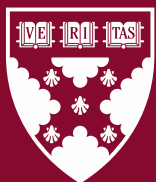


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Location-Specificity and Geographic Competition for Remote Workers

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Abstract

The precipitous growth of remote work has given rise to a new phenomenon: geographic competition between localities for the physical presence of remote workers. Remote workers with high general human capital may create value for their new destinations and reverse net talent outflow from smaller cities in middle America and globally. However, localities seeking to attract, retain, and create value from so-called “digital nomads” face significant challenges because such workers may have a low attachment to their new destination. Analogizing these challenges to the problem of creating and capturing value from workers with general human capital, we argue that localities can compete for remote workers by leveraging location-specific attributes which create value for the individual and the locality. We examined these ideas in the context of Tulsa Remote, a program that provides relocation incentives and a bundle of services to increase engagement and embeddedness in Tulsa, Oklahoma. We found that Tulsa Remote increased community engagement, real income, and entrepreneurship of remote workers, benefiting both the community and the individual. Tulsa Remote increased worker’s willingness to stay, and local community engagement is a key driver of this relationship. This work thus suggests that location-specificity enables localities to both create and capture value from remote workers.

Keywords: Geographic Competition, Remote work, Location-specificity, General human capital, Pro-Sociality

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Location-Specificity and Geographic Competition for Remote Workers

1. INTRODUCTION

For most of history, where a worker lived was determined by where there were opportunities to be gainfully employed. The precipitous growth of fully remote work, however, has allowed more workers to relocate to places where—were it not for remote work—they might not otherwise have been able to live. In 2023, nearly 17 million Americans are “digital nomads” (Nikolovska, 2023), working online and not in a fixed place (Choudhury, 2022a; Everson, King, & Ockels, 2021). The potential for remote workers to live anywhere has led to a new form of competition: geographic competition among localities for the physical presence of remote workers. In 2022, more than 70 localities in the US offered incentives to relocate remote workers to reverse brain drain, spur entrepreneurship, and revitalize their economies (Choudhury, 2022a). However, since remote workers may be unlikely to stay in a given area, localities investing in relocating them may suffer a pyrrhic victory when remote workers simply collect any incentives offered and then move on to the next place. So, why are localities competing for geographically mobile remote workers? And how can they compete successfully?

We explore these questions by reframing them through the lens of the strategic human capital literature, which has focused on an analogous question: how can firms create and capture value from workers with general human capital (Becker, 1962; Coff, 1997; Kryscynski, Coff, & Campbell, 2021). This literature emphasizes mechanisms which work by triggering one of two interrelated effects: (a) increasing the worker’s *productivity* at the focal firm relative to other firms (Burbano, 2019a; Campbell, Coff, & Kryscynski, 2012; Flammer & Luo, 2017; Gubler, Larkin, & Pierce, 2018; Lazear, 2009; Leuven & Oosterbeek, 2001; Wang, He, & Mahoney, 2009), or (b) increasing the worker’s *relative utility* of staying at the focal firm, either directly or via external conditions that make leaving the firm less attractive. (Acemoglu & Pischke, 1999; Burbano, 2016; Burbano, Mamer, & Snyder, 2018; Kryscynski, 2020; Kryscynski et al., 2021; Starr, Ganco, & Campbell, 2018). In both cases, firms are able to create firm-specific utility to keep workers in the firm (either via higher pecuniary or non-pecuniary benefits) while capturing some of the surplus between productivity and wages. Research also emphasizes the role of recruiting workers who are willing to invest in developing firm-specific capital, or who derive value from firm-specific incentives in the first place (Morris et al. 2016).

As in previous work engaged with regional development from a strategy perspective (Shaver, 2018) and that connects benefits from human capital investments to social ties that could be geographically-bound (Gubler, 2019), we translate the ideas developed in the strategic human capital literature into the context of geographic competition for remote workers. This translation implies that localities can implement practices that (a) increase the value created by remote workers to the locality (by e.g., increasing local economic activity or community engagement), or (b) increase the relative utility (either from pecuniary or non-pecuniary benefits) that remote workers experience from living in the locality relative to the expected utility of living elsewhere. Indeed, some practices can address both dimensions, such as fostering community engagement, social cohesion, or facilitating new venture formation (which increase both value to the locality and utility to the worker). In addition, careful screening and recruitment is essential to ensure workers value location-specific incentives or are willing to invest in developing location-specific capital.

To explore these ideas, we examine the Tulsa Remote program, which pays remote workers \$10,000 to relocate to Tulsa, Oklahoma for at least one year, and provides a working space, integration into the local community and entrepreneurial ecosystem, and housing assistance. Launched in 2019 to attract individuals with high economic potential to the city, Tulsa Remote received over 20,000 applications and relocated nearly 2000 individuals by mid-2023, with 75% staying at least two years. Tulsa Remote thus provides a unique context to study if and how a relocation incentive strategy may work and what complementary systems of activities attract, retain, and create value from remote workers.

We examine the Tulsa Remote using a mixed-methods approach. First, we conducted a qualitative assessment of Tulsa Remote's activities and potential effects on its participants based on interactions with the Tulsa Remote team, on-site visits, proprietary documents, and interviews with participants. Following an abductive approach (Flammer & Bansal, 2017; Flammer & Ioannou, 2021; Graebner, Knott, Lieberman, & Mitchell, 2023; King, Goldfarb, & Simcoe, 2021; Seo, Luo, & Kaul, 2021), the initial qualitative assessment uncovered several mechanisms that might uniquely increase participants' value to Tulsa, and willingness to stay in Tulsa even beyond the duration of the program. Based on these findings, we developed and deployed a survey to measure remote workers' pre- and post-Tulsa Remote behaviors and work/socioeconomic characteristics that would reflect potentially location-specific attributes, as well as the willingness to stay in an area. We leveraged a difference-in-differences design to estimate the impact of

Tulsa Remote on its participants, comparing changes within treated individuals before and after the Tulsa Remote program to changes within a variety of “near-treated” individuals over the same time frame.

Our quantitative and qualitative findings reveal not only that the Tulsa Remote program increased participants’ willingness to stay in Tulsa, but also that several mechanisms drive this relationship. First, Tulsa Remote increased the pecuniary benefits to living in Tulsa, both because it has a relatively low cost of living (an aspect not unique to Tulsa) and because Tulsa Remote deploys several activities to prevent their members from suffering productivity losses by moving to Tulsa. Second, Tulsa Remote promotes a series of activities to facilitate local entrepreneurial endeavors. Finally, Tulsa Remote creates location-specific utility via non-pecuniary mechanisms, adding value to Tulsa by facilitating connections between Tulsa Remoters themselves and local pro-social activities, such as volunteering and participation in local organizations (e.g., school boards, local NGOs). We find that, although these three potential mechanisms (real income, entrepreneurship, community engagement) explain approximately 30% of the effect from Tulsa Remote on willingness to stay in a region, engagement with the local community—the mechanism that is the most specific to the location—is the main driver of expected retention.

Finally, in light of potential adverse selection into who applies to Tulsa Remote, we study the role of careful recruitment to distinguish between applicants who might be willing to develop value in the local community and those who just want the incentives. We analyze textual data about applicant’s self-reported ‘fit’ with the program and data from notes taken by interviewers during the selection process. We find that Tulsa’s endogenous selection choices connect with Tulsa Remote’s strategy to attract and retain remote workers who are interested in building connections within the local community.

The contribution of this study builds on the intersection of three streams of research: (1) the literature in strategic human capital on value creation and capture from workers with general human capital (Coff, 1997; Kryscynski, 2020; Kryscynski et al., 2021; Starr et al., 2018), (2) the rise of remote work and work-from-anywhere (Choudhury, 2022b; Choudhury, Foroughi, & Larson, 2021; Teodorovicz, Sadun, Andrew L Kun, & Shaer, 2021), (3) on the study of pro-sociality as a critical mechanism that shapes value creation and capture from human capital (Bode, Singh, & Rogan, 2015; Burbano, 2016, 2019a; Burbano & Chiles, 2022; Burbano et al., 2018; Carnahan, Kryscynski, & Olson, 2017; Flammer & Luo, 2017; Gubler et al., 2018), which also connects to the broader agenda of studying the intersection between strategic management and policy goals (Balasubramanian, Chang, Sakakibara, Sivadasan, & Starr, 2022; McGahan,

2020; Shaver, 2018; Teodorovicz, Lazzarini, Cabral, & Nardi, 2022). Our main contribution is to broaden the scope of value of the strategic human capital literature’s findings on how firms create and capture value from workers. That is, we leverage the idea that what might help firms compete in human capital markets may also help localities create and capture value as they compete in the new geographic market for remote workers. In doing so, we embrace the idea that localities can design systems of (human resource management) practices (Chadwick, Super, & Kwon, 2015; Porter, 1980) that provide unique pecuniary or non-pecuniary benefits to both workers and the locality. We also validate these ideas with qualitative and quantitative evidence from the Tulsa Remote program, emphasizing the importance of recruitment and screening to limit adverse selection and ensure a match with worker tastes and preferences.

2. CONTEXTUAL BACKGROUND: THE RISE OF REMOTE WORK AND GEOGRAPHIC COMPETITION

Since the geographic distribution of human capital has historically been tied to the geographic distribution of employment opportunities, the potential for geographic competition for human capital was limited to geographic competition over job-producing firms, like Amazon HQ2, and the potential amenities that such firms and their workers might value (e.g., schools, safety) (World Bank, 2015). However, in light of recent evidence that the vitality of the region depends on the talent pool (Shaver, 2018)—an element which could be shaped by local policies—and a dramatic increase in the supply of remote workers (Barrero, Bloom, & Davis, 2021; Neeley, 2021), localities have increased their demand for the presence of remote workers.

In this context, and amidst the rise of remote work precipitated by the COVID pandemic, localities began to consider programs to attract highly educated remote workers to revitalize their economies. Their hope is to bring in individuals who will increase the tax base and contribute in valuable ways to enrich the community, perhaps via business development, entrepreneurship, and job creation. For instance, several countries worldwide have started to offer “digital nomad” visas for remote workers to gain temporary access to the region, enabling the country to benefit while also potentially creating cross-border knowledge flows (Choudhury, 2022a, 2022b). Similar policies to relocate remote workers have been developed in the United States but focused on attracting remote workers from within the country. Figure 1 shows a map of the United States where each blue marker represents the location of a city that had one program to attract remote workers by mid-2022.

INSERT FIGURE 1 HERE

As localities attempt to benefit from attracting fully remote work to nurture their local talent pool and to foster regional development, they engage in a competition with other localities for the presence of remote workers. This competition occurs simultaneously (and is analogous) to the competition among firms for a worker's labor and human capital. The rise of policies to compete in the market from remote workers stems from a century of migration of highly educated workers from smaller towns towards larger, and (at first) more economically attractive cities (Edward Glaeser, 2012). These patterns hurt smaller towns, who were outcompeted by large dense urban centers which attracted larger numbers of talented individuals, by reducing the local stock of skilled workers and sense of community (Carr & Kefalas, 2011). However, the cost of living in large and dense urban centers also started to increase, reducing real income for highly educated individuals in large cities (Moretti, 2010). As a result, the recent rise of fully remote work created conditions which changed the landscape of the market for the physical presence of skilled workers, and that enables programs to attract remote workers to emerge.

In the next sections, we emphasize the challenges these programs face and whether and how they might successfully compete in the geographic market for remote workers.

3. THEORETICAL BACKGROUND: CHALLENGES WITH GEOGRAPHIC COMPETITION FOR REMOTE WORKERS

Localities face several challenges in recruiting remote workers to their geographic area. If remote workers are equally valuable to numerous localities, then "perfect" geographic competition for remote workers will result in localities paying remote workers their value and extracting no residual value. Indeed, that these workers are sometimes characterized as "digital nomads" suggests that such workers move frequently to seek out new places to live, making it difficult for any locality to hold onto them or extract value from them. For example, Nikolovska (2023) suggests that the average digital nomad stays just 71 days in a city. In the worst case, cities that offer a subsidy to attract a remote worker may suffer a winner's curse, where a worker takes the subsidy, provides no value to the locality, and leaves as soon as possible. So, how can localities create and capture value in competing for remote workers?

In the following section we chart a potential answer to this question by analogizing it to the challenges firms face in terms of creating and capturing value from general human capital (Barney & Wright, 1998;

Campbell et al., 2012; Coff, 1997; Coff & Kryscynski, 2011; Ployhart & Moliterno, 2011; Wang et al., 2009). Just like fully remote workers may provide similar value to the locality regardless of where they live, workers with fully general human capital are equally productive regardless of the firm. By translating ideas from the literature on creating and capturing value from workers with general human capital, we can draw insights for how localities might successfully compete in the geographic market for remote workers.

3.1. Creating and capturing value from general human capital

In the classic conceptualization of labor market competition for workers whose human capital is equally valuable across employers (Becker, 1962), perfect competition ensures firms bid up the worker's wage until it equals their marginal product, with the firm unable to capture any residual value. Strategic human capital literature has emphasized two broad classes of solutions to the challenge of creating and capturing value from workers with fully general human capital: (a) increasing the worker's *productivity* at the focal firm relative to other firms, (b) and increasing the worker's *utility* relative to other firms (which could involve either increasing utility within the focal firm or exploiting external conditions that reduce the value of moving to other firms). We discuss each of these in turn, emphasizing that they are intrinsically related to each other, and how they enable firms to create "firm-specific incentives" that motivate workers to create value while prolonging their engagement with the firm (Kryscynski et al., 2021).

The first, and most-well known solution is to make the worker more productive *only* at the focal firm. The firm can accomplish this in several ways: they can incentivize workers to develop firm-specific human capital (Barney, 1991; Coff & Kryscynski, 2011; Fister & Seth, 2007), promote co-specialized investments between workers and firm (Leuven & Oosterbeek, 2001), or develop complementarities between a worker's general human capital and other firm-specific characteristics or resources (Brynjolfsson & Milgrom, 2013; Crocker & Eckardt, 2014; Nyberg, Moliterno, Chadwick, & Coff, 2019). While firm-specific resources that generate greater productivity might be as common as a team of coworkers who make each other more productive, other characteristics of a firm that are not directly related to workers' productive activities might also spur productivity. For instance, a firm's mission, its public commitment to social responsibility, or unique care for employee's wellness can uniquely increase worker effort by developing in the worker a higher sense of purpose, commitment, and motivation (Bode & Singh, 2018; Flammer & Luo, 2017; Grant, 2012; Gubler et al., 2018).

Second, even when workers are equally productive across firms, the recent literature on “firm-specific *incentives*” (Kryscynski et al., 2021) suggests firms can still create and capture value from workers by increasing their utility at the focal firm relative to other firms. If firms can find workers which derive utility from characteristics that are specific to the firm, then the firm can pay the worker lower wages relative to competitors and capture the remaining value. For example, several studies have found that firms that engage in corporate social responsibility can attract talent at relatively lower wages (Burbano 2017) and retain workers for longer (Bode, Singh, Rogan 2015). Similarly, the literature on job embeddedness (Holtom, Mitchell, & Lee, 2006; Mitchell, Holtom, Lee, Sablinski, & Erez, 2001) emphasizes the importance of worker’s perception about what they would lose or be unable to recreate if they were to change jobs. For example, workers may develop utility-enhancing relationships at work which would not transfer if a worker were to leave. Coff and Kryscynski (2011) emphasize the importance of these connections when they write “The many links that employees form with other individuals and organizations in their communities lead to idiosyncratic networks that are, by their very nature, very difficult to recreate elsewhere” (p. 1437). Kryscynski (2020) provides evidence in the software industry that an incentive scheme unique to the firm limits turnover and flatten wage-tenure profiles, while Teodorovicz et al (2023) report how developing a uniquely committed relationship between workers and firms enable firms to reduce churn of more productive workers even under highly flexible work arrangements.

Firms could also exploit external conditions that enable them to increase a worker’s relative utility at the focal firm in comparison to other firms. These conditions arise due to frictions in the labor market that reduce the expected utility from outside options (even in the absence of firm-specific resources that uniquely increase the utility of workers). They include search and matching frictions, institutional frictions, and informational frictions inherent in finding and matching workers to potential jobs. For example, the existence of search and moving costs implies that the expected utility of moving to an alternative employer is lower, all else equal. Institutional frictions such as noncompete agreements can further reduce the value of alternative outside options to workers, (Marx, Strumsky, & Fleming, 2009; Starr et al., 2018). There are also many potential information frictions to changing employers that are relevant, such as a worker knowing the quality of another employer (Sockin & Sojourner, 2022), or an employer’s knowledge of the quality of the worker (Lazear, 2012).

The possibility of higher firm-specific productivity and higher firm-specific utility are not mutually exclusive. Rather, firms can pursue practices that enhance both, or can leverage increased firm-specific productivity to increase firm-specific utility, and vice versa. For example, in the classic conceptualization of firm-specific human capital (Hashimoto, 1981), firms share some of the extra productivity with the worker. As a result, firm-specific human capital leads to higher firm-specific utility, since the worker's pecuniary benefit from working at the firm is higher. This enables firm-specific productivity to result in the creation of firm-specific incentives, as workers will uniquely increase their utility of staying in the firm due to a higher pay that could not be matched by competing firms. Similarly, pursuing a social mission that workers value may both give the worker non-pecuniary benefits and increase productivity by increasing the (non-pecuniary) return to work effort. Or, perhaps working within a productive team makes the worker more productive at the focal firm, might also increase non-pecuniary aspects of worker utility that are tied to interacting with the other members of the firm. Lastly, frictions which reduce worker's outside options give firms incentives to invest in training their workers to increase their productivity (Acemoglu and Pishke, 1999; Campbell et al., 2012). For example, Autor (2001) suggests that information frictions which limit the worker's outside options (via their inability of workers to reveal their quality to other firms) results in increases in the firm's willingness to invest in developing even general skills at the focal firm.

Lastly, note that firms' strategies to increase workers' productivity or utility in the firm are not limited to post-hire actions. Part of the firm's ability to increase the worker's productivity at the firm may also lie in their ability to recruit workers who value certain firm-specific characteristics or who are willing to invest in the development of firm-specific capital such capital in the first place (Morris, Alvaraz, Barney, & Molloy, 2016).

3.2. Translation from labor market competition to geographic competition for remote workers

How do these ideas from labor market competition over workers with general human capital (firm-specific productivity and firm-specific utility) translate to geographic competition between localities for remote workers? To begin, we need to transition from anchoring in the firm's presumed goal of profit maximization to the locality's objective, which is, presumably, to maximize the expected present value of the locality. This might be measured in various ways, including the size of the tax base, average individual income, the number of high-quality jobs, community engagement, or subtler measures of quality such as

external perceptions about the vibrancy of business districts or schools. Given this objective, the locality's expected value from bringing a remote worker to the area will be determined by (1) the remote worker's contribution to the community while they are there, (2) how long they will stay, and (3) the cost required to acquire, retain, and create value from the worker. With this objective in mind, we next translate these two ideas from labor market competition to geographic competition for remote workers.

If we consider the idea of practices that uniquely increase the productivity of workers at the focal firm, then the analogous idea for localities is the possibility of making workers *more valuable to the location* relative to other locations. How can the locality help remote workers make a remote worker more valuable to the community? Just as firms may seek to recruit workers who are willing to invest in developing firm-specific human capital (Morris et al., 2016), localities can begin by screening recruits for those who are interested in investing in the development of the community and who credibly indicate they want to stay for the long term. The locality can also foster connections with local businesses, neighborhood groups, volunteering, or finding workers that meet other location-specific needs of the area, or it can promote connections with the entrepreneurial ecosystem and encourage remote workers to start new firms that might potentially grow and bring new jobs and tax revenue to the region. To the extent that such value is tied to resources, people, consumers, or networks that are specific to the location, the remote worker will be able to create more value for the locality than other localities.

The second idea of creating firm-specific incentives that uniquely increase worker utility translates into localities developing location-specific incentives to raise individual utility from living there relative to other places. Such increases in relative utility can derive from pecuniary and non-pecuniary sources, and may be driven by frictions that reduce the expected utility of living elsewhere. We discuss these in turn.

We consider several pecuniary sources of location-specific utility. First, remote workers may experience a direct pecuniary incentive tied to differences in the cost of living across locations. That is, a particular locality might have lower food, energy, housing, and schooling costs, boosting a remote worker's real purchasing power if they moved from a place with a higher cost of living. Although this source of pecuniary gain may not be exclusive to a single location (as several cities may be "low-cost"), this is a dimension that creates heterogeneity in the utility that workers derive from remaining in certain locations in comparison to others. Other, pecuniary, location-specific incentives might be location-specific attributes that make remote workers more productive—either in their existing work or in a new entrepreneurial

venture. For example, providing a communal workspace that fosters worker productivity by enabling remote workers to create unique social capital and benefit from local knowledge spillovers, or an urban design that enables workers to save time on commute and day-to-day chores can all increase a remote worker's productivity and thus their real earnings (if earnings are tied to productivity). Similarly, if remote workers observe a location-specific entrepreneurial opportunity, they may experience pecuniary benefits by leveraging their human capital in a new venture that caters to unique local demand.¹

Non-pecuniary, location-specific incentives may also arise from many of the activities that the locality can foster. For example, remote workers may acquire location-specific utility from developing significant local connections within the community, their neighborhood, or with local businesses. As Coff and Kryscynski (2011) emphasized, local connections can embed workers within their community, increasing the utility of living in a certain location relative to others. The ability for localities to foster such connections may also relate to the direct pecuniary incentives realized from lower costs-of-living, increased productivity, or reduced commute times: If remote workers do not feel as much pressure to make rent or pay a mortgage each month, or simply have more leisure time, then they may be more willing to invest in other activities that reflect utility-enhancing engagement with the local community.

Finally, the idea that frictions limit the expected utility of changing firms translates into the idea that there are frictions that reduce the expected utility of living in other areas. A natural friction is the direct moving cost associated with leaving one locality for another, which can be substantial. Ransom (2022), for example, estimates that moving localities costs an average of \$400,000 in net present value. A second friction is the potential repayment cost imposed by the locality regarding repayment of the incentive if the worker leaves too soon. Lastly, information frictions make it difficult to know what life would be like in other areas. Localities with incumbent remote workers likely benefit from this informational gap because it is costly for remote workers to gather information on other places. These frictions give localities incentives to develop programs to recruit remote workers even when location-specific incentives or capital are unachievable (Acemoglu and Pischke 1999).

¹ In theory, just as the development of firm-specific human capital enables firms to pay their workers more than other firms, if remote workers are more valuable to a certain locality then it would allow the locality to share some of that value with the remote worker. However, in practice, localities typically offer a fixed incentive package.,

Note that for these frictions to help a locality create value with remote workers, however, recruitment on the front end must overcome them. In this sense, the initial incentive payment can help cover some of the direct costs of packing and moving. Localities can also mitigate potential informational frictions by inviting candidates to visit the city, show them the neighborhoods they might live in, visit the local schools, and introduce them to local businesses and leaders. And after a worker arrives, they can help with purchasing a home, applying for entry into schools, and integration into the local community.

To summarize, localities face a challenge in attracting, retaining, and creating value from so-called “digital nomads,” who may simply take any incentive payment they offer and move away as soon as possible. Translating the literature in strategic human capital, however, suggests that localities can seek to create value from remote workers by bundling a set of services which uniquely increase the remote worker’s value to the locality or utility from living there relative to other localities. Some services may help with recruitment, such as direct relocation payments and expected cost-of-living differences, while other services may help with value creation and retention. For example, by helping to embed the worker in a supportive community, or by helping them start a new business, they may create more value for the locality itself via the worker’s pro-social engagement while also giving the worker some location-specific utility from these interactions. Similarly, by helping with housing assistance, they may help embed remote workers in neighborhoods where they find significant value—which would have been otherwise hard for them to afford or identify—and in which they add significant value. Indeed, in our empirical below, Tulsa Remote provides such a *bundle* of services.

Lastly, it is important to stress the importance of recruitment in the face of adverse selection into these programs. Since these programs pay a fixed incentive to relocate—e.g., \$10k in the case of Tulsa Remote—the types of remote workers attracted to such programs may be those with low attachment to their community (e.g., since they can be persuaded to leave their prior area with to a relatively low monetary incentive). If low-geographic-attachment is a fixed individual characteristic, then this creates a “lemons problem” for the localities, since they only want to pay the incentive (and for the other services) to those who will be attached to and create value within the community. Thus, as in Autor (2001), recruitment and screening to sort the “high-commitment-types” may also play a crucial role in solving this lemon’s problem.

In what follows, we empirically examine these ideas in the context of the Tulsa Remote program.

4. BACKGROUND: THE TULSA REMOTE PROGRAM

Tulsa Remote is sponsored by the George Kaiser Family Foundation (GKFF), located in Tulsa, Oklahoma whose mission is to disrupt the “intergenerational cycle of poverty in Tulsa.” Tulsa Remote is one element of a series of initiatives that GKFF had begun sponsoring since 1990s with the goal of promoting the socioeconomic development of Tulsa. While several of these initiatives aimed at fostering new businesses and economic opportunities for current residents, GKFF reported facing challenges associated with an undersupply of job opportunities for highly educated workers in Tulsa, an insufficient number of knowledge-intensive firms in the city, and a low share of residents with college and/or graduate degrees (Newman, O’Dell, & Fikri, 2021). Tulsa Remote emerged as an initiative to overcome these challenges by considering workers that could work from anywhere and bring their skills with them if they moved to Tulsa.

Inspired by other initiatives that emerged in regions such as Vermont and Hawaii, which provided incentives for remote workers to relocate,² GKFF conceptualized and started implementing the Tulsa Remote program in November 2018. The Tulsa Remote program offers a bundle of services which map to the theoretical ideas laid out in the prior section. The program provides a \$10,000 incentive, paid out over the course of the first year in which remote workers to move to Tulsa. If the worker leaves before the year is up, they forego the remaining payments and the last \$1,500 of the \$10,000, which serves as a bonus for staying the full year. In addition, Tulsa Remote helps Tulsa Remoters find housing with the house purchasing process. They also provide office space for Tulsa Remoters to be productive and help integrate Tulsa Remoters into the local community by holding regular social events and connecting Tulsa Remoters with local organizations and the entrepreneurial ecosystem.

The selection process for Tulsa remote works as follows. Applicants must (1) be able to move to Tulsa within 12 months of application, (2) be 18 years old or older, (3) be eligible to work in the United States (since Tulsa Remote cannot sponsor visas), and (4) be full-time remote or self-employed and currently living outside of Oklahoma. The Tulsa Remote team read applications from eligible participants, and rated them on a scale of 1 to 5, with only participants receiving a 4 or 5 invited for a virtual interview. Each applicant that passed the first stage had a 20-minute interview with a Tulsa Remote interviewer.

² Think Vermont, “Remote Worker Grant Program,” <https://accd.vermont.gov/economic-development/remoteworkergrantprogram>, accessed August 2021., “Hawaii’s “Movers and Shakas,” <https://www.moversandshakas.org>, accessed August 2021. Remote Year, “Work and Travel Abroad Programs for Professionals,” <https://remoteyear.com/>, accessed May 2020.

Although interviewers were allowed to unilaterally admit applicants, the Tulsa Remote team held weekly meeting to discuss candidates who would receive an offer and be invited to move to Tulsa.

5. DATA AND EMPIRICAL STRATEGY

To study the mechanisms that potentially enable Tulsa Remote to attract, retain and benefit from its participants, our team partnered with Tulsa Remote to conduct an in-depth, multi-method study. We focused on how participation in Tulsa Remote affected its participants in ways that could explain both their decision to stay in Tulsa after their participation in the program as well as their level of engagement with the local community. With this purpose in mind, we leverage multiple qualitative and quantitative data sources.

We collected multiple types of *qualitative* data. First, we obtained public information about Tulsa Remote, as well as internal documents such as application and interview data. Second, we engaged in more than 30 hours of meetings with several members of the Tulsa Remote team (e.g., Chief Executive Office, Chief Operations Office, administrative staff, and staff working directly with the Tulsa Remoters) to collect information about the detailed activities and expected impacts of the program. We also conducted an observational 3-day visit to Tulsa followed by 14 semi-structured virtual interviews with Tulsa Remote participants. The goal of the visit was to obtain on-site information about the activities that Tulsa Remote promoted for its participants, and engage in conversations with Tulsa Remote members to understand the main benefits and costs associated to their decision of moving to (and potentially staying in) Tulsa.³

To bolster any qualitative findings, we designed and deployed a survey via our partnership with Tulsa Remote which measured the reported behaviors, work/socioeconomic characteristics, and preferences of both Tulsa Remoters and a variety of groups of “almost-Tulsa-Remoters”.⁴ We focused the survey on participants of the first two recruitment waves of Tulsa Remote (2019 and 2020), which had over 20,000 applications, 2,700 invitations to move to Tulsa, and ultimately 763 individuals relocating to Tulsa. Respondents provided information about their lives at the time of survey deployment (June 2021) and about themselves three years prior (June 2018), which was one year before the Tulsa Remote program started.

³ The interviews focused on obtaining information about three main topics: (1) the reasons why they applied to the program; (2) the changes in the participants’ day-to-day life before versus after moving to Tulsa; (3) the benefits that participants now enjoyed in their lives that were attributed to Tulsa Remote and that they would lose if they moved away from Tulsa. Interviews lasted between 30 and 45 minutes, were in English, and were later transcribed alongside notes taken by the research team.

⁴ The survey was deployed before the on-site interviews took place.

The survey covered three areas which the program expected to help keep participants in Tulsa: (1) financial gains after moving to Tulsa (although these gains could be obtained in other areas in the country); (2) engagement in local entrepreneurial opportunities; and (3) a deeper integration within the local community. As a result, the survey asked questions about income, self-reported changes in productivity, engagement with entrepreneurial endeavors, engagement with the local community (e.g., via volunteering activities, participation in local organizations, etc.), as well as several demographic variables. The survey also asked about a respondents' willingness to continue residing in the city where they lived at the time of response.

5.1. Empirical Strategy for Quantitative Analyses

Quantifying the effect of the Tulsa Remote program on participant's willingness to stay and to engage in value creating activities requires an explicitly counterfactual exercise. We need to understand not only what happened to those who entered the Tulsa Remote program, but what would have happened to them had they not joined Tulsa Remote. Constructing this counterfactual is the key challenge in our empirical work. We detail our empirical approach below.

5.1.1. Addressing Selection into Tulsa Remote

Our approach to estimating what would have happened to Tulsa Remoters were they not to have joined Tulsa Remote leverages the staged selection process of the program, which allows us to address several types of selection. We describe these briefly. First, individuals *select into applying*, such that individuals who chose to apply were likely already considering moving to a different city. Second, there is *selection into being accepted into the program*, as Tulsa Remote screens all applications and invites only a subset of the applicants to move to Tulsa. Such organization-side screening likely prioritizes individuals with certain attributes (e.g., high educational level) that Tulsa Remote considers valuable and that are absent in non-invited applicants. Third, individuals *select into accepting the offer*. Finally, individuals can potentially decline to move even after accepting, such that there is *selection into coming to Tulsa Remote*.

We designed a strategy to address—and understand the extent of—these selection issues by obtaining data from individuals belonging to one of three benchmark groups which will be compared against participants of Tulsa Remote. This empirical strategy is analogous to the strategy of Greenstone, Hornbeck, and Moretti (2010), who create a counterfactual group by collecting data about “almost treated” units of

analysis, and to empirical papers which compare the outcomes of “winners” to that of “near-winners.” Since individuals who applied to Tulsa Remote are likely different than those who did not apply (Ashenfelter, 1978), we address *selection into applying* by focusing our attention on obtaining data only for individuals who applied to Tulsa Remote. Conditional on applying, the first benchmark group is that of individuals who were *Rejected Applicants* to Tulsa Remote. Although this group of individuals was sufficiently motivated to apply to Tulsa Remote, they were screened out of the process by the program’s selection team. The second benchmark group comprises of individuals who applied and were accepted by the Tulsa Remote program, but eventually declined the opportunity to move (for unobservable reasons). We call this benchmark group as *Near-Tulsa Remoters*. Comparing Near-Tulsa Remoters to Tulsa Remoters addresses both self-selection into applying and selection into being invited, as individuals in either group were evaluated as “desirable” candidates from the point of view of Tulsa Remote. If the decision to reject the program are exogenous to the outcomes we study (e.g., COVID restrictions that made moving across states harder), then comparing *Tulsa Remoters* to *Near-Tulsa Remoters* would reflect the counterfactual of interest. Lastly, the third benchmark group addresses selection into accepting the offer to move. This group comprises of individuals who applied, were invited to move, accepted the offer, but are yet to effectively move to Tulsa. This is the group of *Soon-to-be Tulsa Remoters*. This group originates from individuals who have either just recently been invited to move or who have delayed their move to Tulsa Remote after being invited. Similar to the case of Near-Tulsa Remoters, the assumption for Soon-to-be Tulsa Remoters to reflect the counterfactual of interest is that the reasons for delayed move to Tulsa are exogenous to our outcomes of interest. Between these three comparison groups the Near-Tulsa Remoters are our default, since people who are about to leave may behave differently in anticipation of leaving.

Table 1 summarizes the treatment and benchmark groups used in our empirical strategy, as well as indicated the type of selection they account for.

INSERT TABLE 1 HERE

5.1.2. Sample and Descriptive Statistics

Table 2 reports the sample size, response rate, and descriptive statistics of the baseline demographic characteristics of the 1243 individuals who responded to our survey, breaking them down by type of respondents. In total, 411 respondents were Tulsa Remoters (response rate of 53.9%%) and 832 were

benchmark non-Tulsa Remoters. Within the group of benchmark individuals, 111 were Soon-to-be Tulsa Remotes, (response rate of 43.7%), 306 were Near-Tulsa Remoter (response rate of 18.4%), and 415 were Rejected Applicants (response rate of 1.4%).

Table 2 also reports the exact p-values of statistical tests comparing baseline characteristics of Tulsa Remoters (referring to the year 2018) against those of individuals in the three benchmark groups. Column 5 shows that Tulsa Remoters and Rejected Applicants who responded to our survey differed in many baseline characteristics. For example, Tulsa Remoters had higher nominal and adjusted income, and more education, reflecting in part the Tulsa Remote mission of attracting high skilled workers. Columns 6 and 7 show, however, that Tulsa Remoters, Near-Tulsa Remoters, and Soon-to-be Tulsa Remoters are either economically or statistically similar across all socioeconomic characteristics in the baseline year. This result provides support to our empirical strategy of comparing Tulsa Remoters to individuals that were invited or that even accepted the offer of Tulsa Remote, but that either declined the offer in the end (Near-Tulsa Remoters) or that are scheduled to move (Soon-to-be Tulsa Remoters). The only variables for which there is a statistical difference is that Tulsa Remoters are less likely to have a previous connection to Tulsa. However, as previous connections to Tulsa are arguably a reason to stay rather than to leave the city, these differences could reduce retention rates of Tulsa Remoters. Regardless, we always control for these variables in our specifications.

5.1.3. Econometric Specifications

To quantitatively examine the potential effects of participating in Tulsa Remote, we use the survey data and compare *Tulsa Remoters* to individuals in each of the three benchmark groups. Throughout the main text, we focus on reporting the results comparing Tulsa Remoters to Near-Tulsa Remoters, our preferred benchmark group. In the online appendix, we report the analogous estimates comparing Tulsa Remoters to the two other benchmark groups.⁵

Our main specification is a difference-in-differences model that compares how various outcomes differ between 2021 and 2018, for Tulsa Remoters versus Near Tulsa Remoters. Our main specification is:

$$Y_{it} = \alpha_t + \alpha_i + \beta(TulsaRemoter_i \times Post_t) + u_{it}, \quad (1)$$

⁵ All results are consistent in analyses using a sample that pools all benchmark groups and uses Tulsa Remote as a “benchmark” group and dummies for each benchmark group.

where Y_{it} is one of the dependent variables of interest for individual i , in period t . $TulsaRemoter_i$ is an indicator variable that assumes value 1 if an individual is a current or a former member of the Tulsa Remote Program, and zero otherwise. $Post_t$ is an indicator variable that assumes value 1 for observations corresponding to the year 2021 (after *Tulsa Remoters* in our sample joined the program), and 0 otherwise (e.g., information about year 2018, a year before Tulsa Remote existed). α_t are year fixed effects, α_i are individual fixed effects, and u_{it} is an error term. All standard errors are clustered at the individual level.

We also report results from another specification where, instead of adding individual fixed effects, we control for pre-treatment socioeconomic variables (\mathbf{X}_i). In these cases, we use the specifications below:

$$Y_{it} = \alpha + \alpha_t + \delta TulsaRemoter_i + \beta(TulsaRemoter_i \times Post_t) + \Theta' \mathbf{X}_i + u_{it} \quad (2)$$

We describe the control variables in the subsequent section.

Some dependent variables asked only about the post-treatment period such that a difference-in-differences design is not possible. For these variables we estimate the following cross-sectional specification via least squares:

$$Y_i = \alpha + \beta TulsaRemoter_i + \Theta' \mathbf{X}_i + u_i, \quad (3)$$

where \mathbf{X}_i is a vector of individual-level socioeconomic characteristics that is fixed in time, as described below. In such specifications, we use heteroskedasticity robust standard errors.

5.1.4. Main variables

Main dependent variables. We use two measures to capture the individual-level returns to an individual's human capital, the *log of individual nominal income* and the *log of individual income adjusted by local rental prices*. The first measure enables comparison about potential earnings differences that disregard regional differences in purchase power, while the second measure captures a location-specific component associated to differences in cost of living across regions. In the survey, individuals reported their income levels and zip codes both for years 2018 (pre-treatment, retrospectively) and 2021 (post-treatment). We use the zip-codes to match individuals to average rental prices at the 3-digit zip-code level and then adjust income levels using a multiplier that has as base the average rent in the zipcode of Tulsa in 2018.⁶

⁶ To adjust for local prices, we used the Small Area Fair Market Rents rental price data that is collected and published by the Office of Policy Development and Research, an office of the U.S. Department of Housing and Urban Development (<https://www.huduser.gov/portal/datasets/fmr/smallarea/index.html>).

To measure an individual's engagement in local entrepreneurial activities, we use two variables. First, *intends to be a local entrepreneur* is a dummy variable that takes the value 1 if the individual reported thinking about or working towards opening a self-owned business in the city where they resided in the focal year, and zero otherwise. Second, *is a local entrepreneur* is a dummy variable that takes value 1 if the individual reported managing a self-owned business in the city where they resided in the focal year, and zero otherwise. Both variables were measured in 2018 (retrospectively) and in 2021.

The survey instrument also captured information about individual engagement in nine community-oriented and pro-social activities, such as volunteering and sponsorship of local businesses, both for pre- (retrospectively) and post-treatment periods. All variables were captured for each focal year (2018 or 2021) in the form of dummy variables where 1 represented that the individual engaged in that activity monthly at that point in time. For each year, we used these 9 dummy variables to construct a *community engagement index* as the fraction of such activities that the respondent reported engaging in monthly.

Finally, to measure expected retention, we use a survey question that asked respondents to rate how likely they were to continue residing in the city where they currently lived 5 years in the future (2026), and 10 years in the future (2031). Respondents provided a score ranging from -3 (very unlikely) to +3 (very likely). Using these scores, we created simplified dummy variables of *high willingness to stay for the next 5 years* and *high willingness to stay for the next 10 years*. These variables take value 1 if the respondent rated the likelihood of staying in the city for the next 5 or 10 years, respectively, as either +2 or +3. In the online appendix we report an ordinal logit analysis using all levels of this variable and further analyses where we compute the probability of reporting a low willingness to stay (using e.g., scores of -2 or -3).

Independent variables. As detailed below, we adopt either a differences-in-differences design to compare the evolution of the main dependent variables across Tulsa Remoters and Near-Tulsa Remoters, or we use a cross-sectional regression to compare these groups whenever the dependent variable was only measured for the post-treatment year. In the differences-in-differences design, the main independent variables are a *Tulsa Remoter* dummy variable indicating participation in the Tulsa Remote program, a *Post-Treatment* dummy variable indicating that the observation refers to the post-treatment year (2021), and the interaction between these variables (in all differences-in-differences specifications). In cross-sectional analyses, we simply use the *Tulsa Remoter* dummy variable.

Control variables. In the main specifications, we control for individual-level fixed effects. Whenever not controlling for individual-level fixed effects, we control for the following fixed-in-time socioeconomic variables: *gender, ethnicity, age in 2021, highest educational degree in 2021, household size in 2021, and dummies representing potential prior connections to city where the respondent lived in 2021.*

INSERT TABLE 2 HERE

6. RESULTS

In this section we examine how Tulsa Remote affected individual returns to human capital (including both direct pecuniary benefits from e.g., real income increases but also nonpecuniary benefits), local entrepreneurship, and community engagement. For each outcome, we discuss both qualitative interview and quantitative survey evidence. We end by examining intentions to stay in Tulsa Remote and examine how Tulsa Remoters were selected based on their applications and interviews.

6.1. Returns to Human Capital

6.1.1. Qualitative evidence

According to our interactions with Tulsa Remote, one of the main benefits that the program provides to participants is to directly increase the returns to the human capital of the worker. This increased return originates from several channels, though perhaps most notably through lower cost-of-living, as participants moved from dense, expensive cities to less-expensive Tulsa. Superior purchasing power leads to higher consumption following participation in Tulsa Remote, as reported by participants:

There has been a lot of economic gain for me. I bought a multi-family fourplex here. The cashflow is positive. I save more, [but I also] probably spend more here because I can spend more. (Interviewee 1)

I never thought I would own a house. Now I have two houses. I can also afford additional expenses for my children, as soccer practice and swimming. (Interviewee 2)

Moreover, while the key mechanism driving the local returns to one's human capital originates from regional price differences rather than Tulsa Remote's activities—which also implies that such low cost of living is not uniquely present in Tulsa—interactions with participants and workers from Tulsa Remote suggested that there is a system of activities to reinforce this direct pecuniary incentive to stay in Tulsa. For example, if remote workers became less productive by moving to Tulsa (due to e.g., being further from

their company’s headquarter or by moving to less-dense region where knowledge spillovers between workers are less prevalent), Tulsa Remoters could have fewer opportunities to advance their careers, leading to lower nominal wage growth. Another concern is that moving across cities could create day-to-day distractions leading Tulsa Remoters to become less focused in their work (e.g., finding lodging, securing schools for children, etc.). To circumvent these challenges, Tulsa Remote engages in activities to enable participants to retain their productivity even after moving to Tulsa. For instance, all Tulsa Remoters receive a one-year access to a co-working space that minimizes frictions related to the lack of adequate infrastructure for remote workers to work. Moreover, Tulsa Remote invites finalist candidates for a trip to Tulsa so they can learn about the city and amenities, thus anticipating actions to prepare them for moving to Tulsa. The program also employs staff that maintain a consistent relationship with Tulsa Remoters with the goal of supporting their move.

Interviewees reported that these activities of Tulsa Remote supported them to have a seamless move to Tulsa, even potentially facilitating their work activities.

Tulsa Remote wouldn’t have been as a positive experience as it has been if it wasn’t for 360 north (name of co-working space). To me, in my mind, they [Tulsa Remote and 360 north] come hand in hand. [...] I appreciated the space and I wanted to get to meet other locals. 360 was a place that it was easy to meet local entrepreneurs. (Interviewee 3)

Given that I already worked remotely, I believe that I became more productive in Tulsa due to the access to proper infrastructure and accommodations for remote work in the coworking space they provide. (Interviewee 4)

6.1.2. Quantitative evidence

Table 3 displays the results of differences-and-differences specifications examining whether Tulsa Remoters experienced a different income trajectory between 2018 and 2021 when compared to the Near-Tulsa Remoters benchmark group. Columns 1-3 display results about changes in the *log of individual nominal income*, whereas results in columns 4-6 focus on changes in the *log of the individual real income (adjusted by rental prices)*. Columns 1 and 4 report baseline differences-in-differences specifications with no control variables beyond the Tulsa Remote and the Post dummies. Columns 2 and 5 report results adding the baseline control variables (as in equation 1) and columns 3 and 6 report our preferred specifications which further add individual fixed effects (as in equation 2).

INSERT TABLE 3 HERE

The results in columns 1-3 in Table 3 indicate that the change in nominal income between 2018-2021 for Tulsa Remoters was, in each specification, statistically indistinguishable from that of Near-Tulsa Remoters (0.01 log points difference, column 3, p-value=0.883). Furthermore, the baseline nominal income of Tulsa Remoters was also similar to this benchmark group (0.033 log points, column 1, p-value=0.666). However, the results reported on columns 4-6 of Table 3 suggest that participation in the Tulsa Remote program increased the real income/returns to human capital of participants. These differences are explained by the low cost of living (particularly associated to housing and rental prices) in Tulsa in comparison to the regions where *Tulsa Remoters* lived in 2018. *Tulsa Remoters* experienced a real wage increase that was 54.3% ($e^{0.434}-1$) higher than *Near-Tulsa Remoters* (column 6, p-value<0.001). These results and the similarity of pre-Tulsa Remote real income levels were consistent across all the specifications. Figure 2 (panel A) depicts graphically the results reported on Table 3 by showing comparing the 2018-2021 evolution of nominal and real income of Tulsa Remoters and of Near-Tulsa Remoters.

INSERT FIGURE 2 HERE

The results reported in Table 3 and in Figure 2 (panel A) show that: (1) participation in Tulsa Remote did not lead to any particular nominal wage penalty and (2), when compared to individuals who are *Near-Tulsa Remoters*, participation in *Tulsa Remoter* led to a substantial real increase in the returns to the human capital of individuals. Since a key empirical driver of the return is the difference in purchasing power across regions, this increase in purchase power may be a mechanism to prevent the departure of “digital nomads.”

While the lack of a nominal wage penalty might be suggestive that there is no productivity drop from participating in Tulsa Remote, we document this directly in Table A16. Here we use a measure of perceived productivity and find no evidence that Tulsa Remoters report a self-perceived productivity drop relative to benchmark groups. However, superior returns to human capital driven by regional price differences alone are unlikely to be sufficient to hold onto remote workers—since other areas may have even lower prices. Accordingly, next we look at other forms of engagement that could tie remote workers to Tulsa.

6.2. Engagement in Local Entrepreneurial Activities

6.2.1. Qualitative evidence

A second element that potentially enables Tulsa Remote to retain individuals in Tulsa—as well as increase the value of Tulsa Remoters to the community—is the potential for Tulsa Remoters to engage in

entrepreneurship locally. One element raised by interviewees that drive potential engagement in local entrepreneurial opportunities is the higher willingness to take risk that is connected to the increase in individuals' purchase power upon moving to Tulsa. Tulsa Remoters reported that the financial risks of starting a new company are lower in Tulsa, since they have higher real disposable income in Tulsa when compared to cities they used to live.

The biggest change in my life is that it [participating in Tulsa Remote] gave me the freedom to take more risks. [...] I have the room in my budget to [...] pursue my dreams. Because there are a lot of entrepreneurial resources here, it was really easy to jumpstart my idea. (Interviewee 5)

However, as argued in the previous subsection, such increase in the propensity to take risk following gains in purchase power may not be “specific” to Tulsa, as remote workers could also move to other regions that are less expensive and thus experience superior purchase power. However, Tulsa Remote promotes a series of activities to enable individuals to become entrepreneurs while leveraging and creating resources that, once obtained by Tulsa Remoters, are difficult to replicate in other localities. These activities include connections with the local business community to promote events where Tulsa Remoters can meet local businessmen and potential local investors. Moreover, Tulsa Remote has a close connection with Atento Capital, a Tulsa-based investment firm headquartered in the same co-working space that Tulsa Remoters receive access to upon moving to Tulsa. Such connections further deepen the potential ties between Tulsa Remoters and the entrepreneurial ecosystem in Tulsa. As a result, participation in Tulsa Remote leads participants to develop unique social capital to support entrepreneurial endeavors locally.

The involvement with local entrepreneurs' initiatives has skyrocketed, things like pitch-competitions. I'm now an advisor for an accelerator here. I'm also advised by people. It is a full spectrum that keeps me busy. (Interviewee 5)

Because there are so many (entrepreneurship-oriented) events and they (Tulsa Remote) keep us in tune with what is going on, I always know what is happening and whether I am a fit for existing programs. (Interviewee 6)

6.2.2. Quantitative evidence

Table 4 shows results associated with the propensity to engage in entrepreneurial activities. The table structure is analogous to that of Table 3, with columns 1-3 reporting results on the probability of reporting an *intention of being a local entrepreneur* and columns 4-6 report results on the probability of *already being a local entrepreneur*.

INSERT TABLE 4 HERE

The results suggest that Tulsa Remoters are more likely to engage in entrepreneurial endeavors after participation in the Tulsa Remote program when compared to Near-Tulsa Remoters. When compared to these individuals who were accepted in the program but ultimately declined to move, Tulsa Remoters became 7.5p.p. (or 23.5% relative to the Tulsa Remoter baseline mean in 2018) more likely to think about or work towards becoming a local entrepreneur (column 3, p-value=0.035) and 5.3p.p. (24.8% relative to the 2018 Tulsa Remoter baseline mean) more likely to already be managing a local entrepreneurial endeavor (column 6, p-value=0.092). We depict these results graphically in Figure 2 (panel B), which shows that while Tulsa Remoters and Near-Tulsa Remoters reported an increase in the likelihood of intending to engage and effective engagement in entrepreneurial activities, this increase was larger for the group of Tulsa Remoters.

We interpret the results comparing Tulsa Remoters to Near-Tulsa Remoters as aligned to the reports about Tulsa Remote providing support for participants to engage in entrepreneurship in the local community. Such support and eventual entrepreneurial endeavor could be another element that retains Tulsa Remoters in the city by increasing the future potential returns of staying in the city to develop the business. Furthermore, differences between intention or effective local entrepreneurial activities could suggest a time lag between accessing the resources and support provided by Tulsa Remote and the effective beginning of a new enterprise. Effectively, our results cannot distinguish between planning for entrepreneurial activities that could have existed prior to the selection process from those that could have emerged during their experience as Tulsa Remoters.

6.3. Local Community Engagement

While the previous elements created by Tulsa Remote to retain and create value from workers focused on potentially monetary gains, all Tulsa Remoters that we interviewed highlighted a third element that created a strong incentive for them to stay in Tulsa: an increased engagement and connection with the local community. In this section we consider qualitative and quantitative evidence related to this idea.

6.3.1. Qualitative Evidence

Tulsa Remote fostered two types of local connections: (1) connections between Tulsa Remoters themselves, and (2) connection between Tulsa Remoters and the local Tulsans. For instance, Tulsa Remote often promoted social events for participants to connect with one another, as well as created electronic communication channels exclusive to Tulsa Remoters for participants to share their experience and know one another even before moving to Tulsa. Tulsa Remote also shared information about local volunteering opportunities and local events (even if not promoted by the George Kaiser Family Foundation) to engage participants with local organizations, such as school boards, local NGOs, and other organizations.

To be honest, I applied for the kicks and giggles. [...] By months 3 or 4 [in Tulsa], I found a core group of friends who could work and play at my level. I thought that maybe I should stay longer. [...] Travelling was great, but the connections were fleeting. (Interviewee 3)

The barrier to joining and finding these opportunities [volunteering, participation in local organizations] has been removed through the Tulsa Remote community. It is so much easier to learn about things. [...] A lot of the “red-tape” stuff is taken care off. It is easy to find causes and places to get involved. (Interviewee 7)

Such engagement with a local community—either within Tulsa Remote or the local population—was reported as hard-to-replicate in other regions while also being uniquely valuable within Tulsa. Furthermore, when asked about what Tulsa Remote could improve in their activities to facilitate retention, interviewees raised that Tulsa Remote could improve further activities that connected Tulsa Remoters with local Tulsans, as well as activities that continued to connect former participants to new participants.

I had moved to DC as an adult. I know how hard it is to become a part of a community when you are an adult and with a child. After 3 months being in Tulsa, I had a flourishing social life. That was mostly due to the social connections supported by Tulsa Remote. [...] It is such a gift to have a built-in network of people who are looking out for each one another. I cannot think about leaving here and starting all over again (Interviewee 2)

6.3.2. Quantitative evidence

Table 5 reports the results about the effect of participation in Tulsa Remote on the propensity of individuals to engage with the local community, as measured by the *community engagement index*. The table maintains the same structure as that of Tables 3 and 4.

INSERT TABLE 5 HERE

Table 5 shows that Tulsa Remoters became more likely to engage with the local community where they reside in comparison to Near-Tulsa Remoters, whose community engagement fell over this time period. In our preferred specifications (column 3), Tulsa Remoters reported an increase in their community engagement index after moving to Tulsa of 0.069 against Near-Tulsa Remoters (p-value=0.001). These results represent a difference in the community engagement index that is 17.2% of the mean index for the group of Tulsa Remoters in 2018. Figure 2 (panel C) depicts these results graphically.

While near-Tulsa Remoters experienced a decline in their community engagement between 2018 and 2021, Tulsa Remoters increased their community engagement. Since our post-period was in mid-2021, our interpretation of the overall decline in community engagement reflects the potential reduction in pro-social behavior in the second half of the COVID pandemic. However, as reported in our qualitative and quantitative evidence, Tulsa Remote was able to mitigate such a decline in community engagement by promoting several activities to facilitate community integration. Furthermore, Tulsa Remote may also increase engagement during the COVID-19 pandemic because the reduced population density limited the likelihood that the virus would be transmitted within the community. In robustness checks, we find that our results were not driven by differences in social distancing policing across US states.

Another concern is that the increase in pro-social engagement was driven by Tulsa Remoters becoming engaged in the events that were exclusively open to Tulsa Remoters (e.g., dinners with other participants) rather than in activities connected to the Tulsa community at large. This concern is alleviated by the analyses reported on Table A17 in the online appendix, where we estimate the change in the likelihood of Tulsa Remoters engaging in each of the nine activities measured in our survey. These analyses found that Tulsa Remoters increased their engagement in 4 different types of pro-social activities: volunteering, participation in local organizations, sponsorship of local small/local establishments, and engagement in conversations about discrimination. Whereas participation in local organizations could be interpreted as participation in Tulsa Remote events (even though qualitative reports do not suggest this is the case), volunteering, sponsorship of local establishments, and engagement in conversations about discrimination are not considered to be “exclusive” activities open only to Tulsa Remoters.

6.4. Propensity to Stay and Drivers of Propensity to Stay

The retention rate of Tulsa Remote across the 2019 and 2020 cohorts was of 87.5% of participants staying in the city for the entire first year, and more than 75% of the participants stayed in the city for a second year—even after their affiliation to Tulsa Remote ended—and approximately 70% of the participants still resided in the city by the end of 2022. Since the average digital nomad stays 71 days in a city (Nikolovska, 2023), these data indicate the potential success of Tulsa Remote in retaining participants.

In Table 6 we directly examine intentions to stay after 2021 and report a test of which, if any, of the mechanisms identified above drive the intent of individuals to stay in the medium- and long-term. We restrict the sample of benchmark individuals only to those Near-Tulsa Remoters that moved between 2018 and 2021, to mitigate concerns that these individuals are likely to move since they applied to Tulsa Remote.

Since the outcome variable is only measured in 2021, we estimate linear probability models following equation 3. Columns 1 through 6 report the models that correlate the probability of having a high intent of continue residing in the city where the respondent lives in the next 5 years (columns 1-3) or in the next 10 years (columns 4-6) as a function of the treatment dummy and the post-treatment levels of the community engagement index, real income, and engagement with entrepreneurship. Columns 1 and 4 only add the treatment dummy and baseline control variables. Columns 2 and 5 add the measures of the three potential mechanisms that we studied in the previous sections, as well as baseline control variables, whereas columns 3 and 6 we further add the treatment dummy.

The results show that Tulsa Remoters are 19.8 p.p more likely to report a high willingness to stay in the city where they reside within the next 5 years (p -value <0.001 , column 1). This difference also exists for the reported long-term preference for continuing residing in Tulsa (8.6 p.p., p -value=0.020, column 4). Columns 2 and 5 show also that all three potentially mechanisms are positively correlated with the intent of staying in a city in the short-term (column 2, p -value=0.001 for the community engagement index, p -value=0.045 for already managing an own-business, and p -value=0.101 for levels of real income). Furthermore, the Tulsa Remote treatment falls by 25-30% when controlling for these baseline mechanisms, suggesting that they are responsible for a sizable part of the Tulsa Remote retention differential. Nevertheless, being a Tulsa Remoter continues to be positively correlated with a high intent to continue residing in the same city even after accounting for the proposed mechanisms, which suggests that there are

potentially unobservable elements or activities that Tulsa Remote engages in to retain individuals in the city which were not measured via our survey.

INSERT TABLE 6 HERE

6.5. Recruitment of individuals who would respond to Tulsa Remote’s system of activities

While the analyses above suggest that Tulsa Remote implements a system of practices experienced by Tulsa Remoters which create location-specific incentives, such as unique social capital to support entrepreneurship locally and community engagement that embeds remote workers within the local community, another aspect that could complement such post-move practices is the selection process used by Tulsa Remote. Indeed, the literature in strategic human capital has highlighted that firms could benefit from developing a capability to select workers who are willing to make firm-specific commitments (Morris et al., 2016). In the case of Tulsa Remote, the analogous practice would be for Tulsa Remote to recruit individuals who are more likely to value community engagement and other practices that aim to build location-specific capital. For instance, when asked about the criteria initially used to select participants, a former CEO of Tulsa Remote reported:

We really focus on whether or not an individual [...] wants to have a positive impact in their community. And that's really by whatever way they define the term "positive impact" and whatever is really exciting to them. [...] Our team's real focus is understanding the interests and priorities of the participants that come through our program and getting them connected to the right organizations or individuals in Tulsa that helped them feel involved in the community and give them an opportunity to influence the areas that they're really interested in. (Kerr & Fuller, 2020).

To assess the potential role of Tulsa Remote’s selection process, we engaged in an explorative text analysis focused on understanding how the selection criteria of Tulsa Remote matches the incentives they create for participants. We used unique, proprietary data provided by Tulsa Remote collected in the context of the selection process for the 2019 and 2020 recruitment waves. First, for all applicants that met the minimum application requirements, we used the text data entered in the application form that is associated with the question about how applicants justified their “fit” with the Tulsa Remote program. Second, conditional on participants being selected for an interview, we obtained access to the notes taken by the Tulsa Remote interviewer during the interviews. We use these two types of supplementary textual data to engage with two questions: (1) “how do applicants that were invited to move to Tulsa differ in their response

to those applicants that were not invited to move?” and (2) “conditional on being invited to an interview, what are the topics that Tulsa Remote analyses try to assess in the interview stage?” To do this analysis, we conducted exploratory topic modelling analyses using a Latent Dirichlet Allocation (LDA) technique employed to differentiate responses based on the corpus of words entered in each entry.

Table 7 summarizes the key results. Panels A and B show the results of 2-topic and 3-topic analyses on the words used in the 25,598 application forms for the question about the applicant’s fit to the program. Panels C and D show the analogous analyses using data from the 3,339 interview notes we had access to. Column [1] shows the top-5 keywords of each topic, column [2] shows column percentages indicating how among not invited applicants (Panels A and B) or not invited interviewees (Panels C and D) the topics were associated. Column [3] shows the same percentages except among those who were invited applicants (Panels A and B) or interviewees (Panels C and D) to Tulsa Remote.

Panels A and B show a striking difference between topics. Those who were invited to Tulsa Remote were more likely to discuss “tulsa” and “community” (Topic 1 in Panel A and Topics 1 and 2 in Panel B). In contrast, those who were not invited were less likely to emphasize community and Tulsa. This analysis shows that Tulsa Remote selects participants—even in the first stage of their selection process—based on their willingness to engage with the Tulsa community at large.

Panels C and D show that, once participants advance to the interview stage, there are two key topics that recruiters ask about: work and community (both within the context of Tulsa). Panel C suggests that among those who are invited the interviewer took more notes related to community (Topic 2), though the three-topic model provides less consistent evidence of this. Ultimately, these results suggest these topics are consistently appearing in interviewer notes regardless of whether the interviewee was ultimately invited or not to the program. These results shed light on the potential consistency of the selection process in terms of focusing on the economic potential and on the community-related potential of applicants that made to the interview stage.

7. ROBUSTNESS AND ADDITIONAL ANALYSES

We conducted a series of analyses to validate the robustness of our main results. First, in Table 8 we report a summary of the results comparing Tulsa Remoters to the other two benchmark groups for which we collected data: Soon-to-be Tulsa Remoters (Panel A) and Rejected Applicants (Panel B). Columns [1]-[5] reports the differences-in-differences coefficient using a model with individual and period fixed effects comparing each of the dependent variables used on Tables 3 to 5. The results show that the patterns found when comparing Tulsa Remotes to Near-Tulsa Remoters mostly hold when using our different benchmark groups, which is particularly important as we even compare Tulsa Remoters to individuals who are about to participate in the program (Soon-to-be Tulsa Remoters).

INSERT TABLE 8 HERE

In the online appendix, we report additional econometric robustness analyses to the results reported on Tables 3-5 and on Table 6. First, following the suggestion of McKenzie (2012) when using differences-in-differences when data covers two time periods, we show that the results reported on Tables 3-5 are robust to the use of ANCOVA specifications (Tables A01 to A03 in the online appendix). We also show that the results are robust to restricting the sample only to those Near-Tulsa Remoters who switched zip codes between 2018 and 2021; i.e., the same sample used to estimate the results reported in Table 6 (Tables A04 to A06 in the online appendix).

We also conducted a series of robustness analyses to validate the results reported in Table 6. First, we assessed that the results are consistent even if we do not restrict the sample to participants that switched zip codes between 2018 and 2021 (Table A07 in the online appendix). The results are also robust to the use of 2018 to 2021 changes in our independent variables as predictors of willingness to stay rather than their 2021 levels (Table A08 in the online appendix). We further show that the patterns of results in Table 6 are consistent with the use of an ordinal logit model considering all levels of the survey questions regarding willingness to stay in the city where respondents resided (Table A09 in the online appendix), and to the use of a dependent variable measuring a high “unwillingness” to stay (Table A10 in the online appendix). Finally, we show that the results are consistent even using the sample of Rejected Tulsa Remoters (Table A11 in the online appendix).

Beyond the robustness analyses above, we conducted a series of additional analyses to rule out potential competing explanations for our findings. First, one concern was that the results—in particular the

pro-sociality results—could have been driven by different responses to COVID-19 restrictions imposed by Oklahoma (a state which had relatively less strict restrictions) versus other states that imposed more restrictive social distancing measures. Even though our survey was in mid-2021, when restrictions in the United States were already generally looser than during the apex of the COVID-19 pandemic, our pro-sociality results could have been driven simply by the fact that social interactions were easier in states with fewer COVID-19 restrictions. To assuage these concerns, we re-estimated all analyses reported on Tables 3 to 6 using strictly a sample of individuals that, in 2021, resided in majorly “red” states, i.e., states with a majority of Republican electoral districts in the 2020 presidential elections. These states were known for implementing less restrictive social distancing policies during the COVID-19 pandemic (Denworth, 2022). In Tables A12 to A13 in the online appendix, we show that our main results are similar even as we restrict the sample only to individuals residing in “red” states in 2021.

Another competing explanation to our results is the preferences of Tulsa Remoters for housing and work conditions could be different from those of the benchmark groups. For instance, Tulsa Remoters could attribute higher value to being able to purchase houses versus renting, one type of consumption that becomes more easily achievable once in Tulsa. Tulsa Remoters could also attribute higher value to remote work than individuals in the benchmark groups. Results in Tables A14 and A15 in the online appendix address these concerns. We show that, at least in terms of reported preferences, Tulsa Remoters and all benchmark groups are similar regarding their reported change in preferences in terms of work and housing. Indeed, the only reported change in preference is that Tulsa Remoters report an increase in their preference for finding new jobs in their current place of residence (Tulsa). Analogously, we report in Table A16 that Tulsa Remoters do not perceive changes in their productivity differently from Near-Tulsa Remoters.

8. DISCUSSION AND CONCLUDING REMARKS

This study is motivated by a new phenomenon: the growth in remote work across the United States has given rise to geographic competition, where localities recruit remote workers to enhance local development. However, competing to relocate remote workers is a risky endeavor, since remote workers are known for their low attachment to place. Any remote workers the locality can relocate may simply collect any incentives and leave for a different place as soon as they are able. Considering these challenges, we study how localities can offer a bundle of services to attract, retain, and create value from remote

workers. We briefly summarize our approach and findings, and then discuss the limitations and contribution of this study.

To guide our analysis, we translate prior research from an analogous setting: how firms attract, retain, and capture value from workers whose skills are equally valuable at many other employers. This literature suggests that localities might compete by developing a bundle of services that exploit various forms of location-specificity. These include making remote workers more valuable to their locality or raising the worker's utility from living in the locality relative to others. It also emphasizes the importance of recruiting remote workers willing to make location-specific investments. The Tulsa Remote program offers a unique case study to examine these ideas because it offers a bundle of services to attract and embed remote workers in the Tulsa community. These services include a direct relocation incentive payment of \$10k, assistance with finding and purchasing housing, fostering engagement with local businesses and the entrepreneurial ecosystem, and providing services to enhance productivity.

Using qualitative and quantitative data from participants and 'near-participants' in the Tulsa Remote program, we find that participation in Tulsa Remote increased real earnings, entrepreneurship, and local community engagement. Tulsa Remoters report that they are also more likely to stay in their current locality for the next 5 and 10 years, and that this effect is driven in large part by greater community engagement. Finally, to mitigate adverse selection into the program, we document how Tulsa Remote prioritized engagement with the local community in its recruitment process.

This study contributes to research in strategic human capital (Burbano, 2019b; Campbell et al., 2012; Coff, 1999; Kryscynski, 2020; Kryscynski et al., 2021; Starr et al., 2018), remote work (Barrero et al., 2021; Chattopadhyay & Choudhury, 2017; Choudhury, 2022b, 2022a; Choudhury et al., 2021; Teodorovicz, Sadun, Andrew L. Kun, & Shaer, 2021), and the study of pro-sociality and other social goals (e.g., regional development (Shaver, 2018)) in strategic management research (Bode et al., 2015; Burbano, 2016, 2019a; Burbano & Chiles, 2022; Burbano et al., 2018; Carnahan et al., 2017; Flammer & Luo, 2017; Gubler et al., 2018; McGahan, 2020; Shaver, 2018; Teodorovicz et al., 2022). While the strategic human capital literature focused on understanding how firms can create and capture value from workers, our main contribution to this literature is to extend insights from studies focused on human capital markets to geographic markets, where the actors are not firms but rather localities. In this sense, we provide insight and supporting evidence regarding how localities might successfully compete in geographic markets for remote workers. These

insights suggest that careful recruitment, and several forms of location-specificity (including frictions) can help localities attract remoter workers, root them, and help increase their contribution to society.

While the findings of this study suggest some ways that localities can successfully compete in the geographic competition for remote workers, there are several important limitations to our analysis. First, because Tulsa Remote offers a set of bundled services, we cannot empirically distinguish the impact of each service on the attraction of remote workers, their willingness to contribute locally, and how long they will stay. The qualitative evidence we describe is strongly suggestive that the community engagement element, including fostering connections in a common workplace and in the entrepreneurial ecosystem, likely drives long-term willingness to stay. However, it is more difficult to determine to what extent those factors matter in attracting remote workers in the first place. Similarly, we cannot determine precisely what elements of Tulsa Remote increase *ex ante* attraction to the program. Since community engagement is in partially an experience good (and can be somewhat mitigated by an initial visit), it is natural to expect that the direct financial incentive, a lower cost-of-living, and assistance with housing are more salient to remote workers at the outset. We hope future work will separate out the value of these services.

One reason that separating out the value of these bundled services—or examining which combinations of them drive value creation—will be helpful is that some of them are truly location-specific while others are not. For example, there are likely cheaper places to live than Tulsa, so cost-of-living differences alone (assuming all else equal) are unlikely to drive long-term stays. Similarly, many localities may also offer similar workplaces or help with housing or local engagement. *Ex ante*, it is plausible that these places appear similar to potential applicants because it is difficult to gather information on precisely what experiences in each location will be like. In this sense, localities that can more effectively reduce information asymmetry to effectively showcase the value of living there may be more likely to succeed. *Ex post*, however, after remote workers have joined the program, it seems easier to develop location-specific value because the community in which the remote worker will be embedded is necessarily local. Recruitment based on willingness to invest locally may also make it easier to foster these connections, since relationships between remote workers are less likely to be fleeting. Thus, fostering engagement with the community—whether in terms of local entrepreneurship, volunteering, or other forms of engagement—is likely to increase both the individual’s contribution to the locality and utility they derive from living there.

A second limitation of our analysis is that we have not effectively studied the costs of deploying this set of bundled services. That is, localities are likely concerned with their ability to (1) attract remote workers, (2) the value created while they are there, (3) how long they stay, and (4) the cost required to attract, embed, and retain those workers. Our study has examined (some of) the first three of these characteristics, but we have not discussed the cost of providing these services. Clearly for every worker who comes Tulsa Remote pays \$10k, but they must also pay for the time spent recruiting and screening candidates, the time their employees spend helping Tulsa Remoters find housing and schools, and the social and business events that help engage Tulsa Remoters with the local community. However, independent estimates from the Economic Innovation Group of the Tulsa Remote program suggest that Tulsa Remote added \$62 million in new local earnings, with \$51.3 million directly attributed to the relocated remote workers.⁷ They estimate that in 2021 every dollar spent toward relocating a remote worker created \$13.77 in new local labor income. Accordingly, and considering the increased uncompensated volunteer engagement, it seems likely that Tulsa Remote likely creates and captures value from remote workers.

A related limitation regards the generalizability of our findings. That is, our analysis is specific to just one location (Tulsa, Oklahoma) and one program in that location (Tulsa Remote). While the theory described above seems capable of helping localities compete in the geographic competition for remote workers, we are unable to distinguish whether there is something specific about Tulsa, Oklahoma, or Tulsa Remote (as opposed to other similar programs in Tulsa), that is driving our results. Replicating these findings in several other cities would be an important next step.

Finally, in terms of managerial implications, our results suggest that organizations or local governments interested in obtaining an advantage in the geographic competition for high-skilled remote workers might consider combining a financial incentive with a set of ancillary activities which support their embeddedness with the local community. Given a future in which remote work looks increasingly likely to become a permanent phenomena, this study is the first to assess how localities can benefit from developing strategies that will enable them to compete successfully in the factor market for remote talent while also creating potential positive impacts to local communities and organizations.

⁷ See <https://eig.org/tulsa-remote/>.

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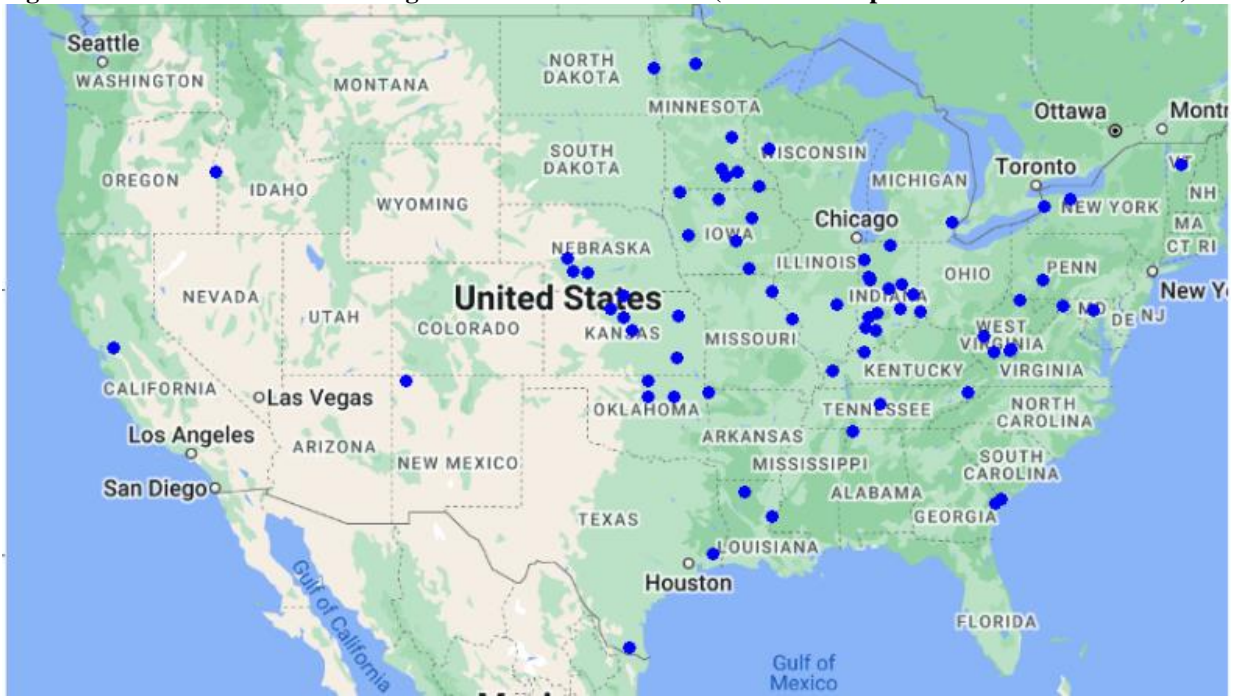
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FIGURES AND TABLES

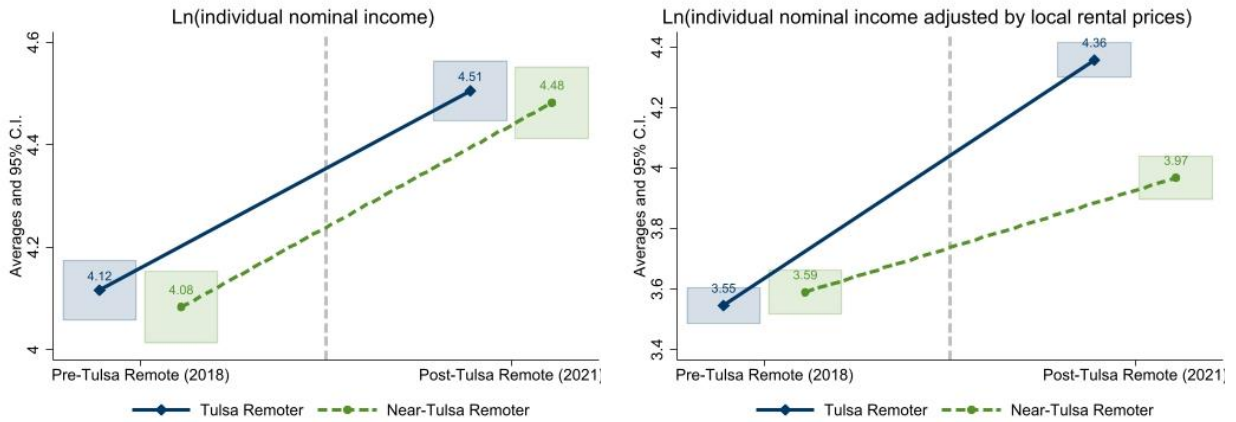
Figure 1: Relocation Incentives Programs in the United States (with the exception of Alaska and Hawaii)



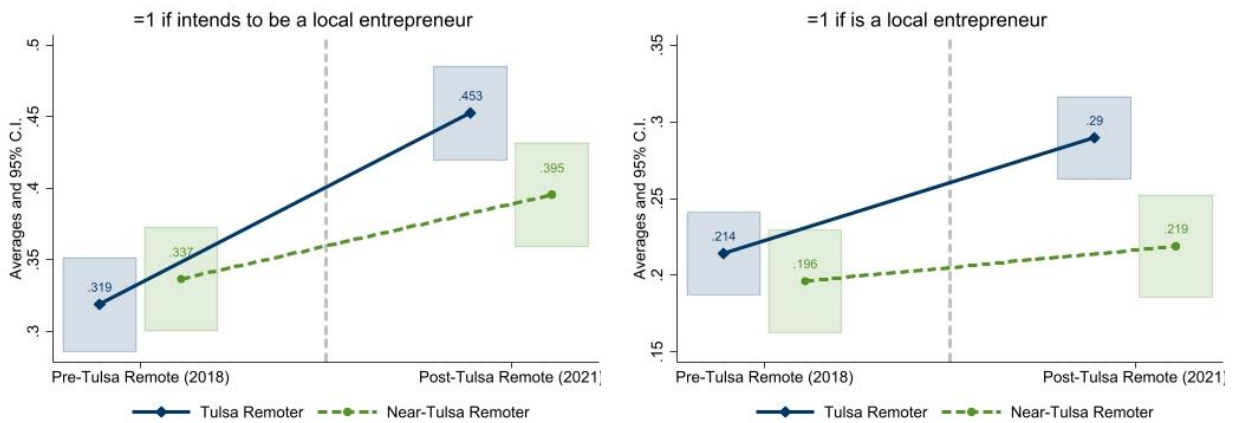
Notes: created by the authors using data from MakeMyMove (extracted in July/2022).

Figure 2: Graphical summary of results: Tulsa Remoters vs. Near-Tulsa Remoters.

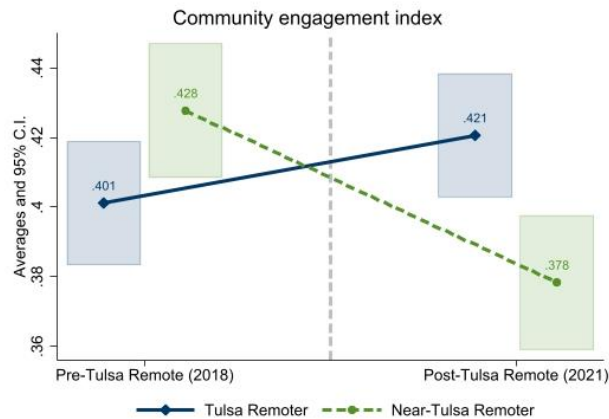
Panel A - Evolution in Returns to Human Capital: Tulsa Remoters vs. Near-Tulsa Remoters.



Panel B – Evolution in Entrepreneurial Engagement: Tulsa Remoters vs. Near-Tulsa Remoters



Panel C - Evolution in Community Engagement: Tulsa Remoters vs. Near-Tulsa Remoters.



Notes: all panels report the mean predicted value of the dependent variables used in the analyses reported in Tables 3 to 5. The specification follows equation. The figures represent point-estimates and the 95% confidence interval.

Table 1 – Summary of Treatment and Benchmark Groups

| Group | Steps of the Tulsa Remote Selection Process | | | | Type of Selection Addressed | | |
|---------------------------------------|---|-----------------|----------------|---------------|-----------------------------|--------------------|--------------------------|
| | Applied | Invited to move | Agreed to move | Already moved | Into applying | Into being invited | Into accepting the offer |
| Rejected applicants (Benchmark) | X | - | - | - | X | - | - |
| Near-Tulsa Remoters (Benchmark) | X | X | - | - | X | X | - |
| Soon-to-be Tulsa Remoters (Benchmark) | X | X | X | - | X | X | X |
| Tulsa Remoters (Treatment) | X | X | X | X | N/A | N/A | N/A |

Table 2 – Summary of Treatment and Benchmark Groups in June 2018

| | [1] | [2] | [3] | [4] | [5] | [6] | [7] |
|---|-------------------|---------------------|---------------------|---------------------------|---|--------|--------|
| | Tulsa Remoters | Rejected Applicants | Near-Tulsa Remoters | Soon-to-be Tulsa Remoters | Mean comparison (reporting p-values from t-test) | | |
| | | | | | 1 vs 2 | 1 vs 3 | 1 vs 4 |
| Observations | 411 | 415 | 306 | 116 | | | |
| Response rate | 53.90% | 1.40% | 18.40% | 43.70% | | | |
| Ln(Nominal Income) | 4.116 (1.002) | 3.803 (1.155) | 4.083 (1.026) | 4.013 (1.038) | 0.000 | 0.666 | 0.350 |
| Ln(Income adjusted for rental prices) | 3.545 (0.937) | 3.4 (1.027) | 3.587 (0.989) | 3.594 (0.971) | 0.043 | 0.574 | 0.646 |
| =1 thinking about opening new business | 0.319 (0.467) | 0.405 (0.491) | 0.337 (0.473) | 0.369 (0.485) | 0.010 | 0.615 | 0.326 |
| =1 working in own business | 0.214 (0.411) | 0.299 (0.458) | 0.196 (0.398) | 0.261 (0.441) | 0.005 | 0.554 | 0.312 |
| Community engagement | 0.401 (0.253) | 0.404 (0.276) | 0.428 (0.261) | 0.426 (0.262) | 0.878 | 0.173 | 0.366 |
| Highest Education: college degree | 0.397 (0.49) | 0.296 (0.457) | 0.369 (0.483) | 0.342 (0.477) | 0.002 | 0.457 | 0.292 |
| Highest Education: graduate degree | 0.47 (0.5) | 0.402 (0.491) | 0.51 (0.501) | 0.55 (0.5) | 0.052 | 0.287 | 0.137 |
| Age | 37.838 (9.476) | 42.001 (10.983) | 39.495 (10.538) | 36.273 (9.002) | 0.000 | 0.030 | 0.110 |
| Gender: male | 0.521 (0.5) | 0.513 (0.5) | 0.51 (0.501) | 0.55 (0.5) | 0.831 | 0.774 | 0.590 |
| Race/Ethnicity: white | 0.708 (0.455) | 0.583 (0.494) | 0.65 (0.478) | 0.649 (0.48) | 0.000 | 0.103 | 0.244 |
| Race/Ethnicity: black/african-american | 0.144 (0.351) | 0.198 (0.399) | 0.141 (0.348) | 0.162 (0.37) | 0.039 | 0.909 | 0.635 |
| Marital status: not married | 0.294 (0.456) | 0.335 (0.473) | 0.281 (0.45) | 0.378 (0.487) | 0.210 | 0.696 | 0.104 |
| Household size | 1.783 (0.975) | 2.354 (1.301) | 2.088 (1.205) | 2.135 (1.239) | 0.000 | 0.000 | 0.006 |
| Prior connection to city: family | 0.341 (0.474) | 0.484 (0.5) | 0.474 (0.5) | 0.486 (0.502) | 0.000 | 0.000 | 0.007 |
| Prior connection to city: friends | 0.336 (0.473) | 0.41 (0.492) | 0.507 (0.501) | 0.477 (0.502) | 0.028 | 0.000 | 0.008 |
| Prior connection to city: professional | 0.178 (0.383) | 0.27 (0.444) | 0.359 (0.481) | 0.261 (0.441) | 0.001 | 0.000 | 0.071 |
| Prior connection to city: lived in the city | 0.187 (0.391) | 0.299 (0.458) | 0.324 (0.469) | 0.261 (0.441) | 0.000 | 0.000 | 0.111 |
| Prior connection to city: other | 0.046 (0.21) | 0.029 (0.168) | 0.042 (0.202) | 0.045 (0.208) | 0.191 | 0.809 | 0.958 |

Notes: columns [1]-[4] show the mean and standard deviation of the main dependent and control variables across the different groups of respondents (treated groups of Tulsa Remoters, and benchmark groups of Rejected Applicants, Near-Tulsa Remoters, and Soon-to-be Tulsa Remoters, respectively). Columns [5]-[7] report the exact p-value of a t-test comparing the means of the Tulsa Remote group to each benchmark group separately.

**Table 3: Participation in Tulsa Remote and Increased Returns to Human Capital
(Benchmark: Near-Tulsa Remoters)**

| Dep. variable | [1] | [2] | [3] | [4] | [5] | [6] |
|----------------------------|-------------------------------|------------------|------------------|----------------------------|------------------|------------------|
| | Ln(nominal individual income) | | | Ln(real individual income) | | |
| Tulsa Remoter=1 X Post=1 | -0.01 [0.883] | -0.01 [0.883] | -0.01 [0.883] | 0.429 [0.000] | 0.431 [0.000] | 0.434 [0.000] |
| Tulsa Remoter=1 | 0.033 [0.666] | 0.082 [0.277] | | -0.042 [0.574] | 0.004 [0.953] | |
| Post=1 | 0.399 [0.000] | 0.399 [0.000] | 0.399 [0.000] | 0.384 [0.000] | 0.381 [0.000] | 0.378 [0.000] |
| Observations | 1434 | 1434 | 1434 | 1394 | 1394 | 1372 |
| Baseline control variables | NO | YES | NO | NO | YES | NO |
| Individual fixed effects | NO | NO | YES | NO | NO | YES |

Note: p-value in brackets. Standard errors clustered at the level of the respondents. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in. Real income is nominal income adjusted for local rental prices.

**Table 4: Participation in Tulsa Remote and Engagement in Entrepreneurship
(Benchmark: Near-Tulsa Remoters)**

| Dep. variable | [1] | [2] | [3] | [4] | [5] | [6] |
|----------------------------|--|------------------|------------------|-------------------------------|------------------|------------------|
| | =1 if intends to be a local entrepreneur | | | =1 if is a local entrepreneur | | |
| Tulsa Remoter=1 X Post=1 | 0.075 [0.035] | 0.075 [0.036] | 0.075 [0.035] | 0.053 [0.092] | 0.053 [0.094] | 0.053 [0.092] |
| Tulsa Remoter=1 | -0.018 [0.615] | 0.012 [0.744] | 0 [.] | 0.018 [0.554] | 0.037 [0.232] | |
| Post=1 | 0.059 [0.026] | 0.059 [0.027] | 0.059 [0.026] | 0.023 [0.346] | 0.023 [0.348] | 0.023 [0.346] |
| Observations | 1434 | 1434 | 1434 | 1434 | 1434 | 1434 |
| Baseline control variables | NO | YES | NO | NO | YES | NO |
| Individual fixed effects | NO | NO | YES | NO | NO | YES |

Note: p-value in brackets. Standard errors clustered at the level of the respondents. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in

**Table 5: Participation in Tulsa Remote and Community Engagement
(Benchmark: Near-Tulsa Remoters)**

| Dep. variable | [1] | [2] | [3] |
|----------------------------|----------------------------|-------------------|-------------------|
| | Community Engagement Index | | |
| Tulsa Remoter=1 X Post=1 | 0.069 [0.000] | 0.069 [0.000] | 0.069 [0.000] |
| Tulsa Remoter=1 | -0.027 [0.173] | -0.02 [0.315] | |
| Post=1 | -0.049 [0.000] | -0.049 [0.000] | -0.049 [0.000] |
| Observations | 1434 | 1434 | 1434 |
| Baseline control variables | NO | YES | NO |
| Individual fixed effects | NO | NO | YES |

Note: p-value in brackets. Standard errors clustered at the level of the respondents. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in

Table 6: Willingness-to-Stay as a Function of Location-Specific Incentives: Local Returns to Human Capital, Engagement in Local Entrepreneurship, and Community Engagement (Benchmark: Near-Tulsa Remoters who changed zip codes between 2018 and 2021).

| Dep. variable | [1] | [2] | [3] | [4] | [5] | [6] |
|---|---|------------------|-------------------|--|-------------------|-------------------|
| | =1 if "high" willingness to stay for the next 5 years | | | =1 if "high" willingness to stay for the next 10 years | | |
| Tulsa Remoter=1 | 0.198 [0.000] | | 0.163 [0.000] | 0.086 [0.020] | | 0.06 [0.124] |
| Community engagement index | | 0.263 [0.001] | 0.234 [0.004] | | 0.185 [0.012] | 0.175 [0.019] |
| =1 if intends to be a local entrepreneur | | 0.002 [0.965] | -0.004 [0.924] | | -0.001 [0.988] | -0.003 [0.940] |
| =1 if is a local entrepreneur | | 0.107 [0.045] | 0.091 [0.084] | | 0.041 [0.398] | 0.035 [0.470] |
| Ln(individual income adjusted by rental prices) | | 0.041 [0.101] | 0.019 [0.464] | | 0.029 [0.213] | 0.021 [0.376] |
| Observations | 606 | 597 | 597 | 607 | 598 | 598 |
| Baseline control variables | YES | YES | YES | YES | YES | YES |

Note: p-value in brackets. Standard errors clustered at the level of the respondents. Sample: these specifications only consider respondents who have changed zipcodes between 2018 and 2021. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in.

Table 7: Main topics emerging from applicant’s self-reported “fit” with Tulsa Remote and from recruiter’s notes during interview stage

| Topic | Top-5 words | % applicants per topic | | |
|---|--|-----------------------------|-------------------------|-----|
| | | [1] | [2] | [3] |
| | | Not invited to Tulsa Remote | Invited to Tulsa Remote | |
| Panel A: | | | | |
| 2-topic LDA - applicant's response regarding "fit" with Tulsa Remote (25,5598 applications) | | | | |
| Topic 1 | tulsa, community, work, live, city | 49.1% | 67.8% | |
| Topic 2 | new, people, love, great, make | 50.9% | 32.2% | |
| Panel B: | | | | |
| 3-topic LDA - applicant's response regarding "fit" with Tulsa Remote (25,5598 applications) | | | | |
| Topic 1 | new, tulsa, love, live, place | 37.7% | 42.3% | |
| Topic 2 | community, work, tulsa, business, remote | 30.1% | 42.4% | |
| Topic 3 | people, work, person, great, love | 32.2% | 15.2% | |
| Panel C: | | | | |
| 2-topic LDA - notes taken by interviewers (3,339 interview notes) | | | | |
| Topic 1 | tulsa, work, want, live, year | 54.4% | 47.8% | |
| Topic 2 | work, community, look, tulsa, great | 45.6% | 52.2% | |
| Panel D: | | | | |
| 3-topic LDA - notes taken by interviewers (3,339 interview notes) | | | | |
| Topic 1 | work, tulsa, live, company, want | 36.3% | 41.3% | |
| Topic 2 | community, tulsa, work, look, want | 35.9% | 34.8% | |
| Topic 3 | tulsa, community, work, want, great | 27.8% | 23.9% | |

Note: in columns [2] and [3] we report, per group of applicants not invited to Tulsa Remote or Invited to Tulsa Remote, the share of documents that were more likely to be classified as predominantly in each topic. As a result, the vertical sum of the percentages in each column-panel adds up to 100% (e.g., in Panel A, 49.1% of applicants not invited to Tulsa Remote had their document classified within Topic 1, whereas the remaining 50.9% had their document classified within Topic 2. Analogously, 67.8% of the applicants who were eventually invited to Tulsa Remote had their documents classified under Topic 1, whereas only 32.2% had their document classified under Topic 2).

Table 8: Robustness analyses comparing Tulsa Remoters to Soon-to-be Tulsa Remoters and to Rejected Applicants

| | [1] | [2] | [3] | [4] | [5] |
|---|-------------------------------|---|--|-------------------------------|----------------------------|
| Dep. variable | Ln(individual nominal income) | Ln(individual income adjusted by rental prices) | =1 if intends to be a local entrepreneur | =1 if is a local entrepreneur | Community Engagement Index |
| Panel A: Participants of Tulsa Remote versus Soon-to-be Tulsa Remoters | | | | | |
| Tulsa Remoter=1 X Post=1 | -0.038 | 0.25 | 0.053 | 0.075 | 0.093 |
| | [0.694] | [0.009] | [0.325] | [0.067] | [0.002] |
| <i>Observations</i> | <i>1044</i> | <i>994</i> | <i>1044</i> | <i>1044</i> | <i>1044</i> |
| Panel B: Participants of Tulsa Remote versus Rejected Applicants | | | | | |
| Tulsa Remoter=1 X Post=1 | 0.288 | 0.748 | 0.04 | -0.004 | 0.063 |
| | [0.000] | [0.000] | [0.232] | [0.889] | [0.000] |
| <i>Observations</i> | <i>1652</i> | <i>1510</i> | <i>1652</i> | <i>1652</i> | <i>1652</i> |
| Year fixed effects | YES | YES | YES | YES | YES |
| Individual fixed effects | YES | YES | YES | YES | YES |

Note: p-value in brackets. Standard errors clustered at the level of the respondents.

Online Appendix

Location-Specificity and Geographic Competition for Remote Workers

Table A01: Participation in Tulsa Remote and Increased Returns to Human Capital (Benchmark: Near-Tulsa Remoters) - ANCOVA Specification

| Dep. variable | [1] | [2] | [3] | [4] |
|--|--------------------------------------|---------|--|---------|
| | Ln(nominal individual income) (post) | | Ln(individual income adjusted by rental prices) (post) | |
| Tulsa Remoter=1 | 0.01 | 0.009 | 0.406 | 0.401 |
| | [0.848] | [0.869] | [0.000] | [0.000] |
| Ln(nominal individual income) (baseline) | 0.415 | 0.424 | | |
| | [0.000] | [0.000] | | |
| Ln(individual income adjusted by rental prices) (baseline) | | | 0.42 | 0.427 |
| | | | [0.000] | [0.000] |
| <i>Observations</i> | 717 | 717 | 686 | 686 |
| Baseline control variables | NO | YES | NO | NO |

Note: p-value in brackets. Standard errors clustered at the level of the respondent. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in

Table A02: Participation in Tulsa Remote and Engagement in Entrepreneurship (Benchmark: Near-Tulsa Remoters) - ANCOVA Specification

| Dep. variable | [1] | [2] | [3] | [4] |
|---|---|---------|--------------------------------------|---------|
| | =1 if intends to be a local entrepreneur (post) | | =1 if is a local entrepreneur (post) | |
| Tulsa Remoter=1 | 0.067 | 0.085 | 0.06 | 0.08 |
| | [0.035] | [0.011] | [0.032] | [0.006] |
| =1 if intends to be a local entrepreneur (baseline) | 0.546 | 0.522 | | |
| | [0.000] | [0.000] | | |
| =1 if is a local entrepreneur (baseline) | | | 0.574 | 0.563 |
| | | | [0.000] | [0.000] |
| <i>Observations</i> | 717 | 717 | 717 | 717 |
| Baseline control variables | NO | YES | NO | YES |

Note: p-value in brackets. Standard errors clustered at the level of the respondent. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in

Table A03: Participation in Tulsa Remote and Community Engagement (Benchmark: Near-Tulsa Remoters) - ANCOVA Specification

| Dep. variable | [1] | [2] |
|---------------------------------------|-----------------------------------|---------|
| | Community Engagement Index (post) | |
| Tulsa Remoter=1 | 0.055 | 0.055 |
| | [0.001] | [0.001] |
| Community Engagement Index (baseline) | 0.462 | 0.439 |
| | [0.000] | [0.000] |
| <i>Observations</i> | 717 | 717 |
| Baseline control variables | NO | YES |

Note: p-value in brackets. Standard errors clustered at the level of the respondent. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in

**Table A04: Participation in Tulsa Remote and Increased Returns to Human Capital
(Benchmark: Near-Tulsa Remoters who changed zip codes between 2018 and 2021)**

| Dep. variable | [1] | [2] | [3] | [4] | [5] | [6] |
|----------------------------|-------------------------------|-------------------|-------------------|----------------------------|------------------|------------------|
| | Ln(nominal individual income) | | | Ln(real individual income) | | |
| Tulsa Remoter=1 X Post=1 | -0.035 [0.653] | -0.035 [0.655] | -0.035 [0.653] | 0.343 [0.000] | 0.347 [0.000] | 0.349 [0.000] |
| Tulsa Remoter=1 | 0.108 [0.232] | 0.139 [0.136] | | 0.053 [0.541] | 0.07 [0.429] | |
| Post=1 | 0.425 [0.000] | 0.425 [0.000] | 0.425 [0.000] | 0.47 [0.000] | 0.466 [0.000] | 0.463 [0.000] |
| Observations | 1214 | 1214 | 1214 | 1182 | 1182 | 1160 |
| Baseline control variables | NO | YES | NO | NO | YES | NO |
| Individual fixed effects | NO | NO | YES | NO | NO | YES |

Note: p-value in brackets. Standard errors clustered at the level of the respondents. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in. Real income is nominal income adjusted for local rental prices. This table only considers “movers” as benchmark individuals (i.e., individuals that switched zip codes of residency between 2018 and 2021).

**Table A05: Participation in Tulsa Remote and Engagement in Entrepreneurship
(Benchmark: Near-Tulsa Remoters who changed zip codes between 2018 and 2021)**

| Dep. variable | [1] | [2] | [3] | [4] | [5] | [6] |
|----------------------------|--|-------------------|------------------|-------------------------------|------------------|------------------|
| | =1 if intends to be a local entrepreneur | | | =1 if is a local entrepreneur | | |
| Tulsa Remoter=1 X Post=1 | 0.088 [0.030] | 0.088 [0.031] | 0.088 [0.030] | 0.055 [0.131] | 0.055 [0.133] | 0.055 [0.131] |
| Tulsa Remoter=1 | -0.033 [0.419] | -0.003 [0.935] | | 0.02 [0.561] | 0.036 [0.307] | |
| Post=1 | 0.046 [0.159] | 0.046 [0.161] | 0.046 [0.159] | 0.02 [0.506] | 0.02 [0.508] | 0.02 [0.505] |
| Observations | 1214 | 1214 | 1214 | 1214 | 1214 | 1214 |
| Baseline control variables | NO | YES | NO | NO | YES | NO |
| Individual fixed effects | NO | NO | YES | NO | NO | YES |

Note: p-value in brackets. Standard errors clustered at the level of the respondents. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in. This table only considers “movers” as benchmark individuals (i.e., individuals that switched zip codes of residency between 2018 and 2021).

**Table A06: Participation in Tulsa Remote and Community Engagement
(Benchmark: Near-Tulsa Remoters who changed zip codes between 2018 and 2021)**

| Dep. variable | [1] | [2] | [3] |
|----------------------------|----------------------------|-------------------|-------------------|
| | Community Engagement Index | | |
| Tulsa Remoter=1 X Post=1 | 0.084 [0.000] | 0.084 [0.000] | 0.084 [0.000] |
| Tulsa Remoter=1 | -0.026 [0.251] | -0.024 [0.309] | |
| Post=1 | -0.065 [0.000] | -0.065 [0.000] | -0.065 [0.000] |
| Observations | 1214 | 1214 | 1214 |
| Baseline control variables | NO | YES | NO |
| Individual fixed effects | NO | NO | YES |

Note: p-value in brackets. Standard errors clustered at the level of the respondents. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in. This table only considers “movers” as benchmark individuals (i.e., individuals that switched zip codes of residency between 2018 and 2021).

Table A07: Willingness-to-Stay as a Function of Location-Specific Incentives: 2018-2021 Change in Local Returns to Human Capital, Engagement in Local Entrepreneurship, and Community Engagement (Benchmark: Any Near-Tulsa Remoter in the Sample).

| Dep. variable | [1] | [2] | [3] | [4] | [5] | [6] |
|--|---|------------------|-------------------|--|------------------|------------------|
| | =1 if "high" willingness to stay for the next 5 years | | | =1 if "high" willingness to stay for the next 10 years | | |
| Tulsa Remoter=1 | | 0.237 [0.000] | 0.212 [0.000] | | 0.127 [0.000] | 0.105 [0.002] |
| Change in community engagement index | 0.211 [0.005] | | 0.182 [0.012] | 0.139 [0.037] | | 0.124 [0.060] |
| =1 if changed from not intending to intending to be a local entrepreneur | -0.014 [0.720] | | -0.023 [0.550] | 0.009 [0.811] | | 0.004 [0.910] |
| =1 if changed from not being to being a local entrepreneur | 0.092 [0.042] | | 0.068 [0.125] | 0.039 [0.335] | | 0.027 [0.503] |
| Change in ln(individual income adjusted by rental prices) | 0.052 [0.024] | | 0.019 [0.414] | 0.035 [0.110] | | 0.019 [0.402] |
| Observations | 703 | 716 | 703 | 704 | 717 | 704 |
| Baseline control variables | YES | YES | YES | YES | YES | YES |

Note: p-value in brackets. Standard errors clustered at the level of the respondents. Sample: these specifications only consider respondents who have changed zipcodes between 2018 and 2021. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in.

Table A08: Willingness-to-Stay as a Function of Location-Specific Incentives: 2018-2021 Change in Local Returns to Human Capital, Engagement in Local Entrepreneurship, and Community Engagement (Benchmark: Near-Tulsa Remoters who changed zip codes between 2018 and 2021).

| Dep. variable | [1] | [2] | [3] | [4] | [5] | [6] |
|--|---|-------------------|-------------------|--|-------------------|------------------|
| | =1 if "high" willingness to stay for the next 5 years | | | =1 if "high" willingness to stay for the next 10 years | | |
| Tulsa Remoter=1 | 0.198 [0.000] | | 0.176 [0.003] | 0.086 [0.020] | | 0.039 [0.465] |
| Change in community engagement index | | 0.327 [0.000] | 0.281 [0.050] | | 0.252 [0.000] | 0.258 [0.084] |
| =1 if changed from not intending to intending to be a local entrepreneur | | 0.001 [0.140] | 0.001 [0.210] | | 0 [0.190] | 0.001 [0.422] |
| =1 if changed from not being to being a local entrepreneur | | -0.083 [0.111] | -0.208 [0.002] | | -0.075 [0.091] | -0.15 [0.055] |
| Change in ln(individual income adjusted by rental prices) | | 0.105 [0.110] | 0.117 [0.321] | | 0.101 [0.097] | 0.09 [0.466] |
| Observations | 606 | 579 | 579 | 607 | 580 | 580 |
| Baseline control variables | YES | YES | YES | YES | YES | YES |

Note: p-value in brackets. Standard errors clustered at the level of the respondents. Sample: these specifications only consider respondents who have changed zipcodes between 2018 and 2021. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in.

**Table A09: Willingness-to-Stay as a Function of Location-Specific Incentives: Ordered logit model
(Benchmark: Near-Tulsa Remoters who changed zip codes between 2018 and 2021).**

| Dep. variable | [1] | [2] |
|---|--|---|
| | -3 to +3 score in willingness to stay for the next 5 years | -3 to +3 score in willingness to stay for the next 10 years |
| Tulsa Remoter=1 | 1.028 [0.000] | 0.746 [0.000] |
| Community engagement index | 1.131 [0.001] | 1.165 [0.000] |
| =1 if intends to be a local entrepreneur | -0.222 [0.180] | -0.125 [0.472] |
| =1 if is a local entrepreneur | 0.313 [0.077] | 0.324 [0.070] |
| Ln(individual income adjusted by rental prices) | -0.001 [0.991] | -0.032 [0.763] |
| Observations | 597 | 598 |
| Baseline control variables | YES | YES |

Note: p-value in brackets. The table reports ordered logit coefficients for each of the predicted variables. Sample: these specifications only consider respondents who have changed zipcodes between 2018 and 2021. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in

**Table A10: Unwillingness-to-Stay as a Function of Location-Specific Incentives: Local Returns to Human Capital, Engagement in Local Entrepreneurship, and Community Engagement
(Benchmark: Near-Tulsa Remoters who changed zip codes between 2018 and 2021).**

| Dep. variable | [1] | [2] | [3] | [4] | [5] | [6] |
|---|---|-------------------|-------------------|--|-------------------|-------------------|
| | =1 if "high" unwillingness to stay for the next 5 years | | | =1 if "high" unwillingness to stay for the next 10 years | | |
| Tulsa Remoter=1 | | -0.244 [0.000] | -0.222 [0.000] | | -0.241 [0.000] | -0.221 [0.000] |
| Community engagement index | -0.324 [0.000] | | -0.285 [0.000] | -0.345 [0.000] | | -0.306 [0.000] |
| =1 if intends to be a local entrepreneur | 0.042 [0.314] | | 0.05 [0.221] | 0.012 [0.777] | | 0.021 [0.633] |
| =1 if is a local entrepreneur | -0.07 [0.121] | | -0.049 [0.266] | -0.091 [0.058] | | -0.07 [0.137] |
| Ln(individual income adjusted by rental prices) | -0.033 [0.158] | | -0.004 [0.868] | -0.008 [0.721] | | 0.02 [0.384] |
| Observations | 597 | 606 | 597 | 598 | 607 | 598 |
| Baseline control variables | YES | YES | YES | YES | YES | YES |

Note: p-value in brackets. Robust Standard errors. Sample: these specifications only consider respondents who have changed zipcodes between 2018 and 2021. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in.

Table A11: Willingness-to-Stay as a Function of Location-Specific Incentives: Local Returns to Human Capital, Engagement in Local Entrepreneurship, and Community Engagement (Benchmark: Rejected Applicants who changed zip codes between 2018 and 2021).

| Dep. variable | [1] | [2] | [3] | [4] | [5] | [6] |
|---|---|------------------|-------------------|--|------------------|-------------------|
| | =1 if "high" willingness to stay for the next 5 years | | | =1 if "high" willingness to stay for the next 10 years | | |
| Tulsa Remoter=1 | | 0.181 [0.000] | 0.159 [0.000] | | 0.119 [0.001] | 0.092 [0.019] |
| Community engagement index | 0.193 [0.015] | | 0.16 [0.041] | 0.14 [0.048] | | 0.121 [0.089] |
| =1 if intends to be a local entrepreneur | -0.041 [0.317] | | -0.044 [0.270] | -0.007 [0.845] | | -0.009 [0.800] |
| =1 if is a local entrepreneur | 0.054 [0.215] | | 0.056 [0.189] | 0.037 [0.336] | | 0.039 [0.317] |
| Ln(individual income adjusted by rental prices) | 0.055 [0.004] | | 0.026 [0.216] | 0.042 [0.018] | | 0.025 [0.197] |
| Observations | 629 | 635 | 629 | 628 | 634 | 628 |
| Baseline control variables | YES | YES | YES | YES | YES | YES |

Note: p-value in brackets. Robust standard errors. Sample: these specifications only consider respondents who have changed zipcodes between 2018 and 2021. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in.

Table A12: Participation in Tulsa Remote and Creation of Incentives to Stay in Tulsa: Comparison To Individuals in States with “Looser” (Red) or “Stricter” COVID-19 Restrictions (Benchmark: Near-Tulsa Remoters Depending on State of Residence in 2021).

| | Ln(individual nominal income) | Ln(individual nominal income adjusted by local rental prices) | =1 if intends to be a local entrepreneur | =1 if is a local entrepreneur | Community engagement index |
|---|-------------------------------|---|--|-------------------------------|----------------------------|
| Panel A: Tulsa Remoters vs. Near-Tulsa Remoters living in "red" states in 2021 | | | | | |
| Tulsa Remoter=1 X Post=1 | -0.018 [0.828] | 0.505 [0.000] | 0.082 [0.044] | 0.08 [0.022] | 0.072 [0.001] |
| Observations | 1246 | 1184 | 1246 | 1246 | 1246 |
| Panel B: Tulsa Remoters vs. Near-Tulsa Remoters not living in "red" blue states in 2021 | | | | | |
| Tulsa Remoter=1 X Post=1 | 0.288 [0.000] | 0.748 [0.000] | 0.04 [0.232] | -0.004 [0.889] | 0.063 [0.000] |
| Observations | 1652 | 1510 | 1652 | 1652 | 1652 |
| Year fixed effects | YES | YES | YES | YES | YES |
| Individual fixed effects | YES | YES | YES | YES | YES |

Note: p-value in brackets. Standard errors clustered at the level of the respondents.

Table A13: Willingness-to-Stay as a Function of Location-Specific Incentives: Comparison To Individuals in States with “Looser” (Red) or “Stricter” COVID-19 Restrictions (Benchmark: Near-Tulsa Remoters Depending on State of Residence in 2021).

| | =1 if "high" willingness to stay for the next 5 years | | =1 if "high" willingness to stay for the next 10 years | | |
|---|---|-------------------|--|-------------------|--|
| Panel A: Tulsa Remoters vs. Near-Tulsa Remoters living in "red" states in 2021 | | | | | |
| Tulsa Remoter=1 | 0.1 [0.097] | 0.072 [0.252] | -0.026 [0.648] | -0.055 [0.334] | |
| Community engagement index | 0.243 [0.010] | 0.236 [0.012] | 0.165 [0.050] | 0.17 [0.044] | |
| =1 if intends to be a local entrepreneur | -0.025 [0.614] | -0.026 [0.604] | 0.017 [0.716] | 0.017 [0.704] | |
| =1 if is a local entrepreneur | 0.106 [0.055] | 0.102 [0.066] | 0.045 [0.361] | 0.048 [0.330] | |
| Ln(individual income adjusted by rental prices) | 0.025 [0.348] | 0.02 [0.446] | 0.025 [0.318] | 0.028 [0.267] | |
| <i>Observations</i> | 478 | 483 | 478 | 479 | |
| Panel B: Tulsa Remoters vs. Near-Tulsa Remoters not living in "red" blue states in 2021 | | | | | |
| Tulsa Remoter=1 | 0.268 [0.000] | 0.234 [0.000] | 0.163 [0.000] | 0.105 [0.006] | |
| Community engagement index | 0.318 [0.000] | 0.273 [0.002] | 0.2 [0.012] | 0.184 [0.020] | |
| =1 if intends to be a local entrepreneur | -0.027 [0.560] | -0.044 [0.323] | 0.002 [0.971] | 0.008 [0.842] | |
| =1 if is a local entrepreneur | 0.106 [0.040] | 0.079 [0.112] | 0.056 [0.216] | 0.041 [0.359] | |
| Ln(individual income adjusted by rental prices) | 0.033 [0.286] | 0.026 [0.401] | 0.029 [0.303] | 0.024 [0.408] | |
| <i>Observations</i> | 525 | 534 | 525 | 534 | |
| Baseline control variables | YES | YES | YES | YES | |

Note: p-value in brackets. Robust standard errors. Sample: these specifications only consider respondents who have changed zipcodes between 2018 and 2021. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in.

**Table A14: Participation in Tulsa Remote and 2018-2021 Perceived Criteria Used When Considering a New Job
(Benchmark: Near-Tulsa Remoters)**

| | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] |
|--|-------------------|-------------------|-------------------|---------------------|-------------------|-------------------|---|--------------------------|------------------------|
| Dep. Variable: Change in Criteria to Find a New Job (-3 to +3 score, 0=as important in 2018 as in 2021)... | Same industry | Same function | Being remote | Similar /better pay | Work-life balance | Stability | Ease of starting a new business while working | Being in high-tech firms | Being in the same city |
| Tulsa Remoter=1 | -0.117 [0.398] | -0.111 [0.413] | -0.229 [0.136] | -0.114 [0.430] | -0.117 [0.425] | -0.189 [0.199] | 0.172 [0.229] | 0.036 [0.804] | 0.52 [0.000] |
| <i>Observations</i> | 717 | 717 | 717 | 717 | 717 | 717 | 717 | 717 | 717 |
| Individual fixed effects | YES | YES | YES | YES | YES | YES | YES | YES | YES |

Note: p-value in brackets. Standard errors clustered at the level of the respondents. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in. This table only considers “movers” as benchmark individuals (i.e., individuals that switched zip codes of residency between 2018 and 2021).

**Table A15: Participation in Tulsa Remote and 2018-2021 Perceived Criteria Used When Looking for a Place of Residence
(Benchmark: Near-Tulsa Remoters)**

| | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] |
|---|-------------------|------------------|-------------------|----------------------------|-------------------|-----------------------|----------------------|------------------|-----------------------------|
| Dep. Variable: Change in Criteria to Find a New Place of Residence (-3 to +3 score, 0=as important in 2018 as in 2021)... | Housing costs | Living costs | Size of residence | Opportunities to integrate | Safety/ Security | Exposure to diversity | Ease to make friends | Amenities | Access to job opportunities |
| Tulsa Remoter=1 | -0.207 [0.157] | 0.052 [0.715] | 0.204 [0.151] | 0.163 [0.240] | -0.152 [0.296] | 0.091 [0.521] | 0.222 [0.108] | 0.096 [0.494] | -0.145 [0.317] |
| <i>Observations</i> | 717 | 717 | 717 | 717 | 717 | 717 | 717 | 717 | 717 |
| Individual fixed effects | YES | YES | YES | YES | YES | YES | YES | YES | YES |

Note: p-value in brackets. Standard errors clustered at the level of the respondents. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in. This table only considers “movers” as benchmark individuals (i.e., individuals that switched zip codes of residency between 2018 and 2021).

Table A16: Participation in Tulsa Remote and Self-Perceived Changes in Productivity: Ordered logit model

(Benchmark: Near-Tulsa Remoters who changed zip codes between 2018 and 2021).

| | [1] | [2] | [3] |
|----------------------------|---|---|--|
| Dep. variable | -3 to +3 score in self-perceived change in focus while working (0 = no change) | -3 to +3 score in self-perceived change in ability to complete tasks (0 = no change) | -3 to +3 score in self-perceived change in productivity (0 = no change) |
| Tulsa Remoter=1 | 0.009 [0.951] | -0.073 [0.612] | -0.064 [0.654] |
| <i>Observations</i> | 717 | 717 | 717 |
| Baseline control variables | YES | YES | YES |

Note: p-value in brackets. The table reports ordered logit coefficients for each of the predicted variables. Sample: these specifications only consider respondents who have changed zipcodes between 2018 and 2021. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in

**Table A17: Participation in Tulsa Remote and Detailed Community Engagement (Activity Breakdown)
(Benchmark: Near-Tulsa Remoters who changed zip codes between 2018 and 2021)**

| | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] |
|---------------------------------------|--------------|---------------------------|-----------------------------------|---|--------------------|----------------------|-------------------------|----------------------------|------------------|
| Dep. Variable: Monthly engages in ... | Volunteering | Participation local orgs. | Support small/local establishment | Personal conversations about discrimination | In-person activism | Local charity giving | Organizational activism | Leadership of organization | Virtual activism |
| Tulsa Remoter=1 X Post=1 | 0.239 | 0.18 | 0.08 | 0.063 | 0.039 | 0.027 | 0.011 | 0.009 | -0.028 |
| | [0.000] | [0.000] | [0.003] | [0.067] | [0.258] | [0.436] | [0.718] | [0.794] | [0.346] |
| Post=1 | -0.288 | -0.16 | -0.02 | 0.105 | -0.056 | -0.029 | 0.003 | -0.072 | 0.072 |
| | [0.000] | [0.000] | [0.377] | [0.000] | [0.017] | [0.257] | [0.887] | [0.004] | [0.001] |
| <i>Observations</i> | <i>1434</i> | <i>1434</i> | <i>1434</i> | <i>1434</i> | <i>1434</i> | <i>1434</i> | <i>1434</i> | <i>1434</i> | <i>1434</i> |
| Individual fixed effects | YES | YES | YES | YES | YES | YES | YES | YES | YES |

Note: p-value in brackets. Standard errors clustered at the level of the respondents. Baseline control variables: gender, ethnicity, age, education, household size, and prior connections to city where respondent currently lives in. This table only considers “movers” as benchmark individuals (i.e., individuals that switched zip codes of residency between 2018 and 2021).