had mold... and I had COVID as well, at that time, I was tested positive for COVID. So I had a very bad situation... was depressed as well, because my apartment was in the basement, and the window was kind of broken...it was winter, and the heater was not working at that time. And I told (the resettlement organization) that I really cannot go back there because it was like a nightmare for me. And they were like just go back. Then I asked my American friend here and she helped me find a better house... She also paid the first month's rent (P12)."

According to the same participant, American families express a willingness to volunteer and assist refugees not only professionally and logistically but also in navigating the new environment.

He mentioned that many of his American friends from college and their families reached out to him, expressing a desire to connect with refugee families and provide help. He attempted to formalize this network between refugees but faced obstacles due to safety concerns raised by resettlement organizations. The participant explained:

> "I created that grouping in an Excel sheet, So I added the names of the Afghan families, how many people were there, and also, phone numbers, and then for each family, I put like two American families to help, so and also with their phone numbers, I shared the form families, WhatsApp numbers to American families, lots of numbers, and they started contacting them. And that's when they (resettlement organization) knew about and then they said stopped doing this... because they have not done any security check of host families, so they don't want to put both families into any trouble (P12)."

6 Discussion

6.1 Key Insights and Lessons Learnt

When Hsiao et al. coined the term sociotechnical adaptation, they emphasized the difference between socio-cultural and sociotechnical adaptation, with the latter focusing on the use of technologies, tools, skills, and willingness required to use technologies when relocating. In this section, we present key insights and lessons learned by studying sociotechnical adaptation in the Afghan refugee context in the US Midwest. We pay particular attention to how technologies, tools, willingness, and skills or lack thereof assisted or hindered in socio-cultural, psychological, and economic adaptation.

6.1.1 Limited Use of Technologies in Psychological Adaptation. We saw significant use of technologies and tools and willingness to gain skills to aid economic and socio-cultural adaptation. Towards economic adaptation, we saw the use of YouTube videos by Afghan refugees to upskill themselves, leaning on shared-identity host community members to acquire digital skills such as Microsoft Excel, to reduce expenditure by shopping through budget-friendly websites. Towards socio-cultural adaptation, we saw participants using YouTube tutorials to acquire language proficiency and skills such as Microsoft Excel, leveraging shared-identity host community members to assist in applying for official appointments, emailing Muslim student association members, and using WhatsApp groups to check Halal ingredients. However, we saw very limited use of digital technologies towards psychological adaptation. The only instance we uncovered involved men using a problem-solving approach to manage stress. This included forming large WhatsApp groups to share resources and gaining procedural knowledge about their new environment through Google searches. This limited use of digital technologies for psychological adaptation presents challenges and opportunities for HCI research as well as refugee resettlement communities. Given the offline coping skills used by our women participants, we acknowledge the need for shared identity and language as a prerequisite for any psychological interventions. Given the limited number of board-certified psychiatrists and psychologists who speak Pashto or Dari, refugee resettlement agencies could use teletherapy to connect refugees to the limited number of experts around each state. [2] teletherapy has gained prominence during COVID-19. Most therapists now offer remote sessions, and most health insurance accept teletherapy.

For HCI and CSCW communities wanting to design for this population, our findings about the gendered differences in stressors encountered as well as in the coping styles of Afghan men and women are an important starting point. Given that men use a solution oriented approach to coping [54], digital technologies that help with learning, goal setting, and self tracking [92] can be contextualized to the needs of this audience. However, given that women use emotional discharge

[2]Therapists are required by law only to treat patients residing within states they are licensed to practice in

and peer support as a primary means of support, speech-based women-only digital safe spaces [51] that are refugee led and moderated can be a good starting point. Prior work has shown that these spaces work in similar cultural contexts [9, 89]. Speech-enabled spaces would also overcome issues with language and digital literacy. Additionally, given the strong sense of community among Afghan refugees, embracing an asset-based design approach [84], rather than a needs-based approach, could align better with the strengths and resources of the refugee community. This method focuses on the potential and capabilities rather than deficits, advocating for solutions that empower users and recognize their inherent assets.

Furthermore, advancement in speech and natural language processing (NLP) communities and large-language models could present an opportunity to create customized speech-based therapy solutions for Afghan refugees. For instance, ChatGPT's paid version (GPT 4.0) can converse in both textual and oral Pashto and Dari. Future HCI researchers could look into designing mobile applications or therapy chatbots [15] that introduce models such as Traditional Islamically Integrated Psychotherapy [41] to Muslim refugee users. However, it is crucial to approach the development of mobile applications or therapy chatbots with extreme caution. While these technologies offer significant potential, they also pose risks due to known issues with bias, racism, and mismatched expectations about LLMs' capabilities. There is a pressing need for more research on integrating clinical care factors such as empathy, compassion, and validation into these models to make their responses appropriate. A human-in-the-loop approach where clinicians or trained community health workers vet responses before they reach users could provide a stepping stone in the right direction. We also want to highlight the extreme psychological trauma that refugee children went through and implore HCI researchers to study this population and explore the potential for technologies to aid in providing them with relief.

6.1.2 Tension between Sociocultural & Economic Adaptation leading to psychological distress. Our findings uncover repeated instances of tension between economic adaptation and trying to hold on to one's socio-cultural values that led to psychological distress. For instance, men have to swallow their pride and ask their partners to help with income generation, even though they come from cultures where they consider it their responsibility to provide for the household. These are deeply held values that don't change overnight, and being forced to compromise on them leads to psychological distress. We note that this is less of an economic adaptation and more of a compromise of socio-cultural values to overcome economic stressors caused by forced displacement.

We also uncover our participants actively wrestling with this tension, caving in in some instances while holding firm in others. For example, men participants allowed their wives or daughters to work outside the house, but in women-only environments or only if they wore the Hijab. These difficult concepts to wrestle with potentially also cause friction within the household and can lead to long-term conflicts. While we see digital technologies providing a small ray of hope in minimizing this tension, we also want to caution against technological determinism. These are tough, intractable social issues that don't have easy fixes. However, digital technologies provide small openings, such as using social networks to create awareness among the host population to be sensitive to refugee needs (such as Halal dietary restrictions) or online job opportunities allowing women to work from home. We would encourage future HCI scholars to wrestle with the tension we uncover and explore whether HCI even has a role to play in assuaging this conflict.

6.1.3 Economic Adaptation, Solidarity Economies & HCI. A solidarity economy approach underpins a belief that "people are deeply creative and capable of developing their solutions to economic problems, and that these solutions will look different in different places and contexts" [48]. Furthermore, solidarity economics are collective visioning processes [48] that are recently gaining prominence in HCI [26]. Our data showed some signs of creative and collective problem-solving

approaches to overcome economic obstacles. For instance, women participants shared discount codes or combined their online shopping into a single cart to avail of discounts, reflecting solidarity efforts reminiscent of food access strategies during the COVID-19 pandemic. During the pandemic, people turned to online platforms to share food and recipe information when in-person contact was reduced. Interestingly, these online solidarity efforts did not replace offline solidarity efforts like carpooling or ridesharing, even when online ordering was an option [27]. While this wasn't an explicit research interest for this paper, it aligns with previous studies to explore creative, collective, and solidarity approaches to overcoming economic adversity and ways digital technologies can be created to aid such efforts [74]. We can envision ways to support such practices and coordination tactics (e.g., an online service that allows people who live nearby to combine their carts to reduce shipping costs and environmental footprint or allow strangers to join group-based phone plans without having to share sensitive details such as credit card numbers and account log-ins).

6.1.4 Furthering the Sociotechnical Adaptation conceptualization. In the commerce case study used by Hsiao to conceptualize sociotechnical adaptation, there is an underlying assumption that sociotechnical adaptation happens at the individual level. Most refugees that have arrived over the past decade in countries like the US, Canada, Germany, and Australia have come from communal and conservative cultures such as Afghanistan, Syria, and Iraq [71]. Our findings show that sociotechnical adaptation in such contexts is both (a) gendered and (b) takes place at least at the household if not at the communal level. For instance, both husband and wife prioritize what's good for the family over what their own aspirations may be. At the family level, we find that the goal is largely to acquire skills, both digital and otherwise, that can help the entire family socio-culturally and economically adapt quickly, thereby reducing the psychological stressors that come with lower income and a myriad of unknowns. Given the gendered and communal aspect of sociotechnical adaptation found in our study, we recommend sociotechnical adaptation literature be explored at the individual, household, and community levels. How might future scholars explore ways for technology to support different forms of adaptation as a familial unit, versus an individual one? Additionally, digital literacy programs for refugees should be mindful of and prioritize gender-sensitive programming. For instance, in the case of our male participants, digital literacy interventions can supplement existing offerings at public libraries and refugee resettlement agencies. This would reduce the burden on shared-identity host populations. However, given that women are left to care for the children while men earn an income and advance their skill set, issues with equity in terms of access to opportunities can *and should* be addressed. One approach could be that refugee resettlement agencies provide childcare, transportation, and culturally sensitive offerings (such as women-only digital literacy classes) *on top of* digital literacy classes in the native language (Pashto, Dari). A somewhat different approach could be introducing community technology worker programs that offer one-on-one digital literacy help at the household level, as demonstrated with low-income populations in Detroit [44]. Adding a gender lens to sociotechnical adaptation framing and approaching it at individual, household, and community levels would strengthen the utility and applicability of the sociotechnical adaptation conceptualization for future CSCW and HCI scholars.

6.2 Refugee-host community relations: Role of Shared Identity and Social Capital Activation among Minority Groups

Our work builds on past HCI research on relations between refugees and host communities [5]. Previous research has uncovered that host communities often lack understanding of cultural and religious sensitivities such as the importance of Halal food, limited intermingling between members of the opposite gender, etc. [5]. Previous HCI research also found shame in asking for material

support and distrust between host communities and refugees [5], as well as refugees being perceived as an economic and social burden by the host community [5]. Our findings were different. We found that refugees were not afraid to ask for help, both in terms of material and non-material support, and in fact, were strategic about who they approached for what type of support (host community members with shared and non-shared identities such as nationality, religious identity, language, etc.)

We found that the first stop for most refugees was to approach host community members with a shared identity and ask them for help with logistical and social support aimed at meeting religious obligations (purchasing Halal food, receiving complimentary clothing in accordance with religious principles), emotional support to cope with displacement-related traumas (shared language leading to the opportunity to vent), as well as finding initial income generating opportunities (a job at a butcher shop). Furthermore, refugees reached out to shared-identity host community members for help with skill development for higher-income jobs, such as learning to use Microsoft Excel or improving computer skills for data entry tasks. As refugees became more acquainted with their new surroundings and connected with host community members with non-shared identities (e.g., White, Black, Hispanic Americans), they asked them for help finding higher-paying jobs and were open to accepting material support (e.g., the first month's rent).

This insight about reaching out to shared versus non-shared identity host community members for varying needs builds on Sandra Smith's work [63] on social capital. Smith uprooted conventional wisdom that Black urban poor have limited access to ties of social worth and instead teased apart the social context within which social capital activation occurs. Through interviews with 105 low-income African Americans, Smith found that potential job contacts often limited referrals to close friends and family members [63] or vetted job seekers' character extensively before referring them to same-identity networks (jobs with other Black Americans) [63]. Literature has found that White and Hispanic Americans are much more likely to provide referrals to same-identity job-seekers [36]. Green et al. [36] found that a higher percentage of White Americans reported being hired by their contacts versus Black Americans (18% vs. 8%), and a higher percentage of Latinos reported that their contacts talked to the employer on their behalf compared to Black Americans (37% vs. 25%) [36, 62]. Given that both - Afghan-Americans and American Muslims are minority identities within the US that face significant Islamophobia, it is unsurprising that, similar to Black Americans, these shared-identity host communities don't offer job referrals to Afghan refugees or only offer them low-income jobs that are confined to within-identity networks (e.g., Muslim butcher shops).

This distinction between the type of help provided by shared- and non-shared-identity host communities, as well as the lack of social network activation by shared-identity host communities, is important for HCI. It speaks to and builds upon digital safe space literature [9, 51, 69, 89]. Recent literature has shown that minorities and vulnerable groups, such as low-income women or women in patriarchal countries, can discuss taboo topics [69, 89] and provide peer support [51] through carefully curated digital safe spaces [9]. Our participants created digital spaces, such as a shared WhatsApp group among Afghan women that helps each other identify non-Halal ingredients while grocery shopping. However, carefully curated and moderated digital safe spaces (closed Facebook Groups that allow anonymous communication) with shared-identity host community individuals would allow for easier resettlement experiences and reduced psychological stressors. Such Facebook groups can host Ask Me Anything (AMA) sessions with shared-identity experts, such as Muslim Mental Health experts [41].

Concurrently, less moderated but more facilitated digital spaces that help non-shared identity host community members overcome cultural barriers and facilitate an introduction between refugees and non-shared identity groups are equally useful. Examples of these groups include Refugee Welcome

Collective's Facebook group [53], Buy Nothing Facebook groups with dedicated collection drives for refugees in their community, or local groups such as the local email listservs for refugees. Such groups can potentially help refugees with material needs (such as delivering a couch to someone's house) and other challenging technical help, such as navigating state and federal programs for legal, housing, and income assistance.

7 Limitation

The study used a combination of purposive, convenience, and snowball sampling techniques. While these methods are advantageous for accessing hard-to-reach populations, they may introduce biases that limit the generalizability of the findings. Snowball sampling, in particular, may lead to a sample that is not representative of the wider population of Afghan refugees, as participants may share similar characteristics or perspectives that are not reflective of the entire group. Moreover, the focus on Afghan refugees who arrived in the U.S. following the recent regime change in Afghanistan may also limit the applicability of the findings, given that the evacuation of Afghan refugees was expedited and did not follow established resettlement processes. This specific cohort may have unique characteristics and experiences that are not shared by other groups of Afghan refugees who migrated under different circumstances or at different times. Thus, the study's insights may not fully capture the diverse experiences of the broader Afghan refugee population

8 Conclusion

This study explored economic, socio-cultural, and psychological adaptation among Afghan refugees in a Midwestern U.S. state, highlighting the complex interplay between technology use, gender, and cultural norms. By examining the nuanced ways in which these refugees leverage technology alongside upholding cultural norms, we expand the contours of how sociotechnical adaptation can work in communal, collectivist and gendered cultures. We found that Afghan men and women navigate these challenges differently, influenced by entrenched gender roles and the availability of technological resources. The findings underscore the importance of designing inclusive technologies and support systems that accommodate the diverse needs of refugee populations, promoting a smoother integration process. There is a critical need for continued research to explore psychological adaptation for children. Furthermore, resettlement policies and programming should incorporate gender and communal perspectives to ensure that these systems not only aid in adaptation but also empower displaced communities across borders.

Acknowledgments

We want to thank our participants who generously shared their invaluable experiences, enriching our study. We are grateful to our anonymous reviewers, Sylvia Darling and Ben Zhang, whose constructive feedback has significantly enhanced the quality of this paper. Additionally, we appreciate our collaboration with Jewish Family Services, which facilitated access to our participants. This work was supported by NSF award CNS-2125012.

References

[1] 2022. SHEIN: Women's Fashion. Retrieved January 11, 2023 from https://us.shein.com/
[2] 2023. Temu. Retrieved January 11, 2023 from https://www.temu.com/
[3] Konstantin Aal, Thomas Von Rekowski, George Yerousis, Volker Wulf, and Anne Weibert. 2015. Bridging (Gender-Related) Barriers: A comparative study of intercultural computer clubs. In *Proceedings of the Third Conference on GenderIT*. 17–23.
[4] Ayse Almila Akca. 2020. *Moscheeleben in Deutschland: eine Ethnographie zu islamischem Wissen, Tradition und religiöser Autorität.* transcript Verlag.

[5] Asam Almohamed and Dhaval Vyas. 2016. Designing for the Marginalized: A step towards understanding the lives of refugees and asylum seekers. In *Proceedings of the 2016 acm conference companion publication on designing interactive systems*. 165–168.
[6] Asam Almohamed and Dhaval Vyas. 2016. Vulnerability of displacement: challenges for integrating refugees and asylum seekers in host communities. In *Proceedings of the 28th Australian conference on computer-human interaction*. 125–134.
[7] Asam Almohamed and Dhaval Vyas. 2019. Rebuilding social capital in refugees and asylum seekers. *ACM Transactions on Computer-Human Interaction (TOCHI)* 26, 6 (2019), 1–30.
[8] Asam Hamed Abbas Almohamed, Reem Talhouk, and Dhaval Vyas. 2022. Towards a conceptual framework for understanding the challenges in refugee re-settlement. *Proceedings of the ACM on human-computer interaction* 6, GROUP (2022), 1–27.
[9] Tawfiq Ammari, Momina Nofal, Mustafa Naseem, and Maryam Mustafa. 2022. Moderation as Empowerment: Creating and Managing Women-Only Digital Safe Spaces. *Proceedings of the ACM on Human-Computer Interaction* 6, CSCW2 (2022), 1–36.
[10] Lars Fredrik Andersson, Rikard Eriksson, and Sandro Scocco. 2019. Refugee immigration and the growth of low-wage work in the EU15. *Comparative Migration Studies* 7 (2019), 1–19.
[11] CADI AOUSSI Nachoua. 2022. How to Make America Secure? The United States Refugee Policy during Barack Obama and Donald Trump's Presidencies. (2022).
[12] Zeynep Aycan and John W Berry. 1996. Impact of employment-related experiences on immigrants' psychological well-being and adaptation to Canada. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement* 28, 3 (1996), 240.
[13] Oliver Bakewell. 2011. Conceptualising Displacement and migration: Processes, conditions, and categories. In *The Migration-Displacement Nexus: Patterns, Processes, and Policies*, Khalid Koser and Susan Martin (Eds.). Oxford, Berghahn Books, Chapter 2, 14 – 28.
[14] Jennifer Baranoff, R. Israel Gonzales, Jay Liu, Heidi Yang, and Jimin Zheng. 2015. Lantern: Empowering Refugees Through Community-Generated Guidance Using Near Field Communication. In *CHI'15 Extended Abstracts on Human Factors in Computing Systems*. ACM, 7–12.
[15] Samuel Bell, Clara Wood, and Advait Sarkar. 2019. Perceptions of chatbots in therapy. In *Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems*. 1–6.
[16] John W. Berry. 1997. Immigration, Acculturation, and Adaptation. *Applied Psychology* 46, 1 (Jan. 1997), 5–34. https://doi.org/10.1111/j.1464-0597.1997.tb01087.x
[17] Alexander Betts. 2010. The refugee regime complex. *Refugee Survey Quarterly* 29, 1 (2010), 12–37.
[18] Melanie Birks, Ysanne Chapman, and Karen Francis. 2008. Memoing in qualitative research: Probing data and processes. *Journal of research in nursing* 13, 1 (2008), 68–75.
[19] Virginia Braun and Victoria Clarke. 2006. Using thematic analysis in psychology. *Qualitative research in psychology* 3, 2 (2006), 77–101.
[20] Anastasia Brown and Todd Scribner. 2014. Unfulfilled promises, future possibilities: The refugee resettlement system in the United States. *Journal on Migration and Human Security* 2, 2 (2014), 101–120.
[21] Deana Brown and Rebecca E Grinter. 2016. Designing for transient use: A human-in-the-loop translation platform for refugees. In *Proceedings of the 2016 CHI conference on human factors in computing systems*. 321–330.
[22] Abby Budiman. 2020. *Key findings about U.S. immigrants*. https://www.pewresearch.org/fact-tank/2020/08/20/key-findings-about-u-s-immigrants/ Accessed: April 10, 2021.
[23] Zhifa Chen, Yichen Lu, Mika P Nieminen, and Andrés Lucero. 2020. Creating a chatbot for and with migrants: chatbot personality drives co-design activities. In *Proceedings of the 2020 acm designing interactive systems conference*. 219–230.
[24] John W Creswell and Cheryl N Poth. 2016. *Qualitative inquiry and research design: Choosing among five approaches*. Sage publications.
[25] Clara Crivallero and Name Others. 2016. Title of the Paper. *Journal of Participatory Research* Vol Number, Issue Number (2016), Start Page–End Page.
[26] Tawanna R Dillahunt, Alex Jiahong Lu, and Joanna Velazquez. 2023. Eliciting alternative economic futures with working-class detroiters: Centering afrofuturism in speculative design. In *Proceedings of the 2023 ACM Designing Interactive Systems Conference*. 957–977.
[27] Tawanna R Dillahunt, Michelle Sawwan, Danielle Wood, Brianna L Wimer, Ann-Marie Conrado, Heather Eicher-Miller, Alisa Zornig Gura, and Ronald Metoyer. 2023. Understanding Food Planning Strategies of Food Insecure Populations: Implications for Food-Agentic Technologies. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems* (<conf-loc>, <city>Hamburg</city>, <country>Germany</country>, </conf-loc>) *(CHI '23)*. Association for Computing Machinery, New York, NY, USA, Article 239, 22 pages. https://doi.org/10.1145/3544548.3581568

[28] Ana Maria Bustamante Duarte, Nina Brendel, Auriol Degbelo, and Christian Kray. 2018. Participatory design and participatory research: An HCI case study with young forced migrants. *ACM Transactions on Computer-Human Interaction (TOCHI)* 25, 1 (2018), 1–39.

[29] Duo 2017. *Duolingo*. Retrieved January 11, 2023 from https://englishtest.duolingo.com/applicants

[30] Marta Bivand Erdal and Ceri Oeppen. 2017. Forced to leave? The discursive and analytical significance of describing migration as forced and voluntary. *Journal of Ethnic and Migration Studies* 44, 6 (Apr 2017), 981–998. https://doi.org/10.1080/1369183X.2017.1384149

[31] Karen E Fisher, Katya Yefimova, and Eiad Yafi. 2016. Future's butterflies: Co-designing ICT wayfaring technology with refugee Syrian youth. In *Proceedings of the The 15th International Conference on Interaction Design and Children*. 25–36.

[32] KV Fofanova, AA Sychev, and DM Borisov. 2020. Factors of the Economic Adaptation of Migrants. In *International Scientific Conference" Far East Con"(ISCFEC 2020)*. Atlantis Press, 2698–2703.

[33] Forbes. 2024. How to Protect Your Packages From Porch Pirates This Holiday Season. Retrieved January 11, 2023 from https://www.forbes.com/advisor/personal-finance/porch-pirates-package-theft-holidays/

[34] Sonja Fransen and Hein De Haas. 2022. Trends and patterns of global refugee migration. *Population and Development Review* 48, 1 (2022), 97–128.

[35] Christina Goldbaum and Najim Rahim. 2021. 'What Will Happen to Me?'An Uncertain Future Awaits Afghans Who Fled. *International New York Times* (2021), NA–NA.

[36] Gary Paul Green, Leann M Tigges, and Daniel Diaz. 1999. Racial and ethnic differences in job-search strategies in Atlanta, Boston, and Los Angeles. *Social science quarterly* (1999), 263–278.

[37] Mark Green. 2023. Afghan refugees still in limbo. https://www.wilsoncenter.org/blog-post/afghan-refugees-still-limbo. Accessed: 2023-05-03.

[38] Sonali Hedditch and Dhaval Vyas. 2023. Design Justice in Practice: Community-led Design of an Online Maker Space for Refugee and Migrant Women. *Proceedings of the ACM on Human-Computer Interaction* 7, GROUP (2023), 1–39.

[39] Chiao-Yin Hsiao. 2021. *Online and Offline Adaptation among Transnational Newcomers: Technology-mediated Social Exchange and Trust Development*. Ph. D. Dissertation.

[40] Joey Chiao-Yin Hsiao, Sylvia Darling, and Tawanna R Dillahunt. 2023. How Recent Migrants Develop Trust Through Community Commerce: The Emergence of Sociotechnical Adaptation. *Proceedings of the ACM on Human-Computer Interaction* 7, CSCW1 (2023), 1–24.

[41] Hooman Keshavarzi and Bilal Ali. 2020. Foundations of traditional Islamically integrated psychotherapy (TIIP). *Applying Islamic principles to clinical mental health care: Introducing traditional Islamically integrated psychotherapy* (2020), 9781003043331–3.

[42] LV Korel. 2005. Sociology of adaptations: Questions of theory, methodology and methodology. *Science* (2005).

[43] Chuike Lee, Stephen Viller, and Dhaval Vyas. 2023. Refugee Entrepreneurial Trajectories. *Proceedings of the ACM on Human-Computer Interaction* 7, CSCW2 (2023), 1–26.

[44] Soyoung Lee, Julie Hui, Zachary Rowe, and Tawanna R Dillahunt. 2023. A Collective Approach to Providing Digital Skills Training Among US Public Housing Residents. In *Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems*. 1–6.

[45] Linda Leung. 2010. Telecommunications across borders: Refugees' technology use during displacement. *Journal of Refugee Studies* 23, 3 (2010), 33–48.

[46] Philip Loft. 2021. Afghanistan: Refugees and displaced people in 2021. *Online.] In: House of Commons Library* (2021).

[47] Indrani Medhi-Thies, Pedro Ferreira, Nakull Gupta, Jacki O'Neill, and Edward Cutrell. 2015. KrishiPustak: a social networking system for low-literate farmers. In *Proceedings of the 18th ACM conference on computer supported cooperative work & social computing*. 1670–1681.

[48] Ethan Miller. 2010. Solidarity economy: Key concepts and issues. *Solidarity economy I: Building alternatives for people and planet* (2010), 25–41.

[49] Miraida Morales and Xiaomu Zhou. 2015. Health practices of immigrant women: Indigenous knowledge in an urban environment. *Proceedings of the Association for Information Science and Technology* 52, 1 (2015), 1–10.

[50] Preeti Mudliar. 2018. Public WiFi is for men and mobile internet is for women: Interrogating politics of space and gender around WiFi hotspots. *Proceedings of the ACM on Human-Computer Interaction* 2, CSCW (2018), 1–24.

[51] Mustafa Naseem, Fouzia Younas, and Maryam Mustafa. 2020. Designing digital safe spaces for peer support and connectivity in patriarchal contexts. *Proceedings of the ACM on Human-Computer Interaction* 4, CSCW2 (2020), 1–24.

[52] Alexandria J Nylen, Omar Bah, Jonathan Bott, Giovanna Deluca, Adam C Levine, and Subhan Mohebi. 2023. 'Then, We Lost Everything:'Afghan Evacuee Experiences of Operation Allies Refuge and Operation Allies Welcome. (2023).

[53] Refugee Welcome Collective Organization. 2022. Refugee Women Collective. Retrieved January 11, 2023 from https://www.facebook.com/RefugeeWelcomeCollective/

[54] Bill O'Hanlon. 2013. Solution-oriented therapy: A megatrend in psychotherapy. In *Developing Ericksonian therapy*. Routledge, 93–111.

[55] Ann Peterson Bishop and Karen E Fisher. 2015. Using ICT design to learn about immigrant teens from Myanmar. In *Proceedings of the seventh international conference on information and communication technologies and development*. 1–4.
[56] Mia Prange. 2022. Climate Change Is Fueling Migration. Do Climate Migrants Have Legal Protections? — cfr.org. https://www.cfr.org/in-brief/climate-change-fueling-migration-do-climate-migrants-have-legal-protections. [Accessed 13-01-2024].
[57] Dina Sabie, Cansu Ekmekcioglu, and Syed Ishtiaque Ahmed. 2022. A decade of international migration research in HCI: Overview, challenges, ethics, impact, and future directions. *ACM Transactions on Computer-Human Interaction (TOCHI)* 29, 4 (2022), 1–35.
[58] Laura Schelenz. 2023. Technology, Power, and Social Inclusion: Afghan Refugee Women's Interaction with ICT in Germany. *The International Journal of Information, Diversity, & Inclusion (IJIDI)* 7, 3/4 (2023).
[59] Maximilian Schreieck, Manuel Wiesche, and Helmut Krcmar. 2017. Governing nonprofit platform ecosystems–an information platform for refugees. *Information Technology for Development* 23, 3 (2017), 618–643.
[60] Wendy Searle and Colleen Ward. 1990. The prediction of psychological and sociocultural adjustment during cross-cultural transitions. *International journal of intercultural relations* 14, 4 (1990), 449–464.
[61] Carla Simone, Ina Wagner, Claudia Müller, Anne Weibert, and Volker Wulf. 2022. *Future-Proofing: Making practice-based IT design sustainable*. Oxford University Press.
[62] Sandra Susan Smith. 2003. Exploring the efficacy of African-Americans' job referral networks: A study of the obligations of exchange around job information and influence. *Ethnic & Racial Studies* 26, 6 (2003), 1029–1045.
[63] Sandra Susan Smith. 2005. "Don't put my name on it": Social capital activation and job-finding assistance among the black urban poor. *American journal of sociology* 111, 1 (2005), 1–57.
[64] Christopher H Stucky, William J Brown, Albert R Knight, Andrew J Hover, and Marla J De Jong. 2022. Operation Allies Refuge and Operation Allies Welcome: military perioperative and perianesthesia nursing support to the Afghan evacuation mission. *Journal of PeriAnesthesia Nursing* 37, 3 (2022), 298–307.
[65] Reem Talhouk, Syed Ishtiaque Ahmed, Volker Wulf, Clara Crivellaro, Vasilis Vlachokyriakos, and Patrick Olivier. 2016. Refugees and HCI SIG: The Role of HCI in Responding to the Refugee Crisis. *CHI'16 Extended Abstracts on Human Factors in Computing Systems* (2016), 1073–1074.
[66] Reem Talhouk, Madeline Balaam, Austin L Toombs, Andrew Garbett, Chaza Akik, Hala Ghattas, Vera Araujo-Soares, Balsam Ahmad, and Kyle Montague. 2019. Involving Syrian refugees in design research: lessons learnt from the field. In *Proceedings of the 2019 on Designing Interactive Systems Conference*. 1583–1594.
[67] Reem Talhouk, Tom Bartindale, Kyle Montague, Sandra Mesmar, Chaza Akik, Ali Ghassani, Martine Najem, Hala Ghattas, Patrick Olivier, and Madeline Balaam. 2017. Implications of synchronous IVR radio on Syrian refugee health and community dynamics. In *Proceedings of the 8th International Conference on Communities and Technologies*. 193–202.
[68] Reem Talhouk, Sandra Mesmar, Anja Thieme, Madeline Balaam, Patrick Olivier, Chaza Akik, and Hala Ghattas. 2016. Syrian refugees and digital health in Lebanon: Opportunities for improving antenatal health. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems*. 331–342.
[69] Hannah Tam, Karthik S Bhat, Priyanka Mohindra, and Neha Kumar. 2023. Learning to Navigate Health Taboos through Online Safe Spaces. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*. 1–15.
[70] Nora Tyeklar. 2016. The US refugee resettlement process: A path to self-sufficiency or marginalization. *E. Feuerherm ve V. Ramanathan (Editörler), Refugee resettlement: Language, policy, pedagogy içinde* (2016), 152–171.
[71] UNHCR. 2023. Global Refugee Statistics. Retrieved January 11, 2023 from https://www.unhcr.ca/in-canada/refugee-statistics/
[72] Mihaela Vancea and Nihil Olivera. 2013. E-migrant women in Catalonia: Mobile phone use and maintenance of family relationships. *Gender, Technology and Development* 17, 2 (2013), 179–203.
[73] Antonio Ventriglio and Dinesh Bhugra. 2015. Migration, trauma and resilience. *Trauma and Migration: Cultural Factors in the Diagnosis and Treatment of Traumatised Immigrants* (2015), 69–79.
[74] Vasillis Vlachokyriakos, Clara Crivellaro, Pete Wright, Evika Karamagioli, Eleni-Revekka Staiou, Dimitris Gouscos, Rowan Thorpe, Antonio Krüger, Johannes Schöning, Matt Jones, Shaun Lawson, and Patrick Olivier. 2017. HCI, Solidarity Movements and the Solidarity Economy. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems* (Denver, Colorado, USA) *(CHI '17)*. Association for Computing Machinery, New York, NY, USA, 3126–3137. https://doi.org/10.1145/3025453.3025490
[75] voxy 2017. *Voxy*. Retrieved January 11, 2023 from https://voxy.com/
[76] Sima Wali, Elizabeth Gould, and Paul Fitzgerald. 1999. The impact of political conflict on women: the case of Afghanistan. , 1474–1476 pages.
[77] Colleen Ward. 1996. Acculturation. (1996).
[78] Colleen Ward and Antony Kennedy. 1993. Psychological and socio-cultural adjustment during cross-cultural transitions: A comparison of secondary students overseas and at home. *International journal of psychology* 28, 2 (1993), 129–147.

[79] Colleen Ward and Antony Kennedy. 1994. Acculturation strategies, psychological adjustment, and sociocultural competence during cross-cultural transitions. *International journal of intercultural relations* 18, 3 (1994), 329–343.
[80] Colleen Ward and Antony Kennedy. 1999. The measurement of sociocultural adaptation. *International journal of intercultural relations* 23, 4 (1999), 659–677.
[81] Colleen Ward and Wendy Searle. 1991. The impact of value discrepancies and cultural identity on psychological and sociocultural adjustment of sojourners. *International journal of intercultural relations* 15, 2 (1991), 209–224.
[82] Anne Weibert, Max Krüger, Konstantin Aal, Setareh Sadat Salehee, Renad Khatib, Dave Randall, and Volker Wulf. 2019. Finding language classes: Designing a digital language wizard with refugees and migrants. *Proceedings of the ACM on Human-Computer Interaction* 3, CSCW (2019), 1–23.
[83] Helen West and Roisin Plunkett. 2018. A mapping of refugee resettlement schemes. (2018).
[84] Marisol Wong-Villacres, Aakash Gautam, Deborah Tatar, and Betsy DiSalvo. 2021. Reflections on assets-based design: A journey towards a collective of assets-based thinkers. *Proceedings of the ACM on Human-Computer Interaction* 5, CSCW2 (2021), 1–32.
[85] Volker Wulf and Others. 2013. Using Interactive Technologies to Support the Cultural Integration and Language Learning of Young Refugees. *Journal of Interactive Learning Research* 24, 4 (2013), 419–435.
[86] Ying Xu, Carleen Maitland, and Brian Tomaszewski. 2015. Promoting participatory community building in refugee camps with mapping technology. In *Proceedings of the seventh international conference on information and communication technologies and development*. 1–4.
[87] Eiad Yafi and Murshidah Said. 2017. Empowering Refugees in Malaysia: WhatsApp as a Dominant Tool. In *Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems*. ACM, 1–4.
[88] George Yerousis, Konstantin Aal, Thomas von Rekowski, David W Randall, Markus Rohde, and Volker Wulf. 2015. Computer-enabled project spaces: Connecting with Palestinian refugees across camp boundaries. In *Proceedings of the 33rd annual ACM conference on human factors in computing systems*. 3749–3758.
[89] Fouzia Younas, Mustafa Naseem, and Maryam Mustafa. 2020. Patriarchy and social media: Women only facebook groups as safe spaces for support seeking in Pakistan. In *Proceedings of the 2020 international conference on information and communication technologies and development*. 1–11.
[90] Roger Zetter. 1991. Labelling Refugees: Forming and Transforming a Bureaucratic Identity. *Journal of Refugee Studies* 4, 1 (01 1991), 39–62. https://doi.org/10.1093/jrs/4.1.39
[91] Roger Zetter. 2007. More Labels, Fewer Refugees: Remaking the Refugee Label in an Era of Globalization. *Journal of Refugee Studies* 20, 2 (06 2007), 172–192. https://doi.org/10.1093/jrs/fem011
[92] Renwen Zhang, Jennifer Nicholas, Ashley A Knapp, Andrea K Graham, Elizabeth Gray, Mary J Kwasny, Madhu Reddy, and David C Mohr. 2019. Clinically meaningful use of mental health apps and its effects on depression: mixed methods study. *Journal of Medical Internet Research* 21, 12 (2019), e15644.

Received January 2024; revised April 2024; accepted May 2024