TALLINN UNIVERSITY OF TECHNOLOGY
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FACULTY OF DESIGN

MSc. Design and Technology Futures

DESIGNING DIGITAL STRATEGIES TO FOSTER TRUST, EQUITY AND DIGNITY IN PEER-TO-PEER DONATION SYSTEMS FOR DISASTER SURVIVORS

DIGITAALSETE STRATEEGIATE DISAIN USALDUSE, VÕRDSUSE JA VÄÄRIKUSE TOETAMISEKS KATASTROOFIOHVRITE OMAVAHELISTES ANNETUSSÜSTEEMIDES

MASTER THESIS

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Tallinn 2025

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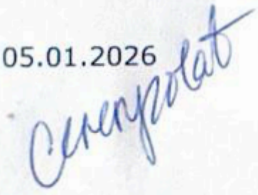

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THESIS TASK

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Thesis topic:

(in English) Designing digital strategies to foster trust, equity and dignity in peer-to-peer donation systems for disaster survivors

(in Estonian) Digitaalsete strateegiate disain usalduse, võrdsuse ja väärikuse toetamiseks katastroofiohvrite omavahelistes annetussüsteemides

Thesis main objectives:

1. To identify limitations of existing digital aid practices in supporting peer-to-peer solidarity during long-term post-disaster recovery, using the 2023 Kahramanmaraş earthquakes in Türkiye as the primary context.
2. To understand the structural and experiential challenges faced by survivors and supporters in sustaining peer-to-peer support beyond the immediate crisis phase.
3. To explore how digital design can enable more dignified, equitable, and sustainable peer-to-peer support, informing the proposal of a design concept for long-term recovery contexts.

Thesis tasks and time schedule:

No	Task description	Deadline
1.	Background research	31.03.2025
2.	Field research, analysis and synthesis of findings	21.04.2025
3.	Concept development, design and finalizing the thesis	04.01.2026

Language: English

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ABSTRACT

This thesis investigates the limitations of digital platforms in supporting peer-to-peer aid during long-term disaster recovery, using the 2023 Kahramanmaraş earthquakes in Türkiye as a contextual case. While citizen-led aid and digital solidarity enabled rapid mobilization during the immediate crisis phase, existing platforms proved insufficient for sustaining support as recovery needs evolved.

The objective of the thesis is to explore how design can address these limitations and support more sustainable forms of peer-to-peer support beyond short-term emergency response. The study highlights how current digital environments shape visibility, participation, and responsibility in post-disaster aid, often requiring public exposure and individual effort to access or provide support.

Based on these insights, the thesis proposes BirArada, a peer-to-peer digital aid coordination platform designed to support long-term post-disaster recovery. Grounded in values of dignity, privacy, equity, and shared responsibility, the concept illustrates how intentional digital design can contribute to more sustainable structures for peer-to-peer aid. The thesis concludes that dignity-centered design approaches can play a meaningful role in strengthening long-term recovery and reshaping digital solidarity beyond moments of crisis.

CONTENTS

PREFACE

This thesis is the result of both academic exploration and personal conviction, shaped by empathy, responsibility, and a deep connection to my country. The idea for this research grew from the collective experience of the 2023 Kahramanmaraş earthquakes in Türkiye, which revealed fragility and strength of human connection in times of crisis. In their aftermath, I witnessed an extraordinary wave of digital solidarity: citizens trying to organize help online, share information, and help one another. This spontaneous movement reflected compassion and resilience of ordinary people along with the immense potential of technology. Witnessing these efforts inspired me to document them, listen to those who contributed and learn from their experiences.

This research began as an effort to record, understand, and reflect on these community-driven support initiatives, not only as expressions of compassion and resilience, but also as lessons for the future. It was equally motivated by a desire to explore how design could help sustain such collective care beyond the immediate visibility of crisis, while fostering long-term awareness and preparedness in Türkiye. Although the project originates from the Turkish earthquake context, I believe that its insights and design proposal can extend to other humanitarian settings, where people come together to help one another.

When the opportunity arose to explore this topic through my thesis, I felt a genuine responsibility to pursue it. The process has been both intellectually and emotionally transformative, allowing me to connect professional purpose with personal meaning.

I am sincerely grateful to all the individuals who shared their experiences, time, and perspectives throughout this process. Their voices gave this project its meaning, direction, and depth. I would also like to thank my supervisors and peers for their thoughtful guidance, feedback and support.

This work is dedicated to everyone who acted, helped, and cared after the earthquakes, as well as for everyone who still believes in the power of solidarity.

LIST OF ABBREVIATIONS AND SYMBOLS

- **NGO** - Non-governmental organizations
- **AFAD -** Afet ve Acil Durum Yönetimi Başkanlığı (The Disaster and Emergency Management Presidency)
- **AKUT -** Arama Kurtarma Derneği (Search & Rescue Association)
- **P2P** - Peer to peer

1. INTRODUCTION

Natural disasters are recurring events that take many forms, including earthquakes, floods, hurricanes, and wildfires, and they often result in widespread disruption to everyday life. While the scale and impact of these events vary depending on geographic, social, and economic conditions, they commonly involve displacement, loss, and prolonged recovery processes. Beyond their immediate physical effects, disasters also highlight how societies respond under pressure and how support is organized when institutional systems face limitations. In such contexts, response is shaped not only by formal organizations, but also by the actions of individuals and communities who mobilize to provide assistance.

Türkiye is located in a seismically active region and has experienced numerous large-scale earthquakes over recent decades. In February 2023, two major earthquakes centered in Kahramanmaraş affected eleven provinces in southern Türkiye, resulting in extensive damage and long-term consequences. During the immediate response phase, citizen-led initiatives and digitally mediated forms of solidarity emerged alongside institutional efforts. Social media platforms and everyday communication tools were used to share information, coordinate resources, and connect people across locations, contributing to early response and mutual assistance.

As recovery progressed beyond the emergency phase, challenges associated with these informal and digital practices became more apparent. Although needs continued, the mechanisms that supported rapid coordination were difficult to sustain over time. Survivors continued to experience ongoing and individualized needs, while existing digital environments offered limited support for addressing these needs in a sustained manner.

At the same time, institutional aid systems primarily operated through standardized procedures designed for large-scale relief, which were not always well suited to addressing personal or evolving situations. In this context, some survivors turned to social media to seek peer-to-peer support, where access often depended on public visibility. Informal intermediaries frequently emerged to facilitate coordination, but responsibility often concentrated on a small number of individuals, making such arrangements difficult to maintain. Meanwhile, many people who wished to offer support reported uncertainty about how to do so in appropriate and effective ways. Together, these conditions point to structural limitations in existing post-disaster aid practices, particularly in supporting peer-to-peer engagement over longer periods of recovery.

This thesis explores how peer-to-peer digital support systems can be designed to better support earthquake survivors during long-term recovery. Focusing on the citizen-led aid ecosystem that emerged after the 2023 Kahramanmaraş earthquakes in Türkiye, the study examines how peer-to-peer support was organized through informal and digital practices, and how these practices evolved as recovery progressed. Particular attention is given to the limitations of existing digital environments in sustaining support beyond the immediate crisis phase.

The main objective of this thesis is to explore how design can enable more sustainable, dignified, and equitable forms of peer-to-peer support in post-disaster contexts. The thesis focuses on long-term recovery and the challenges associated with visibility, responsibility, and participation over time. Based on insights from the research, the thesis proposes a peer-to-peer digital aid coordination concept that aims to support ongoing and personalized needs while reducing reliance on public exposure and informal intermediaries.

The thesis topic is relevant as digital platforms increasingly mediate how collective action and mutual support are organized during crises. While citizen-led and digitally mediated aid plays a significant role in post-disaster contexts, existing systems often struggle to support sustained engagement. By approaching this challenge from a design perspective, the thesis contributes to discussions on digital solidarity and citizen-led response, offering insights into how peer-to-peer support systems might be structured to better align with the conditions of prolonged recovery.

1.1 Terminology

This thesis employs a set of key terms to ensure conceptual clarity and consistency. The definitions provided specify how these terms are understood within the context of this research, with the aim of reducing ambiguity and establishing a shared understanding for the reader. The terminology presented also serves as a reference point for the chapters that follow.

1. **Earthquake survivors** - refers to individuals directly exposed to and affected by the 2023 Kahramanmaraş earthquakes in Türkiye, who continue to live with its social, material, mental and structural consequences.
2. **Post-disaster context** - denotes the period following the initial emergency response, during which affected individuals and communities attempt to re-establish daily life while navigating prolonged disruptions to housing, livelihoods, social relations, and access to support. (Norris et al., 2008).

3. **Immediate relief phase (acute phase)** - describes the short period immediately following a disaster in which lifesaving activities such as search and rescue, emergency medical care, and provision of basic necessities are prioritized. (UNDRR, 2017).
4. **Affected community** - refers to a situational and relational grouping of individuals connected through shared exposure to a disaster and its consequences.
5. **Community-driven support** - refers to forms of assistance that emerge from within affected communities or peer networks rather than being centrally planned or institutionally imposed.
6. **Grassroots** - refers to informal, self-organized support initiatives initiated by individuals or collectives operating outside formal institutional, governmental, or non-governmental organizational structures (Dynes, 2006).
7. **Digital solidarity -** refers to forms of support, coordination, and mutual aid mediated through digital platforms and communication technologies in post-disaster contexts.

1.2 Limitations of the study

It is important to recognize several limitations that affected the process and outcomes of this research. These limitations are related to both practical conditions and the research approach itself. They are explained below to help clarify the scope and context of the study:

• **Time Constraints:** The research was conducted within a limited academic timeframe, which inevitably influenced the depth and scope of the study. Nevertheless, meaningful interviews were conducted and a thorough qualitative analysis was performed.

• **Access to Participants**: The selection of interview participants was shaped by accessibility and availability during the research period. While a diverse range of stakeholders were consulted, including survivors, NGOs, volunteers, and individuals from civil society, the sample may not fully represent the broader population involved in the earthquake response. Certain perspectives may be underrepresented due to difficulties in reaching individuals.

• **Remote Interview Format:** All interviews were conducted online, which, while logistically practical, limited the ability to engage with participants in their

physical environments. The absence of on-site observation may have restricted the researcher's understanding of certain spatial, environmental, or embodied dimensions of post-disaster life.

- **Context-Specific Focus:** The research is grounded in the context of the 2023 Türkiye earthquakes and reflects the social, cultural, and digital dynamics specific to that setting. While many of the insights may have broader relevance, the findings are shaped by regional realities and may not be directly generalizable to other geographic or cultural contexts without adaptation.

- **Design-Centered Scope:** As this thesis is situated within a design discipline, the focus of the research was on uncovering insights relevant to future design interventions. Broader political, economic, or institutional factors, while acknowledged, were not analyzed in depth. The findings therefore emphasize systems, tools, and experiences from a human-centered and solution-oriented perspective.

In conclusion, while the study offers valuable insights into the challenges and potentials of citizen-led aid and digital coordination in disaster contexts, it is important to interpret its findings within the practical and disciplinary boundaries outlined above.

1.3 Chapter overview

The thesis consists of 7 chapters.

Chapter 1 introduces the research context, background, scope, limitations, and key terminology of the thesis.

Chapter 2 outlines the research approach and methods used in the study, describing the qualitative methods applied and the overall research process guiding data collection and analysis.

Chapter 3 presents the contextual and background research related to the earthquake in Türkiye and broader themes such as post-disaster support and digital solidarity, establishing the situational foundation for the thesis.

Chapter 4 describes the frameworks that guide the thesis and inform the interpretation of research insights.

Chapter 5 presents and synthesizes the findings derived from the field research, based on observations and interviews.

Chapter 6 details the concept development process, translating research insights into design principles and system concepts.

Chapter 7 presents the final design proposal and discusses its features, limitations, ethical considerations, and directions for future development.

2. METHODOLOGIES

This chapter outlines the research methodology used to explore the dynamics of aid coordination, digital solidarity, and community-driven support in the aftermath of the 2023 earthquakes in Türkiye. It explains the qualitative approach taken, including the rationale for selecting interviews and online observation as core methods. The chapter details how data was collected and analyzed, the participant groups involved, and the considerations guiding the research. By explaining how insights were gathered from different actors within the ecosystem of post-disaster response including survivors, volunteers, NGOs, and digital community organizers, this section provides a foundation for the analysis and design decisions presented in the later chapters.

2.1 Qualitative semi-structured interviews

The interviews were conducted between January 2025 and April 2025 in an open-ended, semi-structured format, allowing flexibility to explore experiences while maintaining a focus on key research areas. For each participant group, questionnaires provided in Appendices 1, 2, 3 and 4 were prepared, and the interviewer guided the interviews based on these questionnaires.

All interviews were conducted in Turkish, the native language of the participants, to ensure comfort, clarity, and richer expression. Selected participant statements translated into English by the researcher for analysis and reporting. Interview guides were originally prepared and used in Turkish, and later translated into English for documentation purposes.

Participants were initially contacted via email or social media to provide information about the research and inquire whether they were willing to participate. Some interviewees were also reached through referrals from earlier participants. After receiving positive responses, a consensus was reached regarding the date, time, and preferred online tool for the interview, and the interviews were conducted as planned. Prior to the interviews, participants were provided with a consent form contained in Appendix 5 and were asked for their preference regarding audio recording.

A total of 14 individuals participated in the interviews. These stakeholders included representatives from NGOs, individuals from the earthquake-affected region, volunteers, independent civil volunteers, and individual donors. All interviews were conducted online.

The primary aim of the interviews was to gain a deeper understanding of how aid and support were experienced during and after the 2023 earthquakes by engaging with individuals directly involved in different aspects of the response. Rather than focusing on

a single actor, the study examined the broader ecosystem of help through the different stakeholders. This made it possible to trace not only shared challenges and overarching patterns, but also the specific dynamics, emotional states, motivations, and adaptive strategies that shaped each role within the system. Particular attention was given to how situation evolved from the acute emergency phase into longer-term recovery, how different actors adapted their efforts over time, and how digital tools mediated coordination, visibility, and emotional support. By illuminating these varied experiences, the interviews provide insight into the conditions that complicate long-term, peer-to-peer support. These insights form a foundation for identifying where design interventions could make aid more coherent, trustworthy, emotionally sustainable, and accessible beyond the emergency phase. The methodological limitations of this study, including constraints related to participant access, scope, and the conceptual nature of the design outcome, are discussed in the previous chapter.

The interview findings were analyzed using thematic clustering, a qualitative analysis approach in which recurring patterns and shared concerns across interviews were identified, grouped, and iteratively refined to inform design insights. Interviewees are referenced using role-based identifiers followed by a number for anonymity and clarity. The term "participant" is used in the analysis to refer collectively to all interviewees.

- List of interviewees:

NGO representatives

1. NGO representative 1 - Okul Destek Derneği (School Support Association) representative, interviewed online, duration: 75 mins
2. NGO representative 2 - TİDER (Basic Needs Association) representative, interviewed online, duration: 75 mins

Individuals from the earthquake-affected area

3. Survivor 1 – Earthquake survivor living in a container city, interviewed online, duration: 60 min
4. Survivor 2 – Earthquake survivor living in a container city, interviewed online, duration: 50 min
5. Local 1 – Resident of a container city (not present during the earthquake), interviewed online, duration: 60 min
6. Local 2 – Resident from the disaster area who was not directly affected but actively participated in field support for an extended period, interviewed online, duration: 60 min

Volunteers

7. Volunteer 1 – Field volunteer supporting earthquake survivors and container cities through a volunteer movement, interviewed online, duration: 75 min
8. Volunteer 2 – Field volunteer in container cities through a volunteer movement, interviewed online, duration: 45 min
9. Volunteer 3 – Education volunteer via NGO with company support, interviewed online, duration: 45 min
10. Volunteer 4 – Independent volunteer using digital tools for aid coordination and advocacy; coordinated a citizen-led movement, interviewed online, duration: 60 min
11. Volunteer 5 – Independent volunteer using social media for aid coordination and awareness, interviewed online, duration: 45 min
12. Volunteer 6 – Independent volunteer using social media for aid coordination, interviewed online, duration: 45 min

Individual donors

13. Individual donor 1 (money and goods), interviewed online, duration: 45 min
14. Individual donor 2 (money and goods), interviewed online, duration: 35 min

2.2 Online observation and digital ethnography

Before conducting interviews, online observation was carried out to understand the digital dynamics of aid coordination and community-driven solidarity after the 2023 earthquakes. Online observation, also referred to as digital or netnographic observation, is a qualitative method that involves systematically examining naturally occurring interactions and communication patterns within online environments (Kozinets, 2015). This method was chosen because it enables researchers to access unfiltered, real-time expressions of need, support, and community interaction (Kozinets, 2015).

The observation covered multiple platforms, including Facebook earthquake solidarity groups, Ekşi Sözlük, Ahbap's Facebook and X accounts, and several crowdfunding websites. Ekşi Sözlük, one of Türkiye's largest and longest-running online forums, was observed to understand how its semi-anonymous and community-moderated environment shaped discussions, resource-sharing, and collective problem-solving. Ahbap, a widely recognised civil society organisation that played a central role in post-earthquake relief efforts, was included to examine how individuals used its public posts and comment sections to seek assistance. Facebook solidarity groups were monitored to examine how requests were shared, how members interacted, and how

these groups functioned as informal coordination hubs. Crowdfunding platforms were observed to understand how campaign-based donation systems operated and how users engaged with them.

Data was collected through systematic note-taking while reviewing public posts, discussions, and threads across these platforms. Instead of coding individual entries, a thematic interpretation approach was used to identify recurring patterns in language, emotional tone, interactions and coordination practices.

3. CONTEXT AND BACKGROUND RESEARCH

This chapter provides an overview of the contextual dynamics surrounding the 2023 Kahramanmaraş earthquakes in Türkiye and the broader humanitarian response to the disaster. It offers insights into the scale and impact of the earthquakes, the initial emergency response, and both institutional and citizen-led aid efforts. The chapter also explores how digital platforms were used for organizing and coordinating support, and how these tools shaped the flow of aid and solidarity in both the acute and post-acute phases. The objective is to provide a comprehensive understanding of the current landscape of disaster response and citizen-led aid, forming the basis for identifying gaps in support systems and shaping the foundation for this thesis from a design perspective.

3.1 Scale and impact of the 2023 Kahramanmaraş earthquakes

On 06.02.2023, an earthquake measuring 7.7 on the Richter scale struck the Pazarcık district of Kahramanmaraş, in Türkiye, at 04:17. Later the same day, a second earthquake with a magnitude of 7.6 occurred in Elbistan, another district of Kahramanmaraş, at 13:24 (AFAD, 2023a). Several provinces across southeastern Türkiye were heavily affected by the earthquakes, including Kahramanmaraş, Hatay, Adıyaman, Adana, Malatya, Gaziantep, Şanlıurfa, Diyarbakır, Osmaniye and Kilis (AFAD, 2023a). These regions collectively account for approximately 14 million residents, representing 16.5% of Türkiye's population, and experienced significant losses, including over 41,000 fatalities, 108,000 injuries, and more than 1.2 million people displaced as of February 19, 2023 (World Bank, 2023). According to the Ministry of Urbanization, Environment, and Climate Change (MoEUCC), as cited in the World Bank (2023), the main cause of death was building collapse.

As of March 6, 2023, damage assessments had been completed for over 1.7 million buildings across the 11 affected provinces. In total, over 35,000 buildings had fully collapsed, more than 17,000 buildings were classified as requiring urgent demolition, nearly 180,000 were deemed severely damaged, and hundreds of thousands more sustained moderate or light damage. In addition to residential buildings, the destruction extended to schools, hospitals, administrative centers, hotels, and historically significant structures (T.C. Cumhurbaşkanlığı Strateji ve Bütçe Başkanlığı [Presidency of Strategy and Budget of the Republic of Türkiye], 2023).

Following the earthquake, widespread electricity outages were reported across 27 centers, including both major cities and rural districts, such as Kahramanmaraş city center, and parts of Osmaniye, Malatya, and surrounding areas. As a precautionary measure, natural gas flow was cut off in several areas across the region, and petroleum

distribution was suspended by BOTAŞ (Petroleum Pipeline Corporation, a state owned enterprise) for safety reasons (AFAD, 2023b). Critical transportation infrastructure across the affected region was also significantly disrupted. Several highways were closed due to collapses, landslides, and structural damage, particularly in and around Hatay, Gaziantep, and Adıyaman. Kahramanmaraş and Hatay airports were closed due to earthquake damage, further limiting mobility and the delivery of emergency aid. While some railroads and roads remained accessible for emergency use, the overall impact on transportation systems posed serious logistical challenges during the early response phase (AFAD, 2023b).

The World Bank estimates the direct damages from the earthquakes at approximately US$34.2 billion, equivalent to 4% of Türkiye's 2021 GDP, with residential buildings accounting for the majority of the loss. In addition to these direct damages, the report notes that indirect losses and recovery costs are likely to be significantly higher due to disruptions in economic activity and increased expenses related to reconstruction and social response (2023, p. 20).

The destruction, however, did not stop with the first shocks. Between February 6 and May 6, 2023, a total of 33,591 aftershocks were recorded in the region, ranging in magnitude from 0.2 to 6.6. Of these, 550 earthquakes measured between 4.0 and 5.0, 48 ranged from 5.0 to 6.0, and 2 exceeded 6.0 (AFAD, 2023c). This sustained highly active seismic activity not only prolonged the physical danger and psychological distress experienced by survivors, but also increased the risk of further collapse in already damaged or weakened buildings.

3.2 Initial emergency response and aid coordination

The immediate aftermath of the 2023 Kahramanmaraş earthquakes prompted a nationwide mobilization of public institutions, emergency services, municipalities, and non-governmental organizations (NGOs). Rescue operations began under exceptionally difficult conditions. The first earthquake struck in the early hours of the morning, catching millions asleep and unprepared. Because it occurred during the night, many people only learned what had happened hours later, when news spread at dawn.

Freezing winter temperatures, snow, and rain made survival and logistics harder in the immediate aftermath. Roads and bridges collapsed, and airports in cities such as Hatay became temporarily unusable, severely limiting physical access to affected areas. As a result, movement into and across the region was slow and uneven during the critical early hours. Access was also limited; phone and internet networks were partially down, and families struggled to reach loved ones. In many cases, survivors were left isolated, unable to communicate their location or situation. Together, these conditions created an

early environment marked by both physical disruption and widespread uncertainty, complicating coordination and early rescue efforts at a time when speed was critical.

From the first hours onward, Türkiye's Disaster and Emergency Management Authority (AFAD) acted as the primary coordinating body for the response, supported by search and rescue organizations such as AKUT, as well as local authorities and emergency services. Large numbers of rescue personnel were deployed to the affected areas in the immediate aftermath. International search and rescue teams also arrived from abroad to support rescue operations (United Nations Office for the Coordination of Humanitarian Affairs, 2023). Meanwhile foreign governments and organizations also sent donations such as tents, equipment, and essential goods (Reuters, 2023).

The needs that emerged were extensive and multifaceted. Rescue efforts, urgent medical care, and basic survival needs unfolded at the same time. While some people were still trapped under the rubble and still awaiting rescue, others required immediate treatment, and many who had lost their homes needed warmth, food, clean water, and shelter. At the same time, spaces for care, shelter, and distribution had to be organized concurrently. Trying to respond to these needs in parallel created a situation where coordination was difficult and often stretched.

Despite these challenges, large-scale institutional mobilization was visible, yet the unprecedented scale and geographic spread of the disaster, covering eleven provinces, overwhelmed even the most organized efforts. In many areas, survivors later recalled significant delays in the arrival of formal aid. As a result, the initial days were marked by both intense mobilization and profound absence, with uneven experiences across affected regions (Reuters, 2023).

In parallel, large and well-established non-governmental organizations in Türkiye initiated their own operations, supporting the distribution of essential supplies as well as rescue and coordination efforts. At the same time, across Türkiye, many local civil society groups, volunteer networks, businesses, and ordinary citizens mobilized independently: collecting supplies, organizing convoys, and traveling toward the disaster zone to respond to immediate needs. Despite this widespread mobilization, coordination between institutions and non-governmental actors remained uneven, particularly during the first days following the disaster. Delays in decision-making, fragmented information flows, and difficulties in coordinating multiple actors affected the effectiveness of the early response (Toplum, 2024).

Among the NGOs, Ahbap stood out for its rapid mobilization and public communication. Through transparent online donation campaigns, regular updates, and open

collaboration, it quickly gained national attention and public trust. In contrast, official institutions faced widespread criticism for their slow initial response and opaque communication (Euronews, 2023). Ahbap's visibility can be understood as a form of civic legitimacy grounded less in formal authority and more in transparency, empathy, and responsiveness. In this sense, trust appeared to emerge through visible actions, regular updates, and feedback rather than through institutional distance.

3.2.1 Citizen-Led solidarity efforts

Alongside institutional and NGO interventions, citizen-led forms of solidarity became highly visible across the country. In many cases, people stepped in to address urgent needs, responding both to the limits of formal coordination mechanisms and the scale and immediacy of the disaster, where any form of help was needed without delay (Swift et al., 2023). This informal response was shaped by empathy, urgency, and improvisation. Individuals, volunteers, collectives, local businesses, and diasporic communities began organizing spontaneously, using what they already had: their networks, skills, resources, vehicles, and digital platforms.

These efforts took many forms: coordinating donations, transporting goods, delivering supplies, and organizing local collection and distribution efforts. Across Türkiye, communities mobilized food and household items for affected areas through solidarity chains. Designated drop-off points quickly emerged in major cities such as Ankara and Istanbul, where volunteers sorted and packaged donations for distribution. In parallel, Turkish businesses used their national and international networks to supply critical goods and logistical services (Swift et al., 2023). One interview participant (Volunteer 4) described collecting basic supplies and driving to the affected area to deliver goods and help on the ground in any way possible, such as transporting people or responding to urgent needs as they arose. Taken together, these efforts highlight how ordinary people stepped into new roles, such as organizing donations, coordinating transport, and connecting local efforts, enabling support to move through informal networks alongside formal responses.

This wave of civic action can be understood through the concepts of mutual aid and solidarity-based action, which offer useful frameworks for understanding how people respond in times of crisis. In political and disaster sociology, mutual aid refers to community-driven and reciprocal practices of care and resource-sharing that emerge when formal systems are slow, absent, or overwhelmed (Spade, 2020).

Mutual aid differs from charity or traditional humanitarian aid in both structure and ethos. Charity and humanitarian systems typically operate through hierarchical models in

which resources flow from donors or institutions to recipients, mediated by professional organizations that assess needs, manage distribution, and ensure accountability (Bornstein, 2009). These systems are designed to operate at scale and ensure procedural reliability. In contrast, civic and other non-institutional aid practices are often embedded in existing social relations and local contexts, relying on proximity and negotiated interaction rather than standardized, bureaucratic control mechanisms (Sandvik, 2017). Instead of helping others from a distance, they emphasize acting together: blurring the boundary between giver and receiver, and transforming aid into a collective social practice.

This relational and participatory foundation also extends into the notion of solidarity, which captures the moral infrastructure of these actions (Durkheim, 2014): a collective emotional response to shared suffering that binds communities together (Alexander, 2004). This becomes especially visible in moments of crisis. People act not because they are instructed by an institution. They act because they feel a sense of connection and responsibility toward others. As Rebecca Solnit (2009) points out, in many disasters it is not governments or formal organizations that respond first, but ordinary people who form spontaneous communities of care, focusing on practical and flexible support rather than bureaucratic processes.

In this sense, the mobilization observed in Türkiye was not an exception. It was a response aligned with patterns described in disaster research. The actions taken by individuals, groups, and communities were not only about filling gaps in aid. They reflected a strong sense of collective responsibility and moral agency. From a systems perspective, these emergent efforts demonstrate what Dynes (1970) described as emergent groups: informal collectives that arise to address unmet needs during crises. Although they are not formally recognized, these groups are often able to adapt quickly in chaotic situations by finding improvised solutions. This type of emergent behavior illustrates how societies can adapt in times of crisis through flexible, peer-to-peer organization rather than centralized control.

The coexistence of citizen-led efforts and formal institutions points to the complex nature of disaster response. The ability of citizens to self-organize and collaborate played a significant role during the early phase of the response alongside state capacity. The nature of these efforts offer valuable insights into how future aid systems might be designed.

3.3 Digital solidarity: Coordination and solidarity through everyday digital platforms

The citizen-led response that unfolded across Türkiye was not only physical but also deeply digital. As the scale of the disaster became clear, many individuals began searching for ways to help from their own locations and within their personal capacities, naturally turning to the networks already in their hands: their phones, chats, and social media accounts. What began as mutual aid on the ground quickly extended into a web of digital coordination. Acts of care that took place in physical spaces of community extended across screens and networks. This phenomenon is often referred to as digital solidarity, meaning an ethical form of care carried out through digital networks, in which individuals and communities share information, offer support, and respond to one another's needs during crises (Russo, 2024). Unlike institutional forms of aid, digital solidarity is spontaneous, self-organized, and personal (Ferrari, 2022). It redefines participation in collective care, turning ordinary citizens into active supporters, advocates, and coordinators during shared crises.

This form of solidarity becomes most visible in disasters, a pattern that also emerged during the 2023 Kahramanmaraş earthquakes in Türkiye. Social media sites such as Twitter/X and Instagram, along with messaging apps like WhatsApp and Telegram and blog platforms like Ekşi Sözlük, became lifelines for facilitating communication and coordination in the immediate aftermath of the disaster. These platforms enabled a decentralized flow of information and mobilization. Similar patterns have consistently appeared in crises around the world. Examples such as the #COVIDMutualAid networks and grassroots responses during conflicts and humanitarian emergencies show how digital tools can extend care beyond geographic and bureaucratic boundaries (Ferrari, 2022).

In the first hours and days following the earthquake in Türkiye, Twitter/X became a key channel for sharing urgent, survival-related information. People trapped under collapsed buildings posted messages with their names, locations, and short descriptions of their situation, often asking directly for rescue. These messages were widely shared through retweets and replies. This helped draw attention to rescue needs that had not yet been addressed and showed how visibility on social media was closely linked to the hope of being reached in time. At the same time, users shared information about missing people, temporary shelter locations, access to basic needs, and areas that remained unreachable due to damage, reinforcing social media's role as an important channel for survival-related coordination (Demir, 2023). Together, these practices moved online audiences from passive observers to active participants in life-saving communication.

Beyond immediate rescue efforts, digital platforms also became tools for organizing volunteer activity and donation-related support. Citizens shared lists of essential items such as tents, heaters, blankets, and baby supplies, along with information about donation points. WhatsApp groups were created at the level of cities, districts, and neighborhoods, allowing communities to self-organize around evolving local needs. This micro-level coordination resulted in temporary and flexible forms of logistical organization. Social media also played a role in mobilizing volunteers, as posts circulated with urgent calls for assistance related to logistics and on-site support (Şen & Koç Akgül, 2023). By lowering barriers to participation and making urgent needs visible, these digital tools enabled citizens to take part in collective action based on proximity, available capacity, or willingness to help.

Social media also created national and international awareness. People around the world became aware of the scale and urgency of the disaster as disaster-related hashtags spread widely on social media. As awareness expanded, this visibility helped direct public attention toward urgent needs and citizen-led initiatives, while also bringing institutional responses under greater public scrutiny. Within this digital solidarity ecosystem, Turkish public figures, influencers, and celebrities played a particularly visible role. By using their large followings to highlight urgent needs, share donation campaigns, and support volunteer efforts, they contributed to the amplification and legitimization of grassroots actions. Some figures launched their own initiatives or collaborated with existing ones, while others offered material support, transportation, financial contributions, or their physical presence in affected areas (Karataş & Gencel Bek, 2024). In this way, visibility itself became a form of support, bridging small-scale citizen efforts with broader public attention and resources.

In this sense, digital solidarity operates not only through the coordination of resources and information exchange, but also through empathy and emotional resonance. People connect not because they are assigned to, but because they feel compelled to. People don’t simply donate, they connect, grieve, and care together. This highlights that digital support systems should accommodate relational and affective motivations alongside practical coordination.

Strong emotional moments shared through digital platforms brings people, even strangers, together around a shared sense of concern and purpose. However digital solidarity formed in this way can be fragile sometimes. Participation tends to peak during highly visible and urgent moments, when needs are widely shared and carry strong emotional weight. As collective focus shifts and emotional intensity decreases, engagement often declines. As a result, ongoing needs become less visible and harder to

support. This dynamic points to the broader limitations of digital platforms that privilege immediacy, trending content, and rapid response, rather than offering few mechanisms to sustain care beyond the peak of public attention (Sackitey et al., 2025).

Taken together, these dynamics suggest that digital solidarity should not be seen as a temporary or incidental reaction to a crisis. Instead, it can be understood as an emerging social infrastructure shaped by how participation, visibility, and care are structured. Recognizing this opens space for design to explore how digital environments can better support the continuity of solidarity over time.

3.4 Sustaining support after the crisis and amid evolving needs

Disaster recovery extends far beyond the initial emergency response and unfolds as a prolonged and uneven process shaped by evolving needs and declining public attention. While early phases often generate intense visibility and collective mobilization, many challenges persist long after attention fades. As needs become more individualized and less visible, emergency-oriented support structures withdraw, leaving people to navigate recovery on their own. This mismatch between short-term crisis response and long-term recovery highlights the need for systems that can support care and coordination beyond moments of urgency.

In the immediate aftermath of a disaster, needs are often clear, urgent, and collective, including search and rescue, emergency shelter, food distribution, and access to basic supplies. These needs align closely with the operational capacities of state agencies and humanitarian organizations, which are designed to respond rapidly at scale. However, disaster research emphasizes that recovery is not confined to this initial phase but unfolds as a longer process of adaptation over time. As the acute crisis subsides, survivors increasingly face challenges that are less visible, more individualized, and embedded in everyday social, economic, and relational contexts. Addressing these evolving conditions requires support systems that are flexible and responsive to changing circumstances, rather than standardized or time-limited aid mechanisms (Norris et al., 2008).

For many survivors of the 2023 Kahramanmaraş earthquakes in Türkiye, this intermediate period unfolded within tent cities and later container settlements. These small, temporary spaces become the center of daily life for months on end (UN OCHA, 2023). Although container units offer greater stability than tents and provide basic items such as beds, blankets, small appliances, and heating, they nonetheless present significant constraints, including overcrowding, limited storage capacity, insufficient insulation, reduced privacy, and exposure to challenging climate conditions (Tarakçı &

Kavut, 2025). As a result, everyday activities such as sleeping, cooking, studying, and resting are compressed into a few square meters, shaping daily life within these spaces. Over time, these spatial constraints also affect social relations, as families from different backgrounds live in close proximity while coping with disrupted routines. Although intended as temporary solutions, container units are often used for extended periods, effectively becoming long-term living environments.

Even 2 years after the earthquakes, many affected people are still living in container settlements, with ongoing debates about whether survivors' needs have been properly addressed beyond the initial emergency response. As recovery progresses, some households have already moved, or are in the process of moving, into newly built permanent housing (Balkan Insight, 2025). While this transition represents an important milestone, reporting suggests that it can also introduce new uncertainties. Survivors transitioning from containers to newly constructed apartments often face largely empty homes and ongoing living costs, raising questions about how they will furnish their homes and cover basic expenses while dealing with continued financial strain (PBS NewsHour, 2025).

Socioeconomic pressures intensify throughout the post-disaster period as employment opportunities in the affected region remain severely disrupted. The earthquakes led to widespread job losses, reduced economic activity, and prolonged interruptions to both formal and informal labor markets, leaving many households without stable sources of income. High levels of informal employment further limited access to social protection mechanisms, increasing exposure to poverty and economic insecurity. These conditions disproportionately affect women, children, and elderly individuals, who are more likely to rely on damaged social services, informal care networks, or household-based income strategies. In parallel, large-scale displacement and temporary migration in search of work have introduced additional financial strain, including rising housing costs and the erosion of local support systems. Post-earthquake assessments indicate that the combination of job loss, income instability, and weakened social infrastructure significantly heightens long-term vulnerability for these groups (Presidency of Strategy and Budget of the Republic of Türkiye, 2023).

As the recovery process extended beyond the initial weeks of the Türkiye earthquakes, public visibility around ongoing needs steadily declined. Analysis of social media activity shows that online attention peaked during the immediate response phase and dropped sharply afterward, reducing the visibility of later-stage needs (Laosunthara et al., 2025). While social media played a crucial role during the acute phase by supporting rescue efforts, donations, and volunteer coordination, overall online attention declined during

the recovery phase. This shift reduced the visibility of ongoing issues compared to the initial emergency period.

Institutions such as AFAD, the Turkish Red Crescent, Ahbap, and local municipalities continued to provide certain forms of assistance but long-term recovery support often remained standardized. As public and institutional attention decreased, many survivors described a growing sense of being overlooked while still living in unstable conditions. Interviews conducted months after the earthquakes reflect this shift: participants frequently recalled the early period of widespread solidarity as empowering, but contrasted it with later stages marked by isolation and difficulty accessing help (Yeniçırak & Durmaz Yurt, 2024). Together, these dynamics highlight a critical gap between short-term mobilization and long-term support, where needs persist but visibility, coordination, and access to care weaken over time.

Ultimately, disaster recovery unfolds on a human timeline: slow, uneven, emotionally draining, and deeply interpersonal. To respond effectively, systems need to recognize the complexity of recovery, adapt to evolving needs, reduce the emotional burden on survivors, and help transform one-time acts of help into ongoing support.

3.5 Gaps and limitations in current aid ecosystems

Despite the scale of institutional and citizen-led mobilization after the earthquakes, current aid ecosystems show several structural and experiential gaps that particularly affect the long-term recovery phase. These gaps appear most clearly at the intersection of formal humanitarian systems, informal mutual aid practices, and digital solidarity networks.

First, existing aid structures are largely designed around short-term emergency response, which makes them less able to address evolving needs that emerge months and years after the disaster. As survivors move from tents to container settlements and then to permanent housing, support often fails to adapt to changing living conditions, financial pressures, and everyday forms of care work. This creates a mismatch between the temporal logic of institutions and the prolonged, uneven nature of recovery in people’s lives.

Second, the relationship between formal aid and citizen-led mutual aid remains fragmented, with limited mechanisms for coordination, knowledge sharing, or recognition. While emergent groups and volunteers proved highly effective in responding quickly, they often operated parallel to institutional systems, relying on informal networks, personal capacities, and improvised tools. Once the acute phase passed, many

of these efforts either dissolved or became harder to sustain, partly because there were no clear pathways to integrate them into longer-term support structures.

Third, digital platforms played a crucial role in enabling visibility, coordination, and emotional connection, but they are not designed to sustain support over time. Attention, participation, and donations peaked in the first days and weeks, then declined sharply as disaster-related content lost visibility in feeds and trending topics. As a result, ongoing needs in container settlements and during the transition to permanent housing became less visible, leaving survivors with fewer ways to articulate their situations and fewer opportunities for others to respond.

This points to a deeper limitation in current digital infrastructures, which prioritize immediacy and virality over continuity and care. While platforms made it easy to mobilize rapid responses, they offered few tools for tracking long-term needs, maintaining relationships, or coordinating recurring support in a structured way. For individuals who wanted to keep helping, there were limited credible, transparent, and accessible channels to stay engaged beyond one-time donations or short-lived campaigns.

Finally, many survivors experienced an emotional and relational gap as support systems withdrew or became harder to access while everyday challenges intensified. Reportings suggest that the early period of widespread solidarity felt empowering and connective, but later phases were marked by isolation, administrative difficulty, and a sense of being forgotten. This highlights that current aid ecosystems are not only limited in material and logistical terms, but also in how they support the emotional labour of recovery and the maintenance of social ties over time.

3.6 Background research conclusion

The background research reveals a landscape in which care is both powerfully present and structurally fragile. Digital solidarity surged in the immediate aftermath, with social media enabling rapid, peer-to-peer forms of rescue, coordination, and emotional support that often moved faster and more flexibly than formal systems. Yet this wave of collective action was deeply tied to emotion in the moment, raising questions about what remains once attention shifts elsewhere and crisis no longer dominates everyday feeds.

As time passed, survivors' realities did not become simpler but more layered, especially in long-term living arrangements such as container settlements, where daily routines, financial strain, and emotional fatigue accumulated. Standardized, top-down aid practices struggled to keep pace with this shift from acute emergency to slow, uneven recovery, leaving many needs insufficiently addressed. In Türkiye, mistrust toward

official institutions and criticism of the early response further pushed people toward citizen-led forms of support, which were effective in the short term but often lacked durable structures and accountability over the longer period of recovery.

Taken together, these dynamics suggest that the problem is not the absence of solidarity, but its temporal and infrastructural limits. This raises a critical design question: how might community-driven digital support systems be shaped to hold space for long-term, sustainable forms of solidarity that last peak visibility and resist while both institutions and public move on.

3.7 Research question

Based on the contextual analysis and background research insights, this thesis is guided by the following primary research question:

- How can community-driven digital support systems be designed to support earthquake survivors' evolving needs during long-term recovery, beyond short-lived forms of digital solidarity?

This question directs the project toward a space between formal aid infrastructure and informal digital mutual aid: where such community-driven mechanisms are currently lacking clear and credible ways to engage in sustaining support over time.

To explore this question, the project will investigate:

- How support is experienced by survivors, and how they manage and communicate their needs over time
- How supporters' motivation and capacity to engage change over time, and what conditions encourage or hinder sustained participation
- How existing digital platforms shape coordination, communication, and access to support, and what these environments enable or constrain for communities
- How participation and access to support are structured within digital environments over time

Collectively, these inquiries aim to deepen understanding of how support is experienced by those involved, with particular attention to how digital platforms are used in practice, in order to inform the development of a design intervention that responds to existing structural limitations. Rather than treating post-disaster assistance as a short-lived surge of public attention, this thesis explores how digital environments might enable forms of community-driven support that are sustained and adaptable over long-term recovery.

4. THEORETICAL FRAMEWORKS

This chapter introduces the frameworks that guided the development of the thesis. It outlines the selected approaches and their relevance within the context of post-disaster aid and digital solidarity. The frameworks were selected for their ability to support participatory, inclusive, and emotionally-aware design processes suited to crisis contexts, aligning with the project's focus on trust, dignity, and sustained engagement. Applied across different phases of the project, they functioned as guiding tools for structuring insights, framing the problem space, and shaping the direction of the proposed solution.

4.1 The Dignity-Centered design framework

The Dignity-Centered Design Framework proposed by Miso Kim (2021) is a human-centered approach that treats dignity as a core principle guiding design decisions in service and social systems. It provides a useful perspective for understanding the ethical and inclusive aspects of post-disaster support mechanisms. This framework emphasizes the proactive promotion of positive, respectful, and empowering experiences for all stakeholders involved in a service, in addition to preventing negative experiences or harm in service encounters.

The framework conceptualizes dignity through four interconnected dimensions: merit, autonomy, universal rights, and interpersonal care.

Merit refers to the value of individuals based on their contributions or roles within a group, emphasizing fairness and recognition. Autonomy emphasizes personal freedom, self-determination, and the ability to make choices without pressure. According to universal rights, everybody has the inherent and equal right to dignity; therefore, systems must be equitable and inclusive. Interpersonal care focuses on empathy, respect, and compassionate interaction between individuals, emphasizing the emotional aspect of social relations.

This framework aligns closely with the focus of this thesis, which aims to create systems that empower people affected by disasters while preserving their privacy and self-worth in the digital era. It helps to structure and evaluate the design process in a more meaningful way and guides the creation of platforms that humanize aid experiences and foster trust, empathy, and inclusion across diverse forms of participation and interaction.

4.2 Community resilience theory

Community resilience, as defined by Norris et al. (2008), refers to the process through which communities adapt and continue functioning following a disruptive event. Rather

than describing resilience as a stable condition or a simple return to a previous state, the framework emphasizes adaptation over time. Resilience emerges from the interaction of multiple community resources, such as social connections, information sharing, communication practices, and collective problem-solving capacities. These resources become especially important in disaster contexts, where uncertainty, disruption, and limited institutional capacity shape how communities respond and reorganize

This perspective provides a relevant theoretical framework for understanding post-disaster recovery beyond formal aid systems. By focusing on how communities mobilize resources, coordinate support, and maintain communication under strain, the theory highlights the role of social and informational structures in sustaining recovery processes. As a result, community resilience can be used as a framework to examine how supportive systems and infrastructures may contribute to longer-term adaptation by enabling coordination, trust, and access to support without relying solely on centralized or short-term interventions.

5. FIELD RESEARCH

This chapter presents key insights from online observations and semi-structured interviews. While the background research outlined broader patterns and limitations in disaster response and digital solidarity, the focus here shifts to the lived experiences of different groups participated in these efforts, as well as the situated practices observed in everyday support contexts.

Online observation results are presented in relation to the platforms where they were collected, while the interview findings are organised thematically to highlight recurring patterns in needs, experiences, and practices. Together, these insights deepen understanding of how support is organized and mediated over time, and where and why existing digital environments fall short in sustaining post-disaster aid.

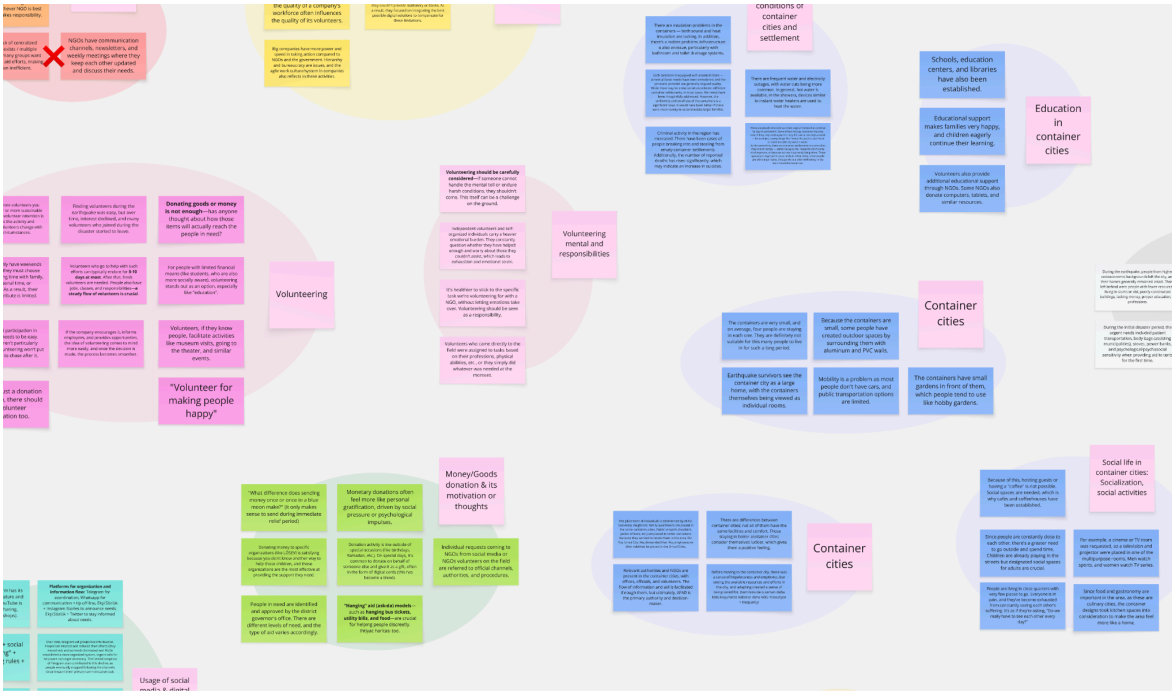

Figure 5.1 Screenshot of thematic clustering of interview data shown on the author's Miro board.

5.1 Insights from online observations

The author conducted online observations across multiple digital and social media platforms that became central to digital solidarity during the earthquake. These included Facebook earthquake solidarity groups, online forums such as Ekşi Sözlük, the X and Facebook accounts of Ahbap, and several crowdfunding websites. The aim was to examine how survivors expressed their needs, how support was mobilised, and how digital environments shaped interactions between survivors, volunteers, and supporters after the immediacy of the disaster.

Across Facebook earthquake solidarity groups, a wide range of posts, comments, and engagement patterns revealed a recurring emotional and linguistic structure. Individuals seeking help often began their messages with expressions of hesitation, urgency, or emotional vulnerability, such as "Allah rızası için yardım edin" ("please help, for God's sake"), "son çare olarak buraya yazıyorum" ("I am writing here as a last resort"), "lütfen beni yanlış anlamayın" ("please don't misunderstand me"), or "çok utanıyorum buraya yazmaya" ("I am very ashamed to write this here"). These phrases conveyed a sense of desperation and emotional exposure, signaling that some individuals had already attempted other channels of support and turned to social media only after their needs remained unmet elsewhere.

In this context, these expressions show how difficult it is for individuals to talk about personal hardship in public and how much emotional effort is required when asking for help in digital spaces. In some posts, people tried to appear more credible by sharing photographs or personal documents to explain their situation and to avoid being questioned by others. This pattern shows that seeking help on social media often depends on public self-disclosure and repeated explanation, which can increase the emotional and personal vulnerability of individuals who are already in difficult situations.

At the same time, comment sections occasionally included dismissive, irrelevant, or insensitive responses, and some requests were met with suspicion regarding deception or misuse. These dynamics suggest that Facebook solidarity groups face limitations in sustaining trust, meaningful engagement, and effective visibility over time.

In these same groups, individuals offering help also made posts describing the type of support they could provide or the profile of recipients they wished to assist (for example, offering financial support specifically for children or students). These posts triggered comment threads in which some users publicly explained their situations. Additionally, there were posts from people independently coordinating volunteer efforts, such as transporting donated goods or providing food for animals in the affected region, highlighting that digital platforms were used not only for direct aid exchanges but also for enabling small-scale, grassroots coordination.

Online observation of Facebook solidarity groups showed that these spaces became less effective over time. While the groups were actively used in the early stages of the disaster response, they later became relatively inactive. Although people continued to post requests for help or solidarity, many of these posts received little or no engagement. In addition, some groups gradually moved away from their original purpose and turned into spaces where businesses or individuals regularly posted spam advertisements or promotional content.

Similar dynamics appeared in the comment sections of Ahbap's Facebook and X posts. Even though Ahbap is a highly visible and active organisation, individuals frequently used public comment threads as alternative channels to request help. This pattern suggests that many people had difficulty reaching the organisation through formal communication channels or had not yet received a response. Posting on social media, where requests are visible to many people at once, appeared to be a more accessible way to ask for help. These messages often mirrored the linguistic and narrative patterns observed in solidarity groups, indicating that public visibility was commonly used as a way to increase the likelihood of being noticed, either by the organisation itself or by other community members who might step in to help.

Another recurring pattern observed across platforms, particularly in response to posts sharing on-the-ground videos or news-style content from the earthquake region, was the presence of public comments expressing both interest in helping and uncertainty about how to do so. Under such posts on Facebook, users frequently wrote comments like "nasıl yardım edebiliriz?" ("how can we help this person?") or "amcaya/teyzeye yardım eden oldu mu?" ("has anyone helped this man/woman?"). These comments indicated a clear willingness to offer support, while also pointing to the absence of clear ways to take action.

On Ekşi Sözlük, the tone and structure of help-related posts differed noticeably from other platforms, which may be related to the site's semi-anonymous culture and controlled entry system. Since starting to write and share entries on the platform requires going through a validation process, the active user base tends to consist of individuals with relatively higher digital literacy and familiarity with the platform's norms compared to mainstream social media. During the earthquake period, this structure shaped who could speak and how: some users who were themselves affected by the disaster posted directly about their own needs, while others in or near the affected region used firsthand observations to describe what people around them needed or what they were witnessing. In addition, many users wrote on behalf of friends, relatives, acquaintances, or others whose needs they encountered offline or on different platforms, and sometimes amplified requests to increase their visibility.

Over time, help-related entries increasingly focused on sharing others' needs, reflecting both the persistence of unmet support and the limited ability of many survivors to participate directly on Ekşi Sözlük. The writing style in these threads tended to be more narrative, reflective, and context-rich compared to posts on Facebook. Threads dedicated to offering support remained active as well, with contributors specifying the type of assistance they could provide. Many posts were updated to report whether help had

arrived, while others remained unchanged, making it unclear whether support had been received. Although activity gradually decreased, the continued presence of such entries indicated that forms of digital solidarity persisted among certain user groups even as broader public attention declined.

Crowdfunding platforms formed another category of online space but demonstrated limitations for the types of needs observed in social media environments. While these platforms are effective for large-scale fundraising campaigns and provide strong UX support for creating and promoting them, their structure is less suited to immediate or small-scale support needs, as it relies on public campaign creation and more complex interfaces. As a result, such platforms were rarely used for the individualized, modest needs that frequently appeared in solidarity groups and forums.

Overall, these observations describe a fragmented digital environment in which survivors and supporters rely on multiple platforms and informal intermediaries to communicate needs and offers of help. Visibility, follow-up, and access to support varied widely across platforms, and interactions were largely shaped by informal and platform-specific practices rather than shared structures.

5.2 Insights from qualitative interviews

This section presents key insights that emerged from interviews conducted with individuals involved in different aspects of the earthquake response. The analysis is organized around recurring themes observed across participants' experiences, including those of survivors, volunteers, supporters, grassroots organizers, and NGO representatives. These insights highlight shared patterns in needs, experiences, and informal practices that shaped support practices over time. Rather than retelling individual accounts, the aim is to surface broader patterns that help contextualize the challenges and conditions observed across digital and physical support environments.

5.2.1 Fragmentation of communication channels and the persistence of redundancy

Interviews revealed that the fragmentation of communication channels was a notable characteristic of the early response phase following the disaster. In the immediate aftermath, a wide range of solidarity groups emerged organically on platforms such as WhatsApp, Telegram, and social media, as individuals and communities mobilized to seek or offer support. Participants noted that the increase of these groups was not only expected but also necessary at the time, as the urgency of the situation pushed people to act quickly and across multiple networks. This fragmentation influenced how support-related communication took place in the early stages.

Volunteers 4 and 5 emphasized that the same need was often shared across different channels simultaneously, resulting in redundancy and coordination difficulties. While this overlap created certain operational challenges, participants generally framed it as a natural consequence of the decentralized and urgent nature of the initial response.

Over time, however, the limitations of these informal channels became more apparent. Volunteers 4 and 5 noted that WhatsApp and Telegram groups became inactive as volunteers' resources, networks, and energy diminished. Some efforts dissolved entirely, while others became passive. In contrast, according to Volunteers 5 and 6, social media platforms, particularly those with broader public reach, remained relatively active. Nevertheless, the persistence of fragmentation, especially across various Facebook groups, Ekşi Sözlük threads, and public pages, continued to create barriers for both aid providers and individuals in need. Requests remained scattered, duplicated, and difficult to track, while survivors or their representatives often had to repost and follow up across multiple disconnected spaces. Over time, this fragmentation made it harder to keep track of needs and ongoing support.

Survivors 1 and 2 reported that they did not use social media for seeking support. Instead, they described participating in WhatsApp and Facebook groups mainly for communication and updates within their container settlements or cities. Although occasional help-seeking posts appeared in these groups, they were largely directed at other survivors facing similar constraints and therefore rarely resulted in meaningful assistance.

5.2.2 The lifecycle of grassroots efforts

Another significant insight from the interviews highlights how the dynamics of citizen-led initiatives evolved over time during the disaster response. In the immediate aftermath of the earthquake, there was widespread chaos, a high volume of urgent needs, and a strong sense of collective mobilization. In such conditions, the legitimacy of individual needs was rarely questioned; several participants broadly assumed that no one would exploit or misuse aid during such an overwhelming crisis. Moreover, given the scale of devastation, many participants described it as reasonable to believe that almost everyone in the region was genuinely in need to some extent. For the first two to three months, this intense mobilization persisted, driven by the continued visibility of the disaster and a shared focus on basic necessities.

As time progressed, however, formal systems gradually became more established. Despite ongoing gaps, Local 2 and Volunteer 4 described the creation of container settlements and the improved organization of state and NGO-led efforts as beginning to

replace the initial chaos with a sense of order. Volunteer 4 described feeling that their mission was complete, particularly after experiencing emotional exhaustion and observing that a more structured aid system was now in place somehow and chose to conclude their personal initiatives.

Simultaneously, the landscape of digital solidarity groups also changed. As public interest declined and formal mechanisms took over, previously vibrant aid groups, such as those on WhatsApp, became inactive. Several participants described that, as visibility decreased, instances of fraud and misuse began to rise, which in turn affected how these informal channels were perceived and used. The initial assumption of universal goodwill gave way to a more complex situation in which participants increasingly mentioned issues related to verification and accountability.

Although many citizen-led initiatives wound down during this transition period, the question remains whether all survivors' needs truly disappeared alongside them. Interview findings suggest that the decline in visibility did not necessarily correspond to the resolution of needs, but rather reflected a shift in the broader organization of recovery efforts.

5.2.3 Emergent systems: Volunteer-built structures for organizing aid

In the absence of pre-existing digital infrastructures specifically designed for crisis response, both NGOs and civilian-led groups began developing their own tools and systems to manage the flow of aid requests. One recurring strategy among NGOs and volunteers was the introduction of standardized request formats, with templates that survivors were asked to follow when posting their needs in WhatsApp and Telegram groups. This allowed organizers to better understand, categorize, and prioritize incoming requests. In parallel, Excel spreadsheets were created and maintained manually by volunteers to track need statuses, contact information, and delivery updates. In some cases, participants described the emergence of "verification volunteers" responsible for follow-up and status confirmation, who contacted individuals directly to check whether support was still needed and updated the information accordingly. These makeshift systems played an important role in organizing and distributing aid in an environment otherwise lacking centralized coordination.

In some cases, technically skilled individuals within aid groups took this one step further. For example, Volunteer 4 embedded in a volunteer-led initiative created a simple custom database tool specifically for tracking aid cases. These improvised digital solutions were not formal platforms, but quickly built, need-driven systems that emerged organically in response to the lack of shared digital systems.

5.2.4 The desire to help vs. the lack of accessible pathways

Interviews revealed a strong desire among individuals to contribute meaningfully to disaster response. Many participants described physically going to the disaster zone to volunteer as the most impactful form of support. However, this was not feasible for most people due to logistical, financial, or personal constraints. Moreover, field volunteering requires emotional resilience and the ability to endure highly challenging conditions, which made it inaccessible to many who still wished to help. As a result, many participants described feeling motivated to contribute but uncertain about how to do so in a way that felt direct and effective. Volunteer 4 and Local 2 noted that a small number of highly driven individuals took initiative on their own, collecting supplies, using their own vehicles, and traveling to the region without formal coordination. However, participants emphasized that such actions require exceptional motivation and a high tolerance for uncertainty, conditions that were not feasible for most people.

Early in the crisis, mass donation drives offered a clear and accessible pathway for participation. Collection points appeared in many cities, allowing people to donate essential items with the expectation that their contributions would reach earthquake survivors. Over time, however, this clarity diminished. While donation channels remained open, many participants described increasing uncertainty about where contributions went, how they were distributed, and whether they directly reached those in need. In particular, several participants expressed growing hesitation toward donating money, citing concerns related to transparency, institutional trust, and the fear that financial contributions might not be used as intended. NGO representative 1 and 2 confirmed this from their perspective, noting that they frequently received questions about their organizational identity and the allocation of donated funds. As donation-based support became more distant and opaque over time, Survivor 1 contrasted this with forms of help that felt more direct and visible. They emphasized that the presence of young people, volunteers on the ground, and visible grassroots initiatives provided not only material assistance but also a sense of hope and emotional support during the recovery process.

Alongside these concerns, participants also described their personal donation habits outside of crisis periods. Many participants explained that they periodically have items, such as clothing, books, toys, or household goods, that they are ready to give away at particular moments in their everyday lives. These contributions are shaped by personal rhythms and available resources, and they often increase during culturally significant periods such as Ramadan. Several participants noted that they often know what they can offer at a given time, but lack clear ways to connect these offerings with immediate and

concrete needs. As a result, such forms of everyday generosity were sometimes described as remaining unused or disconnected from support efforts.

5.2.5 Poor living environments and survivors' needs

Another significant theme identified through the interviews concerns the living conditions faced by earthquake survivors. All participants living in container cities consistently reported structural and environmental problems within container settlements, including overcrowded spaces, poor sound insulation, sewerage and odor issues, and pest infestations. Frequent electricity and water cuts were also mentioned, and available tap water was often described as too contaminated to be used for drinking or cooking, limiting its use to washing purposes. As a result, access to clean water emerged as a recurring concern across interviews, with many survivors reporting the need to obtain their own supplies when possible.

Beyond basic shelter, everyday needs intensified due to inadequacies in the living environment. Participants described that although shared laundries were provided, their limited availability and communal nature raised hygiene concerns. Survivors who had the means were sometimes able to purchase personal washing machines for their containers, but most had to rely on restricted and inconsistent communal facilities. As a result, both Survivor 1 and 2 noted an increased need for additional clothing and linens, as belongings could not be washed as frequently as necessary.

Access to affordable groceries was limited due to the distance to markets, the absence of nearby shops, and inconsistent transportation. Participants described difficulties in obtaining fresh produce, basic dry goods, and cooking essentials. While regular food distributions provided some relief, they were often described as insufficient to fully support everyday food needs. During the interviews, participants also noted differences in how these limitations were experienced within households. While adults often adjusted by reducing their own needs, children required additional resources, including items beyond food. Interviewees mentioned a recurring need for children’s books, stationery, and toys, emphasizing that children’s well-being and happiness played an important role in maintaining morale within families. Taken together, these findings show that many urgent needs described by survivors were closely tied to their ongoing living conditions and household circumstances, rather than to the immediate effects of the disaster alone.

Figure 5.2 Container settlement conditions and close spacing between units. Images provided by an interview participant.

5.2.6 Inequalities in aid distribution and freedom of choice

Another theme that emerged from the interviews concerns unequal conditions faced by earthquake survivors in accessing aid and rebuilding their lives. Many participants consistently emphasized that not all survivors had access to the same level of resources or opportunities. Differences between container settlements, in terms of infrastructure, safety, comfort, and available social amenities, were described as significant, and participants mentioned that many survivors perceived those living in better-equipped areas as "luckier" reinforcing a sense of inequality. Participants also described how aid distribution practices contributed to this unevenness. Support did not reach everyone in the same way; access sometimes depended on being visible to volunteers, having personal connections, or living in locations more frequently visited by NGOs.

Several participants also described the demographic makeup of many container communities, noting the presence of particularly vulnerable groups such as single mothers with children, elderly individuals relying on pensions, people who had lost close family members, and households that had lost both income and possessions. Several participants observed that individuals from higher socioeconomic backgrounds were more likely to leave the city after the earthquake, and that their homes were often less severely affected. Those who remained were frequently described as having fewer resources and having lived in older or poorly constructed buildings prior to the disaster. These groups were perceived as more dependent on external support, and many participants often remarked that "there is always someone who needs help." Needs within these communities were described as ongoing rather than temporary, shaped by

emotional strain, and restricted economic opportunities. While state and NGO support continued, some participants noted that such assistance could only extend so far. It was also mentioned that individuals who had previously lived in informal or precarious housing were expected to be relocated into state-built apartments, a transition that participants anticipated would introduce new challenges.

Both Survivor 1 and 2 described having limited control over the aid they received and the conditions in which they lived. Standardized distributions were described as not aligning with individual circumstances, leaving many survivors with little choice but to accept what was offered.

Figure 5.3 Comparison of two container settlements. Images provided by interview participants.

Figure 5.4. Alternative views of the same two container settlements shown in Figure 5.3. Images provided by interview participants.

5.2.7 Accountability and intimacy in closed-group environments

Participants described how the architecture and culture of different platforms shaped aid coordination in distinct ways. WhatsApp groups were often characterized as more intimate and goal-driven spaces, where members shared a sense of common purpose. The closed and collaborative nature of these groups was described as making it easier to communicate needs, follow up on their status, and take action quickly. Participants noted that they felt more personally responsible for interactions within these spaces, and described a stronger sense of commitment among group members.

A similar dynamic was noted in Ekşi Sözlük, where long-standing user identities and the platform's established community culture were described as fostering familiarity and perceived credibility. Although it functions as a public forum, participants described Ekşi Sözlük as a space where contributions often felt more genuine due to its writer-based structure and shared norms.

5.2.8 Emotional burdens in peer-to-peer aid

Participants also described the emotional burden carried by individuals who took personal initiative during the disaster response. Both in the immediate aftermath of the earthquake and in later phases, those who assumed responsibility for amplifying survivors' needs through social media or other digital channels, as well as for locating aid, reported experiencing significant emotional strain. In the absence of established support mechanisms, these individuals described managing not only communication with potential supporters, but also requests and information related to others in need, creating what was often described as a chaotic and overwhelming environment.

Volunteer 6 reflected on persistent feelings of responsibility and anxiety related to people they were unable to help, which contributed to emotional exhaustion. Similarly, Volunteers 4, 5, and 6 explicitly described feeling deeply fatigued and worn down over time. Participants emphasized that it was not only the volume of communication that created stress, but the moral responsibility they felt when others depended directly on their actions. In the absence of shared or supportive systems, this emotional weight was described as falling largely on individuals.

5.3 Synthesis of the interviews and observations

Taken together, the online observations and field research show that community-driven long-term post-disaster support is not limited by a lack of willingness to help, but by the lack of systems that can sustain care in a reliable way over time. In the immediate aftermath of the earthquake, digital platforms enabled rapid mobilization and collective

action. As time passed, however, these spaces became fragmented and increasingly dependent on individual effort. Survivors, volunteers, and supporters were often left to navigate this environment on their own, adapting their behavior to platform dynamics and improvised coordination practices rather than being supported by structures. Rather than treating these dynamics as temporary coordination problems, this synthesis frames them as design challenges shaped by how dignity, visibility, and responsibility are structured within existing aid environments.

When viewed through a dignity-centered design framework by Miso Kim (2021), these dynamics reveal ongoing threats to dignity as autonomy. Survivors seeking support online were frequently required to share personal details or justify their situations publicly. In many cases, they did not actively choose the form of help that best matched their circumstances, but instead accepted what was available or offered. This constrained form of agency was closely tied to the individualized nature of post-disaster recovery, where needs shifted from urgent, large-scale necessities to smaller, ongoing, and context-specific challenges shaped by living conditions and limited access to resources. However, digital platforms and formal aid systems largely remained standardized. As a result, survivors were often required to adapt to systems or platform logics, and accept one-size-fits-all solutions that did not reflect their everyday needs truly.

Within this environment, credibility emerged as a form of ongoing effort. Survivors frequently engaged in self-disclosure, and justification to be perceived as legitimate, often using apologetic language. From a dignity-centered framework perspective, this places an additional burden on individuals who are already in vulnerable situations. Instead of being supported by systems that assume good faith while enabling respectful verification, survivors were required to actively perform trustworthiness.

Dignity as interpersonal care helps explain how responsibility was distributed across the support ecosystem. Care was often carried out through informal intermediaries: individuals who took on the roles of amplifying needs, coordinating aid, and following up on unresolved cases. While these efforts were motivated by empathy and solidarity, the lack of shared structures meant that emotional and logistical responsibilities accumulated at the individual level. Many participants described feeling personally responsible for outcomes they could not control, leading to exhaustion and eventual withdrawal. In practice, people substituted for missing systems, temporarily absorbing coordination, verification, and emotional labor that would otherwise be supported collectively. This arrangement places care at risk by making it dependent on personal endurance rather than sustainable structures.

Community resilience theory by Norris et al. (2008) helps clarify both why these informal practices emerged and why they became difficult to maintain over time. Strong social ties enabled rapid grassroots responses, particularly in contexts where institutional support was perceived as slow or insufficient. At the same time, resilience research emphasizes that such capacities require supportive infrastructures to remain sustainable. As time passed, the absence of coordinated information flows, shared prioritization mechanisms, and redundancy led to fragmentation and overload. Although communication remained active across platforms, the lack of clear ways to track needs and confirm support resulted in attention-driven responses. These conditions limited collective problem-solving and reinforced reliance on individuals rather than systems.

Within this context, trust appears as a condition closely tied to dignity rather than as a purely institutional attribute. Trust was shaped by whether survivors could ask for help, whether supporters could engage without uncertainty or suspicion, and whether aid relationships felt respectful and meaningful. When credibility depended on exposure, verification relied on informal judgment, and coordination was sustained through personal sacrifice, trust became fragile. The gradual erosion of trust did not indicate a loss of solidarity, but reflected the strain of operating within environments that lacked protective and sustaining mechanisms.

Overall, this synthesis points to a central tension in long-term post-disaster support. While individual willingness to care and help remains strong, existing systems struggle to translate these capacities into durable and dignified forms of assistance. From this perspective, the core challenge is not how to motivate people to act, but how to design systems that allow care to continue without emotional sacrifice from individuals. Informal, peer-to-peer practices demonstrate commitment and solidarity, without defined structures, become difficult to sustain. This synthesis therefore establishes a design position that understands post-disaster aid not as a problem of mobilization, but as a challenge of structuring dignity, trust, and responsibility over time.

5.4 Key areas for development and design opportunities

Based on the insights gathered through online observations and interviews, several areas emerged where design interventions could meaningfully strengthen peer-to-peer support during long-term post-disaster recovery. Rather than addressing isolated issues, these areas respond to recurring patterns identified in the research. Together, they outline how digital support systems might move beyond short-lived forms of digital solidarity and better align with survivors' evolving needs.

Therefore, future systems need to reduce fragmentation and better support peer-to-peer exchanges by providing shared structures for expressing, discovering, and responding to needs. They should preserve dignity by enabling individuals to articulate needs without being forced into public exposure. Interactions must distribute emotional and practical burden more evenly, instead of relying on individual volunteers to coordinate, verify, and follow up on support. Support mechanisms should remain adaptable to different phases of recovery, responding not only to moments of urgency but also to ongoing, everyday needs. Verification processes need to be present but respectful, fostering trust without requiring invasive proof. Finally, systems should make long-term, low-visibility needs discoverable to supporters' intentions and capacities, while ensuring participation feels safe, meaningful, and sustainable over time.

- Adaptive Systems for Evolving Phases of Recovery
  There is a need for digital tools that can adjust to the shifting nature of post-disaster needs: from urgent, high-volume coordination in the early phase to smaller, recurring, everyday needs in the long period of recovery. Designing systems that can transition alongside these phases offers an opportunity to create continuity where current platforms fall short.

- Dignity-Centered and Trust-Building Mechanisms
  Survivors require ways to express needs without being pushed into unwanted visibility, while supporters need confidence that their contributions are directed toward legitimate and timely needs. This creates a shared opportunity space for integrating respectful verification, privacy control, and thoughtful visibility design under a unified approach that strengthens dignity and trust at the same time.

- Inclusive and Sustainable Participation Models
  Current support ecosystems often lack clear and accessible ways for people to participate, leaving many motivated supporters unable to engage. At the same time, a growing distrust toward formal institutions has strengthened the desire for more direct forms of assistance where the impact of one's contribution can be seen and felt. Designing systems that offer flexible, transparent, and easy-to-engage pathways can both broaden participation and support the direct, peer-to-peer exchanges. Such mechanisms can distribute responsibilities more evenly and foster more sustainable forms of long-term support.

- Flexible Peer-to-Peer Support for Long and Low-Visibility Needs
  Long-term recovery is shaped by ongoing, low-visibility needs that often fall outside the scope of standardized, top-down aid. These needs are small and context-dependent, and frequently overlooked as public attention declines. There

is an opportunity to design flexible, responsive peer-to-peer support pathways that make such needs more visible, understandable, and actionable.

6. CONCEPT DEVELOPMENT

The goal of the concept development phase in this thesis is not only to propose new solutions, but to ensure that the emerging design is grounded in the lived experiences of earthquake survivors, informed by supporters' behaviours and coordination practices. Rather than generating ideas in isolation, this phase builds directly on insights gathered from interviews, online observations, and literature, ensuring that the concept remains connected to the emotional, practical, and systemic needs identified throughout the research. The following sections outline the key ideation exercises and concept directions that were developed as a result.

6.1 Empathy mapping

Empathy mapping is a synthesis tool used in human-centered design to visually organise what users say, think, do, and feel, making emotional and cognitive insights more explicit and actionable (Interaction Design Foundation, n.d.). It helps designers identify patterns and underlying motivations that are not always visible when insights remain scattered across interview transcripts or observation notes. This is especially important in contexts where emotional dynamics influence behaviour, as in post-disaster support systems.

In this thesis, empathy mapping was applied to two central user groups: survivors and supporters, to build a better understanding of their emotional landscapes before coming up with any design ideas. By translating scattered qualitative data into a visual, comparative format, this method provides a grounded point for concept development: it clarifies how people navigate help-seeking and help-giving, what kinds of interactions place emotional or cognitive strain on them, and where opportunities may exist to build a more supportive, empowering system. The full empathy maps are provided in the Appendix 6.

6.2 Personas

Personas are fictional yet research-grounded representations of key user groups, created to capture their goals, behaviours, constraints, and perspectives in a concise and relatable format (Cooper et al., 2014). While empathy mapping helps surface emotional and cognitive insights, personas distill these insights into clear user archetypes that can guide decision-making throughout concept development. They serve as a practical tool for keeping users present in the design process, ensuring that emerging ideas respond to real needs rather than abstract assumptions.

For this thesis, two personas were developed to reflect the core users engaged in post-disaster peer support: a 37-year-old mother and disaster survivor with children, and a 35-year-old woman, a teacher, who has a daughter and wishes to donate items. These personas helped translate findings into tangible reference points, enabling a more focused and human-centered ideation process. By articulating users' typical motivations, challenges, expectations, and daily realities, personas make it easier to anticipate how different individuals might navigate support systems and what kinds of design opportunities may better address their situations. The full persona profiles are provided in the Appendix 7 and served as reference points throughout the concept development phase.

6.3 Ideation exercises: How might we?, what if?, analogy thinking, and metaphors

In design, ideation exercises provide structured yet creative ways to explore new possibilities and directions without committing to a single direction in the beginning. The tools used in this phase, How Might We?, What If?, analogy thinking, and metaphor ideation, are widely recognised methods for reframing problems, triggering creative reasoning, and supporting different exploration paths in human-centered design.

How Might We? questions help convert complex insights into actionable opportunities by reframing challenges as open-ended prompts (IDEO, 2015). On the other hand, What if? questions allow for speculative thinking to imagine different futures by pushing the current limitations (Dunne & Raby, 2013). According to Gassmann (2008), analogy thinking encourages designers to look beyond their initial area and gain insights from unrelated areas that address similar emotional and structural issues. Meanwhile, metaphor ideation helps designers see a problem differently, both emotionally and mentally, and opens up new ways to reimagine interactions.

Through these ideation exercises, the aim was not to arrive at concrete features immediately, but to critically question how help-seeking and help-giving are currently structured in post-disaster contexts. This phase focused on exploring alternative ways these interactions could be imagined, especially in relation to exposure, emotional labour, and the challenges survivors face when navigating existing help-seeking practices.

The "How Might We?" questions were used to reframe research insights into opportunity-oriented prompts that foreground emotional and relational challenges. Questions such as "How might we enable survivors to express their needs without feeling exposed?", "How might we reduce the emotional burden of asking for help?", and "How

might we make help-seeking feel less like a public performance?" helped articulate the discomfort and vulnerability associated with current practices of publicly sharing needs. Other prompts, including "How might we make it easier for people to respond to the needs?" and "How might we reduce uncertainty and hesitation for people who want to respond to needs?", shifted attention toward the experience of those willing to help, highlighting the importance of clarity, trust, and emotional safety on both sides of the interaction. Together, these questions reframed the problem space toward the quality and tone of the interaction itself.

Building on this reframing, "What If?" questions were used to challenge assumptions and open up speculative alternatives. Questions such as "What if people initiated support instead of survivors asking for it?" directly questioned the expectation that survivors must actively and repeatedly expose their needs in order to receive help. Similarly, "What if asking for help was like making a wish?" encouraged thinking beyond transactional or demand-driven models of support, inviting softer and less confrontational ways of expressing need. At this stage, these questions were not intended to define solutions, but to loosen existing mental models and allow different relational dynamics between survivors and donors to be imagined.

Analogy thinking further supported this exploration by drawing inspiration from systems and practices outside the disaster context that already manage anonymity, indirect giving, or emotionally safe participation. The tradition of Secret Santa, for example, offered a useful analogy for anonymous, intention-based giving, where support is provided without direct interaction or personal exposure. Similarly, e-commerce wishlists suggested ways in which needs can be presented in a neutral and structured format, allowing others to respond based on their own capacity rather than emotional pressure. These analogies were not treated as models to replicate, but as reference points that revealed alternative logics of matching, visibility, and participation.

Metaphor ideation complemented these analogies by shaping the emotional framing of help-seeking. Metaphors such as wishes, notes, pools or baskets, and ideas like letters in a bottle or wishes sent to the universe helped reimagine how needs might be expressed without carrying the weight of urgency, justification, or public scrutiny. A letter in a bottle, for instance, suggests sending a need outward without knowing who will respond, while still holding the possibility of connection. These metaphors supported thinking about help-seeking as something quieter, more contained, and emotionally protective, rather than as a performance that must convince.

Taken together, these ideation exercises enabled a shift in perspective, from viewing post-disaster support as a series of one-sided requests toward imagining more intentional, indirect, and emotionally considerate forms of peer-to-peer interaction. By combining reframing questions, speculative prompts, analogies, and metaphors, this phase created space to explore how dignity, privacy, and mutuality could be better supported in future design directions.

7. DESIGN PROPOSAL: BIRARADA

This chapter outlines the proposed design solution developed in response to the gaps and insights identified through interviews, online observations, and desk research. It presents the design framework of a digital peer-to-peer (P2P) aid coordination platform that prioritizes trust, dignity, and autonomy in post-disaster support systems. The chapter begins by defining the core principles and overall structure of the concept, followed by a detailed explanation of its main features and value propositions. It further demonstrates how the two main user groups, survivors and supporters, interact with the system through a service blueprint. Finally, the chapter presents an evaluation of the concept and its limitations, followed by a conclusion and opportunities for future development. Overall, the aim of this chapter is to clearly present and critically discuss the proposed design solution, its underlying logic, and its intended contribution to aid coordination.

7.1 BirArada overview

The proposed design solution, BirArada, is a digital peer-to-peer (P2P) aid coordination platform developed in response to the emotional, structural, and ethical challenges observed in post-disaster support systems. It addresses the need for a more accessible and dignity-centered form of assistance by reimagining how needs and offers can be communicated and matched through digital means, particularly in the later phases of recovery, when support becomes more individualized.

Traditional aid systems typically operate through top-down mechanisms, while the digital platforms used during the early stages of disasters often require survivors to publicly express and repeatedly justify their needs, rely on intermediaries, or expose their personal information in order to receive help. BirArada shifts this dynamic by centering support on horizontal, peer-to-peer exchanges, where help is shaped by intention, mutual respect, and shared responsibility rather than hierarchical structures or public self-disclosure.

The name BirArada, meaning “together” in Turkish, was chosen to reflect the platform’s core values of unity, mutual care, and social solidarity. Used in this context, BirArada conveys more than physical closeness, it evokes the idea of being all together, united, and collectively responsive in the face of crisis. Written as a single word, it symbolizes cohesion and shared responsibility, while also positioning survivors and supporters not as opposites, but as members of the same connected community.

- This project proposes BirArada, a digital peer-to-peer (P2P) aid coordination platform developed to address the challenges of long-term and personalized support in post-disaster contexts. The concept is shaped by the persistent gaps in both traditional aid and informal digital networks and aims to create a more relational, flexible, and human-centered support ecosystem.

In BirArada's model, survivors initiate the process by creating their wishes, which represent the needs they are currently facing. Rather than being listed publicly, individual wishes are added to broader wish pools, aggregated and lightly verified categories of needs such as winter clothing, transportation, or educational materials. These pools function as collective representations of ongoing, real needs without requiring individuals to expose themselves or compete for visibility.

Supporters participate by defining the type of help they are able to provide. Once an offer is created, the system presents supporters with a curated set of matching wishes drawn from the pools. Supporters can choose which wishes to support and send offers directly to those individuals. Survivors receive multiple offers privately and select the one most suitable for them, maintaining full agency over the process and avoiding reliance on chance visibility or emotional appeals.

Figure 7.2 Welcome interface mock-up. Created by author. Photos used in the design are from *Unsplash*.

7.2 Main flows and features

The following sections introduce the main user flows and features of BirArada and explain how they operate within the overall system. Each feature is discussed in relation to its underlying design rationale, demonstrating how insights from the research synthesis are translated into design decisions. Where relevant, the sections also include insights from qualitative user feedback gathered from two potential supporters and one earthquake survivor, illustrating how this feedback informed the design of specific features.

Pooled Needs and Collective Visibility

A central structural element of BirArada is the use of pooled needs, in which individual requests created by survivors are aggregated into broader, thematic categories. Within the platform, these requests are referred to as wishes: although they represent needs, this framing originates from the concept development phase and is used intentionally to reduce the emotional burden and stigma associated with asking for help in post-disaster contexts. Instead of appearing as isolated posts or personal appeals, each wish becomes part of a collective pool, such as winter clothing, school supplies, financial aid, or mobility, allowing needs to be made visible at a group level without exposing individual identities.

BirArada shifts attention away from individual storytelling toward shared patterns of need by aggregating individual requests into collective categories. It enables a more balanced form of visibility in which support is guided by demonstrated demand rather than emotionally charged appeals. Pooled visibility also supports clearer organization and situational awareness within the platform. Instead of navigating isolated requests, supporters encounter structured categories that reveal patterns of unmet need across the community. This collective representation helps reduce duplication and competition between requests, while providing a clearer overview of where support is required. As a result, Wish Pools function not only as a protective mechanism for survivors, but also as an organizing structure that balances clarity, fairness, and accessibility.

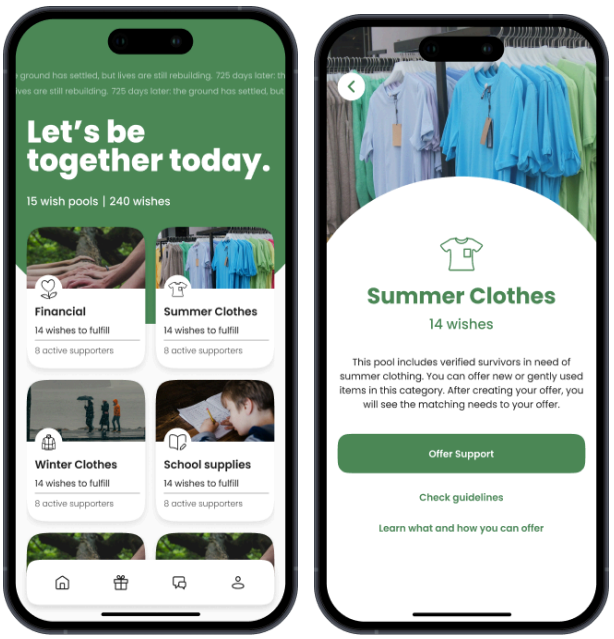

Figure 7.2 Wish pools and entry screen for the wish creation interface mock-ups. Created by author. Photos used in the design are from Unsplash.

Importantly, individual wishes are not directly visible within the pooled view. The pools function as a protective layer, ensuring that specific requests remain shielded until a supporter actively expresses intent to help by creating an offer. Only after this point the system reveals relevant matches, allowing interaction to occur. This intent-first visibility model discourages passive browsing of personal needs, and ensures that access to individual requests is mediated by a demonstrated willingness to support.

The pools are predetermined by the platform and each pooled category is represented through a simple card-based layout within the interface that provides supporters with an immediate overview of where support is needed and the types of assistance they can offer. Each card displays the category name, the number of active wishes awaiting support, and the number of supporters currently engaged with that pool. Beyond communicating the scale of need within each domain, this design also serves as a subtle prompt that broadens supporters' awareness of the diversity of needs that may arise in post-disaster contexts, ranging from highly visible necessities, such as winter clothing or transportation, to less obvious categories like hobby materials, books and reading. The system offers a form of ethical guidance by showing where wishes accumulate and where there is a lack of supporters, highlighting pools that require increased attention or where additional help might be needed. While the presence of many wishes but few supporters signals unmet demand, pools with no current wishes indicate that the category is not actively needed at that moment. This visibility helps donors make informed, intentional decisions while preventing oversaturation in any one category.

When supporters click on a pool, they are taken to a dedicated screen with a clear call-to-action inviting them to become a supporter by creating an offer aligned with that category. For survivors, these pools function differently: although they do not see the supporter-facing pool cards, the same category structure appears as part of the wish creation flow, reminding them of the full range of needs the platform can accommodate. This dual role of the pools, guiding supporters in understanding real-time community needs and helping survivors articulate their own, ensures that the system remains intuitive, balanced, and oriented toward both sides of the support exchange.

Wish and offer creation

The interaction within BirArada begins with the submission of wishes and offers to the platform. The wish and offer creation flows are designed to be intuitive, structured, and sensitive. Both processes rely on easy-to-complete forms that minimize cognitive load and allow users to express needs or offers quickly, to support users with limited digital literacy. Survivors begin by selecting a predefined category, after which the interface presents a set of predefined options tailored to that category. For example, when summer clothing is selected, the available options may include items such as t-shirts, dresses, shorts, trousers, and hats, among others. These options take the form of checkboxes to make the process fast and reduce the pressure to articulate needs in detail. While each category contains its own specific set of selections, the overall flow remains consistent across the platform, ensuring familiarity and ease of use.

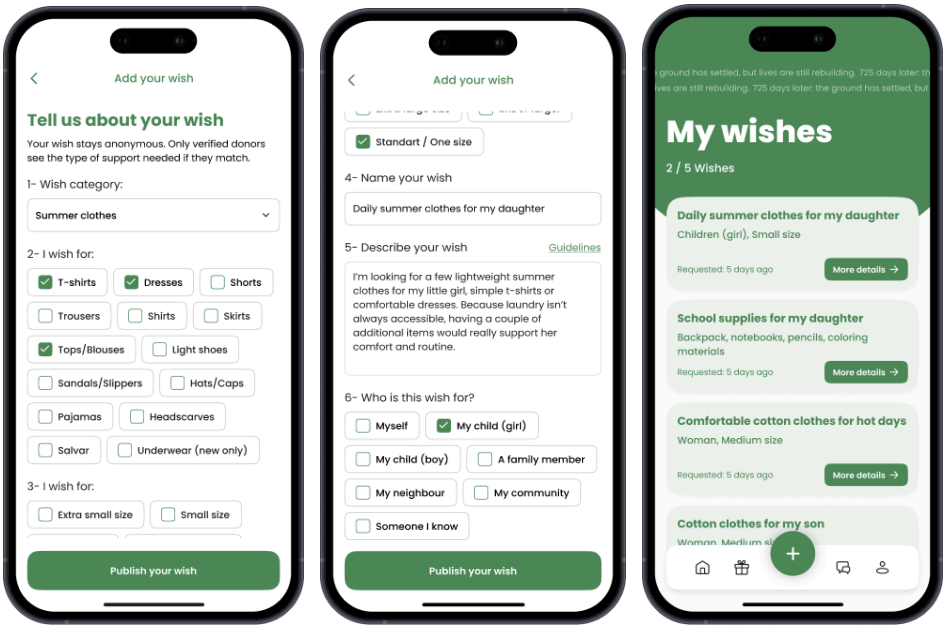

Figure 7.2. Wish creation and survivor homepage interface mock-ups displaying current wishes. Created by the author.

Following the selections, survivors can name their wish and optionally add a brief description. Writing guidelines are accessible within the interface to support users who may be unsure how to express their request. BirArada recognizes that individuals in disaster contexts sometimes need to act on behalf of others; therefore, the wish creation flow includes an option to submit a wish for someone else, such as a child, family member, neighbor, or even a small community group, without requiring the intended recipient to be present on the platform. When a survivor submits a wish, it becomes part of the aggregated wish pool, allowing the system to present it to supporters at the end of their offer creation process whenever a relevant match exists.

The offer creation flow mirrors the logic and design principles of the wish creation process. Supporters begin by selecting a category and are then presented with structured, predefined options describing the type of support they are able to provide. These options are dynamically derived from existing survivor wishes within the selected category. To communicate this logic transparently, the interface includes a brief explanatory note indicating that the available options reflect current needs.

If a specific item does not appear, such as a t-shirt within the summer clothing category, this indicates that no corresponding wishes currently exist. By limiting selectable options in this way, the flow prevents supporters from completing an offer that cannot be matched, reducing frustration and unproductive engagement. At the same time, it provides subtle guidance about which needs are currently present, without exposing individual survivors or revealing sensitive details.

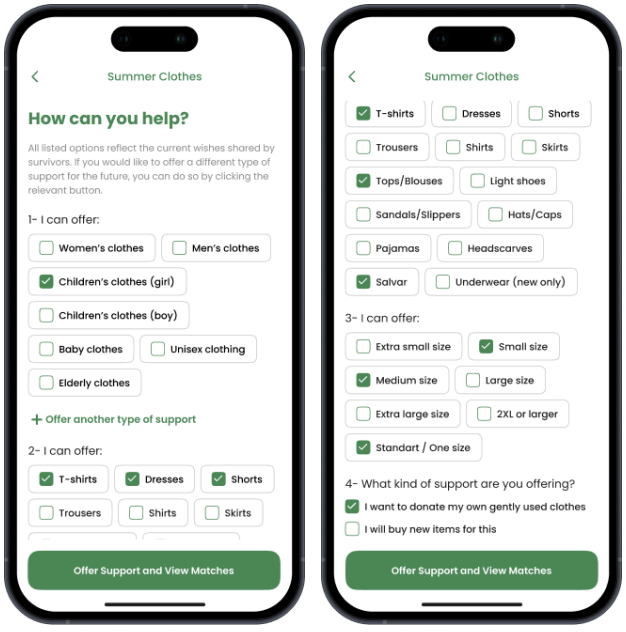

Figure 7.3 Offer creation interface mock-ups. Created by author.

At the same time, the system recognises that supporters may approach participation with different intentions. Some supporters may wish to offer items proactively, even if no immediate match exists: for example, those who can regularly provide clothing or resources and are willing to wait until a relevant need emerges. To accommodate this mindset, the flow includes an option allowing supporters to submit an offer that is not currently listed and to remain available for future matching.

This dual approach reflects insights from qualitative user feedback, where participants expressed concern about creating offers that might remain unmatched and questioned how such situations would be handled over time. In response, the offer creation flow was designed to support both need-responsive contributions and longer-term, availability-based offers, ensuring that supporters can continue engaging with the platform in a way that aligns with their capacity and intentions.

For material assistance, supporters also indicate whether they intend to purchase new items or contribute used items, ensuring clarity, transparency, and alignment with survivors' expectations. Once a supporter submits an offer, the system displays matching wishes. Whole user experience ensures that BirArada's matching system receives standardized and comparable data, enabling more accurate and ethical alignment between needs and available support.

Matching mechanism

BirArada's matching system is designed around a support-first logic in which survivors do not need to seek out help or make themselves visible; instead, the platform takes responsibility for connecting them with suitable supporters. Instead of browsing through individual requests or searching for people to help, supporters begin by defining the type of support they can reliably offer. Once a supporter finalizes their offer, the system retrieves and presents a curated set of relevant wishes drawn from the aggregated wish pools. This ensures that supporters only see needs that align with what they are prepared to provide, reducing mismatches and preventing situations where survivors must wait for the right person to notice them.

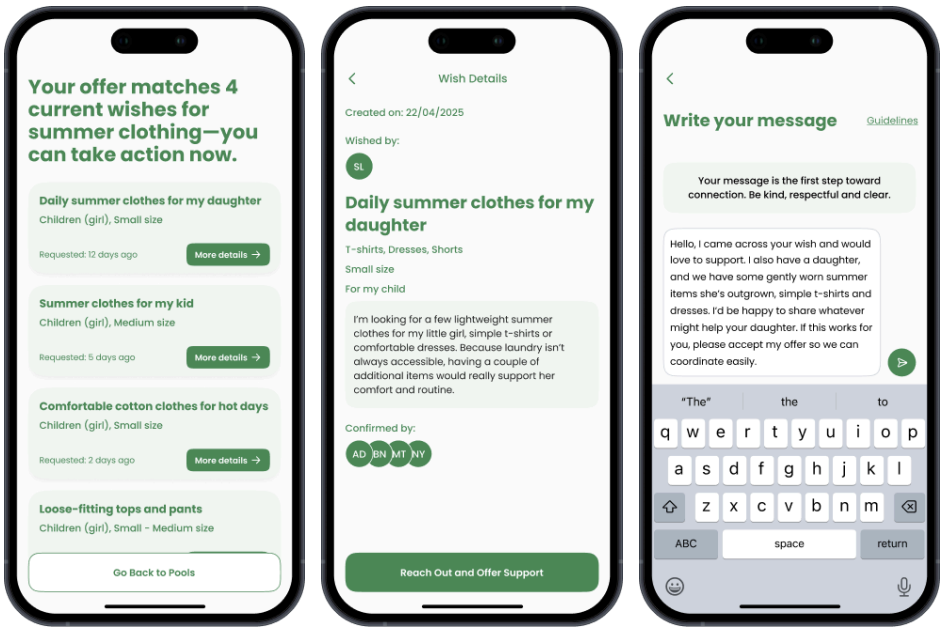

Figure 7.4 Offer matching interface mock-ups. Created by author.

From the survivor's perspective, this mechanism removes the burden of visibility and self-promotion. Survivors do not need to compete for attention, repeatedly explain their circumstances, or hope their request reaches someone who is both available and willing to help. Instead, their wishes wait safely within the wish pools until the system identifies a supporter whose offer corresponds to the type of assistance they need. This design protects individuals from the emotional labor, while still ensuring their needs remain actionable within the platform.

Survivor autonomy and interaction control

A central principle of BirArada is ensuring that survivors retain control over how and when they engage with support. Survivors receive offers privately after their wishes are matched through the system. They can review multiple incoming offers at their own pace and decide which one, if any, to accept. Importantly, the platform allows survivors to articulate multiple and diverse needs over time, for themselves or on behalf of family members, reflecting the reality that recovery is not a single, uniform process but an evolving set of practical and personal requirements.

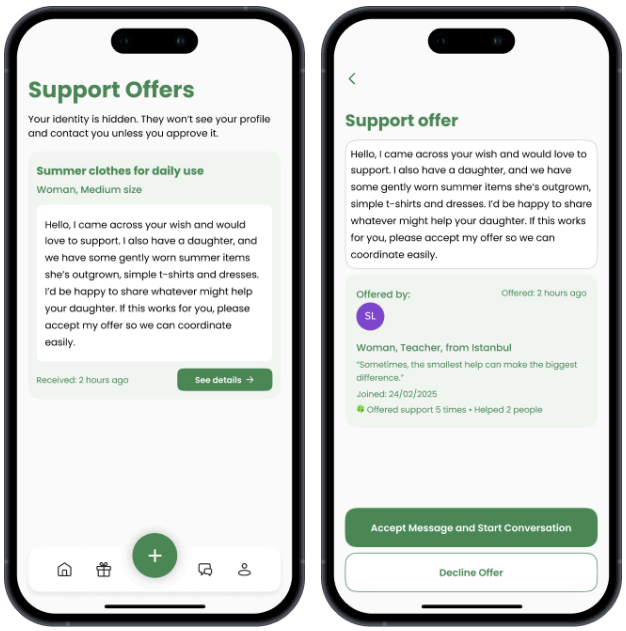

Figure 7.5 Support offers received by survivors interface mock-ups. Created by author.

This design gives survivors the ability to request exactly what they need, when they need it, rather than adapting themselves to generic support packages. Interaction with supporters is governed by consent-based communication: messaging is initiated only after a survivor accepts an offer and remains within the platform, where it can be paused or discontinued at any time. BirArada reframes support as a negotiated and respectful exchange by combining choice, flexibility, and control, while preserving personal boundaries and making survivors active decision-makers in their own recovery process.

Onboarding, verification, and trust-building

Establishing a safe and trustworthy environment is essential for a peer-to-peer aid platform operating in the sensitive context of post-disaster recovery. BirArada approaches this through a combination of lightweight onboarding, context-sensitive verification, and transparent trust cues, all designed to maintain safety without imposing barriers or exposing survivors to unnecessary inspection.

For survivors, the platform incorporates a location-based validation step that confirms whether a user is currently residing in an earthquake-affected area. Instead of requiring formal documents or detailed proof, the system cross-references the user's GPS location or manually entered address with a pre-mapped list of container settlements, temporary housing zones, and designated disaster sites. If the user's location falls within these regions, they are granted access to the request side of the platform. This method provides legitimacy while keeping the process inclusive and respectful of privacy.

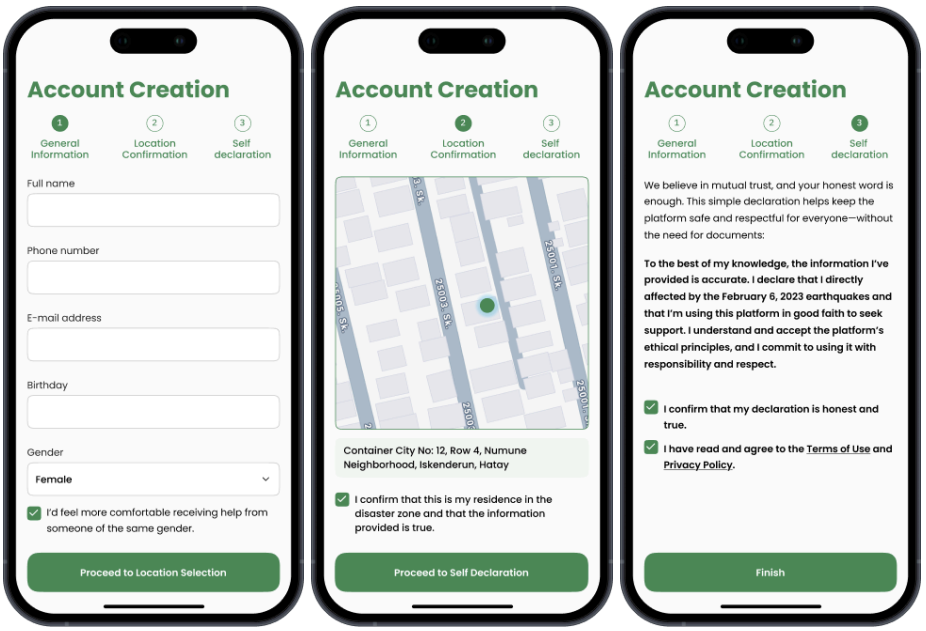

Figure 7.6 Onboarding interface mock-ups. Created by author.

Supporters follow a similarly simple onboarding flow but with an emphasis on transparency and accountability. Supporters can voluntarily add contextual information to their profile, such as their occupation, a short descriptive bio, or a personal statement. These elements help survivors feel more confident when evaluating incoming offers, providing a sense of who the donor is without requiring excessive personal details.

Across both user types, BirArada includes a self-declaration agreement as the final onboarding step. This declaration asks users to affirm that they will use the platform ethically, avoid misuse, and engage in good faith. While not a formal verification method, this commitment reinforces shared responsibility and sets clear expectations for respectful participation within the platform's community.

Additional trust indicators, such as the number of wish pools a supporter supports or the number of fulfilled wishes, are visible to survivors when they receive offers. These cues help survivors make informed decisions about which offers to accept, without forcing them to navigate complex profiles or rely on personal networks.

Together, these elements create a trust framework that is accessible yet reliable, protective yet non-intrusive. Verification remains practical and privacy-sensitive, onboarding remains simple, and trust is built through transparency.

Inclusive and lightweight interface design

BirArada's interface is intentionally designed to be inclusive, lightweight, and usable by individuals with varying levels of digital literacy. Post-disaster contexts often involve

unstable internet connections, limited device access, and users who may not have experience navigating complex applications. To address these realities, the platform prioritizes simplicity in both visual layout and interaction patterns. Screens are uncluttered, navigation is linear, and the design avoids unnecessary terminology or technical language, relying instead on familiar icons, images, clear labels, and supportive microcopy to guide users through each action. Wherever possible, the platform incorporates predefined options, checkboxes, large touch targets, and high-contrast UI elements to enhance ease of use. These choices ensure that individuals who may not be tech-savvy can navigate the platform comfortably, supporting accessibility for people across a wide range of age groups, backgrounds, and technological comfort levels.

While not yet implemented technically, BirArada's design envisions a lightweight system capable of operating under low bandwidth and older devices. These considerations inform the design direction with the aim of minimizing data load and supporting accessibility in constrained environments. This intention is particularly important for survivors in container settlements, temporary shelters, or rural areas where connectivity cannot be guaranteed.

7.3 Value creation

BirArada creates value by transforming how survivors and supporters interact within the post-disaster context. The platform addresses the gaps in traditional and digital aid through a system designed around dignity, privacy, agency, and intentional participation. Its value emerges not only from the features it provides but from the social and relational shifts it enables.

For survivors, BirArada provides a dignified and private way to express their needs through a protected and structured interaction flow. By offering a dedicated platform specifically designed for post-disaster support, BirArada addresses a gap in existing aid environments and helps reduce the vulnerability that often accompanies help-seeking. The platform also reverses the usual dynamic: survivors no longer need to chase support, support comes to them through matched offers. This shift restores agency and gives hope to individuals who struggle to be heard in existing systems, especially those who are more vulnerable, less digitally visible, or emotionally exhausted. Additionally, BirArada allows for personal, specific, and evolving needs, enabling survivors to navigate recovery on their own terms. Through minimal exposure and simplified decision-making, the platform reduces cognitive and emotional load.

For supporters, BirArada creates value by enabling intentional, impact-driven giving. Supporters often want to help but struggle with uncertainty: whether their contribution is

truly needed, whether it reaches the right person, or whether their effort matters. By presenting verified, relevant needs and allowing donors to initiate offers based on what they genuinely want to give, BirArada strengthens trust and encourages deeper engagement. This makes giving more meaningful, targeted, and satisfying while reducing waste and mismatched donations.

The platform also fosters more ethical and equitable aid relationships. Because visibility within BirArada does not depend on emotional storytelling or personal networks, access to support is distributed more evenly, reducing the risk that some individuals become overserved while others remain invisible. The platform shifts support away from hierarchical charity models toward a more balanced and mutual form of aid by structuring interactions in a respectful and transparent manner. Separately, BirArada creates value by strengthening trust and legitimacy in peer-to-peer support. Through structured visibility and mediated access to individual requests, the platform reduces skepticism, making participation feel safer and more credible for all parties.

At a broader societal level, BirArada functions as a form of digital social infrastructure that supports sustained solidarity beyond the immediate disaster response phase. BirArada enables continued participation by lowering barriers to engagement and allowing individuals and communities to contribute at their own pace. Its structure supports long-term involvement from both local and distant supporters, transforming solidarity from a short-lived surge into a more continuous and distributed practice. In this way, the platform complements institutional aid systems by offering an alternative pathway for everyday citizens to participate in recovery efforts, strengthening resilience over time. BirArada also reduces reliance on civil volunteers and individual intermediaries, easing the emotional and logistical burden often placed on them. By enabling needs to be expressed on behalf of others, the platform further extends access to individuals who may be unable or unwilling to engage directly with digital tools. In doing so, BirArada supports more collective forms of care and broadens participation beyond individual users.

7.4 Service blueprint

Service blueprinting is a method used in service design to visualize how users interact with a system and how the system, interfaces, and supporting processes operate behind the scenes to enable those interactions (Bitner et al., 2008; Stickdorn & Schneider, 2011). It is particularly useful in complex, multi-stakeholder contexts because it reveals dependencies, pain points, and coordination requirements that are not visible through interface design alone.

For this project, service blueprinting helped build a clear, holistic understanding of BirArada as a service. By mapping entire journeys, the method made it possible to see how different touchpoints, system actions, and user interactions connect, and where transitions, hand-offs, or supporting processes need to function smoothly to create a coherent experience.

The author created two service blueprints reflecting the core user groups defined in the personas: survivors and supporters. The survivor blueprint follows the journey of a 37-year-old mother and disaster survivor requesting summer clothing for her 5-year-old daughter. The supporter blueprint is based on the scenario of a 35-year-old woman, a teacher, who wants to donate the small clothes of her 7-year-old daughter through BirArada. Both blueprints informed the refinement of the concept and can be found in the Appendix 8.

7.5 Evaluation and limitations

The proposed design of BirArada was evaluated through exploratory qualitative user feedback gathered after the development of the initial concept and prototype. Feedback was collected from three participants, two potential supporters and one earthquake survivor, who were introduced to the context of the project and guided through selected interface screens. The aim of this evaluation was not to conduct formal usability testing, but to understand whether the concept was clear, whether the interaction logic made sense, and whether the design aligned with its intended values.

Overall, participants perceived the concept as understandable and meaningful. The supporter participants described BirArada as a more intentional and respectful alternative to existing informal support channels. From the survivor perspective, the general flow was considered easy to navigate, and the idea of having access to such a platform was seen as potentially helpful in practice. At a general level, this feedback suggested that the core idea of BirArada was able to communicate its purpose and value to different user groups.

At the same time, the feedback sessions raised several questions and tensions that helped clarify the limits and challenges of the proposed design. One recurring concern from the survivor perspective was uncertainty around what happens if no one responds to a submitted wish. This question appeared multiple times during the discussion and pointed to the emotional implications of waiting within peer-to-peer support systems. While the current design does not guarantee responses, the feedback highlighted the importance of acknowledging this uncertainty and of considering how the system might provide reassurance or clarity in such cases. Possible approaches, such as status updates

or supportive system messages, were discussed but were not fully designed within the scope of this thesis.

Another issue that emerged during the sessions related to visibility and transparency. Because survivors do not see the pooled structures that supporters interact with, participants repeatedly asked how wishes would be noticed if they were not publicly broadcast. This revealed a tension between protecting privacy and ensuring that users feel seen. Although the design intentionally avoids public exposure, the feedback made it clear that this logic needs to be communicated more explicitly to survivors so that privacy-preserving decisions do not lead to confusion or mistrust.

From the supporter perspective, discussions highlighted different ways of thinking about contribution, such as offering immediate help versus remaining available for future needs. These conversations also raised questions about what happens when an offer does not result in a match and how supporters understand their ongoing role in the system. This made it clear that the platform needs to support different intentions and expectations, while still providing guidance around how and when support is offered. These insights informed reflections on flexibility in the supporter flows and on how the system can provide continued engagement.

The evaluation presented here has several limitations. The feedback was gathered from a small number of participants, and the insights are not intended to be generalisable. In addition, the discussions were based on early-stage prototype screens rather than a fully functional system, meaning that participant responses reflect anticipated use rather than long-term, real-world interaction. Broader participation and longer-term testing would be needed to better understand sustained engagement, emotional impact, and behaviour over time.

Reflecting on the project as both the designer and the researcher, additional design limitations and open questions were identified. BirArada cannot guarantee that all wishes will receive responses, which reflects a broader limitation of peer-to-peer support systems rather than a failure of interaction design. While the platform aims to reduce harm in such situations by avoiding public exposure and preserving user agency, the emotional weight of unmet needs remains an important consideration for future work. In addition, although BirArada defines initial interaction boundaries, certain moments that involve direct human-to-human interaction, such as messaging, delivery coordination, or address sharing, require further design attention due to their ethical and emotional sensitivity.

Other edge cases were also identified during reflection, particularly around engagement and governance at scale. Scenarios such as supporters sending offers to multiple survivors, survivors submitting a high number of wishes, or mismatches between offered and requested items raise questions about expectation management and potential misuse. These situations were acknowledged but not fully addressed in order to keep the core interaction model focused and accessible. As such, BirArada is presented not as a finished system, but as a structured design proposal that prioritises dignity, clarity, and intentional participation, while remaining open to further iteration and development.

7.6 Conclusion and future development

This chapter presented the final design proposal of BirArada, a peer-to-peer digital support system developed in response to the limitations and ethical challenges observed in post-disaster aid coordination. The design aimed to explore how digital platforms can support survivors and supporters beyond the immediate crisis phase, while reducing emotional burden and reactive forms of participation. Through structured interaction flows and design decisions, BirArada proposes an alternative way of coordinating aid that prioritises dignity, trust, and agency.

The key innovation of BirArada lies not in introducing a new aid mechanism, but in rethinking how aid is made visible, initiated, and negotiated. By separating visibility from exposure, the platform allows survivors to be seen and matched without requiring public self-disclosure. The intent-first contribution model shifts participation away from emotionally driven responses toward more deliberate and capacity-based support. Together, these design decisions demonstrate how interaction design can shape the social and ethical conditions of aid, rather than focusing solely on efficiency or scale.

One direction for future development could be expanding the types of support that can be coordinated through the platform. While the current proposal focuses primarily on material and immediate needs, longer-term recovery phases may involve different forms of support such as training, education, or skill-sharing. Exploring how such non-material contributions could be integrated without increasing emotional pressure or complexity represents an important opportunity for further work.

Future development could also further explore how group or community-based wishes are structured, represented, and coordinated. While BirArada is intentionally designed as a peer-to-peer system, the design already allows wishes to be created on behalf of communities. This acknowledges that some needs in post-disaster contexts are shared, rather than being purely individual. For example, collective requests may relate to clothing for children, hygiene products for women, or supplies for people living in the

same area. Further work could examine how these collective wishes build on the existing peer-to-peer logic while responding more effectively to needs articulated at a group level.

Another potential direction for future development relates to credibility and coordination around both individual and collective needs. Future iterations of BirArada could explore peer-based confirmation mechanisms, where wishes are supported or confirmed by others. Such signals could increase trust and strengthen coordination while remaining aligned with the platform's design principles.

Future development could also examine lightweight community-oriented features that support communication beyond individual matches. Rather than functioning as a general social media platform, BirArada could support survivor-led updates and situational reporting, allowing individuals or groups to share developments, needs, or information in a structured and trusted environment that brings supporters and other survivors together and supports collective awareness. Over time, relationships and acts of solidarity formed through the system could also be documented or shared on a voluntary basis, contributing to collective narratives of recovery without placing additional pressure on survivors.

Finally, future work could explore how BirArada connects to a wider ecosystem beyond the platform itself. Rather than sharing individual or identifiable wishes, aggregated signals about current types of needs could be communicated through social media or partner organisations, to raise awareness and invite potential supporters to participate. Such extensions would require careful consideration of consent, representation, and context, but they highlight the potential of BirArada to function as a flexible infrastructure that supports outreach.

BirArada represents an exploration of how peer-to-peer support systems can be designed with greater attention to dignity, agency, and care. By rethinking visibility, participation, and trust at an interaction level, the project demonstrates how design can act as a bridge between individual goodwill and collective recovery. As such, BirArada contributes not only a platform concept, but a design perspective on how solidarity can be structured more ethically and sustainably through digital systems.

SUMMARY

This thesis explores how peer-to-peer digital support systems can be designed to better support earthquake survivors during long-term recovery. The study is grounded in the context of the 2023 Kahramanmaraş earthquakes in Türkiye, where citizen-led aid and digital solidarity, facilitated through social media and communication tools, played a crucial role in addressing urgent needs, particularly in the early phases of the disaster. While these efforts enabled rapid mobilization and collective action, they gradually dissolved over time and could not be sustained as recovery progressed.

The objective of this thesis is to identify the limitations of existing digital aid practices and to explore how design can support more sustainable peer-to-peer support beyond the immediate crisis phase. To achieve this, the research examined post-disaster aid practices through a design-oriented lens, focusing on how survivors, supporters, and informal coordinators experienced this process over time.

The findings indicate that social media and informal digital networks are poorly suited for long-term recovery. As public attention declines, some survivors with ongoing needs turn to social media to seek support, however, this often requires public exposure and repeated justification in order to access peer-to-peer support. To make peer-to-peer support possible, informal intermediaries often emerge; however, responsibility tends to concentrate on these individuals, leading to fatigue and withdrawal over time. At the same time, many individuals are willing to offer peer-to-peer support but lack accessible and reliable ways to do so. Together, these dynamics reveal structural gaps in current aid ecosystems, in which peer-to-peer support is sustained through personal exposure and individual effort rather than through designed and durable support structures.

Based on these insights, the thesis proposes BirArada, a peer-to-peer digital aid coordination platform designed to support long-term post-disaster recovery. The concept is grounded in values of dignity, privacy, equity, and shared responsibility, and aims to address structural limitations in existing aid practices. By supporting survivor agency and offering clearer pathways for participation, BirArada seeks to enable more intentional, survivor-centered, and sustainable forms of peer-to-peer support beyond attention-driven and exposure-based systems. While further development, testing, and stakeholder collaboration are required, the thesis concludes that intentional, dignity-centered digital design can play a meaningful role in strengthening long-term post-disaster recovery and supporting more resilient forms of collective care.

KOKKUVÕTE

Käesolev magistritöö käsitleb kogukonnapõhiste digitaalsete tugisüsteemide rolli maavärina üleelanute pikaajalises taastumisprotsessis. Uuring lähtub 2023. aasta Kahramanmaraşi maavärinate kontekstist Türgis, kus kodanikualgatuslik abi ja digitaalsed suhtluskanalid olid olulised kiireloomuliste vajaduste katmisel, eriti katastroofi varajases faasis. Sotsiaalmeedia ja muud digitaalsed vahendid võimaldasid kiiret mobiliseerumist ja info liikumist. Samas ilmnes, et need praktikad ei olnud taastumise edenedes püsivad.

Magistritöö eesmärk on kaardistada olemasolevate digitaalsete abipraktikate piirangud ning uurida, kuidas disain saab toetada kestlikumat vastastikust abi ka pärast esmase kriisifaasi lõppu. Selle saavutamiseks analüüsiti katastroofijärgseid abipraktikaid disainikesksest vaatenurgast. Fookuses olid üleelanute, abistajate ja mitteametlike koordinaatorite kogemused ning nende kogemuste muutumine ajas.

Uuringu tulemused näitavad, et sotsiaalmeedia ja mitteametlikud digivõrgustikud ei ole sobivad pikaajaliseks taastumiseks. Avaliku tähelepanu vähenedes pöörduvad osad jätkuvate vajadustega üleelanud sotsiaalmeedia poole, et abi otsida. See eeldab sageli isiklike lugude avalikku jagamist ning vajaduste korduvat põhjendamist. Vastastikuse abi toimimiseks tekivad sageli üksikud inimesed, kes hakkavad täitma vahendaja rolli. Aja jooksul koondub vastutus nendele üksikisikutele, mis suurendab läbipõlemise riski ja viib nende taandumiseni abitegevusest. Samal ajal esineb palju inimesi, kes on valmis vastastikust abi pakkuma, kuid kellel puuduvad selged ja usaldusväärsed võimalused selleks.

Need tähelepanekud osutavad struktuursetele puudujääkidele olemasolevates abisüsteemides. Vastastikune abi kujuneb suurel määral abivajajate avaliku nähtavuse ja üksikisikute isiklike pingutuste tulemusena, mitte läbimõeldud ja kestlikest tugistruktuuridest.

Nende järelduste põhjal pakub magistritöö välja BirArada digitaalse vastastikuse abi koordineerimise platvormi. Platvorm on suunatud pikaajalise katastroofijärgse taastumise toetamisele. Kontseptsioon lähtub väärikuse, privaatsuse, võrdsuse ja jagatud vastutuse põhimõtetest ning püüab leevendada tuvastatud struktuurseid piiranguid. Lahendus toetab üleelanute tegutsemisvõimet ja pakub selgemaid võimalusi abis osalemiseks. Eesmärk on võimaldada teadlikumaid ja kestlikumaid vastastikuse abi vorme, mis ei põhine avalikul enesepaljastusel ega ajutisel tähelepanul.

Kuigi kontseptsioon vajab edasist arendamist, testimist ja koostööd erinevate huvirühmadega, järeldab magistritöö, et sihipäraselt kavandatud ja väärikust arvestav digidisain võib toetada pikaajalist taastumist ning tugevdada vastastikuse abi toimimist katastroofijärgses kontekstis.

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APPENDICES

Appendix 1: Semi-structured interview guide for NGO representatives

Organizational Role and Response Over Time

1. Can you describe the role your organization took on after the earthquake? What was your personal role in this process?
2. When you compare the early response period with the following months, how did your organization's work change?
3. What kinds of shifts or differences emerged over time?

Encountering and Addressing Needs

4. What types of needs do you typically encounter from the field?
5. Through which channels do these needs usually reach your organization?
6. What has it been like for you to work with these needs?
7. Over time, did you encounter more individualized or diverse needs?
8. Do you see differences between institutional forms of support and people's everyday, ongoing needs?
9. Were there situations where people's expectations became challenging to manage?

Digital Communication, Visibility, and Trust

10. Which digital channels do you use for communication?
11. What role does social media play in your work?
12. Do you encounter direct requests for help through social media?
13. What do you think these requests indicate?
14. How do you approach issues of trust and transparency in your work?

Community-Driven and Peer-to-Peer Support

15. How do you view community-driven or peer-to-peer support initiatives?
16. What kinds of observations or experiences have you had with these types of efforts?

Reflections on Long-Term Recovery

17. In your view, which areas of long-term recovery have been most challenging after the earthquake?
18. What do you think could contribute to making recovery processes more effective or sustainable over time?

Appendix 2: Semi-structured interview guide for survivors and local residents

Post-Earthquake Living Context & Everyday Life

1. Can you describe your experience after the earthquake? Where are you currently living?
2. How does this living arrangement feel for you?
3. How did your everyday life change in the weeks and months following the earthquake? Can you describe your current daily life? How does everyday life function in the place where you live?
4. What aspects of living there do you find challenging? What kinds of problems or complaints do you have? At the same time, are there any positive aspects or things that are working well?

Needs and Their Evolution Over Time

5. What were your most urgent and immediate needs after the earthquake?
6. How did your needs change as time passed? What are your most important needs at the moment?
7. Are there needs that are still difficult to meet today? Why do you think these needs are difficult to address?

Access to Support and Aid Structures

8. When you need support, where do you usually turn? How does the process of receiving support work where you currently live? What formal or informal support channels are available?
9. How do you evaluate the support being provided at the moment?
10. Do you think support is sufficient? Do you think it reaches people equally? Overall, how would you describe the way aid and support currently function?

Experiences of Asking for Help

11. How does asking for help make you feel? How do you feel about asking for help in public or online spaces, such as social media?
12. Did you use social media, WhatsApp groups, or similar platforms to ask for help or communicate needs? If so, what was that experience like for you?

Observations and Reflections

13. Beyond your own experience, are there situations you have heard about or observed around you?
14. If there were something that could make the process of asking for help easier or more humane, what do you think that could be?

Appendix 3: Semi-structured interview guide for volunteers

Role and Forms of Volunteering

1. Can you describe what you did during the earthquake response?
2. What kind of volunteer activities were you involved in?
3. How did you become part of this process?
4. What were you doing at the beginning, and what was added later? Did your responsibilities change over time?
5. What kinds of experiences did you have during this process?
6. What worked well for you? What did you find challenging or difficult?

Change Over Time and Observations

7. How did the process change over time? When you compare the early period with the current situation, what feels different?
8. What do you think caused these changes?
9. What kinds of general patterns or situations did you observe?

Digital Platforms and Tools

10. Which platforms or tools did you use most frequently? In what ways did these platforms help you?
11. In which areas did you feel they were insufficient or limiting?

Emotional Impact

12. How did this process affect you emotionally? Were there moments when you felt overwhelmed?
13. What made it difficult to continue this role over the long term?
14. What kinds of support or tools do you think could have made this work more sustainable?
15. What would have made your role easier?

Perspectives on Helping and Giving

16. How do you generally view helping others or making donations?
17. What does helping in a meaningful way mean to you? What kinds of support feel most satisfying or impactful for you?

Appendix 4: Semi-structured interview guide for individual donors

Engagement with the Earthquake and General Attitudes Toward Helping

1. What was the earthquake period like for you personally?
2. During that time, what kinds of things did you do, or were you able to do, related to the earthquake? (You can mention anything that comes to mind, whether small or large.)
3. How do you generally feel about helping others or offering support?
4. During the earthquake period, what did the idea of offering support mean to you?
5. Which ways of supporting felt closer to you? What kinds of support felt more meaningful or more feasible for you?

Decision-Making and Hesitation

6. What factors influenced your decisions about whether or how to offer support?
7. Were there moments when you wanted to help but hesitated or decided not to?
8. How important was trust for you in this process?
9. What made helping more difficult? Did you experience uncertainty or confusion at any point?
10. Did your willingness or motivation to offer support change over time? What do you think contributed to this change?

Perceived Impact and Meaning

11. Is it important for you to see the impact of the support you provide? How does seeing (or not seeing) impact affect your motivation?
12. What could have made it easier for people like you to offer support?
13. In your opinion, what is missing for people who want to help but are unsure how to do so?

Appendix 5: Interview consent form template (In Turkish)

BİLGİLENDİRİLMİŞ GÖNÜLLÜ KATILIMCI ONAM FORMU

Bu formun amacı, katılımcının bu araştırmada yer almakla ilgili temel bilgileri edinmesini ve anlamasını sağlamak, ayrıca katılımcının onayını almaktır. Bu form, araştırmanın içeriği, amaçları, katılımcıların hakları ve kişisel verilerin nasıl korunacağı hakkında bilgiler sunmaktadır. Form, katılımcının anadilinde ve anlaşılır bir şekilde hazırlanmıştır.

Araştırma Adı: Dijital Mecralarla Afet Yardımını Geliştirme

Araştırmacı: Aysel Ceren Polat, ceren-polat@hotmail.com

Kurum: Tallinn Teknoloji Üniversitesi ve Estonya Sanat Akademisi, Tasarım & Teknoloji Gelecekleri Yüksek Lisans Programı (Tallinn University of Technology and Estonian Academy of Arts, MSc Design and Technology Futures), Ehitajate tee 5, 19086 Tallinn

Araştırma Amacı: Bu araştırma, 6 Şubat 2023 tarihinde meydana gelen Kahramanmaraş depremi sonrasındaki yardım faaliyetlerini ve süreçlerini incelemeyi ve dijital mecraların potansiyelini kullanarak bu süreçleri daha verimli ve kapsayıcı hale getirebilmek için tasarım yöntemleriyle çözümler geliştirmeyi amaçlamaktadır. Bu araştırma, araştırma konusuna ilişkin katılımcılardan genel bilgiler edinmeyi ve katılımcıların deneyimleri ile bakış açılarına dair içgörüler elde etmeyi amaçlamaktadır.

Araştırma Hakkında Bilgilendirme: Araştırma kapsamında sizinle görüşme gerçekleştirilecektir. Görüşmenin 45-60 dakika sürmesi planlanmıştır. Katılım tamamen gönüllü olup, 13/04/2025 tarihine kadar herhangi bir gerekçe göstermeksizin araştırmadan çekilebilirsiniz. Kişisel bilgileriniz gizli tutulacak olup, üçüncü kişilerle paylaşılmayacaktır. Bu çalışmadan elde edilecek bilgiler yalnızca bilimsel amaçlarla sadece araştırmacı tarafından analiz edilecek ve anonimleştirilmiş olarak raporlanacaktır. Araştırma verileri güvenle saklanacak ve araştırma sürecinin tamamlanmasından sonra veya eğer araştırma sürecinde araştırmadan çekilirseniz, güvenli bir şekilde silinecektir.

	Lütfen size uygun seçeneği işaretleyin
Yukarıda araştırmayla ilgili belirtilen tüm bilgileri okudum ve anladım. Bilgileri gözden geçirme, soru sorma ve cevap alma fırsatı buldum.	Evet / Hayır
Katılımımın tamamen gönüllü olduğunu ve 13/04/2025 tarihine kadar gerekçe göstermeksizin araştırmadan çekilebileceğimi anlıyorum.	Evet / Hayır

Araştırma kapsamında verdiğim bilgilerin ve kişisel verilerimin nasıl kullanılacağını ve nasıl korunacağını anladım.	Evet / Hayır
Görüşmenin ses kaydının alınmasına izin veriyorum.	Evet / Hayır
Araştırmaya katılmayı onaylıyorum.	Evet / Hayır

Katılımcının Adı Soyadı

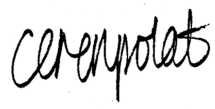
Tarih

Katılımcının İmzası

Aysel Ceren Polat

Araştırmacının Adı Soyadı

Tarih

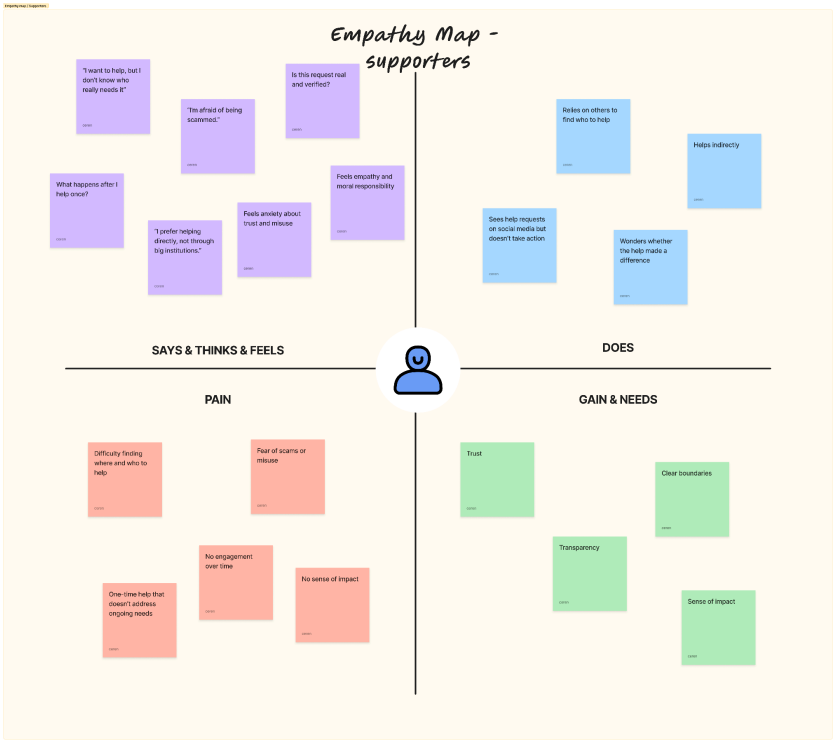


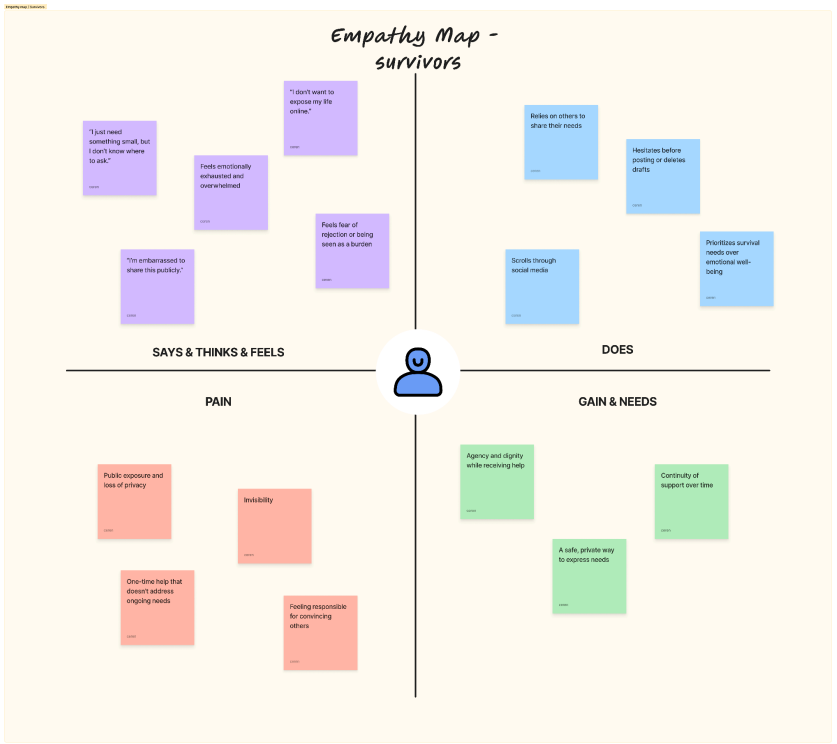
Araştırmacının İmzası

Appendix 6: Empathy Map

Link to the Figma (FigJam) board:

https://www.figma.com/board/eETgR2JRlg4mbBBAfiRsZV/BirArada--Service-Blueprint---Empathy-Map---Persona?node-id=0-1&t=4h4Bgfc6cnVcwh3j-1

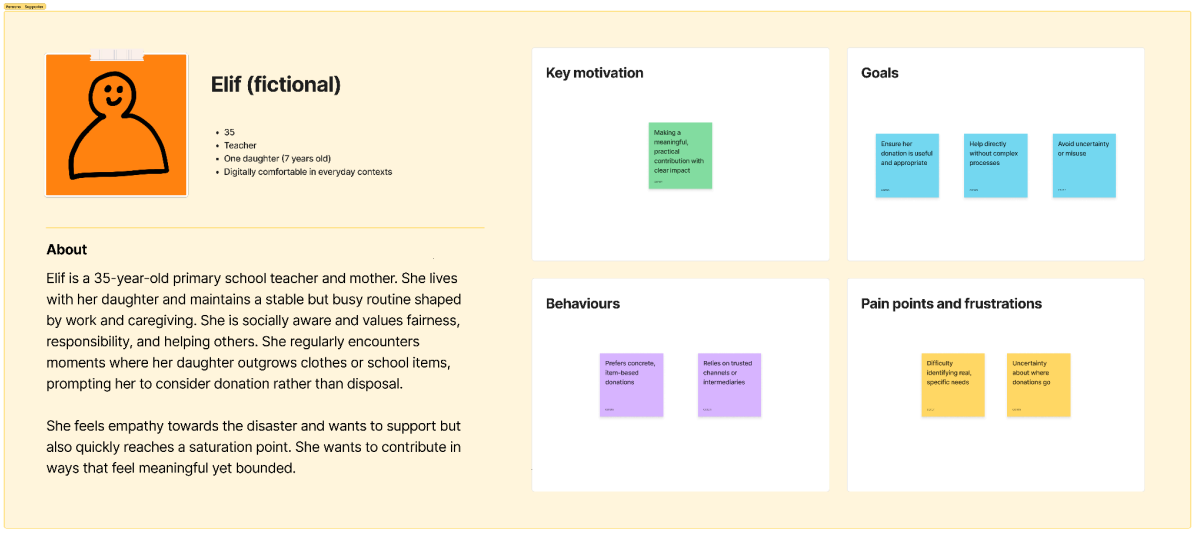


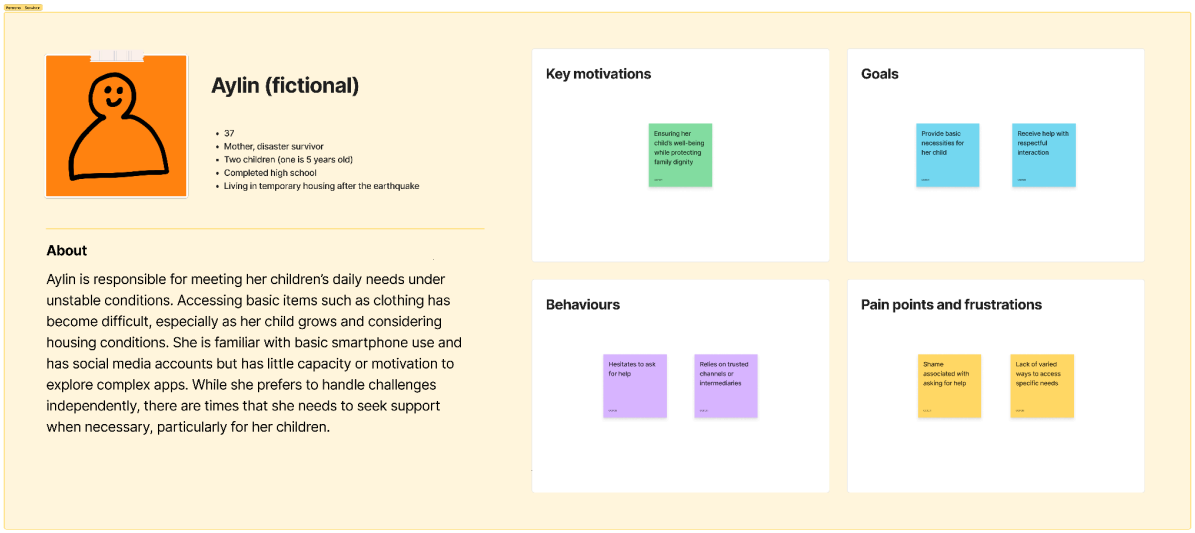


Appendix 7: Personas

Link to the Figma (FigJam) board:

https://www.figma.com/board/eETgR2JRlg4mbBBAfiRsZV/BirArada--Service-Blueprint---Empathy-Map---Persona?node-id=0-1&t=4h4Bgfc6cnVcwh3j-1





Appendix 8: Service blueprints

Link to the Figma (FigJam) board:

https://www.figma.com/board/eETgR2JRlg4mbBBAfiRsZV/BirArada--Service-Blueprint---Empathy-Map---Persona?node-id=0-1&t=4h4Bgfc6cnVcwh3j-1