

Supporting Entrepreneurship in Underserved Populations

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ABSTRACT

In order to develop innovations that tackle global social issues, such as homelessness, racial injustice, and gender inequality, we need tools and systems that empower a diverse range of innovators and entrepreneurs. The goal of my research is to design socio-technical systems that encourage more equitable participation in entrepreneurship by helping people with limited resources coordinate distributed support, develop needed skills, and form successful teams. Through this workshop, I hope to share my experience studying entrepreneurship support tools in underserved populations, as well as learn and develop new approaches to performing research in these communities.

Author Keywords

Entrepreneurship; Innovation; Social Computing; Crowdfunding; Diversity.

ACM Classification Keywords

H.5.3. [Information Interfaces and Presentation (e.g. HCI)]: Computer-supported cooperative work

INTRODUCTION

Despite increased efforts to democratize opportunities to entrepreneurship, there are still wide gaps in access and performance. For instance, in the United States, women are half as likely as men to start new businesses, and those that do make lower profits and hire fewer employees [19]. Similarly, while the rates of Black and Latino entrepreneurs are increasing, their businesses have lower sales on average and higher chances of failing [2]. This performance gap is widely due to the fact that people who start out with limited financial and social capital inherently have lower chances of long-term economic success [2,3,19].

Advances in socio-technical systems – environments where social interactions shape and are shaped by technology [14,20] – have the potential to drastically change who can access much needed social and financial capital and how entrepreneurship work is performed. Unfortunately, performing entrepreneurship has become synonymous with being Caucasian, affluent, and male [2,19]. The goal of my research is to break this pattern by designing socio-technical systems that empower people with limited resources to coordinate distributed support, develop needed skills, and form successful teams. Specifically, I ask, *How can we design socio-technical systems to encourage more equitable participation in entrepreneurship?*

FORMATIVE WORK

I have studied the work of novice innovators and women in entrepreneurship through three popular socio-technical contexts, including crowdfunding communities and communication in start-up teams.

Distributed Support in Crowdfunding

Crowdfunding—the online request for resources from a distributed audience often in exchange for a reward [5]—has emerged as one of the most successful Internet based technologies to help people with limited capital and expertise seek resources to deploy their work.

I followed an inductive grounded theory approach [18], performing interviews with over 100 people in the crowdfunding community, and found that people crowdfund not just to raise money, but to also develop long-lasting relationships with others who have similar interests and can serve as mentors, feedback providers, and customers [9]. In fact, participants described giving just as much money away to other campaigns as they received for their own, highlighting community values of social support not commonly found in many traditional innovation environments [9]. Previous research finds that innovators typically avoid sharing ideas and work processes openly and rarely maintain long-term ties with customers [16]. My work shows how crowdfunding breaks these traditional models as people who crowdfund rely on each other to share resources [9], and develop professional skills [8] and self-efficacy [6]—community values often highlighted in populations where resources are scarce.

Tensions: Crowdfunding and Underserved Populations

However, while we see initial evidence that crowdfunding has made entrepreneurship more accessible for people with limited experience and financial capital, there are still wide gaps in how this technology supports those with limited professional networks.

Researchers have recently started to study how crowdfunding could support female entrepreneurs by supporting female investors [12]. Others find that racial minorities are funded less on crowdfunding sites [15]. This could be an affect of limited professional and financial social networks and/or people's inherent biases against funding people of color, similar to discrimination observed in other online sharing technologies like Airbnb [4].

In order to develop more equitable entrepreneurship technologies, more work needs to be done to design tools that take into consideration people's inherent professional

social network and position in society, and how they influence one's access to opportunities. Instead, much of the research on crowdfunding in HCI has focused more on the monetary side of crowdfunding, such as how project description words [13] or update timing [21] influence funding success.

Gender Diversity and Inclusion in Start-up Teams

While online systems, like crowdfunding platforms provide opportunities for geographically distributed people to share financial resources, they also impose challenges on relationship development in the absence of shared physical contexts. Barriers to developing relationships with new people is particularly detrimental in entrepreneurial careers where teams are self-formed and tend to be less diverse than those created under managerial leadership [1].

Over the past two years, I have established relationships with leaders of entrepreneurial communities in Chicago and Seattle to understand how members form start-up teams. In a study of start-up teams in Seattle, I found that women in male-dominated tech start-ups often felt less included when using richer communication channels (e.g. phone and video calls). Our survey and interview data show that while richer media allow for greater feedback and social cues, which are typically more useful during interpersonal communication, they also highlight certain microaggressions, such as being interrupted, joked about, or ignored. Microaggressions play a large part in the psychological experience of being a minority in a start-up team and have been a major reason for why women drop out of male-dominant careers at a higher rate than men.

Tensions: Communication Technologies in Start-up Teams

Compared to previous work on gender inclusive technologies in HCI, we focus less on people's relationship with software, such as programming self-efficacy, and more on how software's designed affordances influence people's relationship with each other. Supporting gender diversity in teams is a difficult problem rooted in social structures, and not just the design of technology. For instance, previous work by Kiesler et al. describe how the affordances of social technologies can mask typically salient features, making it easier for demographically diverse people to bond over intellectual interests rather than more superficial factors [17]. However, initially hiding demographic traits only masks the underlying social problem of biases rather than addressing it.

Motivated by related work on offline interventions to support diversity, tool designers could develop tools that encourage greater awareness of implicit biases in computer-mediated environments. For instance, various systems have been developed to provide communication-based feedback during group meetings to identify how often teams agreed or disagreed with their colleagues [11] or how dominant certain people are in meetings [10].

Based on our quantitative and qualitative data, we suggested five possible avenues in HCI for supporting gender diversity in start-up teams: 1) support ad-hoc socialization in entrepreneurship community spaces, 2) make it easier to create and manage sub-groups that developed from community-wide discussions, 3) scaffold the creation and practice of minority support groups, 4) provide examples of inclusive work practices in online collaboration environments, and 5) track and flag behavior that may lead to less inclusive communication practices [7].

FUTURE WORK

The crux of my work is to understand how the design of socio-technical systems can produce inherent biases in entrepreneurship activity by promoting the success of already dominant groups while limiting the growth of underserved populations. I believe a mixed methods approach with a focus on in-depth qualitative approaches, including interviews, co-design, and community involvement, is imperative for designing technologies that take into consideration the everyday practices and values of entrepreneurs who have limited resources.

Approach

I hope to 1) develop new relationships with existing communities that promote gender and racial diversity in entrepreneurship, 2) take a participatory research approach to empower people to take part in the research and design process, and 3) draw from existing literature on equity, diversity, and class, to inform study goals.

Methods Goals and Challenges

Over the past three years, my research has grown from just understanding "novice" entrepreneurs to understanding the experiences of other particularly underserved populations, such as gender and racial minorities in entrepreneurship. However, the transition to addressing issues of race, gender, and class in my HCI research has been challenging. I have had to learn to how to effectively communicate the value of research to non-academic communities, motivate community members to participate in co-design research activities, and encourage people to reflect on their unique experiences—all of which takes months of in-person contact and relationship development.

Through these experiences, I learned the importance of identifying ways for people throughout the community (including leaders, experienced members, and new members) to participate in the research and design process of enacting change in their community environment. This process starts out with *understanding* what people want to change, *identifying the stakeholders* in making this change, and *facilitating* the design process while keeping community members' goals and needs a priority. In developing these relationships, I found my role becoming more of a community coordinator and manager rather than a "resident researcher."

WORKSHOP GOALS

At the Workshop on Reflections on Design for Underserved Population, I hope to share my experiences performing research with underserved populations in entrepreneurship. Some questions I hope to discuss include, *What is the role of the researcher in implementing interventions short- and long-term? What are best practices for developing trusting and mutually beneficial relationships with community leaders and members? How can we best involve community members in the design process so that solutions are both impactful and feasible?* Overall, I look forward to developing new approaches to performing research with underserved populations and would be honored to help promote these values in the HCI community.

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