

# Making a Living My Way: Necessity-driven Entrepreneurship in Resource-Constrained Communities

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Entrepreneurship has long been used to create self-employment opportunities to guard against career uncertainty. Yet, little is known about how social technologies impact the day-to-day work of entrepreneurs in resource-constrained contexts. We performed a qualitative study involving interviews with 26 micro-entrepreneurs in Detroit and observations of entrepreneurship events. We found that micro-entrepreneurs in Detroit are often pushed into entrepreneurship in response to unexpected life disruptions, barriers to employment, and desire to benefit the community. Their resource-constrained contexts shape how they use social technologies, such as sharing economy tools and social media groups, particularly with respect to privacy, safety, and professional agency. We expand the discussion in CSCW around what it means to be an entrepreneur and provide implications for how social technologies can be designed to better meet the employment needs of people in resource-constrained communities.

Additional Key Words and Phrases: entrepreneurship, low-resource communities, underserved populations, sharing economy, social technologies, employment, agency, privacy

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## 1 INTRODUCTION

In conversations about digital technology, the word "entrepreneur" often brings to mind someone launching a Silicon Valley tech startup and competing for venture capitalist funding [71, 92]. Other forms of entrepreneurship, however, are far more numerous [103, 112]. We consider necessity driven entrepreneurship in American resource-constrained communities—regions in the United States that have few employment opportunities and limited access to basic resources needed for well-being, such as healthy food, transportation, and education.

The gap in economic well-being between "opportunity" and "necessity"-driven entrepreneurship often shapes why people start businesses, which enterprises they start, and what they need to survive and thrive [18]. Opportunity-driven entrepreneurs refer to people who start businesses by choice and have idle capital to exploit. In contrast, necessity-driven entrepreneurs typically refer

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to people who are pushed into entrepreneurship because of barriers to employment and limited access to basic resources [18, 42, 43]. For example, necessity-driven entrepreneurship might include someone who cleans homes for supplemental income or someone who caters home-cooked meals in a neighborhood with limited access to healthy food.

Social technologies play an increasingly central role in how people communicate and exchange goods and services in resource-constrained communities in the U.S. [31–33, 36, 46]. As more people leverage these technologies to participate in alternative forms of work [36, 105], it is imperative to understand how these technologies influence people’s economic stability by supporting or inhibiting professional agency—the ability to control how one performs work and construct professional identities within a larger socio-cultural context [49]. We define *social technology* as any type of online tool or platform that allows people to communicate, interact, and/or share information or resources with each other [76]. This includes social media (e.g. Facebook, Instagram), sharing economy tools (e.g. Uber, Taskrabbit), and social networking platforms (e.g. LinkedIn).

The majority of work on social technologies for entrepreneurship in resource-constrained communities has focused on “developing” regions outside the United States. This literature emphasizes how entrepreneurs use mobile phones and older technologies, like radio, to access information, such as finding out market prices for agricultural produce [16, 17, 40, 42, 54]. However, there has been little research on the use of social technologies by necessity-driven entrepreneurs in the U.S. where having a strong online presence, such as on Facebook, Instagram, and Youtube, are increasingly necessary for building personal “brands” and connecting with potential customers outside of one’s immediate social network [63, 65]. Specifically, we address the following research questions:

- What drives people in resource-constrained communities to engage in entrepreneurship?
- How do social technologies support or inhibit professional agency when performing entrepreneurship in resource-constrained communities?

To address these questions, we performed a qualitative study by interviewing 26 local micro-entrepreneurs in Detroit and observing Detroit-based entrepreneurial events. We define local micro-entrepreneurs as people who own a formal or informal business of less than five people, generate income, and regularly interact with locals in their neighborhood [50]. We focus on micro-entrepreneurship as it constitutes the majority of small business activity in the U.S. [50] and is more common in resource-constrained environments where starting smaller businesses is more accessible and helps diversify income opportunities [91, 114].

We find that micro-entrepreneurs in Detroit performed work in very different conditions than opportunity-driven entrepreneurs in wealthier economies. These differences shape their reasons for entering into entrepreneurship and how they use social technologies. Unlike entrepreneurs in higher-income regions [71], we find that entrepreneurs in resource-constrained contexts use social technologies to promote community development over competition, stability over risk-taking, privacy over self-promotion, and safety over convenience. We close with recommendations for the design of social technologies intended to support socio-economic resilience in resource-constrained “developed-world” contexts. These findings make the following contributions: First, they extend existing work on entrepreneurship in CSCW to resource-constrained communities in the United States [31]; Second, they offer new insight on the relationship between entrepreneurs, socio-economic context, and social technologies; And third, they offer technology recommendations for those interested in supporting economic mobility [33, 36, 39, 60, 115, 120].

## 2 CONTEXT

Detroit is unique yet emblematic of many regions that have suffered economic decline in the United States. At its height, it was considered the industrial powerhouse of the modern world being the center of automobile production. But, over the past half century, Detroit experienced a sharp decline starting with the automotive industries relocating to outside the city. A combination of disappearing jobs, suburban housing incentives, and racial discrimination led to extreme segregation as White populations moved to the suburbs, while minority (primarily Black) populations stayed in the city [11, 55, 59]. Between the late 1940's and early 2010's, Detroit's population fell by 63%, the number of occupied homes fell by 51%, the number of businesses fell by 81%, and the number of employed residents fell by 73% [11].

More recently, the rhetoric around Detroit has begun to change as popular press articles cite it as a growing creative hub where people can live cheaply and experiment with new business and art endeavors [9, 19, 30, 78, 97]. This newer image of the city, however, does not reflect the reality for most of its residents. Literature on entrepreneurship in Detroit highlights a stark divide between Downtown/Midtown, where businesses are making a comeback, and the rest of the city [97]. In the Downtown/Midtown areas of growth, jobs are increasingly being held by non-Detroiters, highlighting a common pattern of gentrification that does little to help local long-time residents [97].

Despite this divide, commonly referred to as Detroit's "two cities," residents in resource-constrained areas have exhibited resilience by meeting local needs that the city government has failed to address [11, 72]. Some development scholars argue that Detroit is being observed around the world as a potential model for grassroots urban revitalization [41]. Therefore, it is crucial to have an accurate portrayal of resident experiences that reflect their socio-economic reality. We contribute to the limited CSCW literature on entrepreneurship in resource-constrained areas, like Detroit, in order to better understand the role of entrepreneurship and social technologies in economic recovery and community building.

## 3 RELATED WORK

Despite being highly time consuming and risky [90], entrepreneurship is often favored over traditional forms of employment because it provides greater control and agency over one's career trajectory and employment status [103]. To understand how entrepreneurship is being used as a pathway to economic stability, we need to reconsider how we think of entrepreneurship in the U.S., how we design entrepreneurship support tools, and what it means to have agency in employment.

We define entrepreneurship broadly as the process of creating and recombining resources with the intention of making a profit, such as creating a business that sells new products and services [73, 103]. This encompasses many of the more specific definitions around entrepreneurship, such as those defined by innovation [102], or the shifting of economic resources from an area of lower to higher productivity [101].

### 3.1 Necessity vs. Opportunity-driven Entrepreneurship

Researchers and practitioners are beginning to argue against the often oversimplified conception that only necessity-driven entrepreneurship occurs in the Global South and opportunity-driven entrepreneurship in the Global North [13]. The Global North typically refers to countries with a higher income and human-development index (OECD) [4], while the Global South typically includes nations considered lower income and "developing."

Micro-enterprises studied in the Global South are more likely than those in the Global North to be part of the "informal" economy, meaning typically unregistered or unlicensed, require lower-skilled

Table 1. Literature on use and design of social technologies in entrepreneurship. This paper seeks in part to address the under-representation of scholarship on necessity-driven entrepreneurship in the global north, highlighted in the top-left quadrant.

	<b>Necessity-driven</b>	<b>Opportunity-driven</b>
<b>Global North</b>	Dillahunt et al., 2018 [31]	Kokkalis et al., 2017 [75] Muller et al. 2013 [85] Hui et al., 2014 [65] Xu et al. 2014 [123] Wash and Solomon, 2014 [118] Ferro, 2015 [51] Solomon et al., 2015 [104] Hui and Gerber, 2017 [63]
	Bayes, 2001 [17] Duncomb and Heeks, 2002 [43] Duncomb, 2006 [42] Donner, 2007 [40]	Lindtner et al., 2014 [81] Lindtner et al., 2015 [80] Avle and Lindtner, 2016 [13] Avle et al., 2017 [14]
<b>Global South</b>	Duncomb and Molla, 2009 [44] Foster and Heeks, 2010 [53] Rangaswamy and Nair, 2010 [96] Chandra et al., 2017 [26] Jack et al., 2017 [68]	

work, and embedded within family networks [18]. CSCW researchers have primarily studied how mobile phone usage helps grow social networks, lower transaction costs, and access to market information [16, 17, 40, 42, 54]. Others have more recently described the use of social media, e-commerce, and micro-granting sites in scaling local business more globally [17, 68]. In these contexts, social technologies are not only used to coordinate resources, but play a crucial role in how informal enterprises interface with formal entities, like the government and global markets [26, 96].

Comparatively, entrepreneurs in the Global North are often portrayed as "Silicon Valley-like" startups, with goals to make widespread impact through serial ventures, regularly acquiring companies, and developing transformative technologies [12, 92]. While these entrepreneurs put in extensive effort needed to access financial resources, like venture capital funding and angel investment, most are not living in poverty and choose to enter into entrepreneurship voluntarily [71]. CSCW literature on these more opportunity-based entrepreneurs tends to focus on how technology can extend or distribute the already abundant amount of financial and social resources available in these networks, such as through crowdfunding [65, 118] and professional social networking platforms [58, 75].

Opposing opinions about the role of technology in entrepreneurship often stem from the different economic contexts commonly associated with the Global North and the Global South. This distinction between high and low-income regions often masks the range of entrepreneurship and innovation being performed in different parts of the world [13, 66, 80, 81]. For instance, Lindtner et al. describe how makers in Shenzhen collaborate with local manufacturers to develop prototypes and

start up businesses that can compete on a global scale [80, 81]. Similarly, Avle describes how Ghanaians use unconventional funding sources to build their own ecosystems for tech entrepreneurship [13].

If we continue to think of entrepreneurship in the Global North as primarily opportunity-based, we miss the necessity-driven entrepreneurs in “developed” countries like the United States (Table 1). Regions of Detroit are in many ways economically comparable to places typically studied in the Global South with respect to employment rate, literacy, and access to healthy food [11]. But, Detroit also exists in very different socio-technical landscape compared to previously studied areas of necessity-driven entrepreneurship. For example, technology use documented in areas of India [26, 96] and areas of Africa [40, 42–44], has focused on how people use older technologies, like basic mobile phones, landlines, and radio, to connect with local customers of similar socio-economic status. Residents of Detroit, however, are more likely to own smart phones [25, 93] than basic mobile phones and need to connect with higher income customers nearby in order to sustain their businesses. This difference in geography and local population shapes how entrepreneurs in regions like Detroit use technology to take advantage of entrepreneurial opportunities. We contribute to this more nuanced understanding of entrepreneurship in CSCW by adding to the under-studied area of how social technologies are used by necessity-driven entrepreneurship in the Global North, specifically in the context of Detroit.

### 3.2 Entrepreneurship in CSCW

Research on entrepreneurship in CSCW has primarily focused on use of crowdfunding platforms and professional networking platforms to raise funds and build community [51, 65, 75, 85, 104, 118]. However, much of this literature focuses on startups in higher-income contexts who enter into entrepreneurship voluntarily and engender risk-taking values like “growing fast” and “failing often” [13]. In these contexts, entrepreneurs are more likely to leverage social technologies to extend or distribute the already abundant financial and social resources embedded within their networks [12, 92].

Despite increasing use of social technologies in entrepreneurship [65, 106], there is a divide among scholars on how central a role technology plays in supporting entrepreneurship and economic growth more broadly. Silicon Valley narratives tend to emphasize technology’s potential to be the driving force to a better society [71]. For example, people have promoted crowdfunding as a modern opportunity to democratize access to entrepreneurship [8, 23], even though success often requires a strong initial social network and time to devise and implement marketing plans [31, 64, 65, 83]. Others find that technology only reinforces or amplifies social inequalities [111]. Thus, racial minorities are funded less on crowdfunding sites [98] and other sharing economy platforms, like Airbnb [45]. These outcomes could be due to limited professional and financial networks and the larger society’s racial biases. In order to develop more equitable entrepreneurship technologies, more work needs to be done in CSCW to understand the motivations and work of diverse entrepreneurs.

*3.2.1 Professional Agency, The Sharing Economy, and Entrepreneurship.* Perhaps one of the largest discussions around entrepreneurship in CSCW focuses on the sharing economy, and whether workers on platforms like Uber and TaskRabbit are considered entrepreneurs or contractors. One of the primary distinctions between sharing economy workers and the entrepreneurs is their level of professional agency. Professional agency is defined as 1) being able to influence and make choices over how one works, 2) performing work that aligns with and discursively shapes personal motivations and identities, and 3) shaping work practices while taking into account personal and community histories, resources, and skills [49, 116].

Therefore, sharing economy workers could be considered entrepreneurial depending on platform affordances. Sundaranjan expresses that sharing economy platforms support entrepreneurial work on a spectrum between "hierarchy-like," meaning less entrepreneurial and more like working for an employer, and "market-like," meaning more entrepreneurial where workers have greater control over how they work, but often operating with less organizational support [106]. For example, he argues that Uber is entrepreneurial because drivers use their own assets for production (i.e. personally owned car) and can easily enter and exit the work as they please, but also not entrepreneurial because drivers cannot choose customers, pricing, or how they market themselves. In contrast, Etsy is considered more traditionally entrepreneurial because providers can control their pricing, who they sell to, and how to publicize their work. Yet, unlike Uber, Etsy does not directly match customers to providers, placing more responsibility on Etsy sellers to figure out how to make a profit.

This overlapping view of entrepreneurship and the sharing economy centers mostly on micro-entrepreneurs, people who generate income through a formal or informal business of less than five people [50, 106]. While we choose five employees to be specific for recruitment reasons, the number of employees in "micro"-enterprises varies between reports [50, 95], and entrepreneurial researchers argue that the number of employees that defines a business size is somewhat arbitrary and industry specific [90].

Leaders of sharing economy companies have gone as far as publicizing their platform as "training wheels for being an entrepreneur" [106, p. 77] and as entrepreneurial support tools [5, 6]. Conversely, management scholars have primarily described the sharing economy and other alternative work arrangements separately from entrepreneurship, focusing more on the changing relationship between employer and employee rather than worker self-directed efforts outside of organizational structures [22, 105]. It is hard to decipher whether the growth of the sharing economy is driving the increase in micro-entrepreneurship or visa versa. But, it is increasingly apparent that these two groups are highly intertwined, motivating the purpose of this study to understand the role of social technologies in resource-constrained micro-entrepreneurship.

As more people pursue more entrepreneurial career trajectories, we must begin to evaluate how social technologies are replacing or changing traditional organizational structures [105]. The majority of research evaluating career success is still measured through traditional organizational milestones (e.g. promotions) [113]. Instead, we find that as more people take greater control over how they work and who they work for, they rely more heavily on themselves and the technologies they use to achieve economic stability, career advancement, and overall life satisfaction [87]. We seek to understand how micro-entrepreneurs in resource-constrained communities achieve professional agency, and the role of social technologies in this process.

## 4 METHODS

We performed interviews with 26 micro-entrepreneurs in Detroit and observed 7 entrepreneurial events. Drawing from a combination of data sources allowed us to gain a multi-faceted view of micro-entrepreneurship in Detroit. This study was exempted by the IRB, and participant information was only shared with those on the study team.

### 4.1 Participants and Data Collection

**4.1.1 Micro-entrepreneurs.** The majority of our participants have lived in the greater Detroit area for over 15 years and have experienced the region's long history of economic turmoil. Nearly 40% of the city's population live in poverty and often turn to informal employment to make a living [11, 89]. The micro-entrepreneurs we focus on are people who live in the greater Detroit

metropolitan area, own businesses that generate income, employ less than five full-time people, and regularly interact with those living in Detroit.

Participants were recruited between October 2017 and March 2018 from various offline and online sources. Offline, we recruited participants by meeting people at local markets and approaching people at entrepreneurial events. Online, we posted on Detroit-based entrepreneurship Facebook Groups and Detroit-based business sub-Reddits, contacted service providers on Detroit's Craigslist page, messaged people on Detroit's Airbnb Experiences page, and emailed micro-entrepreneurs featured in a local newspaper. We chose not to recruit entrepreneurs from entrepreneurship incubators and accelerators to exclude tech entrepreneurs who may have moved to the city more recently under more fortunate economic conditions.

We interviewed 26 participants (15 female) overall. 18 identified as Black/African American, 5 as White/Caucasian, 1 as Hispanic/Latino/Latina, 1 as Middle Eastern/North African, and 1 as Asian/Asian American (Table 2). These demographics closely represent the racial composition of Detroit per the most recent available U.S. Census data in 2010 (82.7% Black/African American, 10.6% White, 3% other races and 1.1% Asian) [7]. The majority of participants have lived in the greater Detroit area for over 15 years. All participants were given a pseudonym using a random name generator. The first author performed 22 interviews, while two supporting researchers performed the remaining four.

We gathered interview data with micro-entrepreneurs to collect reflections about their entrepreneurial experiences and how they used social technologies for their personal ventures. Interview participants each participated an in-depth semi-structured hour-long interview in person or by phone where they were asked questions about motivations for starting their business, how they accessed needed resources, their usage of social technologies, relationships with peers and mentors, publicity strategy, day-to-day work practices, and perception of Detroit. All interviews were transcribed immediately following the interview and saved in a secure database. All micro-entrepreneur participants were compensated \$20 for their time.

*4.1.2 Entrepreneurial events.* Data from event observations were primarily used for contrasting people's self-reported use of social technologies against public perceptions around how technologies should be used based on event leaders' suggestions. We observed seven entrepreneurial events, including formal workshops about entrepreneurship funding, social media marketing, copyright, how to start a business, and entrepreneurship program information, as well as informal events for networking. Social technologies were mentioned as critical parts of entrepreneurship in all of these events. Event sizes ranged from about 20 to 200 participants and varied in terms of racial demographic. The majority of events were attended by primarily Black/African American participants. We found out about these events through Facebook Events, word-of-mouth, and contacting the Detroit Public Library about entrepreneurship-related events. Notes were taken by hand both during and after the event, and transcribed later into an online database.

## 4.2 Analysis

All data, including interview transcripts and observation notes, were analyzed using thematic analysis [21] to identify themes around why local micro-entrepreneurs in Detroit entered into entrepreneurship and the role of technology in facilitating or inhibiting professional agency in this process. Coding was performed in a spreadsheet primarily by the first author and regular checked with the study team through multiple coding rounds.

We performed three rounds of coding. During the first round, we identified higher level themes around entry into entrepreneurship, use of social technology, and access to emotional resources, informational resources, financial and material resources. We then performed a second round of

Table 2. Micro-entrepreneur participants

ID	Pseudonym	Gender	Race/Ethnicity	Age	Business Type	Years in Detroit
P1	Daniel	M	Black or African American	50-60	clothing	>15
P2	Nora	F	Black or African American	20-30	home goods	>15
P3	Camilla	F	Black or African American	50-60	home goods	>15
P4	Ida	F	Black or African American	60-70	publishing	5-10
P5	Anita	F	White or Caucasian	20-30	jewelry	>15
P6	Marshall	M	White or Caucasian	30-40	transportation	>15
P7	Roger	M	Hispanic, Latino, or Latina	30-40	food product	>15
P8	Adrian	M	Middle Eastern or North African	30-40	food product	>15
P9	Jeanette	F	Black or African American	30-40	food product	10-15
P10	Angela	F	Black or African American	60-70	food product	>15
P11	Fredrick	M	Black or African American	60-70	food product	>15
P12	Raymond	M	Black or African American	40-50	local tours	>15
P13	Gladys	F	Black or African American	80-90	bookstore	>15
P14	Pat	F	Black or African American	40-50	catering	>15
P15	Jeffery	M	Black or African American	30-40	clothing	>15
P16	Beverly	F	White or Caucasian	50-60	local tours	>15
P17	Evan	M	Asian or Asian American	30-40	restaurant	10-15
P18	Deborah	F	Black or African American	30-40	cleaning service	5-10
P19	Cory	M	White or Caucasian	60-70	lawncare	>15
P20	Lowell	M	Black or African American	20-30	entertainment	>15
P21	Joanne	F	Black or African American	20-30	hair and beauty	>15
P22	Laura	F	White or Caucasian	30-40	hair and beauty	>15
P23	Irma	F	Black or African American	30-40	hair and beauty	1-5
P24	Darrell	M	Black or African American	30-40	hair and beauty	>15
P25	Lynette	F	Black or African American	30-40	local tours	>15
P26	Yvonne	F	Black or African American	20-30	catering	>15

coding focusing on the themes of entry into entrepreneurship in order to address our research question of, *What drives people in resource-constrained communities to engage in entrepreneurship?* We determined sub-themes of response to life disruptions (e.g. being laid off), barriers to traditional work (i.e. health issues), and desire to help the local community. All of these themes had emerged by the sixth interview, and were being repeated by multiple participants after about 15 interviews.

Within each of these sub-themes, we then coded for both social technology use and instances of exhibiting or facing challenges to professional agency. The data at the intersection of these codes was used to address our second research question, *How do social technologies support or inhibit professional agency when performing entrepreneurship in resource-constrained communities?* Themes emerged around the role of social technologies in helping or inhibiting participants control of how they worked and what they worked on, reaching saturation during coding after about 12 interviews. Throughout this process, we referred to related literature on necessity-driven entrepreneurship (e.g. [18, 112]), professional agency (e.g. [49]), and social technologies in resource-constrained contexts (e.g. [33, 36, 69, 120]).

## 5 FINDINGS

We found that participants put in considerable economic and social effort to sustain their community and themselves. Participants performed entrepreneurship to cope with, and sometimes prepare for, unexpected life disruptions. We also saw instances in which—both with and without social technologies—participants bootstrapped professional legitimacy outside traditional employment networks and started businesses to meet the needs of their local communities.

Overall, we find contrasting values between necessity-driven and opportunity-driven entrepreneurship. Unlike idolized models of entrepreneurship in places like Silicon Valley, necessity-driven entrepreneurs in Detroit adapted their use of social technologies to support personal values of community over competition, stability over risk, privacy over personal promotion, and safety over convenience.

### 5.1 Control over Financial Stability, Privacy, and Day-to-day Work

Unstable economic climates make finding employment both difficult and recurring as an activity. With minimal financial buffers, participants described entrepreneurship as the most resourceful pathway to maintain economic stability. For instance, various participants described losing their jobs during the recession of the early 2010s and turning to “picking up odd jobs,” expanding their side-income activities, and utilizing other on-demand employment services as a way to protect themselves in times of economic crisis. For instance, Irma explained that having a hair styling business on the side of her part-time job at General Motors provides a way for her to supplement her income because “you don’t know when the next time you about to get laid off. I already was laid off once.” Similarly, Cory described his pathway into entrepreneurship after being laid off from one of the major motor-vehicle companies in the area, going through a divorce, and having to pay for child support at risk of being arrested for missed payments.

“I was literally 3 months from being homeless...I had no idea what to do, however, I knew I had to do something. So I ran an ad in the local community paper, ‘Let me do your odd jobs’ with a list of jobs like picking up dog doo, repairing garages, minor repair. On the third week, somebody called and I had to pick up dog poop...I made a whole \$10. I came home, and I cried my eyeballs out...So, that’s how it started. After about six months of that, I just needed something that would be repeatable. I couldn’t keep chasing money. I couldn’t keep throwing ads in the paper, trying to get stuff. So, I thought, what about lawn care?” - Cory, M, White/Caucasian, lawncare business

While some people see odd-jobs as temporary solutions until they find employment, our participants described seeing these odd jobs as longer-term employment opportunities. Cory used this period of performing on-demand work to achieve relative stability and build up a customer base needed to start his lawncare business, which he now maintains full time. At that time 15 years ago, he had to coordinate his own work opportunities through newspaper advertisements and word of mouth.

Today, sharing economy platforms like Uber, Lyft, and Taskrabbit, market themselves as opportunities to find on-demand jobs with minimal hassle. Uber even goes as far as marketing itself as an entrepreneurship support platform [5, 6]. Participants who were laid off more recently reported briefly driving for Uber and Lyft, but eventually stopping because they felt the platforms did not provide control over their safety or career directions. For instance, even though Raymond was laid off and in need of additional income, he described avoiding Uber and Lyft driving because it did not align with his personal and professional identity as an educator:

“No, that’s [Uber/Lyft] not what I do. I know what I am. I teach history and if I can’t teach history, then I’ll teach something else...I’m not a driver.” -Raymond, M, Black/African-American, historical tours business

Instead, he found work as an on-demand substitute teacher, and in his spare time built a historical tours business, which he described as more in-line with his career motivations.

Other participants, primarily female, expressed that sharing economy platforms like Uber and Lyft did not give them sufficient control over their safety because they could not pre-screen their customers and might find themselves in an unsafe location:

“[Uber/Lyft] can be dangerous. It can be more dangerous than having someone come to your house to get their hair done...Being safe, I’m doing your hair. You’re at my house. If anything I’m going to feel safe regardless. You should be the one who is on the lookout.” -Joanne, F, Black/African American, hair business

Ridehailing is predicated on the notion of a sharing economy which requires collaborative exchange outside of one’s kin or community networks. The success of these, however, is dependent on trust in strangers. The above case demonstrates how this deviates from the norm in her situation (i.e. pre-screening customers). Another participant described how even though she has lived in Detroit her entire life, she still did not feel comfortable driving to certain areas alone. She would always have someone else in her car when she drove to a new place, which limited her sense of independence in her job.

Participants described how they preferred to use more flexible community-based approaches to coordinate their own sharing economy, where they had greater control over their customers and way of working. Two participants (Joanne, Irma) described how they participate in a community-run beauty-focused Facebook Group in Detroit of more than 80,000 members to find customers. In these groups, part-time or full-time hairstylists promote their work through pictures and screen potential customers through Facebook Messenger, text messaging, and phone calls. Participants explained that having these multiple channels helped them feel more secure before meeting customers in person because they could engage in increasingly rich forms of communication to build trust. For example, a customer could comment on an entrepreneur’s Facebook publicity post to ask for an appointment; the entrepreneur could then respond to the comment, then move to Facebook Messenger, and then to personal text or calling to gain more information.

This large community of cosmetology businesses is made possible by Michigan laws that make it legal to have at-home hair styling businesses without a license [3], highlighting how government policy influences the use of social technologies for employment and business development. While these online groups were primarily used for certain services, like hair styling, members were able to leverage these active communities to spark interest in other related side enterprises, such as food catering.

Overall, we find that participants use micro-entrepreneurship to guard against potential life disruptions, such as being laid off. Participants expressed that these online groups helped them find on-demand work opportunities that were personally meaningful, and provided the agency to pre-screen customers through online chat systems and phone calls.

While some scholars see the sharing economy as separate from entrepreneurship [22, 105], we see the sharing economy as places that could be designed to be part of the entrepreneurial process depending on how much agency is provided to workers [106]. Participants in these resource-constrained environments preferred using platforms that provided greater control over who they worked with and how they worked over platforms that required the use of algorithm-based customer matching, like in Uber.

## 5.2 Bootstrapping Legitimacy Offline and Online

In addition to buffering against potential economic uncertainty, participants also cited using entrepreneurship as a way to circumvent barriers to employment in the first place, such as having a criminal record or health issues. Because they faced barriers to traditional professional networks, participants described establishing legitimacy around their businesses through non-traditional means, in other words, by performing “really shady” or “not at all legal” business practices, such as selling unlicensed food and alcohol. They described building trust first offline through highly local networks then relying on social media to bootstrap their customer base in a controlled fashion. Unlike the highly transparent self-promoting entrepreneurial behavior needed to succeed in places like Silicon Valley [71], participants described using social media for publicity while also maximizing personal privacy for safety and cultural reasons. These seemingly conflicting behaviors around publicity and privacy again uncovered participant desires to have greater control over how they grew their business.

For instance, one participant (Yvonne) described how she started her baked goods and beverage business by marketing through friends at hair salons. Yvonne, who sells food products as her full source of income of about \$1,000/month, explained that she chose entrepreneurship because “jobs weren’t calling back quick enough.” She started out by selling baked goods and drinks while she was getting her hair done in a salon, and then expanded her business by informally partnering with hair stylists to provide food and drinks to their customers. She explained that because hair stylists post so much of their work on Instagram and Facebook, she was able to have her food and beverages tagged in other people’s posts for publicity:

**Yvonne:** They might have over 10,000 followers on Instagram. So if they’re building their clientele, their clients are coming. I know the person, so I’m basically getting my work off, my treats and my things, with their clients. That’s how I work sometimes, and I have to split what I make with them or something like that, make negotiations with them.

**Interviewer:** Does that mean when someone who has a lot of followers posts your work, you get messages on Instagram?

**Yvonne:** Yes, I get follow requests, messages. One lady wanted me to provide the sweets and the beverages for her wedding.

-Yvonne, F, Black/African American, catering business

Even though greater publicity would benefit her business, Yvonne chooses to keep her Instagram account private, which provides her control over who follows her, considering her business is not legal. She explained that she felt comfortable first selling in the physical hair salons where she knew people, and building on those networks to expand her online presence. Other participants used fake names online even if they posted pictures of their face. They felt that showing their face was important for building trust without having to share other identifiable information about themselves. When asked to explain what they they were concerned about, they did not provide clear answers other than a general desire to be as careful as possible. Similarly, participants with legal business entities described the benefits of selling in offline markets to first establish trust with customers in-person, and then converting them to online customers through Instagram, Facebook, and Etsy.

Another participant who owns a small bookstore felt that online exchanges with customers were diminishing the social capital created through offline interactions. Even though she had an active Facebook Page for her store, she expressed that the majority of her customer relationships were cultivated through in-person interactions.

“I think the buying and selling of goods and services is personal and it’s reciprocal. I think one of the things that’s lost in the Etsy world, I don’t know as much about Etsy, but in the online world is that there’s no reciprocity and there’s no trust.” -Gladys, F, Black/African American, bookstore

While interviewing her in her store, it was very apparent the priority she placed on in-person social interactions. During our hour-long interview, four different locals came to the store just to see how she was doing and have light conversation. When a pair of new customers came in, she stopped the interview so that she could guide them through the store.

However, these values of building trust offline while maintaining privacy online seemed to clash with public perceptions of how social media should be used for business. During observations of various entrepreneurial workshops, workshop participants were encouraged to be transparent online by posting images and videos that could tell a story about their life, business, and character. However, many participants were not as comfortable sharing information about themselves online. One participant who receives entrepreneurial guidance from a business mentor who runs an online Facebook group for minority female entrepreneurs described how she was pushed to share more about herself on social media than she felt comfortable.

“I’ve never been a social media person, so when I started my business I had to get on social media. Now I have to begin to post things about myself. It took me a really long time just to put my image on my website because I’m so private. That’s another thing I had to overcome just sharing all of [company name] with the public...Some things you just wanna keep private and that’s you. You don’t want everybody to know everything about you.” -Camilla, F, Black/African American, candle business

Previously, Camilla sold makeup products through Amway, a company that allows people to sell health, beauty, and home-care products door-to-door for a small profit. Unlike with Amway, where she primarily had to talk about the product characteristics in a fleeting conversation, she now has to sell the products and her life’s story as a creative on the much more permanent platform of social media. Another participant who started a potato chip company from his soup kitchen expressed dismay about how social media has changed how he has to present himself as an entrepreneur:

“I’m still trying to get used to ‘me, me, me, me, me, me, me. I’m gonna take a selfie. I’m gonna show you what I’m eating, I’m gonna...’ You know...It’s still a learning curve to not be so humble and to say, ‘I, I, I’ all the time.” -Fredrick, M, Black/African American, food product business

Overall, participants expressed apprehension over the expectation that they needed to post pictures and stories online about themselves working and interacting with customers, rather than just highlighting the physical features of their products. Necessity-driven entrepreneurs took a more cautious approach to online publicity and described bootstrapping legitimacy offline first before expanding their online presence.

### 5.3 Socio-cultural Context and Community-focused Ventures

Participants also described motivations to perform entrepreneurship for community benefit, often making decisions to support the well-being of others over their own business growth. Some saw their entrepreneurial endeavors as active responses to a distrust of institutionalized power, such as city government, and in some cases, non-profits. In interviews, the history of institutional oppression was raised multiple times. Two participants described how the Federal Highway Act of 1959 ended the burgeoning future of Black-owned businesses in Detroit when it allowed for highways to be built through Paradise Valley, destroying the most prominent African American business district at the time.

A more recent part of Detroit's history is its tryst with gentrification in the past decade [97]. Our respondents are long-term residents, and issues of tension with institutions emerged in conversations. Two participants cited recent disputes between the city government, non-profits, and locals on how to best support community growth without over gentrification. While participants described using social technologies as part of their day-to-day entrepreneurial work, they emphasized that social technologies would not be the driving force behind large-scale community change. Participants instead cited policy-level supports, such as subsidized building rent, as the most influential factors in keeping small businesses running long-term. We also noticed that participants generally had a more negative impression of technology because many of its benefits were out of reach for those in their own resource-constrained communities.

Particularly salient examples of necessity-driven entrepreneurship include participants who were motivated to start their businesses to build up their local community, even if entrepreneurship was not one of their primary interests. For instance, Raymond explained that he chose to run a historical tours business because he felt that he was making greater impact by teaching locals and visitors the city's racial history.

"I really feel like I'm doing this almost kicking and screaming. That I have to live the way that I have to live. Teaching history is what I love to do. If there was a way that I could do that and my needs would be taken care of, but the fact that I'm doing what the community needs, and I realized that the community needs people to teach this history. If there was a way to do that without the idea of starting a business, and writing invoices, and sending W-9's to people, and charging people a fee, if there was a way to do that, then I'd do that...I'm using business as a vehicle to teach history." -Raymond, M, Black/African American, historical tours business

He explained that he put up with the hassles of entrepreneurship because his tours help build local pride and awareness so that "people who are not policymakers will see what we're doing and put pressure on policymakers to take a different view." While there are online platforms, like Tripadvisor and Airbnb Experiences, which help market these types of businesses to a wider audience, Raymond found the work needed to participate to be infeasible. He described the regular check-ins with the platforms and filling out forms for almost every tour to be too time consuming given that he is a one-man business with another part-time job. The decision to stop using these online platforms suggests that the requirements for participation may be too high for those who cannot afford to hire additional help.

Still, participants described taking it upon themselves to fulfill basic community needs through entrepreneurship. For instance, Pat explained that she was motivated to build her grocery store in a neighborhood that is considered a food desert by the USDA [2].

"And a lot of times when I speak to people about eating healthy they say, 'I don't have access to it. I would do it if I had access.' And it's all about access...there was a store called [Name] recently that was in the paper that had outdated meat and things like that. And that's right in my neighborhood. That's exactly the reason that I'm really motivated about doing it [healthy food store] in this particular neighborhood." -Pat, F, Black/African American, catering business

She explained that she wants to add educational components to this business to help customers learn to cook with healthy ingredients. Additional participants described an educational component to their businesses, including teaching locals hairstyling techniques, photography, or just general business skills.

Even though starting these businesses in low-income areas is more risky because there are fewer clientele with disposable income, participants still chose to prioritize local community needs. For

instance, Joanne described how she spent over seven hours doing a girl's hair for only \$45 because she knew the girl could not afford a higher price. She expressed,

“What motivated me to do hair was because I know a lot of young ladies can't...I can give back to my community and that's also what it's about. Giving back to your community and not charging an arm and a leg for stuff people been doing since back in the day.” -Joanne, F, African American, hair business

Being able to set her own prices depending on the client was seen as a tool to support community members with different needs. Another participant (Marshall) who owns a pedicab business described his motivations to primarily hire recovering drug addicts, like himself, even though they tend to only keep the job for around three months. Similarly, Pat expressed that she wants to hire a store manager who is local to the neighborhood. She explained that her criteria to hire local has slowed the growth of her business, but she felt it necessary for the long-term benefit of the community:

“I would like for them [manager] to want to stay here because you can't live outside of Detroit and be effective in Detroit at the same time. People say, ‘Yes you can.’ No you can't, sorry.” -Pat, F, Black/African American, catering business

These examples uncover nuanced cultural factors behind business decisions that are difficult to program into online algorithms. For example, participants expressed that existing entrepreneurship support tools like crowdfunding often did not meet their particular needs in resource-constrained economies. One participant expressed that crowdfunding was only useful for people who were already engaged in higher-income networks:

“So crowdfunding I think is a wonderful idea. It doesn't go over well in the African American community. There are not very many examples of African Americans that have done well in crowdfunding...It's a function of your network, and a lot of times, just plain African Americans don't have a network of people that have a network of people who have disposable income...This economic recession, for a lot of communities, it never ended. I mean we talk about unemployment and stuff going down, but in communities like this, this neighborhood probably has universal unemployment.” - Fredrick, M, Black/African American, food product business

He expressed that “lump sum” solutions like crowdfunding were especially frustrating because it's “like you get a car, but you don't have money coming in to buy gas.” Another participant (Jeanette) who did run a successful Kiva crowdfunding campaign expressed that it was useful in helping her buy one kitchen appliance, but she chose not to crowdfund again because the time and effort required to manage the campaign was not worth the funding. Gladys described applying to a local crowdfunding company, but was rejected for unknown reasons.

The socio-economic culture in Detroit is inherently different from the high-growth entrepreneurial environments, like Silicon Valley, where competition over company valuations and funding tend to mark who is most prestigious. Instead, we see that values around competition, risk-taking, transparency, and convenience, were not strongly mirrored in places like Detroit, shaping different reasons for why people start businesses and how they use technology for their day-to-day work.

## 6 DISCUSSION AND DESIGN IMPLICATIONS

Entrepreneurs in Detroit perform work in very different socio-economic conditions than opportunity-based entrepreneurs in wealthier economies. Originally, we asked, (1) What drives people in resource-constrained economies to perform entrepreneurship? and (2) How do social technologies support or inhibit professional agency when performing entrepreneurship in resource-constrained

communities? With respect to these research questions we found that micro-entrepreneurs in Detroit were driven to perform entrepreneurship to cope with life disruptions, circumvent barriers to traditional employment, and support local community needs. Necessity-driven entrepreneurship in the United States shaped how social technologies were used to achieve agency with respect to privacy, safety, and day-to-day work practices in ways that differed considerably from opportunity-driven entrepreneurship.

## 6.1 Necessity-driven Entrepreneurship in the United States

One of the main motivations for this study was to expand the discussion around entrepreneurship in CSCW and to understand necessity-driven entrepreneurship in the Global North. Our participants shared some characteristics with their Silicon Valley entrepreneurial cousins, but they also faced socio-economic challenges similar to those faced in the developing world—unemployment, poverty, and limited access to food and transportation [42, 43]. As a result, we find both similarities and key differences between necessity-driven and opportunity-driven entrepreneurs in the United States and how they use social technologies.

Among the similarities are that both groups seem to use social technologies as a way to find important networks of people—mentors, peers, and customers [51, 62, 64, 65]. Among our participants, we found that the use of social media for business still required some offline bootstrapping. In addition, both groups of entrepreneurs continue to depend on in-person social networks, even in an age of rampant social technologies [71]. Tech entrepreneurs continue to compete for positions in prestigious accelerator programs like Y-Combinator, exactly because real human ties still have weight that cannot be readily duplicated online [86]. Yet, the nature of these social networks are inherently different. Researchers studying the culture of Silicon Valley describe it as "a world of strangers" [29]. They find that interpersonal ties are based more on business relationships rather than on the complex familial ties typically associated with social capital and civic engagement [29, 94].

Conversely, we found that those in resource-constrained contexts were being driven or encouraged into entrepreneurship to support strong local connections and to attain greater economic stability. This contrasts strongly with Silicon Valley entrepreneurial motivations which are dominated by narratives of self-actualization and world-changing impact [12, 92]. Instead, our participants spoke of wanting to "give back" to their immediate communities, but not for the sake of millions of global users.

*6.1.1 The American Dream.* Being in the United States introduces a unique dichotomy between localized hardship against a backdrop of "The American Dream," which shapes how vulnerable populations perceive entrepreneurship. As Valdez (2011) points out, entrepreneurship has a double identity in the United States for "How can classism, racism, sexism exist in a society that engenders human agency through equality of opportunity, rewards individual achievements, and is rife with entrepreneurs from all walks of life?" [112, p. 132-133].

In a way, our participants saw entrepreneurship as both necessity *and* opportunity. They expressed both being pushed into entrepreneurship, due to employment barriers, and choosing entrepreneurship, in order to have greater control over their personal destiny. For these reasons, entrepreneurship was not just a way to make additional income, but part of their identity in how they saw themselves professionally and as a contributing member of their local community. Acknowledging the contextual and personal factors of being a necessity-driven entrepreneur highlights future challenges of designing for seemingly competing needs, such as for both publicity and privacy, or organizational structure and professional agency [56, 122].

*6.1.2 Minority Entrepreneurship in the United States.* Given Detroit's majority African American population (82.7%), this work has key implications for minority entrepreneurs. There is much literature on micro-entrepreneurship in the United States by minority populations, but much of this work focuses on recent immigrants in a small set of hub regions [99, 100]. Such work has proposed that the experience of immigrants in starting and sustaining businesses is aided by their kin networks, and benefits of first generation ties to home countries. Moreover, these groups such as South and East Asian immigrants have also benefited from the positive cachet of being 'model minorities', which selectively benefits a smaller ethnic set of immigrants [10]. Groups such as African Americans and Hispanics/Latinos/Latinas do not have access to the same entrepreneurial options that other immigrant groups do, and are instead held back in running enterprises by existing structural disadvantages that shape their participation in economic systems more broadly [112].

For instance, literature on development in Detroit describe conflicting narratives on how the city both displays and oppresses Black entrepreneurship [84]. Sociologists describe how cities often fetishize Black culture to improve their external image, while at the same time promote policies that discriminate against their economic growth [84]. Supporting minority entrepreneurs goes beyond publicizing their success when convenient. Instead, local governments and institutions in power must involve marginalized populations in policy development [11]. Likewise, technology developers must consider the complex constraints of users who are in greater need of employment support, yet have fewer pathways to participate.

## 6.2 Designing for Professional Agency

While introducing technology does not solve larger societal problems such as racism and discrimination [32, 111], technologies play a key role in how workers manage their day-to-day work [39, 67, 77, 109]. Building on a socio-cultural perspective of how agency is constructed [49, 116], our findings suggest that in order to support professional agency among micro-entrepreneurs in resource-constrained communities, social technologies should 1) prioritize privacy and safety, 2) allow for increasing levels of independence, and 3) facilitate local engagement.

*6.2.1 Prioritize Privacy and Safety.* Starting a business in resource-constrained communities inherently involves a wider range of risks compared to regions of greater economic wealth and well-being [18, 42, 43]. Many of our participants repeatedly expressed a desire to maintain personal privacy and safety, sometimes at the cost of expanding their business faster. Therefore, traditional Silicon Valley approaches to design, like "move fast" and "fail often," may not be the most appropriate for contexts where people take entrepreneurial risks out of necessity rather than opportunity, and must rely on online platforms for their basic income needs [120]. Similar to others who have studied privacy and self-disclosure of sensitive information online [20], we see privacy as complex yet necessary in order to maintain personal safety. We define privacy as the ability to control how one's personal and professional information is presented and shared with others [88, 107, 117, 119].

With respect to social technologies, our findings show that people were wary of external consumer-provider matching algorithms and preferred community-driven work-arounds that gave greater agency to the provider. This included choosing on-demand work opportunities that allowed them to screen all of their customers through various mediums of communication, only performing work in places that they deemed safe (i.e. home, storefront), using fake names on social media pages that require the use of real names, and keeping their business Instagram pages private. The reasoning behind this behavior seemed to stem from their overall life experience of using tight-knit trusting relationships to guard against potential societal dangers.

This behavior of adopting and appropriating technologies to fit specific personal and community needs is common in resource-constrained communities [15]. Adapting technologies to better fit

one's socio-cultural context helps to combat power relationship with technologies that are often designed in higher income areas [16, 26] and engender inherently different values around how people should interact and work [13, 14, 67].

While many of these values were expressed in relation to the participants' particular socio-economic environment, people in general are sharing similar sentiments about privacy and safety online [27, 121]. For instance, consistent with previous work in the sharing economy, we also found that participants avoided driving for Uber in neighborhoods they deemed unsafe [79, 108]. Similarly, studies on Facebook users also find that those who do not feel that their privacy needs have been met do not experience the same level of social connectedness with others online [121]. The long history of work on privacy online shows that impressions of privacy can impact how the most vulnerable users navigate these platforms to access critical resources needed for socio-economic well-being. Consistent with previous literature, what is considered "private" or "safe" varies from person to person. Various researchers have suggested that social media technologies should allow for a "privacy fit" or "collaborative privacy" that meets the needs of the platforms' diverse user populations [28, 121].

*6.2.2 Allow for Increasing Levels of Independence.* While formalized ways to participate in on-demand work through the sharing economy, such as Uber, Lyft, and Taskrabbit, were seen as potential opportunities to gain needed income, participants did not see themselves working on these platforms forever. Various existing sharing economy applications promote the idea that they are entrepreneurial support platforms by allowing workers to gain additional income while they build startups on the side [5, 6]. However, our work highlights how micro-entrepreneurs in resource-constrained communities often prefer to use their time in the sharing economy not just for income generation, but also to make connections and build business experience that could be uses to launch future related ventures.

Our findings show that the plug-in-and-work model of platforms like Uber and Lyft does not meet many of the needs of aspiring micro-entrepreneurs in resource-constrained areas. Instead, we found that micro-entrepreneurs in Detroit chose to participate in informal sharing economies through tightly-knit support groups of similar others. Many of these groups existed on platforms like Facebook, where they could both connect with potential customers as well as peers. Participants described preferring online groups that allowed them to seek entrepreneurial opportunities aligned with their interests and connect with customers using both in-platform (e.g. Facebook Messenger) and out-of-platform (e.g. phone calls) communication mediums.

While sharing economy sites, like Uber, claim to support entrepreneurs, they give their workers very little opportunity to develop skills for upward mobility or building personal brands and customer networks needed to grow a business. In contrast, informal online groups allow entrepreneurs to locate peers to exchange advice, customer contacts, and resources. Dillahunt et al. considers this informal community activity a potential "pre-sharing economy," an opportunity to understand and support the informal sharing economy activity in communities in order to inform the design and creation of tools that could better meet their needs [38].

While higher provider-consumer scaffolding (e.g. matching, payment processing) creates lower barriers to entry, platforms that have an explicit goal to support the growth of entrepreneurship should consider providing for increasing levels of control over one's brand and customer base. Similar efforts have been made in the crowdfunding space, such as with the partnership between Kickstarter and Amazon's Launchpad program, which provides a transition from crowdfunding a product to selling it on the online marketplaces full time [1, 70]. Platforms like Uber, Lyft, Airbnb, and TaskRabbit, could provide similar partnerships or platforms that provide their workers greater independence and opportunity for growth.

*6.2.3 Facilitate Local Engagement.* There has been a growing discussion around how to make global social technologies more local to support stronger civic engagement. Scholars have found that neighborhood residents are using community-oriented social media systems to live more energy consciously [37] and combat crime [48]. Our findings build on this growing area of research to show how micro-entrepreneurs are using social technologies to engage with and support their communities.

While many see the value of social technologies as providing the ability to engage with people all over the world, researchers are also finding that online engagement drives offline behavior. For instance, Erete describes how people use community-oriented social technologies online to discuss neighborhood crime, which informs what questions people ask in offline community forums [48]. Hui et al. found that co-located creative communities, like makerspaces, leverage online community communication channels to foster offline awareness and interactions around other people's project work [63]. The use of social technologies to support online-offline transitions is also found in people-nearby applications, like Tinder and Grindr, where people use the online space to evaluate others and build initial trust before agreeing to meet in person [57, 61, 110]. For entrepreneurship, offline relationship development is still needed for skill development and resource exchange, especially in resource-constrained communities where in-person interactions are heavily relied on to build trust [31].

However, designing for local engagement on social media takes into account different constraints compared to global social technologies [47]. With community-oriented social technologies, users are more often concerned about privacy because they could be more easily identified by local acquaintances [48]. In addition, community-oriented social technologies, like Nextdoor, are more often used for general announcements rather than in relationship development and knowledge sharing [24, 82], which are crucial for supporting entrepreneurship.

Similar to previous work on the design of community-oriented social technologies, we find that online small group engagement is needed for building trust and fostering engagement with the community at large [47]. Our work finds that these small groups are often initiated through existing network connections or offline events, such as workshops. Participants cited how these online small group interactions with locals help them gain geographically specific advice, such as knowledge around city-wide business policies. In contrast to the large online entrepreneurial groups of thousands of members, participation in small online groups were also more likely to foster offline meetings where members could develop stronger personal relationships with entrepreneurial peers, which supports both information exchange and overall self-efficacy [63]. This local focus of social technologies could even be extended to connecting entrepreneurs and customers to support local wealth generation [74].

However, not all participants had the luxury of knowing other micro-entrepreneurs when they started or had the time to attend entrepreneurial events. In these cases, there is an opportunity for social technologies to facilitate small group development between local peers and mentors. For example, technologies could recommend small group participation with entrepreneurial peers who work in similar businesses and could provide local knowledge. While connecting potential business competitors could deter interaction, our findings indicate that in resource-constrained places like Detroit, entrepreneurs understand that a stronger market overall helps personal sales and publicity.

Overall, we must understand how to better include marginalized voices and values in the design process of social technologies [34]. Building on previous work designing employment interventions in low-SES areas [32, 33, 35], we could involve co-design and participatory design in creating employment tools that uncover opportunities to meet the unique needs of workers in "riskier"

contexts [31]. Community-focused approaches may seem slower at first, but would lead to products that reflect the values of those who face greater barriers to professional resources [52, 56].

## 7 LIMITATIONS AND FUTURE WORK

We acknowledge limitations inherent with studying a single area, like Detroit. While potentially limiting the generalizability of our findings, it also provides an in-depth study of a particular region. We believe this allowed us to identify stronger patterns in the data due to participants' similar experiences. Second, we acknowledge that not being native residents of Detroit may limit our understanding of the people and culture.

Finally, even though we recruited through multiple offline and online avenues, it is possible that we were either selecting for empowered people (i.e. people comfortable talking about the state of their business), or people who were doing particularly poorly (i.e. needed the financial compensation). While our array of recruiting methods allowed us to recruit a diverse sample of micro-entrepreneurs in Detroit, it also introduced future questions around differences in sub-categories within our sample population, such as gender, types of entrepreneurs, and individual personality. While our initial data did not reveal any significant differences between these categories, we expect that there are some differentiation. We hope to explore differences between subcategories of micro-entrepreneurs in resource-constrained communities in a future larger scale survey-based study with both micro-entrepreneurs in Detroit and in the nation at large. The findings from this initial qualitative study will inform future survey questions around potential motivations, technology usage, and perceptions of professional agency.

## 8 CONCLUSION

We performed an in-depth qualitative study involving interviews with 26 micro-entrepreneurs in Detroit and observations of entrepreneurship events. We found that micro-entrepreneurs in Detroit were driven to perform entrepreneurship given their resource-constrained conditions, which shaped how they used social technologies for business purposes. Participants adapted or avoided social technologies to meet their needs around professional agency, privacy, and local engagement. These behaviors help to inform implications for how the CSCW community can design social technologies to better meet the employment needs of those in resource-constrained contexts.

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