



EMIGRAM

A SHARED IDENTITY APP FOR MIGRANTS

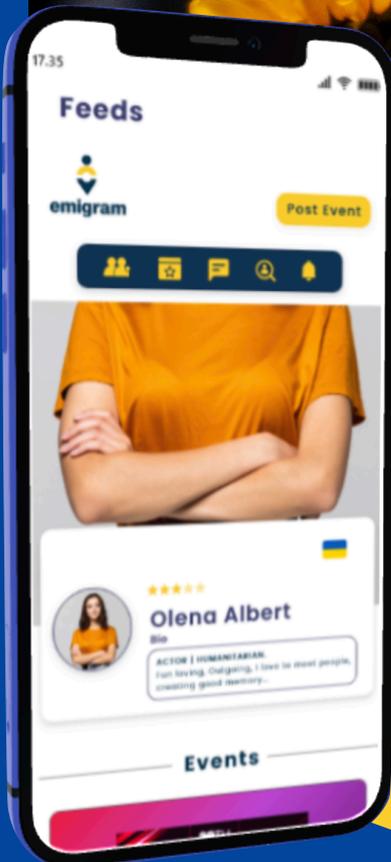


Photo taken by Derek French

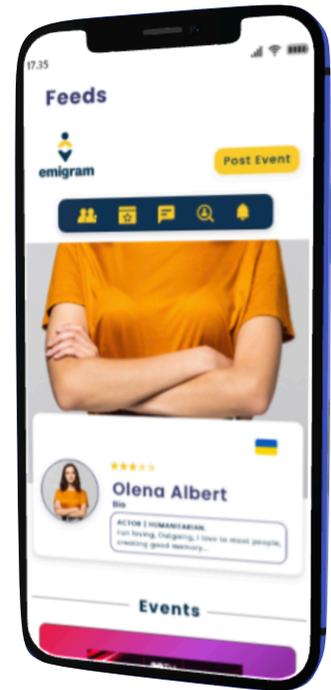
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Abstract

The global phenomenon of migration, forced displacement, and the refugee crisis is increasingly impacting individuals and communities worldwide. Within this context, refugees and migrants encounter distinct challenges during their relocation to new countries, as they are separated from their social networks, close relationships, and familiar cultural environments. Consequently, they undergo temporary social isolation while adapting to unfamiliar cultural contexts, leading to higher risks of homesickness, diminished well-being, and feelings of loneliness.

In order to tackle this issue, we present Emigram, a mobile application designed to foster social connections and support networks among individuals who share a common language and cultural background. This real-time platform aims to facilitate seamless connections, social event facilitation, and access to mental health professionals, specifically catering to the needs of migrants and refugees in new and unfamiliar environments.

At the piloting of our solution for Ukrainian migrants and refugees, we demonstrated the feasibility of our solution through prolific data, literature review and market and gap analysis. We identify the necessity for the intervention and verify the viability of the platform concept. Subsequently, we describe the design and the necessary measures to ensure its effective implementation.



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1. Introduction

Migration, forced displacement, and the refugee crisis have become defining challenges of our time, with staggering numbers highlighting the scale of the issue, as 82.4 million people were displaced due to conflicts, violence or natural disasters in 2020 (UNHCR, 2021). The magnitude of this displacement crisis is compounded by various risks and challenges faced by those affected, such as trafficking, human rights violations, lack of adequate humanitarian assistance, sexual and gender-based violence, detention, deportation, xenophobia, and discrimination (UNESCO 2023).

Migration and forced displacement impact loneliness, mental health, and communities beyond physical upheaval. Research indicates that displaced populations face a range of negative health consequences that can be compounded by exposure to violence, adverse labor market outcomes, and heightened risk of poverty (Mollica et al., 2001; Becker and Ferrara, 2019; Verme and Schuettler, 2021). Subtly however, in times of crisis, such as conflicts, natural disasters, and economic or health crises, people often experience higher levels of loneliness, exacerbating existing inequalities and increasing vulnerability and marginalization (Lippke and Warner, 2023; Bas van Bavel and Marten Scheffe, 2021). This is particularly evident among indigenous populations who were displaced from their lands, as the disruption of their social connectedness and loss of cultural traditions contribute to heightened feelings of loneliness (Myrle et al., 2017).

Migrants and refugees also experience higher levels of loneliness compared to host populations due to massive disruptions in their social networks and the barriers they encounter in new countries (Lea-Maria et al, 2021; Max Stick, Feng Hou, and Lisa Kaida, 2021). The experience of existential loneliness derived from being a migrant is a long-term and significant process (Olofsson et al., 2021). Migrants experience more social and emotional loneliness and are less satisfied with their social relationships compared to their native counterparts (Kate 2020). Consequently, the reduced social network and support lead to social isolation, increased migration-related grief, and mental health challenges (Ekoh et al., 2023).

The intricate web of migration, forced displacement, and the refugee crisis highlights the immense challenges faced by individuals and communities. Loneliness becomes a significant outcome of these experiences, making the already challenging journey for individuals seeking safety, stability, and a sense of belonging even more difficult. Recognizing the importance of social isolation and loneliness as often neglected factors influencing our health, including among older individuals, emphasizes the crucial role of meaningful social connections in promoting our mental, physical, and overall well-being.¹

¹ <https://www.who.int/activities/reducing-social-isolation-and-loneliness-among-older-people>

In this report, we propose *Emigram*, a shared identity activity-based social mobile application that locates and connects individuals who share a common language and cultural background in real-time. The application aims to facilitate social connections and support networks in new and unfamiliar environments, especially for migrants and refugees. Users create profiles specifying their language, cultural background, and interests, and utilize the GPS technology (while prioritizing data privacy) to find nearby individuals with similar backgrounds to connect and socialize with each other. The GPS also assists in finding nearby individuals who are verified mental health professionals or psychologists who specialize in addressing loneliness and related mental health issues. Embedded with a leaderboard system that facilitates social activities and community formulation. This community formation helps provide a sense of belonging, mutual support, and cultural familiarity in the midst of displacement or migration. This kind of community not only provides a sense of belonging for the participants and reduces their experiences of isolation, but also connects them to resources and networking opportunities (Hanckel & Morris, 2014). A strong sense of community bonding increases the level of social network and community participation, enhancing the sense of belonging and trust, and developing reciprocity (Kiyota et al., 2015) that ends up preventing loneliness. Batsleer & Duggan, (2020) adds to the rigour that providing spaces where members of socially excluded communities could come together and connect with like-minded people was shown to help isolated and lonely young adults an opportunity to connect and build social bonds.

2. Geographical Context: Ukrainian Refugees and Ukrainian Migrants

This report addresses the broad scope of Migration as a global problem (Zunejo et al., 2022) but mainly focused on Ukrainian refugees and Ukrainian migrants as a case study. Consequently, the geographical context will be examined under these two categories. The decision to work with these scopes is based on the understanding that by extension, refugees are a special type of migrants and considering the ongoing Russia-Ukraine war, much of our emphasis is placed on the Ukrainian refugees.

A. Ukrainian Refugees

2.1 The Genesis of the Russian- Ukraine Conflict

The conflict between Russia and Ukraine began in year 2014 which is strongly linked to the Euromaidan protest in Ukraine. The protest emerged in response to former President Yanukovich's preference for Moscow over closer economic relations with the European Union (EU).² Ukraine's aspiration for stronger connections with the EU carried immense importance for the country, but it was seen as a concern by Russia. She views Ukraine as being within its sphere of influence and opposes her alignment with Western nations. Additionally, Ukraine holds

²<https://www.economist.com/the-economist-explains/2022/02/16/what-did-ukraines-revolution-in-2014-achieve>

strategic importance as a transit country for Russian gas exports to Europe (Chow, E., & Elkind, J. 2009). The EU as an integration association will hold the status of the leader in international economic relations; therefore, for Ukraine as an European state, an important step is to form a new strategy for economic development of the EU (Yunin et al., 2018). Ukraine joining the EU membership could jeopardize Russian gas exports; Putin's annexation of Crimea based on Euromaidan unrest may threaten Ukraine's membership. Russian President Putin capitalized on the Euromaidan unrest to annex Crimea, justifying that it is based on the majority desire of Crimean residents to join Russia. However, the annexation faced international criticism for lacking legitimacy and violating Ukraine's territorial integrity.³ The Russian ideology considers the Ukrainian and Russian peoples to be parts of a single social and cultural community, whereas the Ukrainian nation-building ideology regards Russia as the hostile Other. Thus, the Russia-Ukraine conflict will continue, with various degrees of intensity, in many spheres (Kiryukhin, 2016).

2.2 The Escalation in 2022: Unleashing Full-Blown Conflict

Year 2022 marked a turning point in the ongoing Russia-Ukraine conflict as tensions reached unprecedented levels leading to a full-blown conflict with far-reaching implications.⁴ The Guardian Online News outlet reported that “Russia's assault on Ukraine commenced with a barrage of missiles, air raids, and a three-pronged invasion from the north, east, and south. The capital city of Kyiv, as well as Kharkiv and Kherson, were seemingly targeted in this military campaign”.⁵ Amidst various speculations surrounding the cause of the full-blown war that erupted at 5 am on February 24th 2022, it becomes evident that the Federation of Russia's actions were a response to the growing alliance between Ukraine and the North Atlantic Treaty Organization (NATO).⁶ Despite Ukraine not being a member state of NATO, the consistent alignment between the two entities has raised concerns. According to a report, Ukraine's alliance with NATO became



³<https://www.cfr.org/background/ukraine-conflict-crossroads-europe-and-russia#:~:text=Russia's%20invasion%20of%20Ukraine%20in,turning%20point%20for%20European%20security>

⁴ <https://www.theguardian.com/world/2022/feb/24/war-ukraine-kyiv-map-where-has-russia-attacked>

⁵ <https://www.theguardian.com/world/2022/feb/24/war-ukraine-kyiv-map-where-has-russia-attacked>

⁶ <https://www.cfr.org/background/ukraine-conflict-crossroads-europe-and-russia#chapter-title-0-5>

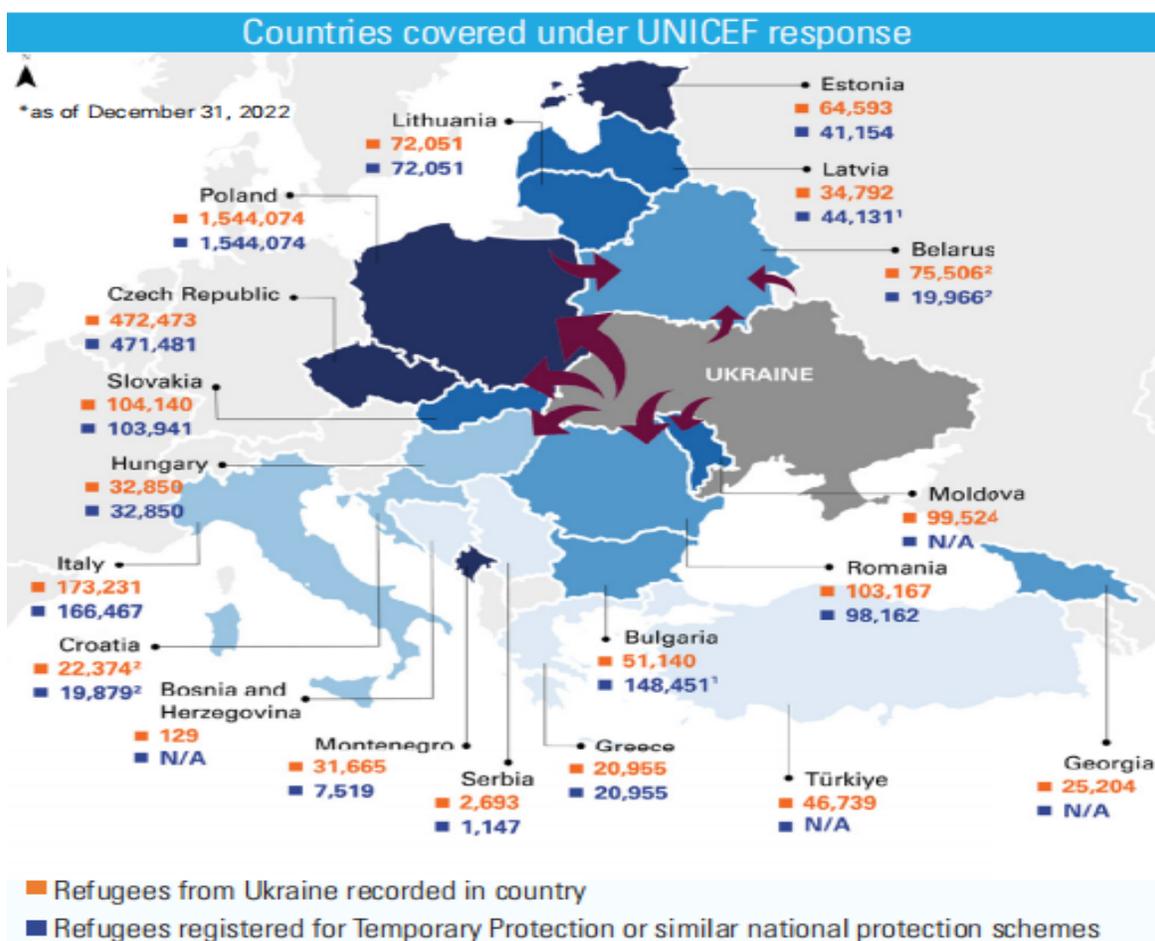
increasingly apparent through its annual military exercises and its designation as one of the six enhanced opportunity partners in 2020, this special status granted by NATO reflects the close relationship between Ukraine and the bloc, further emphasizing Kyiv's aspiration for full NATO membership.⁷ As the number of NATO member states grows, Russia finds herself increasingly surrounded by these member countries. The map above vividly illustrates the concerns of the Russian Federation, as every expansion of NATO is viewed as a direct threat to its sovereignty.

2.3 The Ramifications of the Conflict: Unraveling the Effects of War

Initial attacks on February 24th, 2022, spread to Kramatorsk, Horodyshche, Uman, and more.⁸ Ukraine halts civilian flights due to Russia's military actions. As a result of the ongoing conflict, a significant number of third country nationals (TCNs) and Ukrainians have been compelled to seek refuge near the borders of neighboring countries, such as Poland and Moldova etc. (IOM 2022). This situation has forced individuals to leave their families behind, with women and children being particularly vulnerable to the effects of the war. One year after the outbreak of the war, approximately 13.4 million people have been displaced within Ukraine, while an estimated 15 million people are struggling with deteriorating mental health issues (IOM 2022). The impact has also extended beyond Ukraine's borders, as neighboring nations face a substantial influx of people. This refugee crisis has strained resources and infrastructure, necessitating urgent humanitarian responses and international aid. The accompanying graph illustrates the distribution of Ukrainian refugees across different countries as of December 2022.

⁷ <https://www.cfr.org/backgrounder/ukraine-conflict-crossroads-europe-and-russia#chapter-title-0-5>

⁸ <https://www.bbc.co.uk/news/business-60505415>



Source: UNICEF

B. Ukrainian Migrants

While we are deeply concerned about the Russian-Ukraine war and how it has affected the lives of Ukrainians, we also noticed that there has been massive migration from Ukraine, which has been largely associated with so many factors such as crises, socio-economic factors, and military conflicts over the years and has made so many Ukrainians seek residence and employment abroad (Podra & Petryshyn, 2021).

In fact, according to (Strielkowski et al., 2015), Ukraine has a large migration potential and is likely to supply the highest amount of labour migration amongst all former USSR countries. These studies greatly intrigued our team, as they confirmed that many Ukrainians are living abroad as migrants. To this end, we were interested in gathering data about the feelings of loneliness of these Ukrainian migrants, which we did through the Prolific platform, and the data we got presented a staggering result, which we discussed in the need assessment. Interestingly, the study by (Uittenhove et al, 2022) supports the use of Prolific for web-based behavioral research, emphasizing its potential for ensuring high data quality compared to other platforms

like MTurk. Our team collected data from 57 Ukrainian migrants, and below are the demographics of our participants.

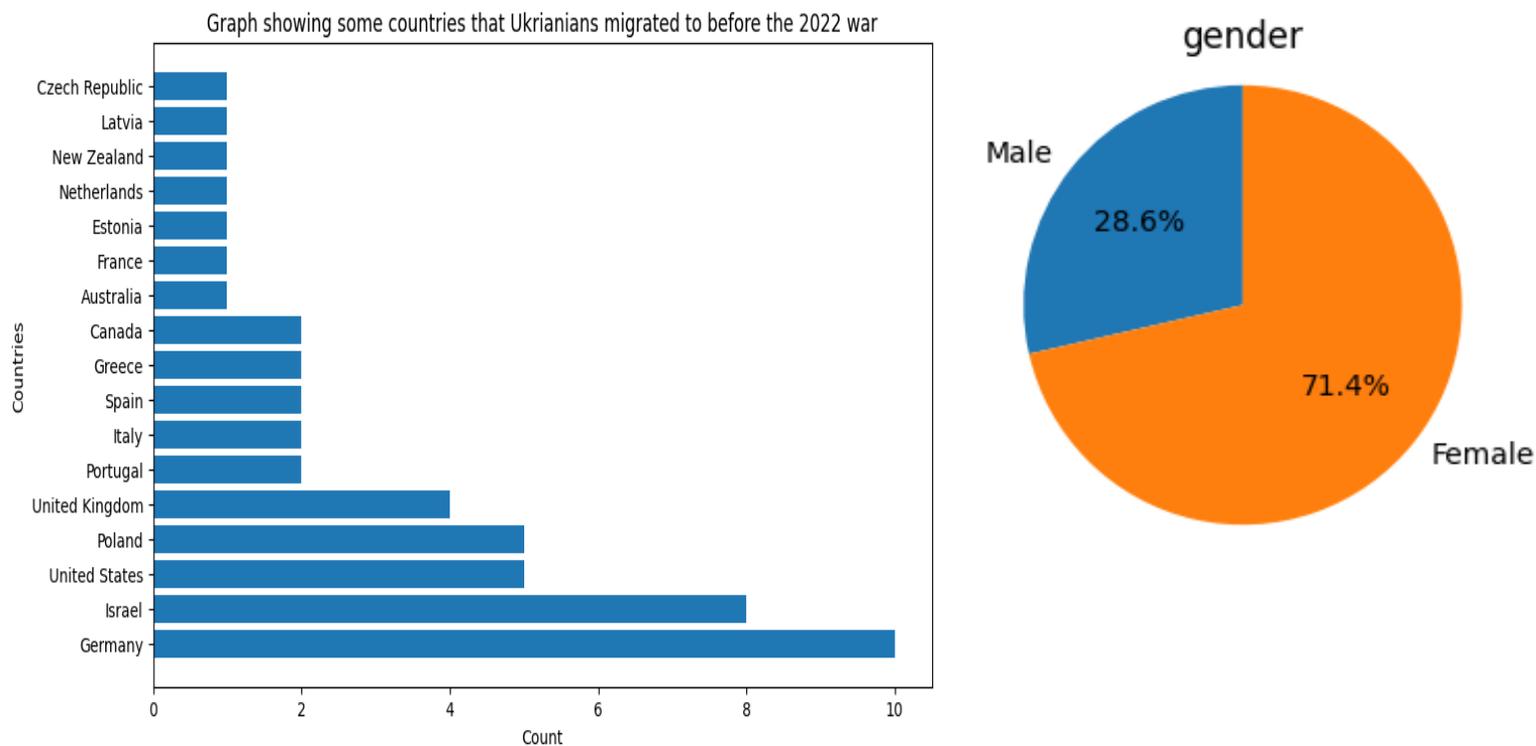


Figure 1: Diagrams showing some demographics of the participants

3. Need Assessment

3.1 Literature Review

3.1.1 Ukrainian Refugees

The current refugee crisis due to the Russian-Ukrainian war has had profound effects on the Ukrainian population, particularly in terms of their mental health and social interactions. Nesterenko (2022) highlights that forced relocation triggers a crisis of personal, public (local), and social identities in Ukraine, leading to increased feelings of loneliness among the affected population. Rendiuk (2022) further emphasizes the unprecedented scale of forced resettlement movements among Ukrainians and their negative impact on the state's gene pool.

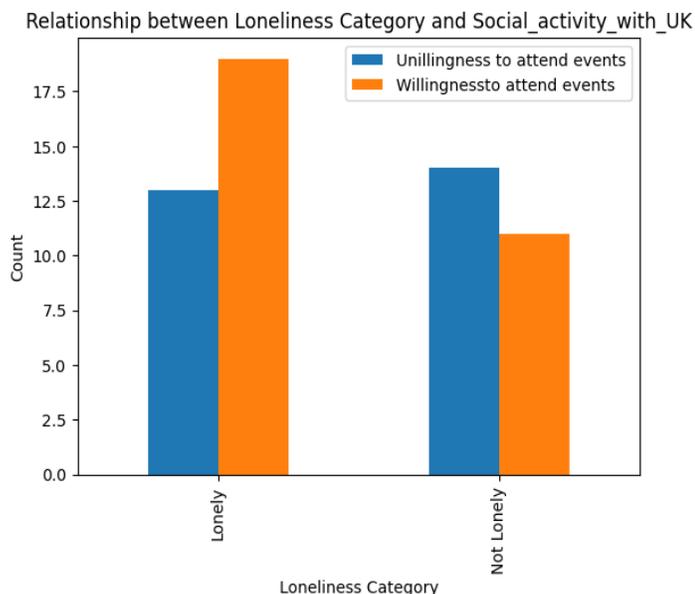
Vardanyan (2022) emphasizes the transformation of migration processes and the overall situation due to the Russian-Ukrainian war, not only in Ukraine but also in neighboring countries such as Armenia. This suggests that the impact of the conflict extends beyond Ukraine's borders, affecting the diaspora communities as well. Yasegnal (2022) explores and confirms the psycho-social problems manifested among people affected by war, including displacement, lack

of basic needs, social disruption, exposure to violence, and mental health issues. Shevlin et al (2022) further highlight the psychological consequences of the Ukraine war and the likelihood of mental health problems among Ukrainians both inside and outside of Ukraine.

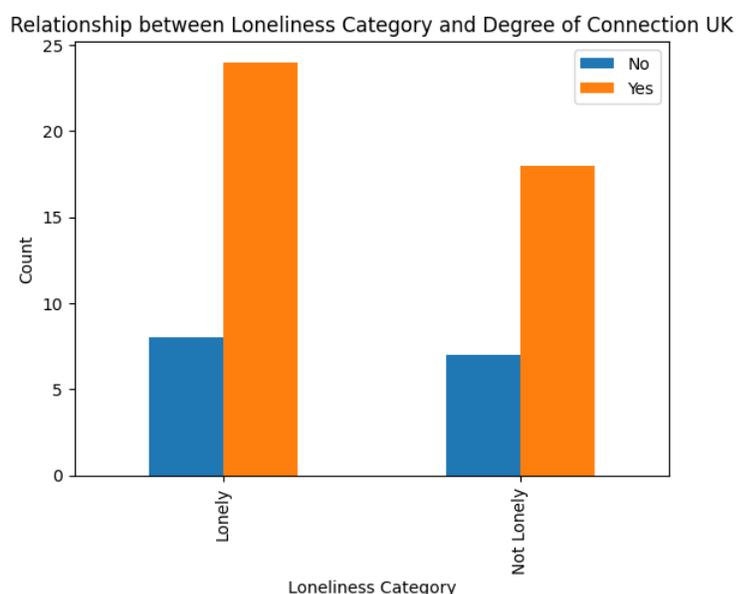
The European Union Agency for Fundamental Rights (2022) presents survey findings indicating high levels of depression, difficulty sleeping, and feelings of vulnerability among displaced Ukrainians. Moreover, the impact of the war has led to disruptions in access to crucial services, (IOM 2023) triggering further isolation and loneliness. (Kurapov et al., 2022) underscore the impact of the war on mental health, fear, substance use, stress, loneliness, and burnout among university students and personnel. The cumulative effect of war and displacement predisposes Ukrainian young people to significant mental health outcomes (Chaaya et al., 2022).

3.1.2 Ukrainian Migrants

Globally, migrants experience massive disruptions in their social networks and often encounter barriers in new countries (Max 2021). Additionally, even immigrants living in countries for a long time are prone to higher levels of loneliness, as has been shown for immigrant and refugee seniors (Shanthi 2019). Migrants experience more social and emotional loneliness and are less satisfied with their social relationships compared to their native counterparts (Kate 2020). However, to comprehensively explore the experience of loneliness among Ukrainian migrants and gain a deeper understanding of its dynamics, our team utilized the universal loneliness construct as presented in (Hudiyana et al., 2021). Based on questions on loneliness that were graded on a Likert scale 1-5, we generated the loneliness score. We calculated the mean of the responses for each individual and categorized them as not-lonely (score <2.5) and lonely (score > 2.5). In Fig. 2a, based on the loneliness score, we plotted these scores against their “willingness to attend social events with fellow Ukrainians because they believe it can solve their loneliness problem,” and we discovered that Ukrainian migrants who are lonely showed more interest in attending social events with fellow Ukrainians than Ukrainian Migrants who are not lonely. In Fig. 2b, in the same vein as above, based on the loneliness score, we also plotted these scores against “those who feel connecting with a fellow Ukrainian will give them companionship,” and the result was staggering. Our analysis showed that both lonely and not-lonely Ukrainian migrants believed that connecting with fellow Ukrainians would give them companionship.



i. Fig 2a



ii. Fig 2b

Figure 2: Barplots of the relationship between loneliness and other variables.

- Here is the link to our code base in google colab for the analysis of the data collected : <https://rb.gy/y8g60>

4. Market Analysis and Comparative Assessment

4.1 Comparative Assessment

This part provides a detailed market analysis and comparative assessment of apps and support systems available to Ukrainians who have been displaced internally or forced to live outside their country in Europe due to the ongoing war. Additionally, it incorporates commentary and analysis of Ukrainians experiencing loneliness as a result of forced displacement. The analysis incorporates findings from different sources, including the United Nations Children's Fund (UNICEF), news articles, and research studies. The analysis aims to evaluate the purpose, target audience, features, and findings/characteristics of each app and support system, with a focus on addressing Ukrainians' loneliness.

Table 1: Comparative Assessment of Apps and Support Systems

Player and Apps	Purpose	Target Audience	Features	Characteristics	Geographic Scope
PROUCH (UNICEF & Ukraine's Ministry)	Mental health support groups	Mental health support group Negatively impacted youth & parents	Free physical and online zoom sessions	- Offers professional psychological support - Focuses on dealing with psychological challenges during wars and conflicts	Ukraine
My Phone Friend	Overcoming loneliness	Individuals in Ukraine	Phone support system	- Originally launched during the COVID-19 pandemic to combat loneliness - Helps hundreds of people overcome loneliness and stress	Ukraine
Facebook, Instagram, TikTok, and Twitter	Enable users to connect with others, share content, and engage in social interaction	Global market, including, Ukrainians living abroad	Social media platform	- Facilitate social interaction - Share various types of content such as photos, videos, and text updates.	Global, Europe
Tinder	Connection and support	Individuals globally seeking to sponsor	Matchmaking platform	- Provides a way for people to connect with and support Ukrainians in need of shelter	Global, Europe
Diia App	Financial assistance and news updates	Displaced Ukrainians across Europe	Mobile application	- Provides cash aid and services to displaced Ukrainians - Allows tracking of events and direct support to the military	Europe
Mygrants for Ukraine App	Matching Ukrainian nationals with businesses	Ukrainian nationals in Italy	Employment app	- Aims to integrate Ukrainians into the economic and social fabric of Italy	Italy
Better Time Stories Audio	Providing bilingual books for refugee children	Ukrainian refugee children in various countries	Bilingual book packages	- Facilitates adaptation to a new language environment for refugee children - Supports family reunification through storytelling	Europe, Ukraine
BSF's Bonjour Belgique	Reception, orientation, and integration	Ukrainian refugees in Belgium	Information, psychosocial care, and education	- Provides secure spaces for refugees to access information and support -Aims to facilitate integration into Belgian society	Belgium
Host4Ukraine	Connect Ukrainian refugees with helpers	Ukrainian refugees, helpers around the world	Offers free accommodation, jobs, supplies, and services	- Unbureaucratic and fast matching	Global
InterNations	Global community for expatriates	Expatriates and international-minded	Connecting with people, organizing events and activity	- Fosters global connections, expat support	Global
Ukr Connect (.com)	Connect Ukrainian refugees in a city, provide support and information	Ukrainian refugees in Poland	Registration, city search, support groups, forums, assistance in various areas	Networking, experience sharing, access to support and information	Cities in Poland where Ukrainian refugees reside

4.2 Similar Offerings and Differentiation

Ukrconnect is a notable organization working on social support and peer-to-peer community identification to address social isolation. However, it lacks flexibility in their features and fails to emphasize strategies to prevent loneliness, as highlighted by Jones (2011), who posits that group identity formation is a negotiated process that requires specific strategies to foster a sense of belonging and cohesion. Building upon this understanding, our solution is differentially designed to incorporate these strategies, aiming to create a strong sense of belonging among users of the application.

Our solution addresses the shortcomings by incorporating two key elements: Social Events Initiation and a Leaderboard system. Recognizing the significance of cultural rituals and social life in fostering connections and combating loneliness, our solution seamlessly initiates events on the app for compatriots within the same geographic radius. This facilitates socialization, connection, and sharing of experiences, serving as a social cure against social isolation and enhancing support networks. Additionally, our innovative leaderboard system not only offers recognition but also utilizes virtual gift cards as a means to motivate and reward individuals who organize events to facilitate connections among users.

Real-time and push notifications are other essential features missing in Ukrconnect. By implementing real-time communication, our solution allows instant interaction and helps combat isolation by facilitating immediate connections among Ukrainian migrants and refugees. Push notifications ensure that users receive timely information about relevant events, discussions, or opportunities within the community, ensuring they stay connected and engaged. Furthermore, our solution leverages the popularity of mobile applications, in contrast to Ukrconnect's website-based approach. We drew inspiration from the success story of My Phone Friend, an initiative in Ukraine, which provides a model for leveraging mobile connectivity.

Unlike Ukrconnect, our solution targets not only refugee populations but also existing Ukrainian migrants who might also share the burden of loneliness caused by the war. By encompassing a wider audience, our solution aims to address the comprehensive needs for social connection and support. In a similar vein, Ukrconnect's existence is contingent upon the ongoing war and the specific circumstances surrounding it. Once the war is over, the platform may face challenges in maintaining its relevance. However, our solution is designed to stand the test of time by encompassing not only refugees but also migrants, recognizing that migration is a global phenomenon that persists beyond specific conflicts or crises. This broader focus ensures the longevity and continued relevance of our solution in addressing the loneliness needs of diverse migrant populations.

4.3 Further Gap Analysis of Other Apps:

Market analysis indicates a noticeable deficiency in existing applications and support systems designed to meet the needs of Ukrainian migrants and refugees concerning feelings of isolation. While several initiatives tackle specific areas like mental health support, employment assistance, and information dissemination, they fail to adequately address the problem of loneliness experienced by Ukrainian migrants and refugees. Unlike Ukrconnect, these other apps have gaps in their approach to tackling this issue, which include the following.

A. Lack of Emphasis on Loneliness:

Existing apps and support systems primarily concentrate on providing financial aid, employment opportunities, housing, and access to information. There is limited attention given to tackling the profound loneliness and social isolation experienced by Ukrainian migrants and refugees. According to psychologists, the feeling of loneliness and isolation are widespread among the displaced (IOM 2022) Ukrainians. Interventions addressing loneliness among individuals living alone may be particularly important for the mental wellbeing of this vulnerable population (Jacob, Haro, & Koyanagi, 2019).

B. Limited Connectivity among Ukrainians:

A study carried out by WHO and Statistics Poland (2022) sheds light on the geographical dispersal of Ukrainian refugee populations, emphasizing the challenges they face in connecting with one another due to their dispersed locations. Specifically, Ukrainians who have been compelled to leave their country as a result of the ongoing war find it difficult to overcome the barriers of geographic distance and establish meaningful social connections, leading to heightened feelings of loneliness and isolation. O'Donnell, Paolini, and Stuart (2022) echo calls to strengthen community support for refugees and promote ingroup ties, particularly among those who are the most vulnerable. Meanwhile, findings point to the need to facilitate people's ability to draw effective social support and help others—particularly at times when social connectedness is threatened—as a way of alleviating the psychological distress that commonly presents with loneliness (Bentley et al., 2022). Current apps and support systems have not adequately addressed the need for facilitating social connections and fostering a sense of community among Ukrainian migrants and refugees in similar circumstances.

C. Gap in Comprehensive Support:

While there are mental health support initiatives like the PROUCH Project, their reach and impact is limited to a specific geographic scope of Ukraine. The focus on mental health support often revolves around coping with the psychological challenges of war, neglecting the broader emotional well-being and loneliness experienced by displaced Ukrainians. While many European countries have accepted many refugees, the psychological limbo of being in and escaping the

war continues (Anjum et al 2023). There is a lack of comprehensive support systems that address the multi-dimensional aspects of the Ukrainians refugee experience as regards loneliness and social integration. Current efforts primarily concentrate on immediate needs such as employment and financial aid, while the long-term social and emotional well-being of displaced Ukrainians receives insufficient attention. WHO and Statistics Poland (2022) find that accessing mental health services may hold some stigma for people from Ukraine, but findings from both components of the survey suggest that there is a need for such services. Designing services in ways more acceptable to refugees, such as one-on-one counseling with **Ukrainian-speaking professionals**, may be helpful (WHO and Statistics Poland 2022).

4.4 Problem Specificity

Loneliness is a multifaceted phenomenon, and deep understanding of loneliness requires specifying niche problems to effectively address the complex phenomenon.. Therefore, our team focuses on addressing the loneliness experienced by Ukrainian refugees and migrants due to the following reasons:

4.4.1 Reasons for focusing on the loneliness faced by Ukrainian Migrants and Refugees

It is important to note that loneliness is not solely about being alone but rather the feeling of being disconnected or separated from others (Hays & DiMatteo, 1987), resulting in perceived social isolation (Hawkey, 2010 & Cacioppo, 2012). While loneliness can arise from various causes (Rokach, 1996), certain high-risk groups, such as the elderly, individuals living alone, displaced people, and migrants, are particularly vulnerable due to their increased likelihood of lacking social relationships or being alone (Oishi et al 2013; Ford et al., 2013; Kate et al., 2020; Holmqvist 2019).

Ukrainian refugees, and migrants in particular, face unique challenges when relocating to a different country, as they are uprooted from their social networks, close relationships, and familiar cultural environments (Shevlin et al., 2002; Kanji et al., 2010; Söderqvist). Consequently, they may experience temporary social isolation while adapting to a new cultural context, putting them at greater risk of homesickness, diminished well-being, and loneliness (Bender et al., 2019; Oishi et al., 2013; Sawir et al., 2008; van den Broek & Grundy, 2017; van Tilburg & Vingerhoets, 2007). Furthermore, emotional loneliness, which emerges from the loss or absence of a close emotional attachment figure, appears to be a particularly detrimental component of loneliness (O'Súilleabháin et al, 2019). Therefore, it is important to consider cultural sensitivity in detecting and intervening in loneliness among migrants (Dong, Zhang, & Chang, 2015). It reinforces the notion that disruption or detachment from one's cultural identity can lead to severe feelings of loneliness. Also, identity gaps, where there is a significant discrepancy between one's self-perception and the social identity they aspire to or believe they should possess, have also been identified as a prominent factor in feelings of loneliness (Rhodes,

2014). This suggests that the misalignment between one's cultural identity and the environment they find themselves in can contribute to heightened experiences of loneliness.

Emphasizing support for displaced individuals aligns with humanitarian and ethical principles, demonstrating a commitment to upholding human dignity and recognizing the rights of those who have experienced forced displacement (Ramsay, 2019). The displacement of refugees, as highlighted in Ramsay's study, is not an exceptional phenomenon but rather a reflection of an increasingly globalized experience of ordinary displacement. This experience highlights the stratification of citizenship and civic rights, where the value of human life is reduced to economic productivity (Ramsay, 2019). Also, connecting with others who share the same heritage enables the exchange of shared experiences, stories, and understanding. This shared cultural background can serve as a bridge for forming deeper connections, as individuals can relate to each other's experiences and challenges in adjusting to the new country.

4.5 Potential Market Acceptance

The literature review and the prolific pilot study have revealed that a considerable number of Ukrainian migrants and refugees, especially in the European Region, are facing loneliness. This underscores the importance of understanding the market's psychological behavior and validating the level of market acceptance for addressing the needs of this population through a mobile technological solution.

First, the proposal and acceptance of mobile-based solutions to address loneliness have been significantly influenced by the success story of 'My Phone Friend' in Ukraine. The project was first launched to support people who felt lonely during the COVID-19 pandemic, now that it is extending its usage to connect volunteers and those who needed support, it has helped hundreds of people overcome loneliness and stress in Ukraine.⁹ Walker et al. (2015) provide evidence of the market acceptance of mobile phone technology for enhancing interpersonal and community connectedness in health promotion programs with refugee groups. The findings from Shklovski et al. (2008) further support this notion by demonstrating how phone calls facilitate relationship growth and the exchange of social support, particularly in the context of residential moves.

Second, the prevalence of political Rusynism and its consequences within the Ukrainian diaspora highlights the need for a mobile solution that brings fellow Ukrainians together for social events, fostering a sense of community, combating loneliness, and strengthening cultural bonds. Political Rusynism promotes the recognition and identity of the Rusyn people, causing divergence in perspectives and priorities within the Ukrainian diaspora. The spread of political Rusynism among foreign Ukrainians has led to significant demographic losses of the Ukrainian population and disruption of cultural ties between different groups of the Ukrainian diaspora (Dnistrianskyi, 2022). Hence, by finding a way to connect fellow Ukrainians through the mobile solution, this

⁹ <https://www.unicef.org/ukraine/en/stories/phone-project-helps-young-and-old-connect-ukraine>

creates a sense of shared identity and purpose. Participants can find common ground, share experiences, and collectively work towards preserving Ukrainian culture and heritage despite the challenges posed by political Rusynism as well as the war. This shared purpose contributes to market acceptance as it appeals to individuals seeking a way to connect with their Ukrainian identity and community.

Third, while social media platforms such as Facebook, Instagram, TikTok, and Twitter provide avenues for cultural exchange, they often fall short with dedicated features in catering to individuals who are seeking connections within their own cultural identity, especially when they are geographically distant from their home country or displaced. Hence, this is where the need for a fast and reliable app that focuses on connecting people with shared cultural backgrounds scattered across different geographic locations, to come together, share their experiences, and support each other becomes apparent. Such an app would contribute to the overall well-being and integration of migrants and refugees, allowing them to maintain a strong sense of cultural identity, even in the face of geographical separation and displacement.

Fourth, the war has posed a threat to the rich social life, ritual culture, and festive traditions cherished by Ukrainians, which traditionally served as a powerful antidote against loneliness. Therefore, it is imperative to revive and tap into the cultural heritage and practices of Ukraine to prevent social isolation and preserve Ukrainian cultural identity. According to Stishova (2022), the joint celebration of the Temple Feast and the Village Day in rural areas has played a significant role in fostering community unity, enhancing moral and aesthetic values, and improving communication among members of the village community and neighboring settlements among Ukrainians. The development of a mobile application that enables the preservation and facilitation of cultural celebrations and practices can serve as an effective response to the challenges faced by Ukrainian migrants and refugees. Such an application has the potential to not only address the impact of the war but also generate market acceptance by providing a platform that promotes and supports cultural heritage.

Fifth, the geographic dispersal of Ukrainian refugee populations across various locations in border voivodeships creates a compelling incentive for them to embrace a mobile application that connects individuals, enabling them to alleviate loneliness and foster social connections. According to WHO and Statistics Poland (2022), people who came from Ukraine stayed at various locations in the border voivodeships. The locations listed include: reception points; goods distribution centres; religious houses; medical care points, consulates in Lublin and Przemyśl; and collective accommodation establishments, such as hotels, dormitories, student houses, sanatoriums, school dormitories, school, hostels, guest rooms in kindergartens, schools and other institutions, private houses, etc.

Finally, according to the United Nations refugee agency UNHCR, 90 percent of the more than 7 million refugees from Ukraine are women and children.¹⁰ Mental distress was highest among women, those experiencing loneliness or low social support, and those whose usual everyday life is most affected (Rens et al., 2021). This represents a substantial and potentially sizable market size, further enhancing the potential for market acceptance of our solution.

5. Social Market Opportunity

▶ Ukrainian refugee faces loss and loneliness far from home



Source: Youtube AP Channel

Ukraine's conflict causes displacement, an emotional toll, and loneliness among Ukrainian refugees and migrants. Studies have shown that displaced individuals who experience loneliness also suffer from lower levels of emotional and tangible social support (Kim, 1999).

To address this, we propose *Emigram*, a shared identity activity-based social mobile application that locates and connects individuals who share a common language and cultural background in real-time. The application aims to facilitate social connections and support networks in new and unfamiliar environments, especially for migrants and refugees. Users create profiles specifying their language, cultural background, and interests, and utilize the GPS technology (while prioritizing data privacy) to find nearby individuals with similar backgrounds to connect and socialize with each other. The GPS also assists in finding nearby individuals who are verified mental health professionals or psychologists who specialize in addressing loneliness and related mental health issues. To encourage engagement, the app features a leaderboard system that rewards users for initiating social activities and inviting others to join. By combining social

¹⁰ <https://reporting.unhcr.org/operational/situations/ukraine-situation>

connectivity, incentives to socialize, and access to mental health support within one platform, users establish connections, build support networks, and receive guidance from professionals in overcoming loneliness and related challenges. The app serves as a platform to connect and share practical information, resources, and support primarily among Ukrainians staying in various locations. It provides a space to exchange tips on navigating local services, finding employment opportunities, accessing healthcare, and other essential needs faster and easier. By enabling easy information sharing, the app empowers individuals and helps them navigate their new environment more effectively without language or cultural barriers.

The solution hinges on the findings that building meaningful group-based connections, leveraging ethnic attachment, and enhancing community identification serve as a social cure for loneliness (Kim, 1999; Haslam et al., 2021; McNamara et al., 2021). The application's focus on community identification and peer support aligns with research indicating that these factors can promote a potential social cure for loneliness (McNamara et al., 2021). Additionally, the research of Dahlberg (2007) emphasizes the importance of a sense of belonging in overcoming loneliness, indicating that connections with others can alleviate feelings of isolation, even when separated by distance. Also, facilitating neighborly behaviors, which are more likely to occur in close-knit communities due to proximity, is a key feature of the application in combating loneliness. According to Kearns et al, (2015), their findings highlight the significance of various neighborly behaviors in protecting against loneliness within deprived communities.

Korn et al. (2018) demonstrated that communicating and rewarding "small wins" can increase individuals' willingness to act in the group's interest. This finding supports the idea that incorporating social rewards within the application, such as a leaderboard that rewards users for initiating social activities, motivates individuals to engage in social interactions and promotes the overall well-being of the community (Korn et al., 2018). Kawamichi et al. (2016) found that an increased frequency of social interaction is associated with enjoyment enhancement and activation of the reward system. Also, findings regarding promoting app engagement indicate that utilizing an opt-in approach to social features such as leader boards and team challenges is essential (Tonkin et al., 2017) By providing a platform that enables real-time social connections, the proposed activity-based social mobile application aligns with these findings and has the potential to foster social rewards and positive experiences for users (Kawamichi et al., 2016). According to Shvedko et al, (2020), physical activity interventions could reduce loneliness and improve psychological well-being, among other health benefits. This finding necessitated the well-thought out strategy of carefully designing the app to facilitate social activities beyond mere online connection.

Additionally, Deters and Mehl (2013) conducted an online social networking experiment and observed that participants who engaged in status updating activities experienced a decrease in loneliness. The study showed that posting on social media platforms enhanced feelings of

connectedness to friends on a daily basis, leading to reduced loneliness. This research supports the idea that the proposed mobile application, which facilitates social interactions and support networks, can effectively address challenges related to loneliness (Deters & Mehl, 2013).

6. Design Principles and Considerations

The proposed solution aims to address the issue of loneliness among Ukrainian migrants and refugees through a mobile application. The advantages of developing a mobile app include accessibility to a wide audience, real-time connectivity for immediate social interactions, targeted matching based on user profiles, and flexibility for users to engage at their convenience. The app utilizes interactive features, such as leaderboards and rewards, to actively engage users and promote social connections. Push notifications and updates keep users informed about community activities, reducing the risk of social isolation.

A. Design for Safety and Sincerity

To ensure the safety and security of users, the mobile app implements verification mechanisms, including user reviews and ratings. This fosters trust within the community and encourages responsible and respectful interactions. Additionally, the app provides reporting and moderation functionalities to address any inappropriate or harmful behavior, maintaining a positive and supportive environment for all users. Privacy protection is another crucial aspect. The app incorporates privacy settings that allow users to control the visibility of their personal information and restrict access to specific details. This ensures that users have control over their data and can choose to share it only with individuals they trust.

B. Design for Maximizing Relationship with People of Cultural Ties

The focus of the solution is to create a mobile application that effectively maximizes relationships with people of the same cultural ties in a foreign land. The app aims to address the challenges of loneliness and social isolation by providing a platform where individuals can connect, engage, and build meaningful connections based on shared cultural backgrounds. By leveraging advanced algorithms and matching techniques, the app ensures that users are connected with others who have similar cultural experiences and interests. Inspired by ride-hailing apps, this real-time connectivity feature allows users to instantly connect with others who share their cultural background and are located nearby. It enables users to request and offer assistance, such as language support, cultural guidance, or simply meeting up for a coffee or a walk. This real-time connectivity promotes spontaneity, enabling users to form instant connections and enhance their social experiences in the foreign land.

C. Design for Scalability

The solution is designed to be scalable across Europe and beyond. It will utilize a cloud-based infrastructure and scalable databases to handle increasing user demand. The app supports

multiple languages and considers cultural nuances to cater to diverse user backgrounds. Collaboration with local organizations and government agencies allows for wider reach and comprehensive support. An agile development process ensures continuous improvement and the addition of new features based on user feedback. Overall, the solution's infrastructure, localization features, collaboration, and agile development enable scalability and adaptability to meet the needs of users in different regions.

D. Design for Shared Heritage and Social Activities

The app's design for social activities focuses on facilitating meaningful connections and fostering a sense of community among users. It includes features such as event organization, community forums, and personalized recommendations. Users can create and promote social activities, participate in discussions, and receive personalized suggestions based on their interests. The app incorporates gamification elements to motivate active participation and engagement. Overall, it provides opportunities for users to connect with like-minded individuals and combat loneliness in a foreign land.

E. Design for Sustainability

To design for sustainability, the mobile application would introduce a premium feature after 2-3 years of operation, allowing users to connect with a wider radius of individuals. This feature would generate revenue to support the app's growth. Pricing would be carefully determined, balancing affordability and financial sustainability. The app would remain inclusive by providing a free version for users who cannot access the premium features. By following these approaches, the app would grow its user base, address loneliness among displaced Ukrainians and possibly more audiences, and foster sincere connections while maintaining safety.

7. Technology: A Step-by-Step Usability Scenario

Using the link of the Youtube above, is the true and loneliness story of Viktoria Kovalenko, a Ukrainian refugee living in Kent, United Kingdom with her two-year old daughter, Varvara. As millions of people are in her shoes, we have created two usability scenarios of how the application can be used and beneficial to solving her loneliness issue leveraging on shared cultural identity and proximity.

Scenario 1: Connecting with Fellow Ukrainians in Kent, UK

- The mother downloads the mobile app and creates her profile, specifying her language, cultural background, country, and interests. She also adds her current location as Kent, UK.

- Upon logging into the app, the mother navigates to the search for nearby users section and selects the option to find fellow Ukrainians in her vicinity.willingness to connect with fellow Ukrainians. The mother can view profiles, including information about their language, interests, and shared cultural background.
- After reviewing profiles, the mother finds a user who seems compatible and sends a connection
- The app utilizes GPS technology to identify other users in Kent who have expressed their request or initiates a chat within the app. (On the leaderboard system, she has scored a point doing this.)
- If the other user accepts the request or responds to the chat, they can start exchanging messages, sharing experiences, and potentially plan a meet-up or social activity in Kent. The app's messaging feature facilitates ongoing communication.

Scenario 2: Inviting Fellow Ukrainians to Attend Daughter's Birthday Ceremony

- The mother has organized a birthday ceremony for her daughter and wants to invite fellow Ukrainians to attend the event. She opens the mobile app and goes to the events or activities section. Within the app, the mother creates a new event and fills in details such as the date, time, location, and purpose of the event (birthday ceremony).
- The mother can choose to make the event visible to nearby Ukrainians or limit it to a specific geographic area, such as Kent, UK. She can also specify the target audience as fellow Ukrainians.The app sends notifications to users in the selected area, alerting them about the upcoming event. Users interested in attending can RSVP or express their interest within the app.
- The mother can track the responses and communicate with interested users through the app's event management features. She can provide additional details and answer questions.
- On the day of the birthday ceremony, the mother and her daughter can meet and socialize with fellow Ukrainians who have attended the event, fostering a sense of community and support.

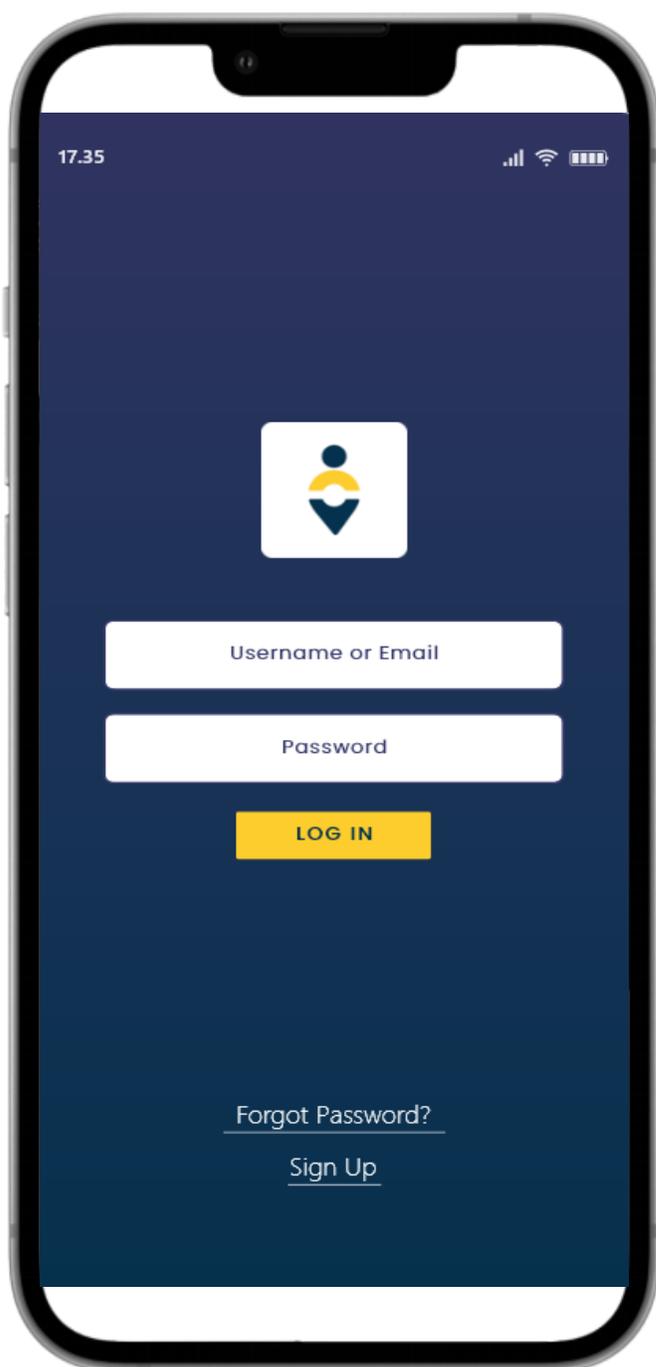
Scenario 3: Connecting with Verified Mental Health Professionals in Kent, UK

- The mother, who is experiencing loneliness and mental health concerns, wants to connect with verified professionals in the Kent, UK area. She opens the mobile app and uses the GPS feature to locate mental health professionals in her vicinity.
- Within the app, the mother finds a curated list of verified mental health professionals who are sensitive to the needs of displaced individuals and offer reduced-cost or pro bono

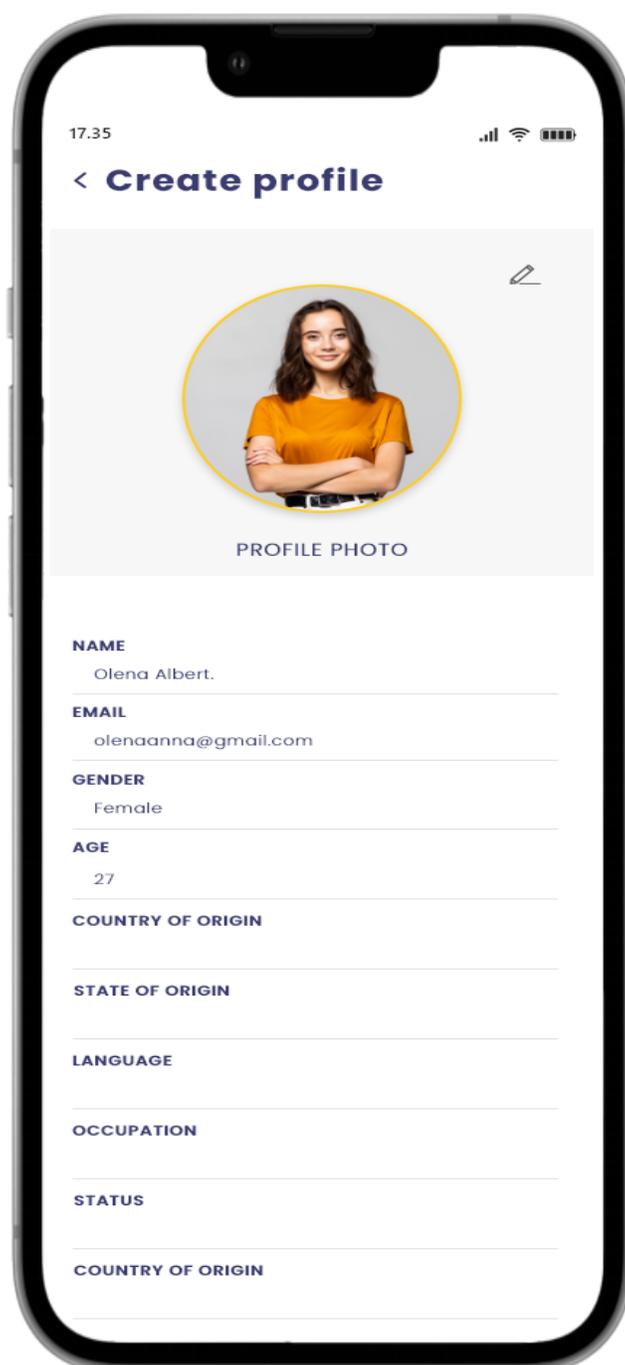
services. These professionals are approved by the app through an easy application based on their qualifications, expertise, and willingness to support those with limited financial resources. The mother selects a professional from the list and initiates contact through the app. They can exchange messages to discuss her specific concerns related to loneliness and mental health.

- Once the mother and the professional establish a mutual understanding, they can schedule an appointment within the Kent, UK, area based on their availability. During the scheduled sessions, the mother can communicate with the professional either in person or through secure video or audio calls, facilitated by the app. This allows her to receive support and guidance tailored to her needs. The app provides a secure messaging platform for ongoing communication between the mother and the professional.
- They can discuss her progress, explore coping strategies for loneliness, and address other mental health concerns she may have. The professionals on the app undergo continuous monitoring by the app's team to ensure they provide quality services and maintain the app's standards, specifically in addressing loneliness and mental health.

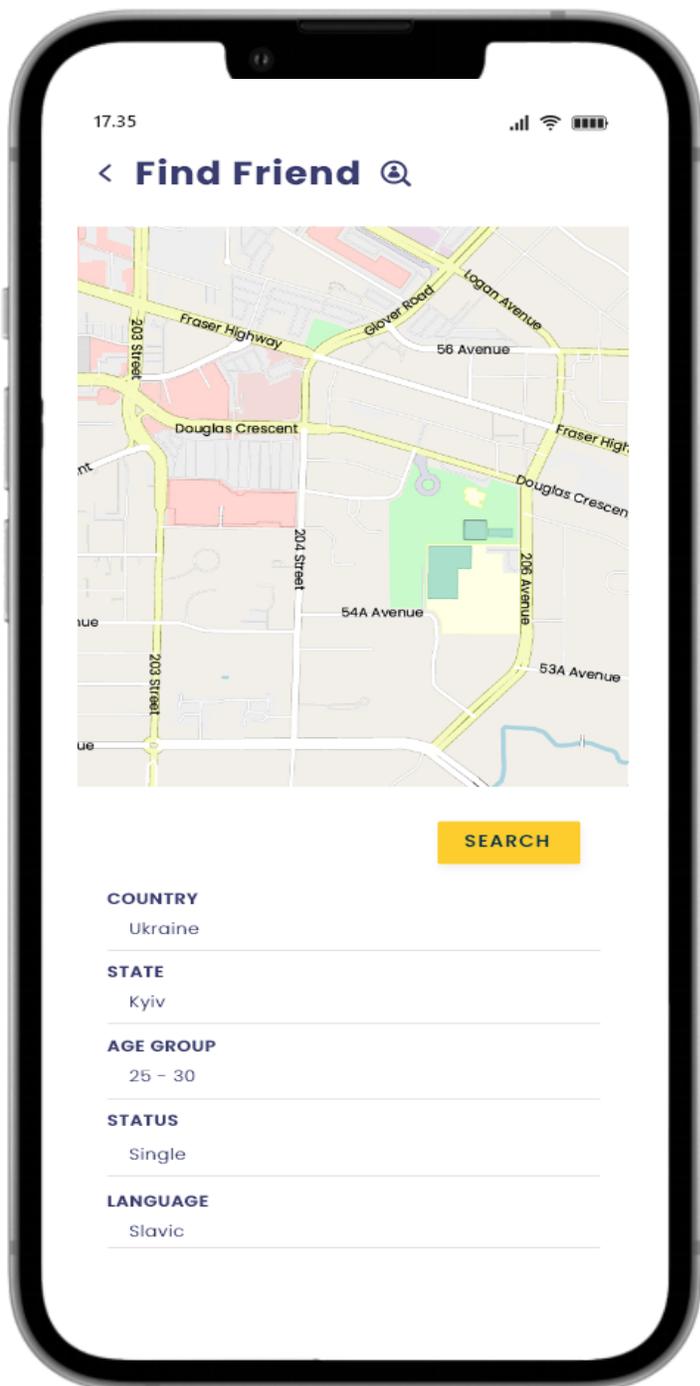
App Usage Preview



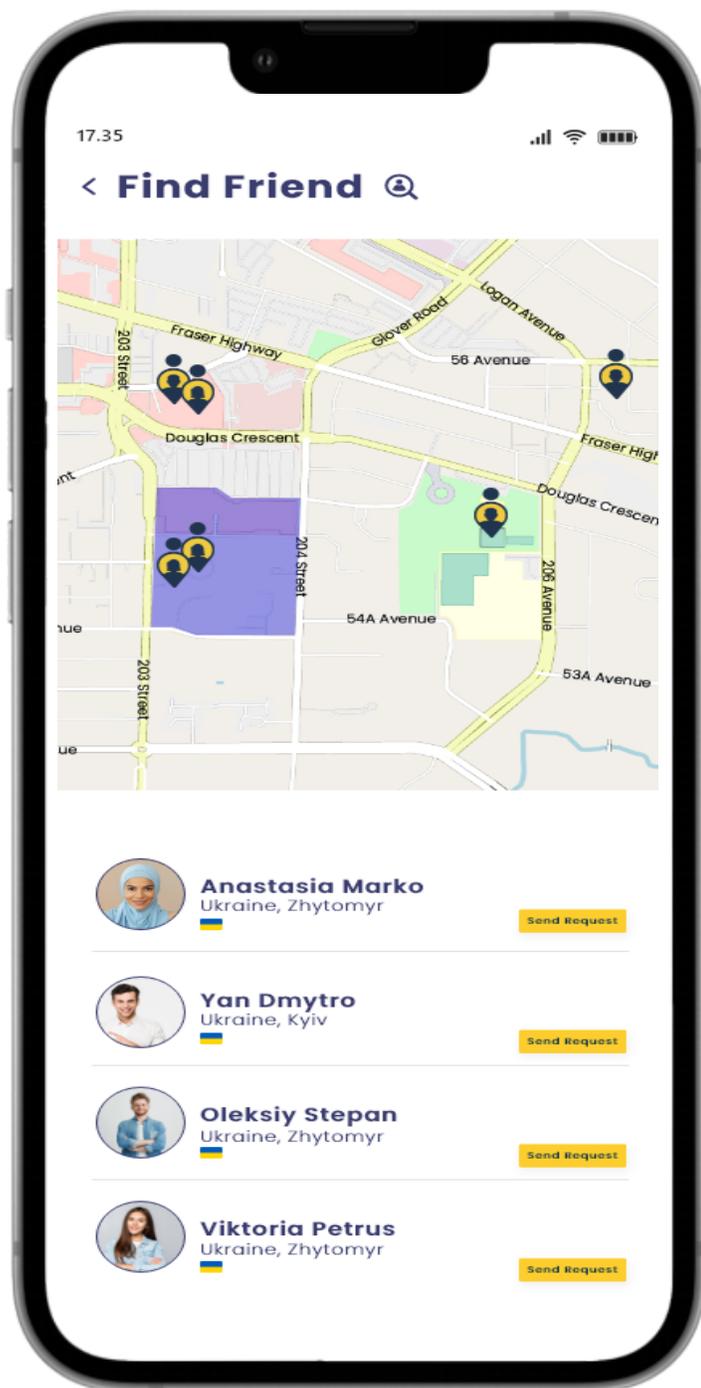
1. Users and mental health professionals or psychologists are required to sign up for the app, and their profiles are verified by our app's team



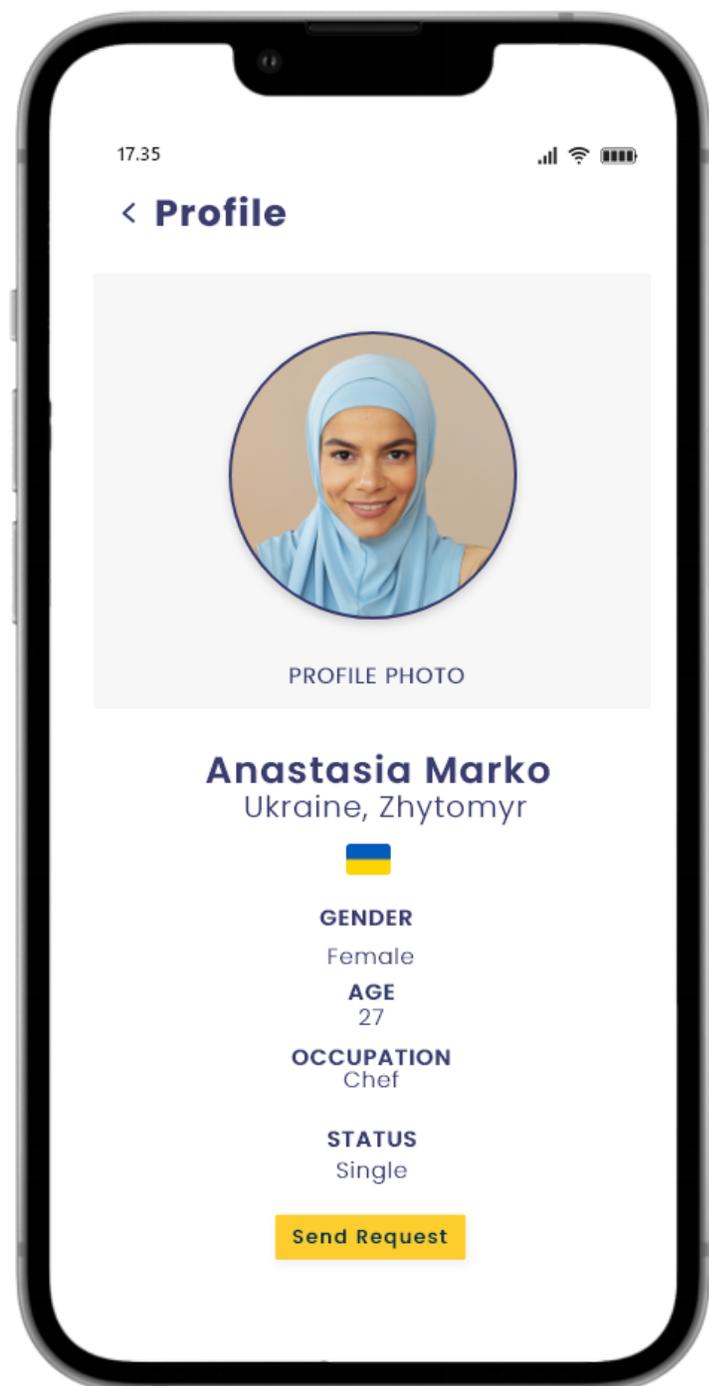
2. User profiles are created with a focus on data privacy, as guided by the app's terms and conditions. Verified professionals are distinguished by a special verified tick, ensuring trust and credibility.



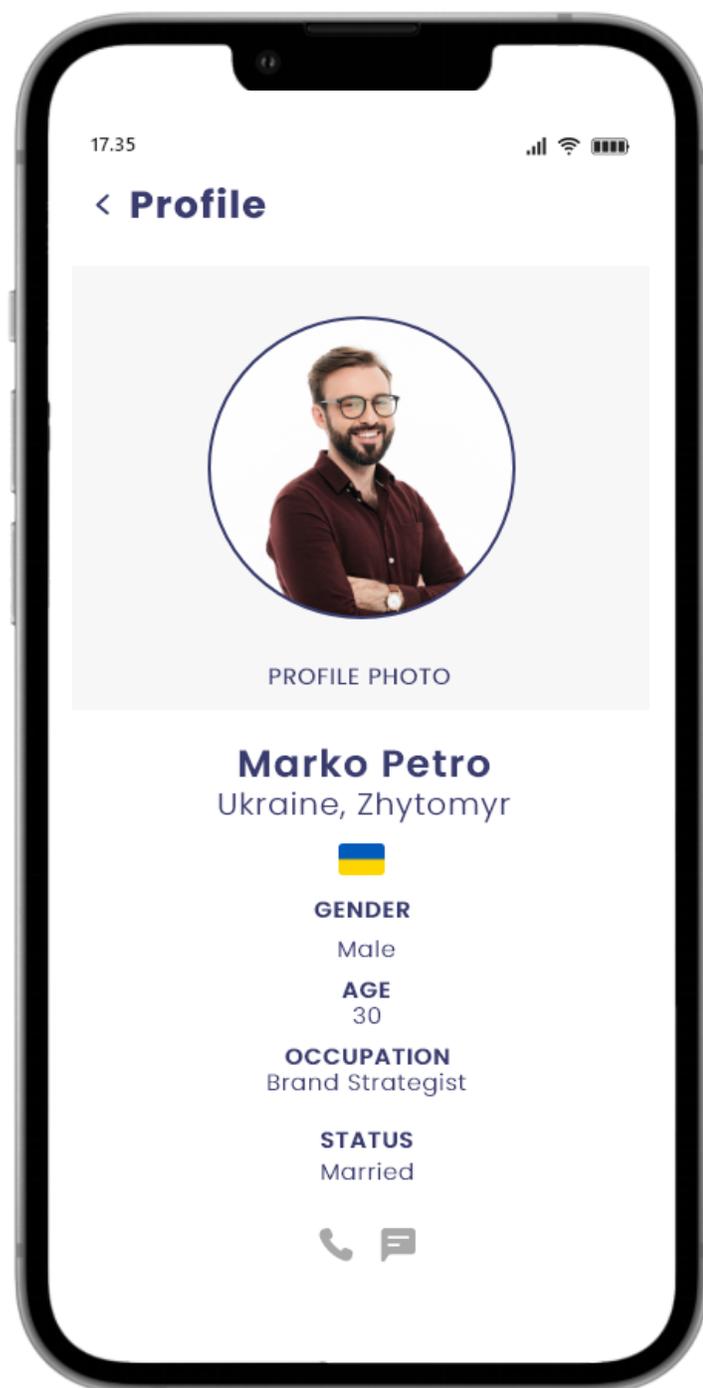
3. The app provides the option to either find and connect with mental health professionals or find friends who share the same cultural or national identity within their vicinity. Users can utilize the filtering option to refine their search based on their preferences.



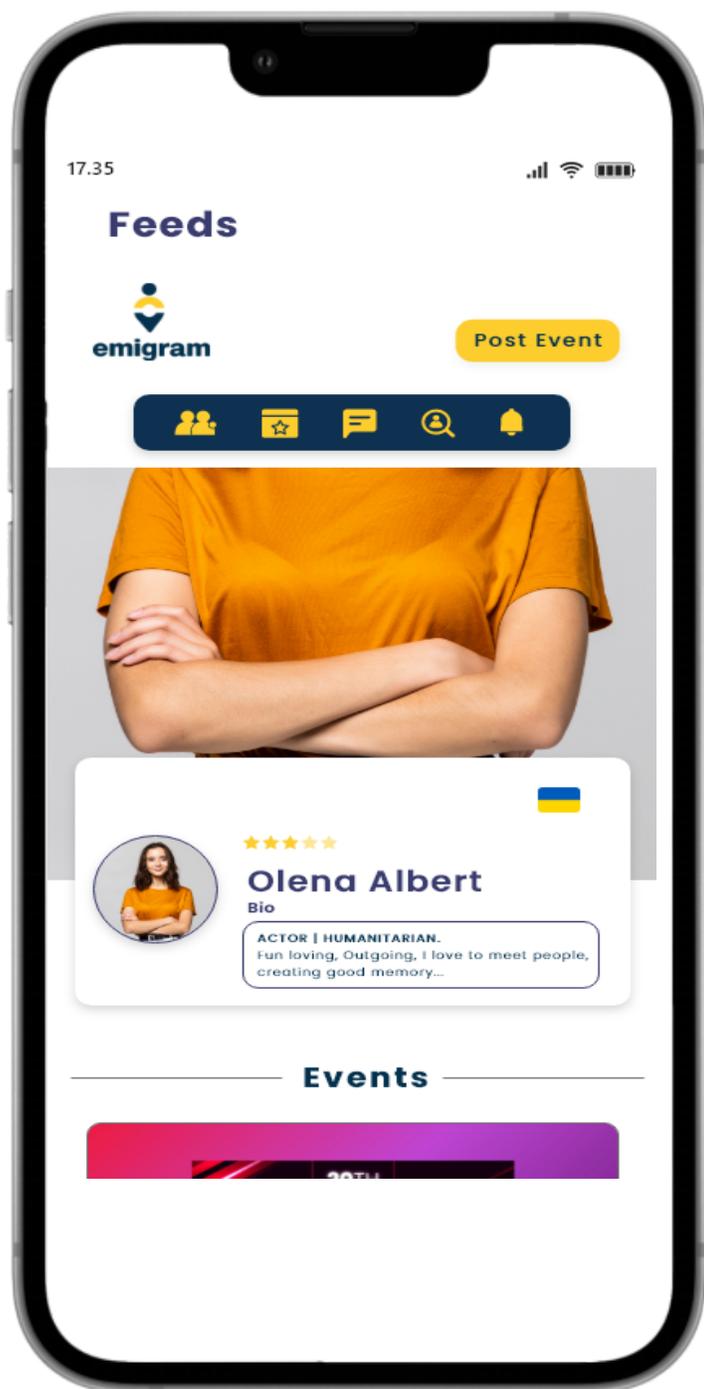
4. Upon clicking the search button, the app displays profiles of potential friends with short bios provided by the users, while their specific location remains undisclosed.



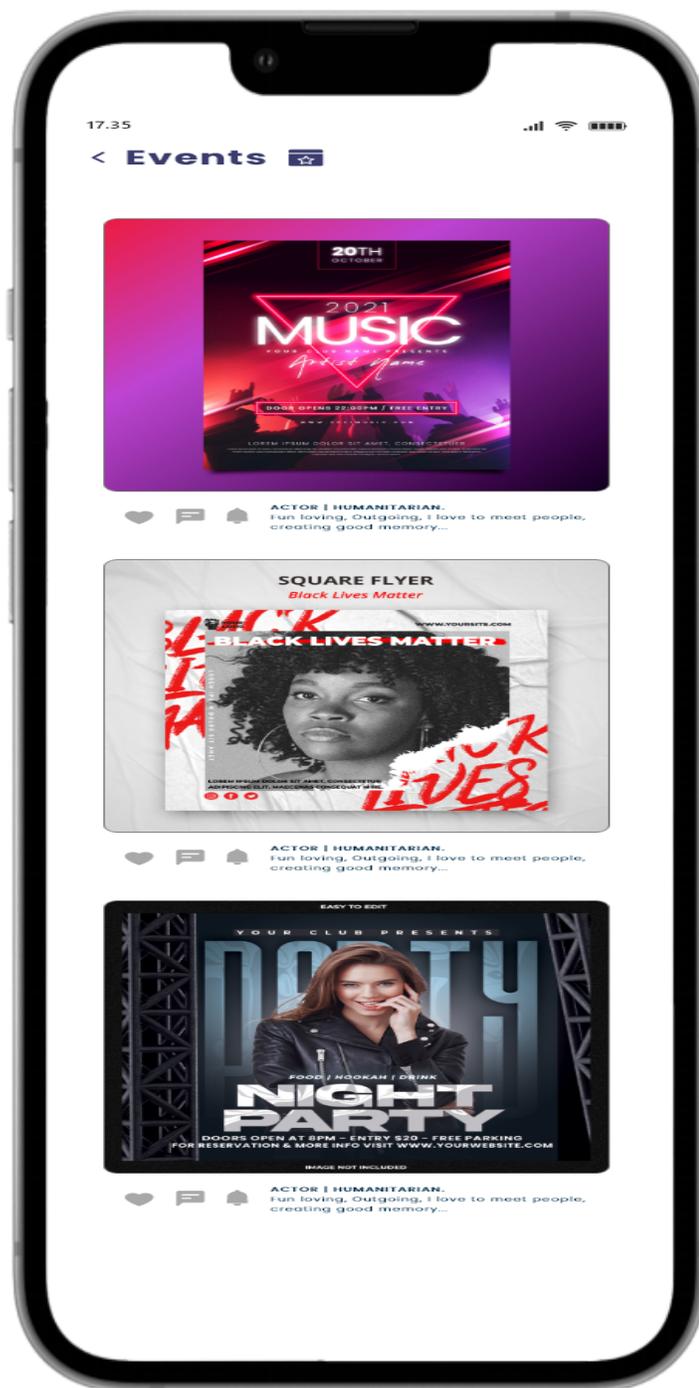
5. Users have the option to send requests to other users based on shared interests and preferences, facilitating connections and fostering meaningful relationships.



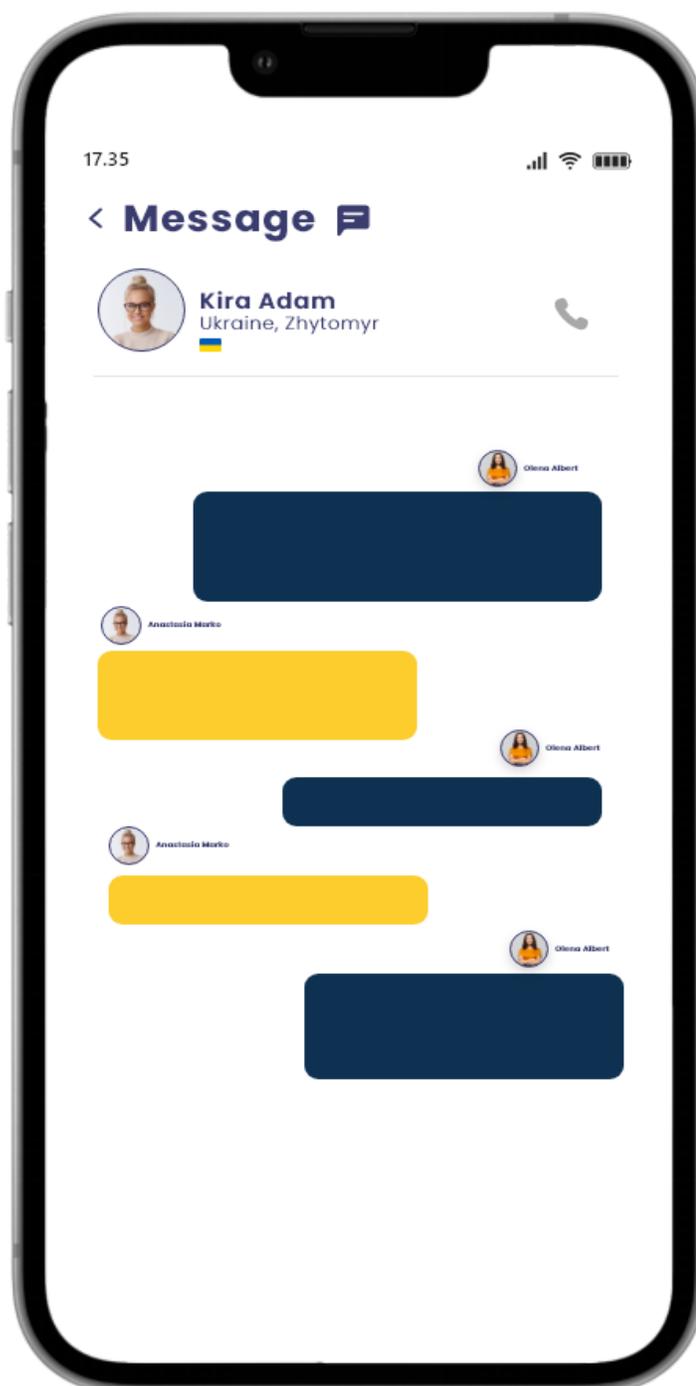
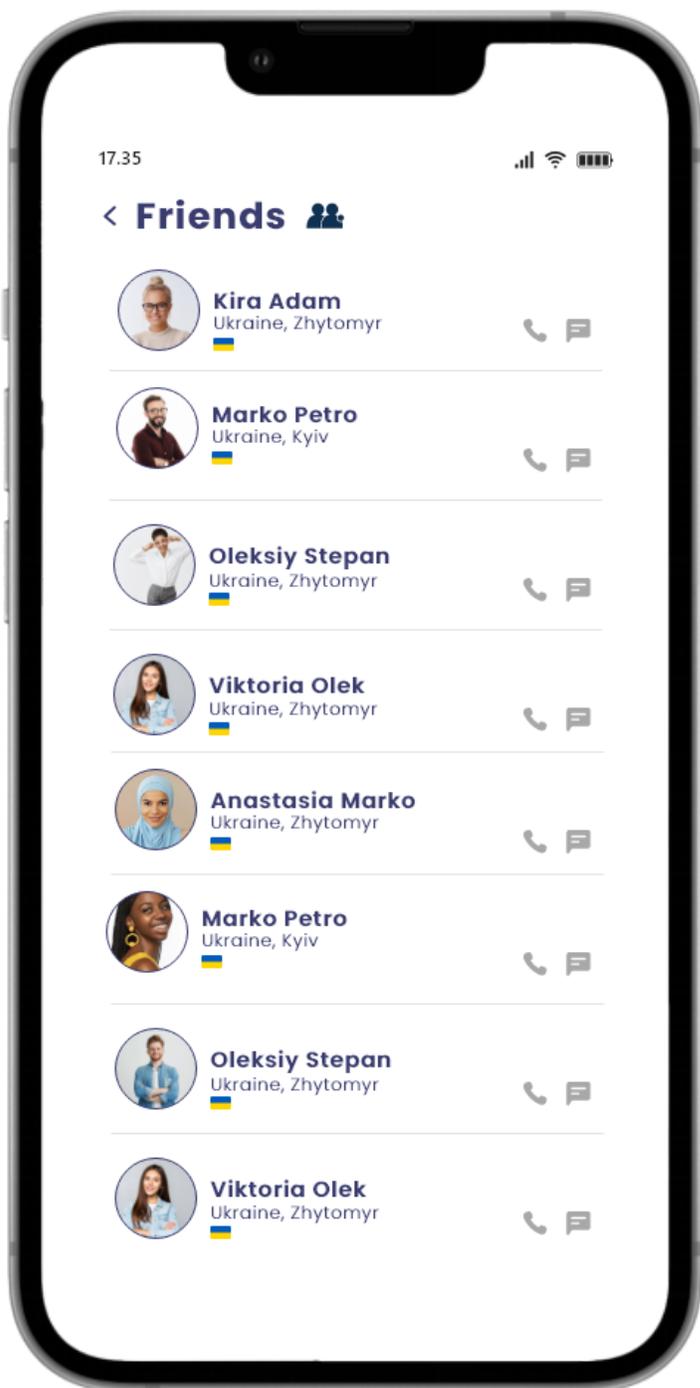
6. Potential friends have the option to accept or reject requests based on their preferences. However, for verified mental health professionals, the app does not include a feature for sending or accepting requests. Their profiles are available for users to access directly for professional support.



7. A user has the ability to post events, which can be made visible to select friends or restricted to a specific audience. The acceptance of event invitations can be facilitated through the notification feature. Users earn event-based points, leaderboard ranks with factors such as event frequency, popularity, and content quality



8. Events that comply with our app's terms and conditions are displayed on the home page, along with relevant feeds and event information.



9. Effortlessly, you can now connect with friends who share your social identity in new environment or mental health professionals who can understand and support you in overcoming loneliness, all without cultural or language barriers.

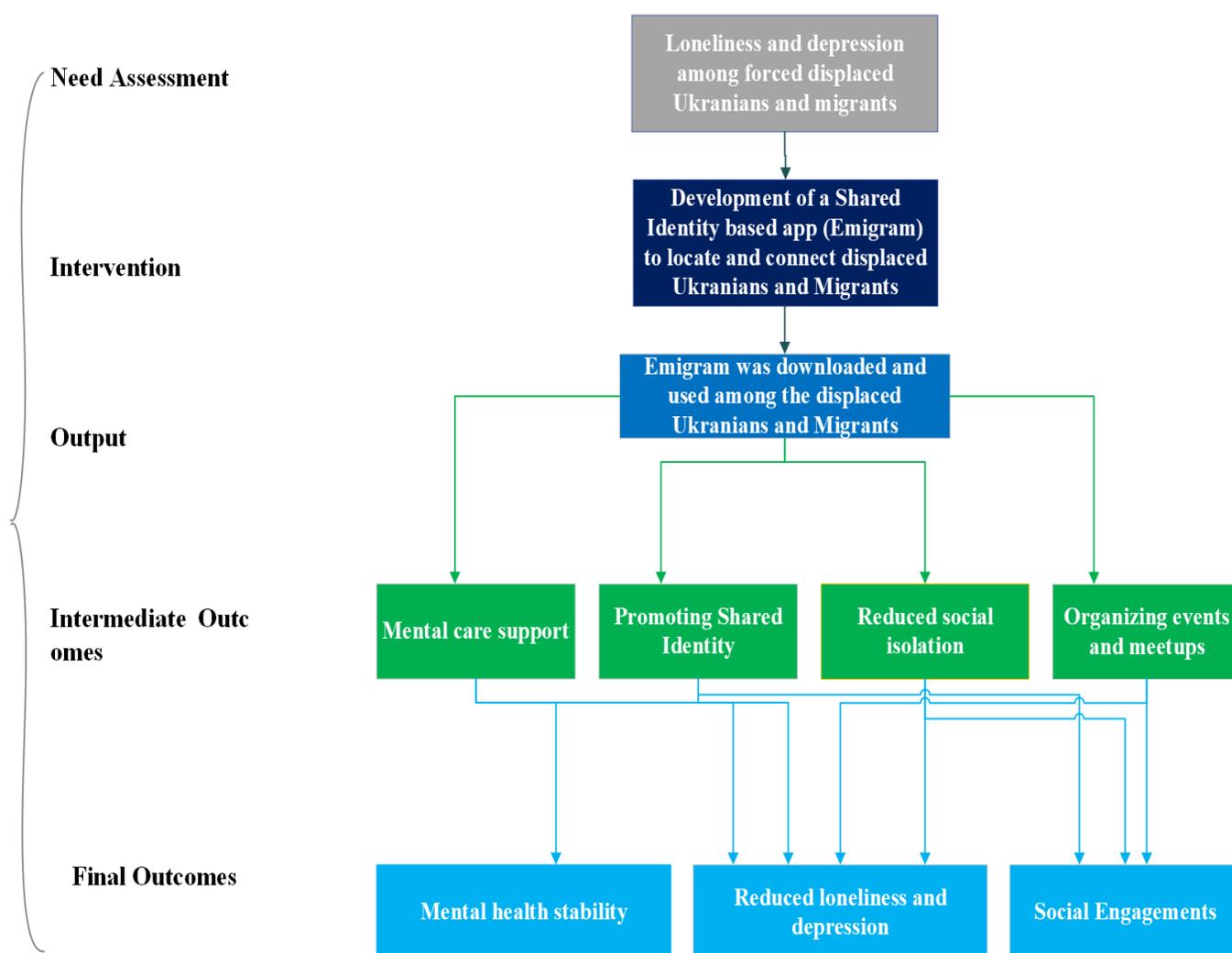
Here is a video link of how Emigram would work in real time : <https://rb.gy/5ausw>

8. Benefits and Intended Outcomes

Theory of Change

Our team will continuously assess the impact of our app on loneliness and depression among Ukrainian refugees and migrants, and possibly beyond. Our metrics include app adoption and usage. Final outcomes will be measured through assessments, validated scales, and event attendance.

Below is the graphical illustration:



The Emigram app will have many significant benefits and positive effects on users' lives. Some of them are:

- **Combat social isolation and loneliness by providing individuals with opportunities to socialize, connect, and share experiences:** Emigram is designed to incorporate specific strategies to foster a sense of belonging and cohesion among users. The Emigram app aims to foster a strong sense of community and support system by facilitating connections between individuals with similar cultural backgrounds and mental health professionals.
- **Develop a stronger social support network and increase social interaction:** The app's focus on social event initiation and the leaderboard system encourage users to organize and participate in activities that facilitate connections. By providing recognition and virtual gift cards as rewards, the app motivates and rewards individuals for their efforts in fostering connections among users.
- **Broad target audience:** Unlike the existing organization Ukrconnect, which primarily focuses on refugee populations, Emigram app solution targets both refugees and existing Ukrainian migrants, and by extension, this app could also work for migrants globally. By encompassing a wider audience, the app aims to address the comprehensive needs for social connection and support, fostering a sense of community among diverse migrant populations.

9. Implementation Strategies

9.1 Stakeholders Analysis

The table below summarizes the key stakeholders in our project. It is important to note that these stakeholders are essentially the same regardless of location but they might change or be more specific depending on location or the host country's context. To clearly illustrate this idea, we take Poland as our starting point as it is the country with the highest number of Ukrainian refugees and also with a substantial number of Ukrainian migrants.

Table 2: Stakeholders analysis

Stakeholder	Role and Interests
<i>Ukrainian Refugees and Migrants</i>	They are the primary users and beneficiaries of the app <i>Emigram</i> , seeking support and connection to combat loneliness.
<i>Local Support Organizations</i>	These organizations provide on-the-ground support and resources for refugees and migrants. They would offer insights, collaborate on app development, and assist with operationalization, language support of the app, app promotion, and user engagement.
<i>Local Government</i>	Collaboration with the Local Government would provide access to data, resources, and potential funding opportunities since they are responsible for refugee and migrant policies and welfare.
<i>NGOs and Charities</i>	Organizations working with refugees can offer services and programs that would provide valuable input, potential partnerships, and help with app promotion and awareness campaigns.
<i>Community Centers</i>	Community centers cater to refugees' social needs and would offer spaces for social gatherings and events listed on the app. Collaborating with these entities can provide event listings and promotion.
<i>Donors and Funding Organizations</i>	Philanthropic foundations, grant-giving organizations, and potential investors would provide financial support for app development, implementation, and scalability.
<i>Mental Health Organizations</i>	Professionals and organizations specializing in mental health support would provide licensed psychological guidance, resources, and potential partnerships for offering mental health services through the app.
<i>Refugee Community Leaders</i>	Partnerships with representatives, leaders, or influencers (from social media) within the refugee community and migrants at large would provide insights, feedback, and help promote the app within their community.
<i>Media Outlets</i>	Local media organizations, journalists, and bloggers would help raise awareness about the app and its impact on refugee communities.
<i>Technology Partners</i>	Tech companies or developers with expertise in app development, GPS integration, security, and user experience would provide technical support and guidance.

9.2 Logical Framework

Outcomes	Performance Indicators	Data sources	Assumptions	SDG target contributed	Related SDG Indicator
<p>1. Enhanced mental well-being for Ukrainian refugees and migrants.</p> <p>2. Reduced feelings of loneliness and isolation.</p> <p>3. Increased social support network size.</p>	<p>- Self-reported improvements in mental health: This could be measured through surveys or assessments that capture changes in mental well-being indicators such as self-reported levels of depression, anxiety, or overall life satisfaction.</p> <p>- Reduced social isolation: This would be measured by analyzing social interaction patterns within the app, such number of connections made, and or participation in social activities facilitated by the app.</p> <p>- Increased social support network size: This would be measured by self-reported perceptions of social support networks before and after using the app.</p>	<p>- Surveys administered to mental health professionals to capture changes in mental health, feelings of loneliness among users</p> <p>- App analytics: Data on user engagement, active users, and usage patterns within the app</p>	<p>- A critical mass of Ukrainians will engage with the app, connect with others, and participate in social activities facilitated by the app.</p> <p>- It assumes that users have access to smartphones or devices with internet connectivity to use the app effectively.</p>	<p>Target 3.4: By 2030, reduce by one-third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.</p>	<p>Indicator 3.4.2: Suicide mortality rate.</p> <p>SDG contributed to:</p> 
<p>1. Promotion of social inclusion and reduced inequalities</p> <p>2. Increased connections and social interactions.</p> <p>3. Fostering inclusive communities and a sense of belonging.</p>	<p>- Diversity of users across different locations: This indicator assesses the app's ability to reach and connect individuals from diverse geographical areas, contributing to a more inclusive platform.</p> <p>- User satisfaction with the app's ability to foster inclusive communities: This captures users' feedback and perception of the app's success in creating an inclusive and supportive environment</p>	<p>- Data on user engagement, active users, usage patterns.</p>	<p>- The app's features and functionalities are tailored to the language and cultural background of the target users, facilitating effective communication and connection</p>	<p>Target 10.2: The app's focus on connecting displaced Ukrainians based on shared language and cultural background promotes social inclusion and reduces inequalities by providing a platform for individuals to connect and interact, irrespective of their displacement status.</p>	<p>Indicator 10.4.1: Adoption of policies, strategies, and measures to promote the inclusion of migrants in society.</p> <p>SDG contributed to:</p> 

<p>1. Enhanced support for displaced Ukrainians through collaboration with local organizations, NGOs, and government agencies.</p> <p>2. Increased reach and effectiveness of initiatives addressing the needs of the target population.</p>	<p>- This indicator assesses the extent to which the joint efforts of the app and partner organizations are reaching and impacting the target population.</p>	<p>- Collaboration agreements and partnership records: These sources provide information on the number and nature of partnerships established</p> <p>- Stakeholder reports and assessments: Reports and assessments from local organizations, NGOs, and government agencies can provide additional data on the impact and effectiveness of joint efforts.</p>	<p>- Local organizations, NGOs, and government agencies are willing and available to collaborate with the app to support Ukrainians.</p> <p>- That partnerships formed will be mutually beneficial, with all stakeholders contributing their expertise and resources towards the common goal.</p>	<p>Target 17.17: Encourage and promote effective public, public-private, and civil society partnerships, building on the experience and resourcing strategies of partnerships.</p>	<p>SDG contributed to:</p> 
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9.3 Implementation strategies

Our shared-identity loneliness-combatting app piloting with Ukrainian refugees and migrants will start out in Poland, by focusing on the following principles in our data-based strategy, which is projected to take approximately 2 years:

- **Additional Research and Needs Assessment**

In this step, we would gather additional data on Ukrainian refugees and Migrants in Poland and identify their specific needs related to combating loneliness. This step is primordial for an efficient design that effectively solves the loneliness problem. We will then be able to identify similarities and differences between the cities, or in general the countries, where refugees and migrants are located.

- **Partnership with Local Support Groups**

In order to gain insights into local dynamics, operational regulations, language support, and app design specific to the region, we will establish partnerships with prominent local support groups that specialize in providing on-the-ground assistance and resources for refugees and migrants. By collaborating with these organizations, we can better understand the unique social environment and tailor the app to meet the specific needs of the local community.

- **App Development and Customization**

Once we have assessed the need for the app, we can start developing it with features like the GPS-based location services, resource mapping, event listings, social networking, and mental health support, tailored to the needs of Ukrainian refugees and migrants in Poland for instance.

- **Pilot Launch and User Feedback**

When the app is deemed ready for use (i.e. satisfies all the aforementioned design criteria in section 6), we would launch it in a city or region of Poland with a significant Ukrainian refugee and migrant population to gather user feedback, assess usability, and refine the app based on user input. This will be achieved through an interactive improvement process whereby we provide frequent updates of the app and collect new feedback of the update. Feedback should be collected through a variety of ways (interviews, surveys, usage data from users etc) to make sure that the opinions of the users are well understood. At this point, we would assess whether the app's features are easy to use, used, useful, and safe.

- **Marketing and Outreach**

At this point, the app is ready to be marketed for the larger population. By integrating our data into our decision and design processes, we can implement a targeted marketing strategy to raise awareness of the app among Ukrainian refugees in Poland, utilizing local media, social media, and partnerships with community organizations.

- Monitoring, Evaluation, and Scaling

Finally, we must continuously monitor the app usage, user engagement, and collect feedback to evaluate the app's impact on combating loneliness. Based on these results, we can consider scaling the app to other cities and regions in Poland with Ukrainian refugee populations, and then move to other countries and start the process from scratch.

We are then able to establish a two-year plan for the efficient execution and continuation of this project.

9.4 Project Timeline

The project is designed to take 2 years to be fully completed starting June 7th, 2023. It will be split into four main activities as seen in the Gantt chart below.

Start Date: 7th June, 2023																												
Activity	2023						2024												2025						Status			
	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY		JUN	JUL	AUG
1. Project design																												
1.1 Finalize project teams & roles	■																											completed
1.2 Primary/Secondary Research	■																											completed
1.3 Project concept ideation	■	■																										completed
1.4 Geneva proposal submission		■	■																									completed
2. Prototype building																									in progress			
2.1 Core functionality development				■	■	■																						in progress
2.2 Performance evaluation					■																							not started
2.3 Field testing phase							■	■	■	■																		not started
2.4 Completion of the app											■																	not started
3. Establishing Partnership																									not started			
3.1 Establish partnership with NGO				■	■	■																						not started
3.2 Establish Partnership with mental health organization				■	■	■																						not started
3.3 Partnership with migrant-related association							■	■	■	■																		not started
3.4 Raising Funds					■	■	■	■	■	■	■	■	■	■	■													not started
4. Project Operation																									not started			
4.1 App commissioning											■	■																not started
4.2 Feedback from users(beta phase)												■	■	■	■													not started
4.3 App improvement												■	■	■	■	■	■	■										not started
4.4 Regular assessment and review												■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	not started
4.5 Scaling the app to migrants in more countries																										■	■	not started

10. Future Vision and Conclusion

The global issue of migration, forced displacement, and refugee crises has far-reaching consequences, including the exacerbation of loneliness. In today's world, characterized by increasing ease of movement compared to years ago, people are more likely to migrate, leading to the disruption of their social networks and a subsequent increase in feelings of isolation and loneliness. Beyond Ukrainian migrants and refugees being our primary target audience, our team envisions to create a world where migrants or displaced people utilize *Emigram* to connect with other verified individuals of the same cultural background on the platform to connect, share opportunities, information, and attend social events, meet low cost-charging verified mental health professionals, thereby creating a supportive network that helps combat loneliness.

Emigram seeks to capture a potential market consisting of international students, international locals, migrants, refugees, and forced displaced individuals in Europe and beyond. Through its plug-and-play and horizontal scaling positioning, Emigram aims to establish itself as the leading global social mobile app facilitating connections among people of similar backgrounds when they are in a foreign country. The app's primary objective is to enable individuals to connect with each other, attend events organized by their peers, and foster community identification for peer-to-peer cultural bonding. This approach fosters cultural exchange and integration, promoting a sense of belonging and shared identity among users. Emigram's strategic focus on scalability and user-friendly functionality positions it as an effective solution for facilitating social connections and cultural bonding on a global scale.

References

- Anjum, G., Aziz, M., & Hamid, H. K. (2023). Life and mental health in limbo of the Ukraine war: How can helpers assist civilians, asylum seekers and refugees affected by the war? *Frontiers in Psychology*, 14, 1129299. doi: 10.3389/fpsyg.2023.1129299.
- Bas van Bavel and Marten Scheffer, "Historical Effects of Shocks on Inequality: The Great Leveler Revisited," *Humanities and Social Sciences Communications* 8, no. 1 (March 17, 2021): 1–9, <https://doi.org/10.1057/s41599-021-00763-4>
- Becker SO, Ferrara A. 2019. Consequences of forced migration: a survey of recent findings. *Labour Economics* 59: 1–16.
- Bender, M., van Osch, Y., Slegers, W., & Ye, M. (2019). Social support benefits psychological adjustment of international students: Evidence from a meta-analysis. *Journal of Cross-Cultural Psychology*, 50(7), 827–847. <https://doi.org/10.1177/0022022119861151>.
- Bentley, S., Young, T., Álvarez, B., Jetten, J., Haslam, C., Cruwys, T., Casara, B., Crimston, C., Dare, M., Ionescu, O., Krug, H., Selvanathan, H., Tanjitpiyanond, P., Steffens, N., Wang, Z., & Wibisono, S. (2022). Double jeopardy: How lower levels of support during COVID-19 exacerbated the relationship between loneliness and distress. *Frontiers in Public Health*. <https://doi.org/10.3389/fpubh.2022.976443>.
- Cacioppo JT, Hawkley LC, Thisted RA. Perceived social isolation makes me sad: Five year cross-lagged analysis of loneliness and depressive symptomatology in the Chicago Health, Aging, and Social Relations study. *Psychol Aging*. 2010;25:453–463. t
- Chaaya, C., Thambi, V. D., Sabuncu, Ö., Abedi, R., Osman Ahmed Osman, A., Uwishema, O., & Onyeakai, H. (2022). Ukraine-Russia crisis and its impacts on the mental health of Ukrainian young people during the COVID-19 pandemic. *Ann Med Surg (Lond)*, 79, 104033. doi: 10.1016/j.amsu.2022.104033.
- Deters, F.G., & Mehl, M.R. (2013). Does Posting Facebook Status Updates Increase or Decrease Loneliness? An Online Social Networking Experiment. *Social Psychological and Personality Science*, 4(5), 579-586. doi: 10.1177/194855061246923.
- Dahlberg, K. (2007). The enigmatic phenomenon of loneliness. *International Journal of Qualitative Studies on Health and Well-being*. <https://doi.org/10.1080/17482620701626117>.
- Dnistrianskyi, M. (2022). Ethnogeographic groundlessness and destructive geopolitical orientation of the anti-Ukrainian geopolitical project of political Rusynism. *The Scientific Issues of Ternopil Volodymyr Hnatiuk National Pedagogical University. Series: Geography*. <https://doi.org/10.25128/2519-4577.22.1.12>.
- Dong, X., Manrui Zhang, and E-Shien Chang. "The association between filial piety and loneliness among Chinese older adults in the greater Chicago area." *Journal of Epidemiological Research* 2.1 (2015): 62-70.
- European Union Agency for Fundamental Rights. (2022). *Ukraine Crisis 2022-2023: 1 Year of Response*. IOM UN Migration.
- Ekoh, P.C., Iwuagwu, A.O., & George, E.O. (2022). Forced Migration-Induced Diminished Social Networks and Support, and its Impact on the Emotional Wellbeing of Older Refugees in Western Countries: A Scoping Review. *Archives of Gerontology and Geriatrics*, 105(2), 104839. doi: 10.1016/j.archger.2022.104839.

- Ford, B. Q., Dmitrieva, J. O., Heller, D., Chentsova-Dutton, Y., Grossmann, I., Tamir, M., ... Mauss, I. B. (2015). Culture shapes whether the pursuit of happiness predicts higher or lower well-being. *Journal of Experimental Psychology: General*, 144(6), 1053–1062. <https://doi-org.proxy.ub.umu.se/10.1037/xge0000108>
- Haslam, S.A., Haslam, C., Cruwys, T., Jetten, J., Bentley, S.V., Fong, P., & Steffens, N.K. (2021). Social identity makes group-based social connection possible: Implications for loneliness and mental health. Available online 24 July 2021, Version of Record 14 August 2021.
- Hawkley, L.C., & Cacioppo, J.T. (2010). Loneliness Matters: A Theoretical and Empirical Review of Consequences and Mechanisms. *Annals of Behavioral Medicine*, 40(2), 10.1007/s12160-010-9210-8. doi: 10.1007/s12160-010-9210-8.
- Heckendorf, H., Lehr, D., & Boß, L. (2022). Effectiveness of an internet-based self-help intervention versus public.
- Hudiyana, Joevarian & Lincoln, Tania & Hartanto, Steffi & Shadiqi, Muhammad & Milla, Mirra & Muluk, Hamdi & Jaya, Edo. (2021). How Universal Is a Construct of Loneliness? Measurement Invariance of the UCLA Loneliness Scale in Indonesia, Germany, and the United States. *Assessment*. 29. 107319112110345. 10.1177/10731911211034564.
- Holmqvist, S., & Östlund, J. (2019). The Experience of Loneliness in Young Adulthood: A Cross-Cultural Study. Master's Thesis, Programme for Master of Science in Psychology, 30 ECTS.
- IOM 2022 Ukraine Crisis 2022: Six Months Response.
- Jacob, L., Haro, J., & Koyanagi, A. (2019). Relationship between living alone and common mental disorders in the 1993, 2000 and 2007 National Psychiatric Morbidity Surveys. *PLoS ONE*, 14(7), e0215182. <https://doi.org/10.1371/journal.pone.0215182>.
- Janet Batsleer and James Duggan, *Young and Lonely: The Social Conditions of Loneliness*, 1st ed. (Bristol University Press, 2020), <https://doi.org/10.46692/9781447355366>
- Jones, J.A. (2011). Who Are We? Producing Group Identity through Everyday Practices of Conflict and Discourse. *Sociological Perspectives*, 54(2), 139-162. Published by Sage Publications, Inc.
- Kim, O. (1999). Mediation effect of social support between ethnic attachment and loneliness in older Korean immigrants. *Nursing Research*, 22(2), 169. doi: 10.1002/(SICI)1098-240X(199904)22:2<169::AID-NUR8>3.0.CO;2-F.
- Kate, R., Bilecen, B., & Steverink, N. (2020). A Closer Look at Loneliness: Why Do First-Generation Migrants Feel More Lonely Than Their Native Dutch Counterparts?. *The Gerontologist*. <https://doi.org/10.1093/geront/gnz192>.
- Kanji, Z., & Cameron, B.L. (2010). Theory: Risk, Resilience and Coping - Exploring the Experiences of Resilience in Muslim Afghan Refugee Children. Pages 22-40. Published online: 12 Apr 2010. Retrieved from <https://doi.org/10.1080/15564901003620973>.
- Kawamichi, H., Sugawara, S., Hamano, Y., Makita, K., Kochiyama, T., & Sadato, N. (2016). Increased frequency of social interaction is associated with enjoyment enhancement and reward system activation. *Scientific Reports*, 6, 24561. <https://doi.org/10.1038/srep24561>.
- Kearns, A., Whitley, E., Tannahill, C., & Ellaway, A. (2015). Loneliness, social relations and health and well-being in deprived communities. *Psychology, Health & Medicine*, 20(4), 484-494. doi:10.1080/13548506.2014.940354.
- Kiryukhin, D. (2016). Russia and Ukraine: the clash of conservative projects. *European Politics and Society*. <https://doi.org/10.1080/23745118.2016.1154130>.

- Kiyota, E., Arnold, M., & Tanaka, Y. Aldrich, D.P., (2015). Elders Leading the Way to Resilience. SSRN Electronic Journal, January. doi: 10.2139/ssrn.2575382.
- Korn, L., Betsch, C., Böhm, R., & Meier, N. (2018). Social Nudging: The Effect of Social Feedback Interventions on Vaccine Uptake. *Health Psychology*, 37(11), 1045-1054. <https://doi.org/10.1037/hea0000668>.
- Kurapov, A., Pavlenko, V., Drozdov, A., Bezliudna, V., Reznik, A., & Isralowitz, R. (2022). Toward an Understanding of the Russian-Ukrainian War Impact on University Students and Personnel. *Ann Med Surg (Lond)*, 79, 104033. doi: 10.1016/j.amsu.2022.104033.
- Lea-Maria Löbel, Hannes Kröger, and Ana Nanette Tibubos, “Social Isolation and Loneliness in the Context of Migration: A Cross-Section-al Study of Refugees, Migrants, and the Native Population in Germany,” April 13, 2021
- Lippke and Warner, “Understanding and Overcoming Challenges in Times of Personal or Global Crisis—Editorial on the Special Issue on Loneliness and Health.”
- Max Stick, Feng Hou, and Lisa Kaida, “Self-Reported Loneliness among Recent Immigrants, Long-Term Immigrants, and Canadian-Born Individuals,” July 28, 2021, <https://www150.statcan.gc.ca/n1/pub/36-28-0001/2021007/article/00001-eng.htm>;
- McNamara, N., Stevenson, C., Costa, S., Bowe, M., Wakefield, J., Kellezi, B., Wilson, I., Halder, M., & Mair, E. (2021). Community identification, social support, and loneliness: The benefits of social identification for personal well-being. *British Journal of Social Psychology*. First published: 04 May 2021. doi: 10.1111/bjso.12456.
- Miller, K.E., & Rasmussen, A. (2017). The mental health of civilians displaced by armed conflict: an ecological model of refugee distress. *Epidemiology and Psychiatric Sciences*, 26(2), 129-138. doi: 10.1017/S2045796016000172.
- Mollica RF et al. 2001. Longitudinal study of psychiatric symptoms, disability, mortality, and emigration among bosnian refugees. *Jama* 286: 546–54.
- Myrle Ballard, Juliana Coughlin, and Donna Martin, “Reconciling with Minoaywin: First Nations Elders’ Advice to Promote Healing from Forced Displacement,” *Canadian Journal on Aging / La Revue Canadienne Du Vieillissement* 39, no. 2 (June 2020): 169–77, <https://doi.org/10.1017/S0714980819000412>
- Nesterenko, I. (2022). Loneliness of Internally Displaced Persons of Ukraine: Theoretical analysis of the Problem. *Baltic Journal of Legal and Social Sciences*. <https://doi.org/10.30525/2592-8813-2022-1-18>.
- Oishi, S., Kesebir, S., Miao, F. F., Talhelm, T., Endo, Y., Uchida, Y., ... Norasakkunkit, V. (2013). Residential mobility increases motivation to expand social network: But why? *Journal of Experimental Social Psychology*, 49(2), 217–223. <https://doi.org/10.1016/j.jesp.2012.10.008>.
- Olofsson, J., Rämgård, M., Sjögren-Forss, K., & Bramhagen, A. (2021). Older migrants’ experience of existential loneliness. *Nursing Ethics*. <https://doi.org/10.1177/0969733021994167>.
- O’Suilleabháin, P.S., Gallagher, S., & Steptoe, A. (2019). Loneliness, Living Alone, and All-Cause Mortality: The Role of Emotional and Social Loneliness in the Elderly During 19 Years of Follow-Up. *Psychosomatic Medicine*, 81(6), 521-528. doi: 10.1097/PSY.0000000000000710.
- O’Donnell, A., Paolini, S., & Stuart, J. (2022). Distinct trajectories of psychological distress among resettled refugees: Community acceptance predicts resilience while low ingroup social support predicts clinical distress. *Transcultural psychiatry*. <https://doi.org/10.1177/13634615221098309>.

- Podra, O., & Petryshyn, N. (2021). Migration processes in Ukraine: Volumes, reasons, consequences.. Economic Analysis. <https://doi.org/10.35774/econa2021.03.052>.
- Ramsay, G. (2019). Humanitarian exploits: Ordinary displacement and the political economy of the global refugee regime. Volume 40, Issue 1. Published online April 5, 2019. doi: 10.1177/0308275X19840417.
- Rens, E., Smith, P., Nicaise, P., Lorant, V., & Van den Broeck, K. (2021). Mental Distress and Its Contributing Factors Among Young People During the First Wave of COVID-19: A Belgian Survey Study. *Frontiers in Psychiatry*, 12, 575553. <https://doi.org/10.3389/fpsy.2021.575553>.
- Rendiuk, T. (2022). Forced Migration in the Extraordinary Conditions of the Russian-Ukrainian War and Its Negative Consequences for the Gene Pool of Ukraine. *Folk art and ethnology*. <https://doi.org/10.15407/nte2022.03.005>.
- Rhodes, J.L. (2014). Loneliness: How Superficial Relationships, Identity Gaps, and Social Support Contribute to Feelings of Loneliness at Pepperdine University. *Pepperdine Journal of Communication Research*, 2, Article 3. <https://digitalcommons.pepperdine.edu/pjcr/vol2/iss1/3>.
- Rokach A. The subjectivity of loneliness and coping with it. *Psychological Reports*. 1996;79(2):475–481.
- Sawir, E., Marginson, S., Deumert, A., Nyland, C., & Ramia, G. (2008). Loneliness and international students: An Australian study. *Journal of Studies in International Education*, 12(2), 148–180. <https://doi.org/10.1177/1028315307299699>
- Söderqvist, Å. (2013). Leaving Care with "Cultural Baggage": The Development of an Identity within a Transnational Space. Pages 39-54. Accepted 16 Sep 2013, Published online: 17 Dec 2013. Retrieved from <https://doi.org/10.1080/0312407X.2013.863955>.
- Shanthi Johnson et al., "Social Isolation and Loneliness among Immigrant and Refugee Seniors in Canada: A Scoping Review," *International Journal of Migration, Health and Social Care* 15 (August 29, 2019): 177–90, <https://doi.org/10.1108/IJMHSC-10-2018-0067>.
- Shevlin, M., Hyland, P., & Karatzias, T. (2022). The psychological consequences of the Ukraine war: What we know, and what we have to learn. *Acta Psychiatrica Scandinavica*. <https://doi.org/10.1111/acps.13466>.
- Shvedko, A. V., Thompson, J. L., Greig, C. A., & Whittaker, A. C. (2020). Physical Activity Intervention for Loneliness (PAIL) in community-dwelling older adults: a randomised feasibility study. *BMC Public Health*, 20(1), 73. <https://doi.org/10.1186/s40814-020-00587-0>
- Shklovski, I., Kraut, R.E., & Cummings, J.N. (2008). Keeping in touch by technology: Maintaining friendships after a residential move. In *Proceedings of the 2008 Conference on Human Factors in Computing Systems, CHI 2008, April 5-10, 2008, Florence, Italy*. doi: 10.1145/1357054.1357182.
- Stishova, N. (2022). "Temple Feast" and "Village Day" within the Discourse of Modern Ukraine. *The Journal of Ethnology and Culturology*. <https://doi.org/10.52603/rec.2022.31.11>.
- Strielkowski, W., Ducháč, T., & Matušková, A. (2015). Labour Market Restrictions and Migrations in the EU: A Case of Ukrainian Migration. *International Political Economy: Migration eJournal*.
- Tang, J., Birrell, E., & Lerner, A. (2022). How Well Do My Results Generalize Now? The External Validity of Online Privacy and Security Surveys. *ArXiv*. <https://arxiv.org/abs/2206.07291>
- Tonkin, E., Jeffs, L., Wycherley, T., Maher, C., Smith, R., Hart, J., Cubillo, B., & Brimblecombe, J. (2017). A Smartphone App to Reduce Sugar-Sweetened Beverage Consumption Among Young Adults in Australian Remote Indigenous Communities: Design, Formative Evaluation and User-Testing. *JMIR mHealth and uHealth*. <https://doi.org/10.2196/mhealth.8651>.

- Uittenhove, K., Jeanneret, S., & Vergauwe, E. (2022). From lab-based to web-based behavioural research: Who you test is more important than how you test. <https://doi.org/10.31234/osf.io/uy4kb>
- UNESCO. (2023). Refugees, Returnees and Displaced Persons: Towards Durable Solutions. Retrieved from <https://www.unesco.org/archives/multimedia/document-4873>
- UNHCR. (2021). Global Report 2021. Retrieved from ReliefWeb: <https://reliefweb.int/report/world/unhcr-global-report-2021>
- Van Tilburg, M., & Vingerhoets, A. (2007). Psychological aspects of geographical moves: Homesickness and acculturation stress. Amsterdam, NL: Amsterdam University Press. VanderWeele,
- Van den Broek, T., & Grundy, E. (2017). Loneliness among Polish migrants in the Netherlands: The impact of presence and location of partners and offspring. *Demographic Research*, 37, 727–742. <https://doi.org/10.4054/DemRes.2017.37.23>
- Vardanyan, T. (2022). ԱՇխարհի ու Հայաստանի միգրացիոն հոսքերը ռուս-ուկրաինական հակամարտության համապատկերում/Migration Flows of the World and Armenia in the Context of the Russian-Ukrainian Conflict. *AMBERD BULLETIN*. https://doi.org/10.52174/2579-2989_2022.2
- Verme P, Schuettler K 2021. The impact of forced displacement on host communities: a review of the empirical literature in economics. *Journal of Development Economics* 150: 102606.
- Walker, R., Koh, L., Wollersheim, D., & Liamputtong, P. (2015). Social connectedness and mobile phone use among refugee women in Australia. *Health and Social Care in the Community*, 23(3), 325-336. doi: 10.1111/hsc.12155.
- Walker, R., Koh, L., Wollersheim, D., & Liamputtong, P. (2015). Social connectedness and mobile phone use among refugee women in Australia. *Health and Social Care in the Community*, 23(3), 325-336. doi: 10.1111/hsc.12155.
- WHO and Statistics Poland 2022. Health of Refugees from Ukraine in Poland 2022: Household Survey and Behavioural Insights Research Report, February 2023. e-ISBN 978-83-67087-39-
- Yasegnal, A.S. (2022). War Related Psycho-Social Problems and Mitigating Strategies: A Time of Crisis, A Time to Act. Volume 31, Issue 3. Published online February 3, 2022. doi: 10.1177/10541373211073507.
- Zunejo, M., Pal, S., Banerjee, A., & Rahut, S. (2022). Migration and the Dilemma of Belonging. *International Journal of English Learning & Teaching Skills*. <https://doi.org/10.15864/ijelts.4403>.