ARPHA Proceedings

Proceedings CAUSummit 2025, 0008-0016
doi: 10.3897/ap.9.e0008

10th Anniversary
World Summit: Civil Engineering-Architecture-Urban Planning Congress

Designing for Social Innovation: Apps as a Tool for Co-Creation

İrem Ercan[1, a)], Didem Kan [2], Onur Mengi [1]

[1] *İzmir University of Economics, Faculty of Fine Arts and Design, Department of Industrial Design, Sakarya Street, No: 156 35330 Balçova, İzmir, Türkiye*
[2] *İzmir University of Economics, Faculty of Fine Arts and Design, Department of Interior Architecture and Environmental Design, Sakarya Street, No: 156 35330 Balçova, İzmir, Türkiye*

[a)] Corresponding author: irem.ercan@ieu.edu.tr

Abstract. A shared understanding of active participation of many urban actors is necessary for a socially sustainable urban environment. This study explores how various urban stakeholders including government agencies, city collectives, citizens, academic institutions, and businesses co-create by leveraging their unique skills and exchanging work and knowledge via an online platform in order to foster social innovation at urban scale. The present research hypothesizes that establishing a participatory mobile application enabling city inhabitants to actively engage and assume shared responsibilities in urban processes can strengthen the sense of belonging of citizens. The design research methodology employed in this study is rooted in the context of co-creation and participatory design. The study is structured around the hypothetical development of the Give a Hand mobile application, a participatory platform designed to make education, health, culture, and art services more accessible for everyone. By enabling participation and co-creation among city inhabitants, the platform aims to optimize public service delivery, saving both time and resources as well as to achieve more inclusive urban environments. More importantly, this platform facilitates urban value creation through mechanisms of volunteering and donations, contributing to the enhancement of the public services. This conceptual framework also helps us understand how designers serve as social innovation facilitators by developing community-driven, inclusive platforms for public service delivery and engagement. The practical implications of this study provides a sustainable network, fostering a stronger sense of belonging among the citizens. By incorporating social networking features, the app facilitates communication, collaboration, and the creation of new community networks, thereby enhancing active participation and contributing to the overall social fabric of the city. The results show that digital platforms can serve as scalable instruments for participatory governance when they are created using the concepts of social innovation and co-creation. The conceptual mobile app provides a flexible and transparent framework for cooperation between corporations, colleges, citizens, and public agencies.

Keywords: Social innovation; social impact; co-creation; mobile app; urban belonging

Published by CAUSummit and peer-reviewed under the responsibility of "World Summit: Civil Engineering-Architecture-Urban Planning Congress - CAUSummit-2025".

SOCIAL INNOVATION AND CO-CREATION

Social impact and co-creation concepts are important tools for creating social innovation. Co-creation, defined as the joint production of outcomes through the active involvement of various stakeholders, has developed as a important mechanism for improving social impact and creating more inclusive, sustainable urban policies and

services [1]. By engaging in co-creation, urban actors can use collective knowledge and enhance participatory governance models that enable social innovation to develop [2]. Cities require comprehensive design solutions that integrate multiple services and are developed through co-creation processes, enabling diverse urban actors to collaboratively generate social impact. Different urban actors can contribute and collaborate in system designs within the scope of their own capacities.

Social innovation is the process of providing creative and effective solutions to solve social problems. This process aims to bring together all actors in society for a common purpose, creating a just and healthy future. While the concept of innovation often brings to mind technological progress, when combined with social innovation, we understand that this progress is people-centered. This study elaborates this discussion with explaining the steps of designing the social innovation project idea as a mobile app called Give a Hand. Social innovation truly represents progress for people. It is, in fact, an art of dialogue that eliminates boundaries and mediates across public, private, and sectors that brings the question ‘How can we define this art of dialogue?’

Firstly, it is essential to build a team. The success of social innovation depends on bringing together individuals from diverse disciplines. This ensures that the team communicates in a common language and works effectively. The personal qualities of the individuals who make up the team are important. Characteristics such as courage, accountability, resourcefulness, ambition, psychological resilience, and the ability to act outside the accepted norm should be valued. This is why social entrepreneurs are valuable. This team sees innovative paths and opportunities and is ready to try these new paths even when established institutions are reluctant. Secondly, an in-depth analysis of the problems of local people is required. At this stage, stakeholders are met, if necessary, to understand local problems and challenges. Workshops are held, the root of the problem is explored, and conceptual ideas for effective solutions are developed. This process is critical for understanding community needs and developing innovative solutions to address them. Lastly and the most crucial phase is the implementation of innovative solutions. The primary goal of all actors in this process is to create social value [3].

The central aspect of social innovation is that the value created by the solution appeals to society as a whole. The fundamental goal is to provide a common benefit for everyone. Social issues have a complex and multilayered structure that affects numerous actors. Hence, the success of social innovation relies on the active involvement of all societal actors as the private sector, the public sector, and civil society, must find common ground. In short, social innovation is the goal of creating a healthier and more equitable future by producing sustainable solutions with a holistic approach together with social actors to create sustainable social impact on the community [4].

When discussing social innovation, which is based on innovation and creativity, it's also necessary to mention impact-focused design. We define impact-focused design as designs that directly benefit the environment, people, or society, sometimes resulting from multidisciplinary work or sometimes solely from a designer's observations. Social innovation emerges from the goal of creating a collective social impact. This keeps the spirit of thinking together, designing together, and producing together at the core. While creating solutions together, it establishes the foundation for collaboration on transforming and evolving. Therefore, we as city actors who are members of the university discussed social innovation, social impact and design with the community to develop the Give a Hand mobile app, driven by our belief that universities have a responsibility to take action for the communities.

Individuals' thoughts, and consequently the emotions and behaviors they experience based on these thoughts, undergo change and transformation as a result of their interactions within the social environment. In this sense, the impression and impact universities have on society plays a significant role. Individuals need to be aware of this, of course, but institutions now need to consider social impact beyond their understanding of social impact. Carroll traced the origins of social responsibility concept back to the 1960s [5]. Carroll referenced Jones, who defined it as being aware of the social impacts in any given practice [6]. Chile and Black also cited a UNESCO (1998) report, emphasizing that universities are not only responsible for educating young people but also for fostering their awareness of how to apply knowledge in alignment with social responsibility [7,8].

In other words, universities are expected to contribute in other aspects such as social, economic, ethical, ethnic diversity, and humanism. Graduates as another city actors deeper understanding of the society, they will become a part of and the quality of the impression and impact the university has on society as a legal entity are crucial. These elements will not only ensure that the institution maintains a strong relationship with its stakeholders and areas of practice, but will also enhance the quality and effectiveness of all communities. It's necessary to implement creative and innovative ideas outside of traditional methods, and to set a goal of sustainable change rather than simply improving something. A bond of trust must be established between society and the university, and therefore, the focus should no longer be on social responsibility but on social impact. Therefore, in this study, we propose as a part of university members, within a conceptual framework that approaches cities as dynamic organisms whose sustainability and liveability can be enhanced through collective consciousness [9]. Creating a socially sustainable

urban environment requires fair and active participation from a variety of urban stakeholders, along with a shared understanding of responsibilities. This study puts forward the hypothesis that a participatory mobile application that enables city inhabitants to engage directly and share responsibility in urban matters can reinforce their sense of belonging to the city. The initiative is grounded in a collaborative framework that brings together designers and non-designer users as urban participants. As university professionals positioned as urban actors within the design field, we propose this project from a design-oriented perspective. The conceptual mobile application, Give a Hand, is designed to facilitate access to educational, health, cultural, and artistic services while optimizing time and budget in public service delivery, through collective involvement and solidarity among citizens. The app is framed within the principles of social innovation, social impact, and co-creation. Give a Hand designed to foster urban value creation through volunteering and donations, thereby supporting and enhancing public services. This collective effort enables expanded public service delivery in cooperation with municipalities, ultimately improving quality of life and strengthening urban attachment through active engagement. Furthermore, the app offers a transparent platform where various stakeholders such as government agencies, city collectives, citizens, academic institutions, and businesses have a chance to access, select, and contribute to urban services. By proposing this participatory mobile app, the goal is to deepen urban inhabitants' sense of belonging and build a sustainable solidarity network with strong social impact. This impact is further reinforced by integrated social networking features that encourage user interaction, collaboration, and the development of new community connections. This study demonstrates the importance of using co-creation and co-design concepts as tools in creating social impact through the content and intended outcomes of the conceptual mobile application developed within the scope of the research.

In this context, co-design also mentioned as collaborative design emerges in the manner of critical approach grounded in participatory and user-centered design methodologies [10]. Co-design promotes long-term social benefits by actively involving diverse community members and stakeholders including employees, citizens, partners, and end-users during the design process to ensure that outcomes are inclusive and responsive [11]. Co-design concept is linked to the collaborative creativity of designers or the collaboration of designers with non-designers of design creation procedure [12]. Rather than designing for people, this approach states designing with people, thereby increasing the coherence and impact of the final product. Within current design landscape, the designer's role is evolved rather than acting as sole problem-solvers, designers increasingly serve as facilitators of co-creation, connecting diverse actors, orchestrating participatory activities, and enabling collaborative exploration of ideas, needs, and solutions [13]. Design processes now involve a broader ecosystem of stakeholders rather than just direct clients. By adopting co-design and co-creation practices, designers not only enhance the creativity and effectiveness of design processes but also cultivate socially sustainable innovations that reflect the collective intelligence and lived experiences of communities [14]. This collaborative model highlights the ethical and practical necessity of shared authorship in design, ensuring that decisions about environments and services are made with, not apart from, those who are affected by them.

Following this approach, the study proposes a conceptual mobile application titled Give a Hand, which seeks to demonstrate how designers can engage in collaboration with non-designers within urban context to create social impact through co-creation. A detailed explanation of the Give a Hand mobile app is provided in the next chapter.

CO-CREATION CASE STUDY: *GIVE A HAND* - CONCEPTUAL MOBILE APP

Concept and Design Rationale

As one of the urban actors, we designed the conceptual mobile app proposal through discussions focused on the terms of social innovation, social impact and co-creation/co-design. A mobile application proposal titled Give a Hand has been proposed to generate social impact in urban contexts through a participatory strategy and a co-creation approach. Unlike existing models, this proposal is designed to operate at the urban scale by dynamically adapting its interface (specifically in terms of actors, objectives, and context) to the unique potentials of cities. Give a Hand mobile app is considered as an output that uses co-creation as a tool that is formed based on cities unique inputs including actors, aims and context (Figure 1).

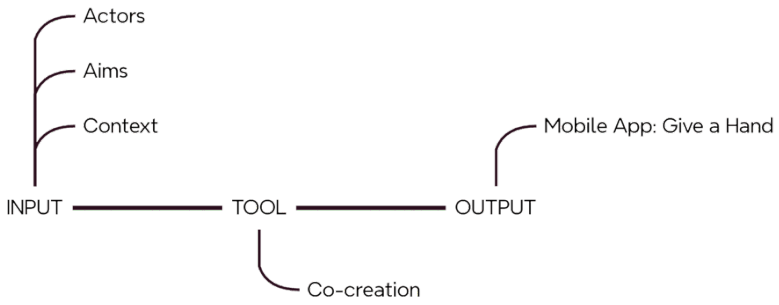

FIGURE 1. Framework of proposed mobile application

Objectives and Scope

The primary objective of the application is to enhance the efficiency of public service delivery by optimizing time and budget through the active and collective participation of urban inhabitants. Grounded in the co-creation framework, the application facilitates city inhabitants' engagement during design and application of public services, thereby contributing to improved urban life quality [15]. Furthermore, such participatory mechanisms are shown to foster a stronger sense of belonging among citizens by enabling them to take an active role in shaping their urban environments [16]. Give a Hand allows developing the co-creation ideas of city inhabitants through the volunteering and donating system and their implementation as public service that can be published in the app interface. It presents a tool for government agencies, city collectives, citizens, academic institutions, and businesses to collaborate and share labor, experience and innovation on a city scale. It is a mobile app where different actors such as government agencies, city collectives, citizens, academic institutions, and businesses have a chance to actively participate and share their responsibilities towards the urban environment. It enables a space that creates social innovation through community engagement that uses volunteering and donation strategies aimed at improving both the urban built environment and the municipal services provided to the city.

User Types and Roles

The application flow begins once the user registers and chooses a profile type either as a volunteer/donator or a public service creator. The flow is shaped according to the user's decision to either define a need for a service within the created urban network or contribute to the provision of such a service, and then proceeds to the next step. If the user selects the volunteer or donator profile, they must create their profile by entering information such as location, available time, interests, and previous experiences. Once this profile is saved, the user becomes a permanent member of the platform and can update their data periodically. On the other hand, if the user is a public service creator, they are required to define data such as the location of the service, required time, types of work, necessary materials, estimated costs, and visual materials related to the tasks. Once this stage is completed, the requested urban service becomes publicly accessible through the service-sharing option in the app interface. After the data is processed and the "save" or "share" options are completed according to the selected user type, the individual or task is directed to the main feed pool within the app flow.

Application Functionality and Workflow

Based on the various data in the homepage, users can save or choose tasks and be a volunteer or donator. If the users select being volunteer, they can contribute the physical, maintenance, technical, designing or digital tasks. Besides, if the users select to be a donator, they can provide material, money, artworks or second-hand goods through the mobile app interface. After the service contribution process is completed in the flow, the users can share the completed tasks, they can invite other related actors in the city or rate other completed works and profiles (Figure 2).

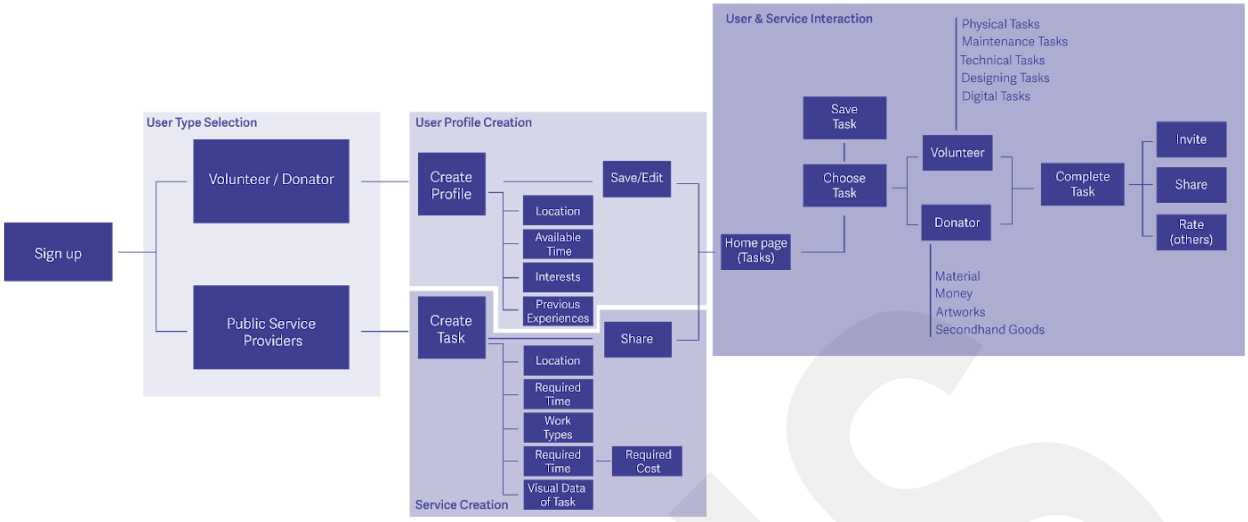

FIGURE 2. Flowchart of the mobile app Give a Hand

The services that public institutions allocate a certain budget and time each year will be presented to the citizens in a transparent manner through this mobile app proposal. Each user will be able to actively volunteer for urban services. Besides, people who do not have time to be volunteers, who are not physically able to work or who do not prefer to be volunteers have a chance to be active donators. There are task definitions and donation styles in different scales that each user is able to find appropriate in this collective network. In the mobile app, there are different types of work packages such as education, health, culture and art that actors can actively choose and participate in the process. In the education case, to explain how the mobile app works through co-creation principle, consider the schools in your city. Any school has a painting work, and there's a budget and timeframe for it. The public service institution (this could be carried out by a public authority such as the Directorate of National Education or by the administration of any private school) defines this task through Give a Hand mobile application. Volunteers and donators, who are the other actors in the city, see this posting and everyone chooses how they can help in their own way. Different urban actors are capable of also being users of various profiles such as dye company, mural artist and painter in the use-case scenarios. In this school case, if the user is the owner of a dye company, they must first complete the sign-up and profile creation steps within the application flow. Then, they should select the school painting task that has been defined by the task creator and added to the main feed. Based on the task details and the number of people required, the necessary dye and brushes will be provided by the dye company. Secondly, if the user is a mural artist, they must first complete the sign-up and profile creation steps within the application flow. Then, they should select the school painting task that has been defined by the task creator and added to the main feed. Based on the task details and the number of people required, the mural artist can paint with other artists or designers as volunteers. After the completion of the task (or it can be a compilation of some part), they can share it in app or other connected social media accounts. As an outcome, the murat artist/s and designer/s who worked for these tasks can gain new experiences and find new networks for their professions. Lastly, if the user is a painter, the first sign-up and profile creation steps should be completed. Then the painter user should select the school painting task that has been defined by the task creator and added to the main feed. Based on the task details and the number of people required, a painter is able to provide labor for this task as a volunteer. After the task completion, it is possible to meet painter and dye company owners, designers and artists who worked for these tasks and expand their network through this mobile app. Besides, in the task compilation process, the actors have a chance to share this work with other professionals who could help with finding more job opportunities and networks (Figure 3).

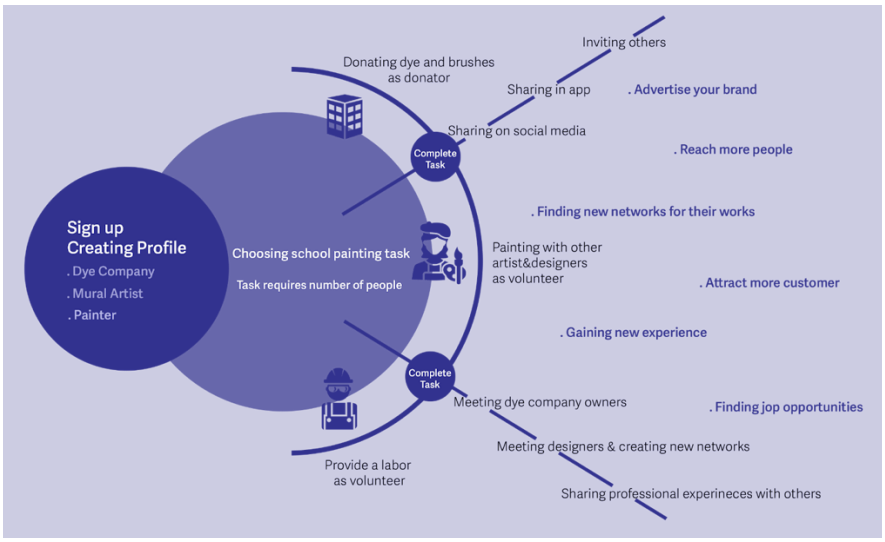

FIGURE 3. Use-case scenarios

Features Supporting Community Engagement

Each participant completes the suitable task and contributes to their city. Thus, the application facilitates budget and time savings in the response to the urban services. The resources conserved through this efficiency are able to be transparently shared to support additional services for citizens. Furthermore, the platform enables users to submit individual feedback and service requests related to urban infrastructure, allowing for direct citizen engagement. When these requests are processed on the city map, they are collected and prioritized as tasks on the platform's main interface. This mechanism fosters a sense of urban belonging, promotes public sensitivity, and enhances environmental awareness among city inhabitants. Additionally, different from the other applications, the Give a Hand app offers a social networking space where users can engage with one another and expand their professional networks. Moreover, individuals and companies that contribute donations benefit from the opportunity to advertise within the application, creating an encouragement for private sector participation.

Interface Design and User Experience

While designing the application interface, existing highly demanded applications social media platforms have been examined. The user profile creation strategy commonly observed on these platforms was also adopted in our design proposal in a way that allows users to access information immediately upon downloading the app, without having to register unless they wish to access more detailed information or actively participate in the process, in which case the registration process begins. Users can first select the areas they are interested in and then access the feed without any registration process (Figure 4).

In this way, the users are able to visually explore the ongoing tasks, their content, and teams. Within this main homepage flow, they are also able to browse other users' profiles and examine the overall framework of the public service task (Figure 5).

However, if they want to participate in detail and take part in the task compilation process, they need to follow the sign-up and account creation steps. If the user is a volunteer or a donator, they are able to create their profile by entering the relevant information accordingly. In addition, if the user is a public service creator, they have a chance to create a profile and define a task by entering the required data into the application (Figure 6).

Location-Based Services and Participation

When users want to learn more about task details within the app, they must complete the signup process. The signup begins with identifying which type of actor they are. Users can start creating their profile by selecting one of

the options: public institutions or city inhabitants. Then, they are able to mark their current location using the location feature. This location feature is designed to match users with relevant tasks within nearby areas. If the user is a public institution, they must enter their location data and define the public service they want to initiate, along with its detailed information. If the user is a city inhabitant, they must also enter their location data. After completing this step, users might select the task categories they are interested in. If there is an ongoing or incomplete task within the selected category, the user might choose it and send a participation request. In doing so, they take the first step toward creating social impact for their city by participating in the co-creation process (Figure 7).

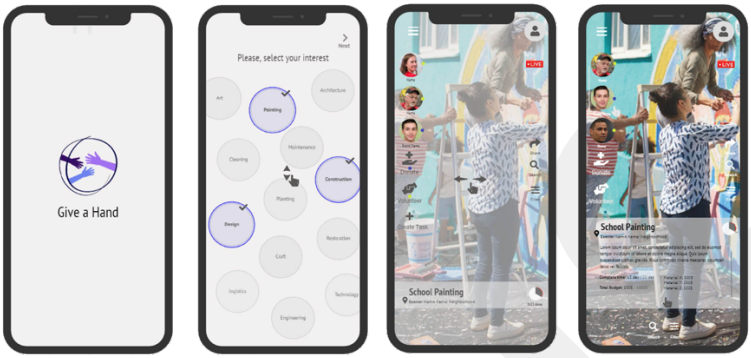

FIGURE 4. Interface of opening page and default feed flow

FIGURE 5. Exploration phase in the feed for general informations of task and team

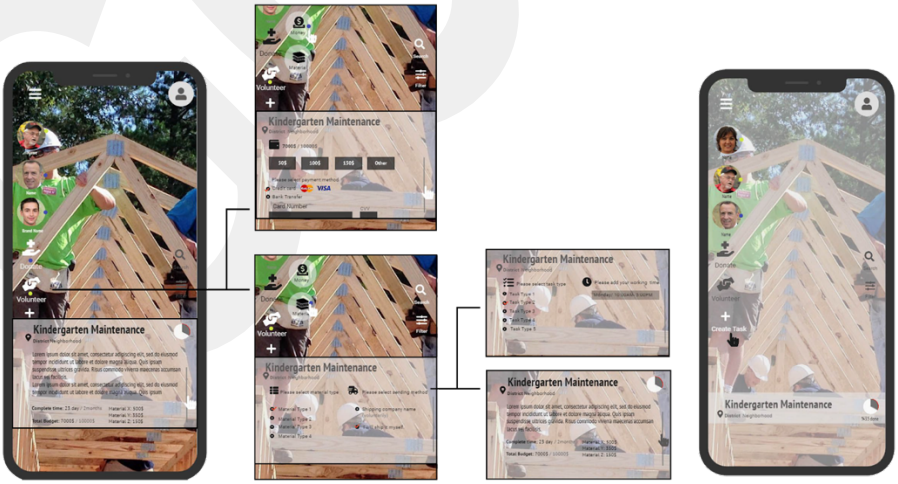

FIGURE 6. Selection of being volunteer or donator and seeing the details of position

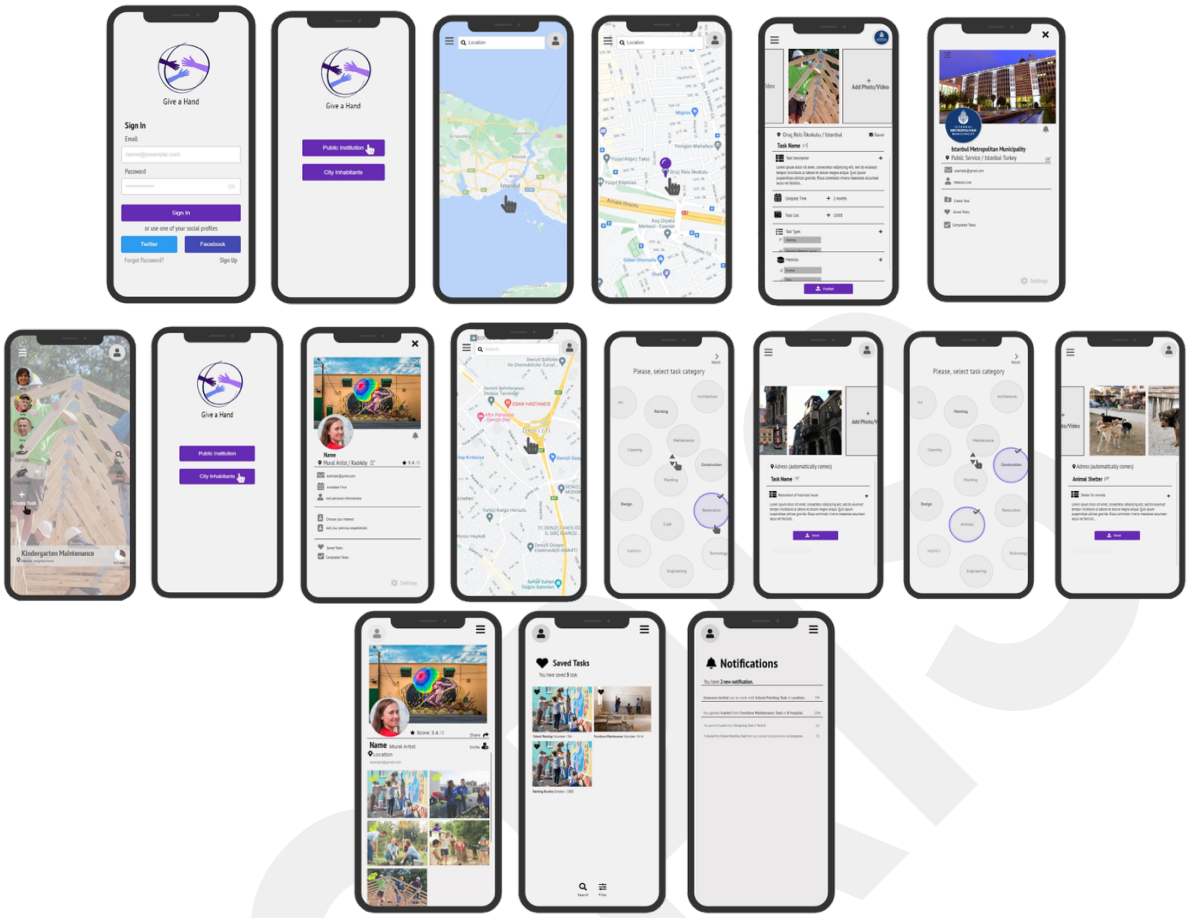

FIGURE 7. Sign up and exploration of task details stages for app users, create task and profile editing pages

CONCLUSION

This study investigates how co-creation may act as a driver of social innovation in urban environments by bringing the collaborative potential of diverse urban actors. Co-creation reflects powerful mechanism for generating socially inclusive and sustainable solutions by involving various stakeholders in the design process [10, 12]. The proposed conceptual mobile application, Give a Hand, has been designed to underline the need for more inclusive, participatory, and resource-efficient approaches to delivering public services as response to complex urban challenges [3, 4]. Regarding the principles of co-creation, social impact and social, the app facilitates collaboration among urban stakeholders including government agencies, city collectives, citizens, academic institutions, and businesses, enhancing accessibility to the education, health, culture, and art services in cities. The study's methodology centers on co-creation together with the participatory design approaches as described in the literature [13], emphasizing designer's role as a facilitator that allow for cooperative exploration of urban solutions through the designed user scenarios. The goal of the Give a Hand is to draw attention to how the app's interface and features foster civic engagement and network-building. It intends to highlight how users can participate either as service contributors or beneficiaries, supporting volunteering and donation-based mechanisms that align with the specific demands of the urban environment.

The study reflects on participatory design paradigm where the stakeholders collaboratively shape the solution through a mobile application that enables collective action. The practical implications of this research is to generate measurable social impact through a digitally enabled co-creation network, and to encourage shared responsibility, sense of belonging, and active citizenship. It also offers a scalable tool for participatory governance model for the integration process of co-creation into the design of urban policy and service delivery. Future research will focus on

testing the app's usability, participation dynamics, and effectiveness through the user perspective, and how mobile platforms like Give a Hand can facilitate long-term urban transformation by embedding co-creation practices into everyday life.

REFERENCES

1. T. Brandsen, T. Steen, and B. Verschuere, Co-Production and Co-Creation: Engaging Citizens in Public Services (Routledge, London, 2018), pp. 1–320.
2. J. Torfing, E. Sørensen, and A. Røiseland, "Transforming the public sector into an arena for co-creation: Barriers, drivers, benefits, and ways forward," Administration & Society 51, 795–825 (2019).
3. G. Mulgan, S. Tucker, R. Ali, and B. Sanders, Social Innovation: What it is, Why it Matters and How it Can be Accelerated (Said Business School, Oxford, 2007), pp. 1–38.
4. G. Cajaiba-Santana, "Social innovation: Moving the field forward. A conceptual framework," Technol. Forecast. Soc. Change 82, 42–51 (2014).
5. A. Carroll, "Corporate Social Responsibility," Business & Society 38, 268–295 (1999).
6. E. Jones, "Social responsibility activism: why individuals are changing their lifestyles to change the world" Ph.D. thesis, University of Colorado, Boulder, CO, 2002.
7. L. M. Chile and X. M. Black, "University–community engagement: Case study of university social responsibility," Educ. Citizsh. Soc. Justice 10, 234–253 (2015).
8. UNESCO, World Declaration on Higher Education for the Twenty-First Century, for Vision and Action, World Conference on Higher Education (UNESCO, Paris, 1998), pp. 1–15.
9. F. Capra and P. L. Luisi, The Systems View of Life: A Unifying Vision (Cambridge University Press, Cambridge, 2014).
10. E. Manzini, Design, When Everybody Designs: An Introduction to Design for Social Innovation (MIT Press, Cambridge, MA, 2015).
11. M. Kang, P. Choo, and C. E. Watters, "Design for Experiencing: Participatory Design Approach with Multidisciplinary Perspectives," Procedia Soc. Behav. Sci. 174, 830–833 (2015)
12. E. B. N. Sanders and P. J. Stappers, "Co-creation and the new landscapes of design," CoDesign 4, 5–18 (2008).
13. T. Mattelmäki and F. Sleeswijk Visser, "Lost in co-X: Interpretations of co-design and co-creation," in Nordes 2011: The 4th Nordic Design Research Conference (Nordic Design Research, Helsinki, 2011).
14. J. Halse, E. Brandt, B. Clark, and T. Binder (Eds.), Rehearsing the Future (The Danish Design School Press, Copenhagen, 2010).
15. W. H. Voorberg, V. J. Bekkers, and L. G. Tummers, "A systematic review of co-creation and co-production: Embarking on the social innovation journey," Public Manag. Rev. 17, 1333–1357 (2014).
16. E. Manzini and F. Rizzo, "Small projects/large changes: Participatory design as an open participated process," CoDesign 7, 199–215 (2011).