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Matching: Designing a Two-Sided Platform for Research Participant Recruitment and Engagement

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Abstract. Recruiting suitable participants is an important but time-consuming step in research, and potential participants may have difficulty finding relevant study or lack motivation to repeatedly participate. This article introduces a two-sided research recruitment platform called Matching, aiming to improve the recruitment experience for researchers and participants. The design process included user research, user journey mapping, interface prototyping, usability testing, and an incentive preference experiment. Matching integrates research creation, participant matching, screening, scheduling, communication and participant management into a centralized workflow for researchers. For participants, the platform offers personalized study discovery, eligibility checking, scheduling, and a combined reward system including cash rewards, platform points, and level-based benefits. In addition, the results of the small incentive preference survey support the design of the incentive mechanism of the platform. Overall, this article demonstrates a user-centered two-sided platform that considers both recruitment efficiency and participant engagement.

Keywords: Research Participant Recruitment, Two-Sided Platform, Human-Computer Interaction, Participant Engagement, Incentive Design

1. Introduction

Recruiting suitable participants is an important step in the research of human-computer interaction, user experience, and related fields. However, this process requires substantial time and effort. Researchers not only need to reach a sufficient number of people and find interested participants, but also need to screen them according to specific requirements and coordinate their participation. Digital recruitment enables researchers to reach a wider pool of potential participants, but the success of digital recruitment is context-dependent and may be influenced by the population, study setting, available resources and recruitment strategy [1, 2]. For example, studies on social media recruitment show that online channels can provide opportunities for efficient and cost-effective recruitment of a large population, but some challenges still remain regarding targeting, representativeness, privacy, and recruitment management [1, 2].

Online participant recruitment platforms offer another solution to this problem. They can connect researchers with potential participants and find individuals who meet the research requirements [3]. Some recent articles of online research platforms also suggest that recruitment sources might affect

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participant quality and recruitment costs [4]. The results suggest that researchers still need effective ways of recruiting suitable participants and of managing the recruitment process.

At the same time, recruitment is a two-sided process. Potential participants need to determine if a study is relevant, reliable and worth their time. Reward is an important influencing factor. Monetary reward has been shown before to motivate research participation and the amount and type of incentive may influence willingness to participate [5, 6]. Some people value immediate monetary reward and some prefer other forms or long-term value. Recent research on gamified rewards also found that game-based incentive mechanisms may influence engagement, but the effects may vary from person to person [7].

To address these issues, the author designed Matching, a two-sided research recruitment platform built to provide support for both researchers and participants. The guiding question of this work is: How can a two-sided research recruitment platform improve the effectiveness and affordability of participant recruitment for researchers, while also providing a more engaging and rewarding experience for participants?

The user research findings from this study are translated into personas, user journeys, design goals, wireframes, and a high-fidelity interactive prototype. The resulting platform offers functions such as study creation, participant matching, screening, scheduling, communication, and participant management for researchers; and functions such as study discovery, eligibility checking, scheduling, and rewards mechanisms for participants. An incentive preference experiment involving 15 participants was also conducted to compare a cash-only incentive with a mixed model. These activities explored how to consider recruitment efficiency and participant motivation in two-sided system design.

2. Related work

2.1. Digital participant recruitment

Digital technology has changed how researchers recruit participants. It is possible for researchers to get in contact with a wider and more distributed population using social media and online participant recruitment services. Darko et al. reviewed work on social media recruitment and found that "the use of social media is a cost-effective and efficient strategy for recruiting research participants" [1]. Their review also showed that social media was used to reach populations that may otherwise be difficult to reach. Zindel also found that social media offers useful targeting capabilities, such as the ability to reach rare groups, but he also points to the limitations that researchers have to consider when using these channels [8].

However, not all problems can be solved by digital technology. Goldman et al. highlighted four key factors that affect social media recruitment: required resources, representativeness, online community building, and privacy [2]. Their findings show that recruitment has to be concerned with the characteristics and goals of each study and use different channels. Furthermore, their research also argues that combining multiple online and offline recruitment channels might help to enhance coverage and recruitment effectiveness.

These findings reflect the fact that the design of Matching needs to pay attention to the follow-up work after potential participants are contacted. Researchers need to consider whether the interested participants meet the requirements, how to communicate with them, arrange times and manage the research progress. Therefore, matching regards recruitment as a coherent workflow.

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2.2. Online research platforms and participant matching

More systematic mechanisms for recruitment are provided by dedicated online participant platforms. Palan and Schitter introduced Prolific, an online pool of participants specifically for research experiments and discussed how such platforms can help researchers obtain participants for online studies [3]. Although this article is an earlier work, it shows the importance of platforms to connect researchers with participants.

It is also important to have good-quality recruited participants. Douglas et al. compared data collected on MTurk, Prolific, CloudResearch, Qualtrics, and a university participant pool. They found that participants on Prolific and CloudResearch were more likely to "pass various attention checks, provide meaningful answers, [and] follow instructions" than participants from several other sources [4]. It suggests that recruitment sources can influence participant quality and that effective recruitment includes identifying suitable and reliable participants.

Matching was designed to simplify the screening process. It provides information on matching and personal profile information to reflect the match between research needs and characteristics of participants. In this project, the calculation matching algorithm was not implemented or evaluated. Instead, it explored how to integrate the matching information into the recruitment interface and workflow.

2.3. Incentives and continued participation

Participant incentives are another important recruitment component. Zheng et al. studied willingness to participate under different monetary and non-monetary incentive conditions and found that both the type and value of an incentive can affect reported interest in research participation [5]. Studies of participants' perspectives on research payment has also found that money can be an important motivation for participation [6].

Furthermore, monetary rewards are not the only mechanism for supporting participation. There has been recent research into the use of gamification and alternative reward structures in digital systems. Game-based rewards can increase certain types of engagement, but not always in good ways. For example, a 2024 study of experience-sampling research found that virtual rewards were associated with higher response rates and faster responses among participants who actively participated with the reward system, but they also led to a slight decline in the reliability of responses [7]. Other studies also suggest that gamification does not always lead to better outcomes. Aubert et al. concluded that "using gamification for decision-making is questionable" and emphasized the importance of individual variability [9]. These findings show that gamified incentives should be used with caution because they may not always improve the experience of the participants.

These findings provide the basis for the design of incentive models in Matching. The design combines monetary incentives with gamification techniques. Researchers can offer cash rewards for individual studies, and the platform can provide additional points and level progression. The purpose of the incentive experiment in this study is to explore if potential participants would be interested in this mixed model.

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3. Methods

3.1. Research design

This project used a human-centered design process to design and explore a two-sided platform for research participant recruitment. The work concentrated on two main user groups: researchers who need to find suitable participants, and people who may be interested in taking part in studies.

The design process included exploratory user research, user needs and pain points, personas and user journey maps, ideation, low-fidelity wireframes, high-fidelity prototypes, usability testing, and an incentive preference experiment. Findings from each stage supported the subsequent design.

3.2. Exploratory user research

To learn about the recruitment process from the perspective of both researchers and participants, exploratory user research was conducted. For researchers, the research focused on how researchers currently find participants and how they communicate, screen and schedule them afterwards. For participants, the research focused on how people discover research opportunities, what information they take into account when deciding to participate, and what factors make them feel the participation is worthwhile.

Regarding the researcher's perspective, some common issues were found. Recruitment often started with friends or classmates because they were convenient and easy to contact. However, depending on personal networks may result in similar backgrounds among participants. When a study required a specific kind of user, this way was less useful. Also, researchers had to contact potential participants one-by-one, and finding common available time could take more effort.

From the participant perspective, how to discover opportunities and how to make decisions on participation were common concerns. Potential participants might not know where they can find research opportunities or if a study was relevant to them. Before deciding to participate, they wanted clear information about study requirements, time commitment, scheduling, and rewards. Moreover, different participants also had different views on the attractiveness of the research: some placed greater importance on rewards, while others paid more attention to the research topic, the participation experience or the potential long-term benefits.

These findings were organized into pain points, user needs and design opportunities. They also helped to define design goals and guided the development of the platform as a two-sided system for researchers and participants.

3.3. Design process and prototype

From the user research, a set of design goals was identified: matching suitable participants with study requirements, simplifying recruitment process, showing different rewards clearly, and driving continued participation.

Some early ideas were expressed in sketches and grayscale wireframes, and they were then developed into a high-fidelity interactive prototype called Matching. The prototype was designed as a two-sided system with linked experiences for researchers and participants.

The researchers have functions including creating a study, defining participant requirements and cash reward, reviewing potential matches, inviting participants, scheduling sessions, communicating with participants, monitoring recruitment progress, and completing studies. The participant profile page can be useful to help researchers review potential participants. The prototype also offers an

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optional VIP membership for researchers. The basic recruitment functions are still available without a VIP subscription. The subscription model was built as a potential way to support platform operations and the participant reward program without charging researchers a service fee for each study.

The participant experience allows participants to discover available studies, review study information, check eligibility, view match information, schedule sessions, track current studies, and receive rewards after participation.

The prototype also has a reward and level system. Participants could receive a cash reward separately for each study, and platform points are assigned through the system. Participants can move up the levels by completing studies. As participants move up the levels, they may gain more benefits including priority access to selected studies, bonus points, and special rewards. Platform points can be used to redeem other rewards such as gift cards, while level progress is calculated based on completed studies and is not decremented by spending points.

3.4. Usability testing

After building the high-fidelity prototype, the three participants took part in usability testing to see if users could understand and complete the core workflow of Matching. For the researcher flow, they were asked to create a study and set requirements, find and invite a suitable participant, and manage the study. For the participant flow, they were asked to find a suitable study, check eligibility, set a time, and check their rewards and level progress after participating in the study. The findings were then used to identify areas for design improvement.

3.5. Incentive preference experiment

An exploratory preference experiment was conducted with 15 participants to investigate participants' reactions to two incentive models. Participants were presented with the same 20-minute online usability study. Study activities and time commitment remained the same, and only the incentive structure was different.

Option A offered a $10 cash reward. Option B offered $5 in cash, 100 platform points, and progress toward a participant level associated with future platform benefits.

Participants rated the preference on a five-point scale. A response of 1 represented a strong preference for Option A, 3 for no preference, and 5 for a strong preference for Option B. Participants were also asked an open-ended question to inquire about the main reason for their choice.

The preference ratings were analyzed by calculating the mean preference score and the distribution of the scores. The open-ended responses were reviewed and grouped into reasons for participants' choices, such as immediate monetary value, long-term benefits, and future platform use expectations. Because the experiment involved only 15 participants, the results were treated as exploratory rather than representative of a larger population.

4. Results

4.1. Usability testing and design refinement

The usability test found several areas that needed improvement. In the researcher flow, users needed clearer feedback when reviewing and selecting matched participants. Therefore, match scores and the recruitment progress were made more visible. In the participant flow, users were unclear about

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the study rewards and level benefits. So the design was revised to separate cash reward, platform points, and level progress more clearly. Users in general were able to understand the core workflows, although some key screens were relatively information-dense. These screens were simplified so that the most important information and the actions were emphasized.

These changes were implemented in the final version of the high-fidelity prototype. As shown in Figure 1, the final design connects the main workflow for the researcher and participant in the same platform while providing different experiences to support the needs of each side.

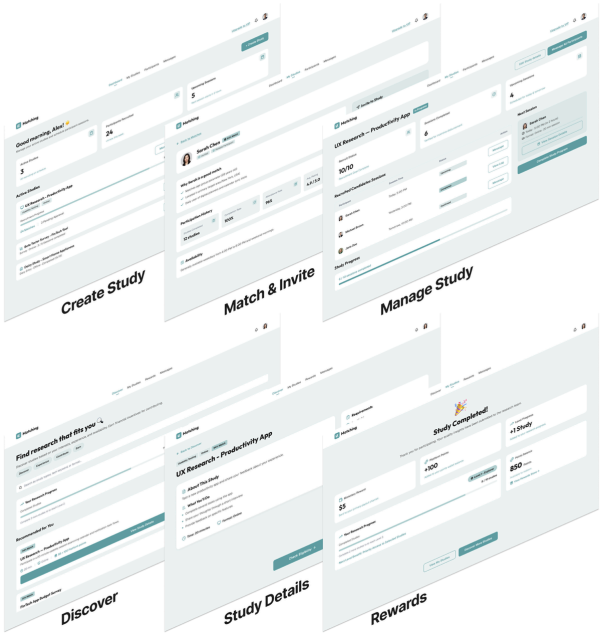


Figure 1. Representative screens from the final Matching high-fidelity prototype after usability testing and design refinement

4.2. Incentive preference results

The 15 responses resulted in a mean preference of 3.40 out of 5, slightly favoring Option B. The distribution of responses is shown in Figure 2.

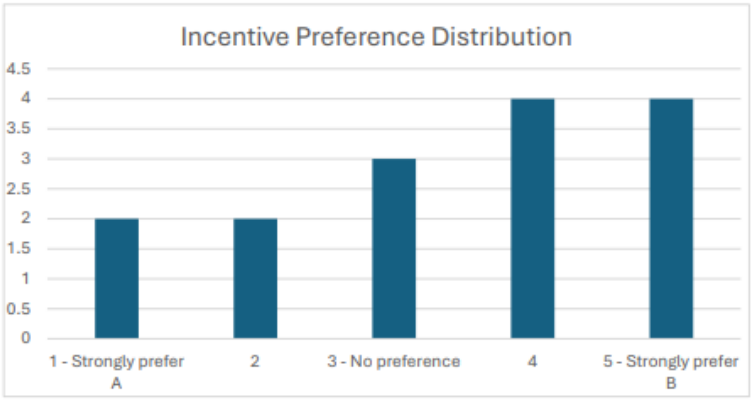


Figure 2. Distribution of incentive preference ratings (n = 15)

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As presented in Figure 2, eight participants (53.3%) chose a rating of 4 or 5 and thus leaned to Option B. Four participants (26.7%) selected 1 or 2 and leaned to Option A, and three participants (20.0%) showed no preference.

The open-ended responses provided the reasons for these choices. The participants who preferred the mixed model often talked about the importance of long-term benefits. For example, one participant commented, "I plan to do more studies, so B is better for me." In contrast, participants who preferred Option A focused on the immediate monetary value. One participant said, "Cash is more useful." Some other answers were conditional. For example, one participant said, "I like B more, but it depends on how often I use the platform." These responses suggest that the value of the mixed incentive model might depend in part on whether participants are likely to participate repeatedly.

5. Discussion

5.1. Recruitment as a workflow

The design process reveals that participant recruitment is a complete workflow bridging the researchers and participants. The researchers have to find appropriate participants, verify that they meet the requirements, communicate with them, schedule the time and manage participation during the research. Participants need to discover relevant research, understand requirements and rewards, check qualifications, make appointments and complete participation. Any issues in these stages could affect the overall experience. Therefore, Matching is about bringing those activities together on one platform, balancing the needs of the two sides and creating value for both.

5.2. Balancing immediate and long-term incentives

The incentive results also show some difference in motivation of the participants. Although 53.3% of participants preferred the mixed reward option, there were some people who preferred direct cash or no preference. This finding is consistent with previous work showing that monetary incentives may influence the willingness of participants to take part [5, 6], and alternative reward systems may affect engagement differently across participants and research settings [7, 10].

For this reason, the final design does not replace cash with points. Cash remains the direct reward for an individual study, and platform points and levels provide additional benefits. This distinction is important because users who are interested in participating occasionally can still get immediate value, while those who participate repeatedly could accumulate longer-term benefit.

5.3. Design implications

Three design implications emerged from the project. First, a two-sided recruitment platform needs to support the needs of both researchers and participants. Researchers need suitable participants, and participants also need related and worthwhile studies.

Additionally, for participants, various rewards should be distinguished clearly in the interface. The usability tests show that when different types and levels of rewards are presented at the same time, users are prone to confusion. A clearer distinction between cash reward, platform points and level progress helps users to understand the specific benefits each study offers and the advantages of continued participation.

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Finally, continued engagement can be considered in participant experience. Features of points, levels, and additional benefits may provide reasons for participants to continue using the platform beyond a single study. However, these features should complement the value of individual studies rather than replace clear reward and relevant research opportunities.

5.4. Limitations and future work

This project still involves several limitations. The usability test only included three participants, and the incentive preference experiment included fifteen participants. These small samples are appropriate only for exploratory design work but do not allow to make broad conclusions for all researchers and research participants. In addition, the incentive experiment measured stated preferences in a hypothetical situation rather than actual participation behavior.

Moreover, the current Matching prototype is only a design concept. Features such as participant matching, the reward economy, level benefits, and the optional researcher VIP membership would require further evaluation in a functioning system. Future work could test the platform with larger and more diverse samples of researchers and participants, and examine whether the proposed features can improve the recruitment efficiency and continued participation in actual research settings.

6. Conclusion

This project explored the design of Matching, a two-sided platform aimed at making research participant recruitment more efficient while creating a clearer and rewarding participant experience. Prior work shows that digital recruitment can expand researchers' access to potential participants, but that there are challenges with targeting appropriate populations, managing recruitment, and providing motivation for participation [1, 2].

Usability testing offered feedback through two flows of researchers and participants and helped to improve the prototype. The incentive preference experiment also showed that although participants' preferences differ, they in general leaned toward a mixed incentive model.

Overall, this project suggests that research recruitment platforms can benefit from considering both researcher efficiency and participant motivation. Matching provides an exploratory design showing how these two sides can be connected within a single recruitment and participation experience.

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