Work from home, internal migration and gender wage gap in Latin America*

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Abstract

This paper examines the effects of teleworking on internal migration within Latin America, utilizing household survey data from Chile, Peru, Mexico, Colombia, and Brazil. Employing a differences-in-differences approach, we compare outcomes for occupations more susceptible to telework before, during, and after the pandemic. Workers in teleworkable occupations were more likely to live in less urban areas during the pandemic, although the effects are small and often statistically insignificant. This contrasts with findings from other developing regions and appears partly due to a lack of telework feasibility in rural areas. We also find evidence of increased wages for teleworkable occupations, suggesting that remote work complemented office-based work. Finally, we uncover notable gender differences: teleworking appears to contribute to a reduction in the gender wage gap, with larger income gains or smaller declines for women compared to men, likely reflecting the higher cost of urban living for women.

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1 Introduction

The COVID-19 pandemic enhanced firms' and individuals' adoption of the work-from-home option, and the shock has proven to have strong long-term effects. For instance, even three years after the pandemic started, work from home accounts for nearly one-third of the paid work days in the US (Delventhal and Parkhomenko, 2023). A study by Akan et al. (2024), using payroll data from Gusto, a firm that offers payroll processing and HR services in the US, finds that the mean distance from employee residence to employer location rose from 10 to 27 miles between 2019 and 2023.[1]

However, almost all of the evidence provided by the literature and media anecdotes emphasizes the case of the United States or other developed countries. The effect of telework may be different in a context with a lower degree of adoption of new technologies, lower incomes, weaker internet connections, and more skewed amenities distribution favoring urban centers but lower levels of urbanization, as is standard in developing countries.

This paper contributes to our understanding of the impact of telework and its effects by providing evidence from five countries in Latin America. We use data from Chile, Mexico, Peru, Colombia and Brazil before, during, and after the pandemic to assess the extent to which telework affected income and the distance between workplace and residence. We examine how the internal migration from urban to rural areas changed with the rise of work-from-home possibilities and study its impact on the gender wage gap.

Specifically, we use a difference-in-difference approach, looking at the location patterns of workers before, during and after the pandemic depending on their occupation. We classify occupations as more or less likely to be workable from home based on the classification by Dingel and Neiman (2020).[2] We then ask if people working in jobs that are more teleworkable have a differential pattern of location during and after the pandemic compared to those working in non-teleworkable occupations, as opposed to what their location choices were before the pandemic. We also estimate the impact on income using the same methodology and study heterogeneous effects by the occupations' initial location and by gender.

We first present a model that simultaneously accounts for urban-rural migration and within-city dynamics and can analyze location choice when working from home is not feasible in rural areas. With telework feasible everywhere, the incomes of individuals in rural areas should benefit from an increase in work-from-home possibilities. In contrast, those previously located in urban areas could see their wage premia shrink, leading to urban-to-rural migration. We should thus observe migration flows towards rural areas and an uncertain impact on aggregate incomes, with that of workers previously in urban areas shrinking and vice versa for those in rural areas. On the other hand, the model shows that when rural telework is not possible because of, for example, a lack of adequate internet, there is migration from rural to urban areas, and the urban-rural wage gap increases. If there is complementarity between office and telework, this would be even

[1] The Gusto dataset mainly covers smaller and mid-sized employers, and the study focuses on a balanced panel of firms that operated from January 2018 to December 2023. The balanced panel contains 6,813 firms, which decreases to 5,793 when attention is restricted to firms with an industry classification.

[2] As a robustness check, we also use a definition built for the region (Mexico).

more exacerbated. Thus, the impact of telework on urban-rural migration and incomes appears to depend crucially on the possibility of performing these tasks in a rural environment, which may be much more difficult in emerging economies than in developed ones. For example, a recent OECD assessment of spatial disparities in Internet quality in 51 OECD and G20 countries placed Colombia second to last regarding fixed network speed in rural areas.[3]

We find that people working in occupations more prone to telework show a small increase (between 1 and 3 percentage points) in their propensity to live in rural areas during and after the pandemic. There is diversity between countries of the region, with Colombia and Brazil showing the smallest effects and Peru providing the most statistically significant effects. Using alternative measures of urbanicity supports the general conclusions. Consequently, the migration dynamics resulting from the pandemic and teleworking in Latin America seem smaller than what has been found in the literature for developed countries.

This could be because occupations prone to remote work in North America or Europe are not as suitable in Latin America, although we show that our results are robust to using a Latin American classification as well. We also show that workers in these occupations were much more likely to perform their work from home during and post-pandemic than other workers, in the only country of the region where such data is available, namely Brazil. Thus, it does not appear to be that remote work is just not occurring in Latin America as it is in other contexts.

Another difference between Latin America and richer economies could be that many of the workers in occupations that are suitable for remote work may have already been living in rural areas pre-pandemic. In all countries, workers in occupations that are more suitable for telework were mostly urban dwellers before the pandemic. We show that this matters for our results. Mobility towards rural areas is substantially larger for occupations that were almost all urban before the pandemic and shrinks as the occupation was increasingly rural in the pre-period. People working in occupations entirely urban before the pandemic are between 2 and 11 percentage points more likely to live in a rural place after the pandemic. The results are statistically significant for Chile, Perú, and Colombia, noisier for Mexico and Brazil. Moreover, in Chile and Colombia (and more noisily in Mexico and Brazil), there is also a migration towards urban centers when these occupations were very rural ex-ante. This suggests that there could be mobility towards rural centers but that the equilibrium "rural concentration" appears to be not too far from having most workers in urban centers.

We next explore the effect on individuals' income. Our model has a prediction on the wages gap between urban and rural workers and, because wage movements may cancel each other, not so much on aggregate incomes. Nevertheless, using the same methodology, we find diverse impacts on aggregate income. For Mexico, we find that occupations that were suitable for remote work experienced a 2 percent decrease in income during the pandemic, and this increases to 5 percent

[3]Caldas et al. (2023) study download speeds in 51 OECD and G20 countries and report speeds for fixed and mobile networks for rural, semi-dense, and urban areas relative to the national average. In Colombia, download speeds on fixed networks are around 50% lower in rural and semi-dense areas, placing it as the second to last and last, respectively (see Figure 3 of the study).

post-pandemic. On the other hand, results for Colombia suggest a large increase of around 30 to 50 percent in income during and post-pandemic for occupations that are more suitable for telework compared to those that are less suitable. Peru and Chile see increases only during the pandemic, and they are much more muted, around 6 to 10 percent. Brazil's results are small and insignificant.

Mexico was the country that had the highest rate of rurality amongst workers in teleworking occupations before the pandemic. This may indicate that for Mexico, it was possible for workers to perform their activities within rural areas. In that case, the decrease in income could be due to the fact that urban workers lose their location premia when remote work unifies the labor market. However, we do not find much difference between how rural was an occupation pre-pandemia in explaining the difference in income over time. But what we see from Mexico seems to be more aligned with our model when remote work can be performed in rural areas.

In the other countries, aggregate income could increase if rural workers see their income improve from their access to remote work. Or it could simply be because rural areas cannot have access to remote work because the infrastructure does not allow it. We find that the increase in income is particularly strong for occupations that were mostly urban before the pandemic. Since those occupations were the only ones where we had documented a strong out-migration, it could be that it corresponds to an increase in the wage of marginal workers from rural areas who now can work in these occupations. Those where the migration was reverse towards the city do not experience this gain in income.

Finally, we study whether the effects are heterogeneous concerning gender. We use the same methodology to estimate the impacts in the sub-sample of men and women. We find that women in teleworkable occupations responded similarly to men in terms of location, as heterogeneity is practically absent. The only country where the difference is most blatant is Colombia, where women migrated a bit more to rural areas than men during the pandemic. However, in teleworkable occupations, compared to other occupations, the gender wage gap decreased after the pandemic. In Colombia, where the income impact was largest, women's earnings increased 58% while for men, we obtained a point estimate of half the size and not statistically significant. Conversely, in Mexico, earnings decreased by 7% for men and 4% for women. For Chile and Perú, women's salaries increased 12% and 10% during the pandemic, while again, the estimates for men are only 7 and 5 percent and less significant. Our results suggest that women find a higher cost of living in cities than men and respond to this shock more strongly, which allows them to reap some of the income benefits.

To our knowledge, we are the first to explore the labor and spatial implications of telecommuting in Latin America. Our analysis provides valuable information for public policies and labor strategies in Latin America and the developing world.

We contribute to the growing literature on internal migration driven by the adoption of work-from-home (WFH) practices. Building on the industry-level indices of teleworkability developed by Dingel and Neiman (2020), Brueckner et al. (2023) use county-level measures of WFH potential to show that high-productivity counties in the US experienced declining house prices and rents post-pandemic, coupled with significant population outflows. Similarly, Ramani and Bloom (2022) document net outflows of people and businesses from central business districts (CBDs) in major US cities, with gains concentrated in less densely populated areas. Our findings complement these studies by offering evidence from Latin America, where urban-to-rural migration and spatial redistribution due to telework are notably smaller, reflecting distinct regional characteristics.

These spatial changes have important implications for housing markets. For instance, Artigue (2024) find that in metropolitan areas, a marginal percentage point increase in the share of fully remote workers reduces the elasticity of house prices with respect to distance by 0.008 log points. Although data limitations prevent us from directly analyzing rental prices, our results suggest that telework could influence housing market dynamics in Latin America, albeit less strongly than in developed regions. Furthermore, studies like Delventhal et al. (2022); Delventhal and Parkhomenko (2023); Davis et al. (2024) emphasize the potential for telework to reconfigure urban form, with significant implications for city planning and infrastructure.

While much of the existing literature focuses on broader telework trends, some works, such as Duranton and Handbury (2023) and Davis et al. (2024), examine the urban consequences of the COVID-19 pandemic specifically. However, these studies are predominantly centered on richer economies. By focusing on Latin America, we provide novel insights into how pandemic-induced shifts in telework impact developing regions with lower technological adoption, weaker internet infrastructure, and different urbanization patterns.

Our study also engages with the literature on gender disparities in the labor market. The gender pay gap has been argued to be essentially a child penalty for women because childbirth induces career interruptions and reduced working hours (Manning and Petrongolo, 2008; Blau and Kahn, 2017; Kleven et al., 2019; Cortés and Pan, 2019; Card and Hyslop, 2021). Research like Borghorst et al. (2024) shows that in Denmark, women significantly reduce their commuting distances after childbirth, incurring substantial wage penalties. Moreno-Maldonado (2022) highlights the role of spatial frictions in perpetuating gender wage gaps, estimating that eliminating such frictions could reduce the gap by 2% in the US. We are the first to examine the role of spatial frictions in shaping the gender wage gap in Latin America, where gender pay gaps and spatial constraints are more pronounced. Our results show that women in teleworkable occupations are more likely to experience more significant income gains, underscoring telework's potential to alleviate spatial frictions for women in developing regions.

Regarding general equilibrium effects, our study complements the findings of Delventhal et al. (2022) and Delventhal and Parkhomenko (2023), who model the impact of telework on spatial reorganization in the US. These studies predict that teleworkable workers move farther from their workplaces, while non-teleworkable workers migrate closer. Our results provide mixed evidence for these predictions, suggesting that contextual factors like infrastructure and baseline urbanization levels shape these dynamics differently in developing economies.

Finally, we contribute to the theoretical literature on telework and the spatial structure of economies. Studies like Brueckner and Sayantani (2023) and Behrens et al. (2024) model the opposing relocation patterns of remote and non-remote workers and highlight how firms optimize WFH practices under land-use constraints. By incorporating empirical evidence from Latin America, our study emphasizes the importance of regional heterogeneity in understanding telework's spatial and economic effects, paving the way for more nuanced theoretical frameworks that account for disparities between developed and developing economies.

2 Motivating theory

This section extends the intercity model of Brueckner et al. (2023) to simultaneously account for urban-rural migration and within-city dynamics. The exposition and notation closely follow theirs.

2.1 Inter and intracity analysis

The model features a rural area R and one city with two locations, the central region and the suburbs, denoted "C" and "S". Both locations share the city amenities A, but living in the suburbs entails the additional cost of commuting to the central area. As in Brueckner et al. (2023), the amount of land at each location is fixed; hence, the land supply elasticity is zero. The total population is constant and equal to N.

The wage in the city is given by $w(L, \alpha)$, where L is the employment and α is a shift parameter that reflects differences in productivity between the city and rural areas. Without WFH, the city's employment level equals the population of the center and the suburbs: $L = N_C + N_S$. We assume that labor productivity is higher in the city than in rural places, thus $\alpha > \alpha_R$, and that amenities differ between rural (A_R) and urban areas (A).

Consumers have identical preferences, with utility in location $i \in \{C, S, R\}$ given by the quasi-linear function $u(e_i, q_i, A_i) = A_i + e_i + v(q_i)$, where q_i is housing (land) consumption and e_i is non-housing consumption. Letting p_i denote the unit housing price in location i, the consumer budget constraint is $e_i = w_i - p_i q_i$, which assumes that the price of non-housing consumption (set to unity) is the same in all locations. Substituting this expression for e_i allows utility to be rewritten as $A_i + w_i + v(q_i) - p_i q_i$. The last two terms represent what Brueckner et al. (2023) call net housing utility (v minus housing cost), which can be written as a function $H(\cdot)$ of population N_i. This function decreases with N_i to reflect that prices rise as population increases (see Brueckner et al. (2023) for a derivation of H and the proof that its derivative is negative).

Therefore, the utility of living (and working) at location i is:

$$U_i = A_i + w_i + H(N_i) \ \forall i \in \{C, S, R\} \tag{1}$$

The equilibrium in the absence of telework is given by equating the utility in the three locations. Consider first the indifference condition within the city:

$$A + w_C(N_C + N_S, \alpha) + H(N_C) = A + w_C(N_C + N_S, \alpha) - t + H(N_S) \tag{2}$$

where t represents the commuting costs.

As both places share amenities and salaries, the disadvantage of the suburbs due to commuting has to be compensated with more net utility from housing. Formally, from Eq. (2):

$$H(N_S) - H(N_C) = t \tag{3}$$

As $H(\cdot)$ is a decreasing function of the population, $N_S < N_C$ must hold. In other words, more people live in the center, where housing is more expensive than in the suburbs, where housing is less expensive, but commuting costs must be incurred. This is the standard prediction of a monocentric city model, where housing consumption increases with distance to the CBD but is adapted for two locations.

Now, consider the urban-rural indifference equilibrium condition:

$$A + w_C(N_C + N_S, \alpha) + H(N_C) = A_R + w_R(N_R, \alpha_R) + H(N_R) \tag{4}$$

where we assume that jobs in rural areas have negligible commuting costs. Eq. (4) can be written as:

$$(A - A_R) + H(N_C) - H(N_R) = w_R(N_R, \alpha_R) - w_C(N_C + N_S, \alpha) \tag{5}$$

which replicates the intercity analysis of Brueckner et al. (2023).

For simplicity, we consider that amenities in rural areas (such as nature, unpolluted air, etc.) are higher than in the city, i.e., $A < A_R$ holds. Furthermore, we look at the case where, in equilibrium without telework, more people live in the city than in rural areas ($N_C + N_S > N_R$), and the wage is higher in the city ($w_C(N_C + N_S, \alpha) > w_R(N_R, \alpha_R)$). In summary, the advantages of the rural location relative to the city are its amenities and more affordable housing, at the expense of a lower salary.

2.2 Work from home

Our model allows us to incorporate the possibility of working from home in two ways. It impacts the city by eliminating commuting costs (t). WFH lowers the relative advantage of living in the center, thus incentivizing people to move from the center to the suburbs. There are no commuting costs with WFH, and the amenities are shared within the city, so the net housing utility must be the same in both places. Substituting $t = 0$ in Eq. (3), we obtain:

$$H(\tilde{N}_S) - H(\tilde{N}_C) = 0 \tag{6}$$

where the tilde denotes equilibrium with teleworking.

Therefore, the possibility of teleworking directly implies equalizing the population in the center and the suburbs.

The second channel through which WFH affects the equilibrium comes from the possibility—or not — of having a job in the city while living in rural areas. If the conditions in rural areas allow for sustaining a job in the city, wages from working in the city must be the same, irrespective of location. In this case, the indifference condition between the central and rural areas is analogous to Eq. (5):

$$(A - A_R) + H(\tilde{N}_C) - H(\tilde{N}_R) = 0 \tag{7}$$

where the difference is on the right-hand side as the wage difference disappears.

By comparing the equilibrium with and without working from home, it is possible to conclude that WFH induces rural-urban migration. To see why, consider Eq. (5) and Eq. (7). As the right-hand side of Eq. (5) is negative and with WFH the right-hand side of Eq. (7) is zero, it follows that $H(\tilde{N}_C) - H(\tilde{N}_R)$ has to be larger under WFH, which occurs when population in the city decreases and rural population increases.

Intuitively, WFH increases the relative advantage of rural areas and thus induces people to move from the city to rural locations. Housing prices increase in rural areas and decrease in cities. As city employment increases, wages are lower. In summary,

Result 1 *When telework is feasible in rural areas, WFH induces migration from urban to rural areas. The new wage is lower than the pre-WFH wage in the city but higher than the pre-WFH wage in the rural area.*

2.3 Limited work from home

As discussed above, it is not always the case that rural places have the minimum conditions for teleworking. For example, there is no internet in many rural areas, or the investment needed is prohibitively costly. We now examine the effect of working from home when it is not feasible in rural areas.

First, the within-city impacts follow the same logic as before: commuting costs disappear, and, compared to the absence of WFH, the suburb becomes more attractive relative to the center. The equilibrium condition remains the same as in Eq. (6):

$$H(\hat{N}_S) - H(\hat{N}_C) = 0 \tag{8}$$

where the hat denotes the equilibrium with limited WFH. As in the previous case, the population of the center and the suburbs are equal under WFH, so housing prices are the same.

The difference lies in the comparison with rural areas. The new equilibrium condition, to be compared with Eq. (5), is:

$$(A - A_R) + H(\hat{N}_C) - H(\hat{N}_R) = w_R(\hat{N}_R, \alpha_R) - w_C(\hat{N}_C + \hat{N}_S, \alpha) \tag{9}$$

To compare the with and without WFH equilibria, suppose first that the rural population does not change, and the introduction of WFH only generates migration within the city, from the center to the suburbs. If this were the case, then the overall utility in the city would increase, as the commuting costs no longer exist and housing in the center is less expensive because people moved to the suburbs ($H(\hat{N}_C) > H(N_C)$). Therefore, when keeping the rural population unchanged, the left-hand side of the equilibrium condition in Eq. (9) is higher than its counterpart without WFH. This can only be part of an equilibrium if the right-hand side also increases, which is not feasible with constant employment.

Therefore, it cannot happen that the rural population is the same under WFH as without it, as total employment in the city cannot be the same. Consequently, WFH induces migration from rural areas to the city. As $\hat{N}_R < N_R$ and $\hat{N}_C = \hat{N}_S$, the net housing utility in the rural location increases ($H(\hat{N}_R) > H(N_R)$), and in the center it decreases as compared to the pre-WFH equilibrium ($H(\hat{N}_C) < H(N_C)$). Consequently, the left-hand side of Eq. (9) is lower under WFH; thus, the right-hand side must also be lower than without WFH. As the wage without WFH is higher in the city, the only possibility of meeting the equilibrium condition is that the wage gap increases. Summarizing,

Result 2 *When remote work is not feasible in rural areas, WFH induces migration from rural to urban areas. The new wages are such that the urban-rural wage gap increases.*

Note that we cannot directly conclude whether the wage in the city increases, the wage in the rural area decreases or both without imposing more assumptions on the labor inverse demand curve. Recent evidence shows that the investment in technology during the pandemic significantly increased WFH productivity. This effect would push wages upwards, even with increased employment. Fortunately, our empirical strategy allows us to test this directly.

2.4 Productivity impacts and predictions

While the analysis above helps understand the impacts on location choice, it does not address changes in productivity. The literature has shown the pandemic boosted WFH productivity because of the complementarity between telework and work at the office (Delventhal and Parkhomenko, 2023; Davis et al., 2024).

The increased productivity affects our theoretical results differently. Firstly, when WFH is possible in rural areas, the income decrease in urban areas is mitigated. Secondly, when rural areas do not have the necessary work amenities for telework, the wage in the city grows more.

The model, therefore, points to the crucial role of rural telework feasibility, as predictions are of opposite directions, and guides the empirical analysis by suggesting heterogeneity of the effects by initial place of residence.

3 Methodology

We take a unique approach to estimating the impact of remote work on migration. Instead of directly using remote workers, which could lead to endogeneity problems, we classify occupations based on their likelihood of being remote-work compatible. This novel distinction allows us to use an exogenous characteristic, the ability to do remote work, combined with the COVID-19 shock, as the treatment in our study.

To do this, we harmonize the categories of occupations over time. Instead of using a unique international categorization across countries, which would have been costly in terms of the number of professions that could be detailed, we focus on having a consistent set of occupations over the entire period for each country. To do so, we employ surveys provided by the national statistical agencies. In Chile, the categorization follows the international occupation codes CIUO-88 and CIUO-08, with three digits. In Mexico, we merged categories of the SINCO 2019 to guarantee a balanced panel. For Peru, we used ISCO-08. For Brazil, we use the ISCO-08 over the full period. For Colombia, a classification that is specific to the country is employed.

We then use the methodology of Dingel and Neiman (2020) to classify occupations that can be more easily worked from home. In particular, we consider IT, mathematics, legal, business, financial operations, research, science, management, executive, artistic, and writing occupations as remote-work compatible, representing the treatment in our sample. This classification also allows individuals to switch between remote-work compatible and incompatible occupations, which will be considered.

As our primary goal is to see if there are changes in urbanization levels and labor income due to remote work, our primary outcomes of interest are variables related to the geographical location of the workers and income. In the next section, we provide a more detailed specification of the variables to consider.

Our model in Section 2 provides two different predictions for the urbanization change depending on whether work from home is feasible in rural areas. When rural conditions allow for teleworking, we expect to observe, during and after the pandemic, that workers in teleworkable occupations are less likely to live in urban settings and earn less. On the contrary, when rural conditions do not permit teleworking, we should observe an increase in urbanization and earnings for the more teleworkable occupations.

Our econometric model relates work from home and outcomes using the following equation:

$$Y_{i,o,t} = \gamma \cdot WFH_o \cdot T_t + \theta_t + \phi_o + \eta_{i,o,t} \tag{10}$$

where $Y_{i,o,t}$ represents the outcome of interest for a person i working in occupation o in period t. For instance, $Y_{i,o,t}$ could be an indicator variable that takes the value one if the individual i working in occupation o lives in an urban area. Our key variable is the interaction between WFH_o, which measures how remote-work-compatible the occupation is, and T_t, which represents the period the observation corresponds to. We control for occupation and time-fixed effects to capture elements specific to each occupation and the temporal shocks experienced by all workers in recent years. Additionally, standard errors are clustered at the occupation level to allow for shocks to last over the period included in our estimation.

As mentioned earlier, under the parallel trends assumption, this methodology allows us to see the causal impact between remote-work suitable jobs and different variables of interest. The parallel trends assumption posits that, in the absence of the pandemic, the trends in urbanization levels and other variables of interest would have evolved similarly for both remote-work compatible and incompatible occupations. We argue this is likely the case since the pandemic was an unexpected shock. Urbanization levels in Latin America over this period were also primarily stable. Based on the literature review, we also suggest that workers and firms did not implement remote work adjustments without the pandemic, so it is unlikely that workers in more teleworkable occupations would have experienced differential trends in urbanization without the pandemic.

The difference-in-differences specification is helpful because our data consists of three cross-sections: one before, one during, and one after the pandemic. We do not have panel data to track workers over time. As the pandemic was an unexpected event that led agents to learn over time about its implications, it is reasonable to assume that the trend differences between remote-work compatible and incompatible occupations would persist over time. Considering the areas where each worker in a given occupation lives or their income, we should not have seen changes if the pandemic had not occurred, as this dynamic is the only external factor that allowed agents to learn and implement telework. If this is true, the empirical strategy will provide a valid counterfactual to evidence the causal effects of remote work.

Furthermore, we estimate the specification for other variables of interest, subject to each country's data, to assess and verify the different dynamics presented in the literature and discussed in the media. These variables include housing conditions, which, for example, will allow us to see if the pandemic and remote work affected agents' decisions to rent. Related to this, we will test whether rental values decreased, meaning whether remote workers paid lower or higher rents after the pandemic. According to the literature, migration decisions are strongly influenced by housing prices. Our model predicts that people migrate to suburban areas with lower property prices. If these conclusions apply to the Latin American region, we should see remote-work-compatible occupations living in areas with lower rental values during and after the pandemic.

4 Data

We use household survey data from different countries in the region to see how remote work conditions affected Latin America. In particular, we work with Chile, Peru, Mexico, Colombia and Brazil. The countries in this study, as an economic block, have a population of over 448 million inhabitants, representing approximately 68% of the total population of LATAM and the Caribbean, with an average GDP per capita of approximately USD 11,100, which positions them among the six largest economies in the region (Chevalier Naranjo, 2023).

Furthermore, these countries are critical economies in Latin America and share similarities in economic development, urbanization, and labor challenges, facilitating data comparison and identifying common trends in internal migration motivated by remote work. The Economic Commission for Latin America and the Caribbean (ECLAC) mentions that two-thirds of the population of Latin America live in cities of 20,000 inhabitants or more, suggesting that it is a region with a high concentration in a few urban centers. Therefore, reviewing how remote work conditions impacted migration in this setting is essential.

The choice of these five countries is due to two fundamental reasons: first, they have available data that allow for an occupational classification following Dingel and Neiman (2020), and second, it enables us to have an equitable representation of different socioeconomic and geographic realities in the region, which enriches our research and results. In terms of GDP per capita, Chile is the country in the sample with the higher value, a GDP per capita of USD 17,093. Mexico and Brazil follow with a GDP per capita of USD 13,926 and USD 10,000, respectively. Finally, Peru and Colombia are well below the average, with USD 7,780 and 6,980 per capita.[4]

Chile

For the case of Chile, we use the CASEN 2017, 2020, and 2022 surveys. Over these three surveys, occupations are consistently classified using ISCO-08, which allows for better classification of jobs with the possibility of being performed remotely. The survey also asks respondents to self-classify their geographical location as urban; this variable can take the value of 1 if it is urban and 0 if it is rural. Notably, within the same municipality, there are areas considered rural and others urban. Additionally, there is information on income earned, whether the household owns or rents their dwelling, and the rental values of the property.

To classify the geographic location reported by the individuals in the survey, we construct municipality-level variables that are time-invariant to eliminate any change that may be related to the composition that comes from the municipality's evolution to urbanization. For this, we use urbanization data at the municipality level provided by the Ministry of Housing and Urbanism to compute a rural fraction index.

With the same objective as before and to test the hypothesis of migration to closer places (see, e.g., Ramani and Bloom, 2022), we also use data from the Center for Improvement, Experimentation, and Pedagogical Research (CPEIP). This data provides the distance between all the pairs of municipalities in Chile. We compute the distance between workers' residences and Chile's three major urban areas: Santiago, Concepción, and Valparaíso. By studying its change, we can determine if remote workers during and after the pandemic live further away from the main urban centers, even if their "rurality" index is unchanged.

Peru

For the case of Peru, we work with the ENAHO 2018, 2019, 2020, and 2022 surveys, which, as in the case of Chile, allow us to see the effects during and after the pandemic of urbanization levels according to the density of inhabitants of the municipalities where the respondents live. As in Chile, rural and urban areas coexist within the same municipality. The survey also has income, housing conditions, and rental value data. The latter will allow us to see if remote workers, after

[4]Data retrieved from the World Bank Open Data on September 5, 2024. Values are for the year 2023 and are in current USD.

the pandemic, spend less on housing (Salon et al., 2022). Likewise, this data enables us to use the classification of Dingel and Neiman (2020) with a similar approach to that used in Chile since it is also based on the ISCO-08 classification, although the categories are coarser.

As in the case of Chile, we compute a variable measuring the rural fraction of the municipality using the 2017 Census data, which is time-invariant and at the province level. In this way, we can study if changes in the internal compositions of the provinces are driving our main results. We also calculate the distance between these provinces and the nearest urban centers. The cities considered were Lima, Arequipa, Callao, and Trujillo.

Mexico

In Mexico, we use the ENOE surveys from 2019 to the first quarter of 2023. The surveys contain information on the occupation and urbanization levels of the areas self-reported by the respondents. The variable is computed at the municipality level, and each municipality can have urban and rural areas. Different aspects are considered when categorizing an area as urban, such as infrastructure, population density, and accessibility to services, among other observations. As in the previous cases, there is also information on income and total jobs. The SINCO 2019 categorization was used to make the occupational classification analogous. As in the other cases, we compute a rural fraction at the municipality level based on ECLAC (2021) data and the distance (state level) to different cities: Mexico City, Tijuana, Zapopan, Puebla, Nezahualcóyotl, Monterrey, Leon, Guadalajara, Ecatepec, and Juarez City.

Colombia

Colombia uses the Integrated Great Survey of Households (GEIH) from 2018 to 2023. It is collected monthly, following the standard format of labor force surveys in Latin America. It is a survey that collects information on people's employment conditions (whether they work, what they do, how much they earn, whether they have social security in health or whether they are looking for work), as well as the general characteristics of the population such as sex, age, marital status and educational level. Occupational categories are in a classification that is adapted to the colombian context. Finally, we compute the distance to the main urban centers in terms of department using Bogota, Cali, Medellin, and Barranquilla.

Brazil

We employ the "National Continuous Household Sample Survey" (PNADC) from 2018 to 2023 in Brazil. This is a monthly household survey with a rotating panel (which we do not use). The survey monitors quarterly fluctuations and the short, medium and long-term evolution of the labor force. This survey began in a pilot phase in October 2011 to be definitely established in January 2012. Its sample was designed to be representative of Brazil, its Major Regions, Federation Units, Metropolitan Areas with the Municipalities of the Capitals, Integrated Development Region - RIDE of Greater Teresina, and Capitals' Municipalities. We do not have as fine geographical identifier for Brazil than in other countries, preventing us from constructing a measure of distance to main urban centers in that country. In addition to providing information on the occupation of the person interviewed and hours worked, it also asks about where the person was, in general, realizing her work (at home, at an office, in the street, etc.). This allows us to measure directly whether occupations that were more suitable for remote work were the ones that became more remote during and after the pandemic. Occupations are consistently classified using the ISCO-08, allowing a clear division between those where remote work is more feasible.

Table 1 summarizes the primary outcome variables of interest over time for our two occupations' categories (teleworkable or not). In particular, we summarize the level of urbanization, which takes the value of 1 if it is an urban area and 0 if it is rural, and the logarithm of income for the five countries in question. The urbanization level variable includes urban areas, such as cities and towns, where the population tends to be denser and more significant infrastructure and services are available. On the other hand, rural areas are comprised of areas outside cities and towns, where the population is more dispersed and infrastructure and services may be more limited.

The data in Chile shows that remote workers were predominantly in urban areas and had higher incomes than non-remote workers before the pandemic. After the pandemic, however, remote-workable occupations increased their prevalence in rural areas, whereas other occupations became a bit more urban than before.

In Peru, just as in Chile, remote-workable occupations increased their prevalence in rural areas after the pandemic. The difference is that the change also occurred in non-teleworkable occupations with even more intensity. The share of urbanization before was 63% and decreased to 47% after the pandemic. There are no significant changes in the number of observations with occupations prone to remote work, but the total number of observations decreases when evaluating income. This lower sample size is because self-employed workers (a large part of the labor force in Peru) do not report income in the survey.

In Mexico, the gap in the location of workers in teleworkable occupations and those in other occupations is more significant than in the Chilean case. Nevertheless, in terms of income, it is relatively similar. Remote-workable occupations have higher incomes and live in more urban areas before the pandemic. Both occupations have become more urban, but teleworkable occupations are more stable than non-teleworkable occupations. When looking at income, the drop in observations is again due to self-employed workers.

Figures in Colombia reveal an overall pattern of workers being less in urban areas over time, regardless of whether they are in teleworkable occupations or not. Unlike in other countries of our sample, the number of observations during the pandemic is significantly lower than before and after.

Finally, Brazil shows a relatively stable pattern with no significant changes in the urbanization level over time for both types of occupations. Incomes increase for both types of workers as well.

As implied by the figures in Table 1, in the pre-pandemic period, in Chile, approximately 10.2% of the workers in the sample have occupations prone to remote work. In Peru, approximately 3.2%

Table 1: Summary statistics

	Urbanization level			Log (income)		
	Pre	During	After	Pre	During	After
			Panel A: Chile			
Not teleworkable	0.778	0.828	0.796	12.643	12.723	13.033
obs	150,548	47,978	66,290	141,292	40,624	63,054
Teleworkable	0.906	0.921	0.902	13.189	13.328	13.608
obs	51,000	20,990	19,109	47,230	18,140	18,251
			Panel B: Peru			
Not teleworkable	0.595	0.566	0.637	6.059	6.122	6.228
obs	127,556	54,116	58,194	40,878	15,969	20,024
Teleworkable	0.950	0.945	0.954	7.196	7.400	7.444
obs	16,408	6,429	6,960	12,831	5,272	5,536
			Panel C: Mexico			
Not teleworkable	0.584	0.619	0.620	8.388	8.531	8.653
obs	1,543,929	847,029	529,422	1,113,863	613,419	375,767
Teleworkable	0.763	0.786	0.787	8.877	8.995	9.096
obs	522,990	297,932	188,253	334,959	196,355	119,256
			Panel D: Colombia			
Not teleworkable	0.753	0.874	0.860	13.372	13.308	13.637
obs	135,561	168,382	597,238	118,484	149,688	562,860
Teleworkable	0.976	0.970	0.953	13.774	13.972	14.204
obs	68,866	41,750	142,995	61,325	39,008	137,125
			Panel E: Brazil			
Not teleworkable	0.719	0.725	0.730	6.953	7.079	7.254
obs	2,072,977	911,958	1,186,488	1,989,922	876,385	1,151,350
Teleworkable	0.923	0.927	0.925	7.671	7.780	7.901
obs	584,084	274,134	354,577	580,315	272,644	352,882

of the workers' occupations have this characteristic; in Mexico, Colombia, and Brazil, the percentage is 7.5%, 3.9%, and 8.1%, respectively.

Table 2 presents each country's composition of remote workers. The different categories of the five countries are standardized to unify the classification results and make them comparable. We performed the classification following the methodology of Dingel and Neiman (2020). In Chile and Brazil, a large part of remote-workable occupations come from senior positions and members of the executive branch: 41.5% and 43.4%, respectively. In Peru and Colombia, only 12.9% and 18.6% are in this category, and for it is 23.8%.

For Peru and Mexico, the significant contribution to this type of work comes from professionals, where the shares 56.4% and 44.5%, respectively. In Colombia, the main category of teleworkable occupations is Agents, Technicians, and Specialists, with a 38%. The occupations that represent a higher percentage in each country are managers in the case of Chile (34.51%), Mexico (14.32%), and Brazil (28.53%). For Peru, it is lawyers (14.15%), and for Colombia, it is Managing directors (11.54%).

Table 2: Remote-Workable Occupations by Country

Occupation	**Chile**	**Peru**	**Mexico**	**Colombia**	**Brazil**
Members of the Executive Branch and Senior Officials					
Members of the Executive Branch	0.21%	1.20%	0.49%	-	2.28%
Directors of Administration	0.83%	0.12%	0.01%	4.02%	11.59%
Managing Directors	5.72%	10.58%	8.93%	11.54%	1.27%
Managers	34.74%	1.01%	14.32%	3.04%	28.53%
Professionals					
Physicists and Astronomers	0.08%	1.47%	0.12%	-	0.02%
Meteorologists	0.05%	0.39%	-	-	0.01%
Chemists	0.50%	1.32%	1.38%	-	0.21%
Mathematicians and Related Professionals	0.14%	0.63%	0.08%	1.23%	0.05%
Civil Engineers	6.36%	12.15%	4.82%	9.00%	2.44%
Electronics Engineers	1.36%	1.25%	1.40%	-	0.08%
Accountants	8.77%	12.00%	12.02%	10.25%	5.63%
Lawyers	5.01%	14.15%	9.98%	4.60%	15.78%
Judges	1.18%	-	0.35%	-	-
Economists	0.29%	1.80%	0.14%	1.49%	0.24%
Sociologists and Anthropologists	0.69%	0.39%	0.20%	2.17%	0.07%
Philosophers and Historians	0.09%	0.10%	0.01%	-	0.02%
Translators	0.32%	0.17%	0.29%	-	0.21%
Psychologists	3.73%	3.59%	5.16%	0.77%	2.83%
Data Creators and Analysts	3.17%	3.69%	1.46%	0.17%	0.47%
Programmers	1.91%	0.60%	6.79%	3.94%	4.83%
Data Entry Operators	0.86%	2.70%	0.31%	-	0.47%
Artists					
Authors and Writers	1.67%	0.24%	0.79%	6.40%	1.86%
Painters	0.43%	0.58%	0.42%	1.06%	0.32%
Composers	0.41%	0.05%	3.11%	0.12%	1.32%
Technical Drafters	1.21%	5.30%	3.25%	1.17%	3.99%
Agents, Technicians, and Specialists					
Stock or Financial Agents	1.40%	0.68%	0.74%	8.94%	2.61%
Insurance Agents	2.40%	1.13%	4.98%	6.75%	2.23%
Administrative Policy Specialists	2.01%	1.08%	0.21%	7.38%	5.52%
Organization and Marketing Specialists	7.72%	5.67%	8.12%	8.86%	-
Programming Technicians	2.88%	3.56%	-	2.82%	-
Accounting Technicians	3.30%	3.30%	9.98%	4.29%	4.82%
Statistical Technicians	0.56%	9.11%	0.18%	-	0.78%

Note: The table standardizes and groups the different categorizations used following Dingel and Neiman (2020). For Chile, it is classified according to ISCO-88 and ISCO-08, for Peru ISCO-08 is used, for Mexico SINCO 2019, and for Colombia CIIU Rev 2022.

5 Results: migration

Table 3 summarizes the results of our main specification for studying the internal migration and labor outcomes. We estimate Equation (10) using as the outcome the urbanization variable, which takes a value of 1 if the self-reported area is urban and 0 if it is rural. Estimates are in columns (1)–(4). We also estimate the same specification but using the logarithm of distance to the main urban centers as the outcome (columns (5)–(8)). As explained before, the geographical identifier for Brazil does not allow us to calculate the distance to the main urban centers for that country.

Panel A reveals that people in Chile working in remote-workable occupations have a 2% lower probability of living in an urban area during the pandemic, and the effect disappears afterward. The estimates are stable in including additional controls and the expansion factor, but statistical significance is lost when using the expansion factor and controls. One explanation for this is that agents in the sample with the expansion factor are representative of the region, and the variability of the sample of remote-workable occupations is minor. Additionally, the expansion factors of these surveys are not designed to be representative at the occupational level.

For Peru, in Panel B, the results are similar during the pandemic; occupations more prone to remote work have a 2% lower probability of living in an urban area, which is robust to the inclusion of controls. Considering the annual population expansion factor, the impact increases to 3%. However, contrary to what happened in Chile after the pandemic, this effect is lasting post-pandemic, remaining in the same range of magnitudes.

Panel C shows that the impacts in Mexico are an outlier. Estimates are small but typically positive, indicating that remote-workable occupations have more probability of living in urban areas, which is robust to the inclusion of controls and the population expansion factor.

Panels D and E show a third pattern. In Colombia and Brazil, the probability of teleworking in urban areas did not change during nor after the pandemic.

In terms of distance, we find almost no statistically significant relationships between whether an occupation was suitable for remote work and the time indicators and the distance to the country's main urban centers. This suggests that the small shift to rural areas may have occurred in areas at the same distance from main urban centers.

The results allow us to conclude that the migration process existed to a lesser extent than what has been documented in developed countries and what has been presumed in Latin America.

5.1 Alternative occupation classification

The previous results were based on a coarse classification of occupations as being either able to do remote work or not. This is clearly a simplification because some occupations are easier to telework than others. To test our results' robustness, we reclassify occupations by their probability of teleworking, following Dingel and Neiman (2020). This allows us to examine if previous findings on migration and income hold when adjusting for telework probability.

We estimate our main specification in Equation (10), using the dichotomic urbanization level as

Table 3: Results: urbanization level and distance

	Urbanization				Ln (Distance)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				Panel A: Chile				
Telework x During	-0.02***	-0.01**	-0.01*	-0.01	-0.05	-0.07**	-0.03	-0.06
	(0.01)	(0.00)	(0.01)	(0.01)	(0.03)	(0.03)	(0.04)	(0.04)
Telework x After	-0.01	-0.01	-0.00	-0.00	-0.01	-0.00	-0.06	-0.05
	(0.01)	(0.01)	(0.01)	(0.01)	(0.06)	(0.05)	(0.06)	(0.05)
Observations	353,458				350,676			
				Panel B: Perú				
Telework x During	-0.02***	-0.02***	-0.03***	-0.03***	0.04	0.04	-0.03	-0.03
	(0.00)	(0.00)	(0.01)	(0.01)	(0.05)	(0.05)	(0.09)	(0.09)
Telework x After	-0.03***	-0.02***	-0.02**	-0.02**	0.05	0.05	0.02	0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.04)	(0.04)	(0.05)	(0.06)
Observations	269,599				268,900			
				Panel C: México				
Telework x During	-0.01**	-0.01**	-0.00	-0.00	0.05***	0.05***	0.04*	0.04*
	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)
Telework x After	-0.01*	-0.01	0.00	0.00	0.04***	0.05***	0.05*	0.05*
	(0.00)	(0.00)	(0.01)	(0.01)	(0.02)	(0.02)	(0.03)	(0.03)
Observations	3,922,748				3,922,748			
				Panel D: Colombia				
Telework x During	-0.01	-0.02	-0.01	-0.03	-0.19	-0.14	-0.33*	-0.22
	(0.02)	(0.02)	(0.02)	(0.02)	(0.14)	(0.11)	(0.20)	(0.19)
Telework x After	-0.01	-0.00	-0.00	-0.00	-0.12	-0.09	-0.17	-0.13
	(0.02)	(0.02)	(0.03)	(0.02)	(0.13)	(0.08)	(0.13)	(0.11)
Observations	1,138,384				912,804			
				Panel E: Brazil				
Telework x During	-0.00	-0.00	0.00	0.00	-	-	-	-
	(0.00)	(0.00)	(0.00)	(0.00)				
Telework x After	-0.00	0.00	-0.00	0.00	-	-	-	-
	(0.00)	(0.00)	(0.00)	(0.00)				
Observations	4,841,695							
Time and Occupation F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Education, gender and age	No	Yes	No	Yes	No	Yes	No	Yes
Expansion factor	No	No	Yes	Yes	No	No	Yes	Yes

Standard errors clustered at occupation level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Note: Using an empirical difference-in-differences strategy, we estimate the impact of remote work during and after the pandemic on the self-reported level of urbanization in mass surveys from Chile, Peru, Mexico, Colombia and Brazil. The dependent variable takes the value of 1 if the area is urban and 0 if it is rural. Even-numbered columns include controls, and columns (3) and (4) consider the expansion factor.

the outcome. The difference lies in the key variable, which is no longer an indicator of a teleworkable occupation, but the probability of remote work.

The results, to be compared to those in Table 3, are presented in Table 4. Panel A reveals that the results are similar to those found in Table 3 during the pandemic. Occupations that are 100 percent more likely to be suitable for remote work have a 2% lower probability of living in an urban area in Chile. As with the binary classification, the effect disappears post-pandemic.

Panel B confirms the rural-urban migration pattern in Peru. The results during the pandemic coincide with the main estimate: the occupations with a 100 percent higher probability to telework have a 2% lower probability of living in an urban area, which increases to 3% after the pandemic. Both estimates are robust to the inclusion of controls and expansion factors.

Panel C indicates that the differential pattern found for Mexico continues to appear when using this alternative way of classifying occupations that are more or less suitable for remote work.

Panel D and E report the estimates for Colombia and Brazil, where we confirm that occupations that have a higher probability of telework do not change significantly in terms of urban/rural location during and after the pandemic.

In a nutshell, Table 4 shows that occupations associated with managerial and executive positions and activities related to programming and mathematics appear to drive the results in the change of urban location of workers over the period, since they had the highest probability of being suitable for remote work. The point estimates are statistically significant only in Perú, confirming the results in Table 3 that the migration from urban areas was small.

5.2 Additional results

To complement the previous results, we conduct additional estimations for country-specific outcomes. We focus primarily on outcomes measured at the municipality level to verify if the change in the urban/rural location is due to migration across or within municipalities. It also helps to compare the results with estimations for developing countries. We discuss the results separately by country.

Chile

Table 5 shows in Panel A that individuals in remote-workable occupations are not less likely to be renters during or after the pandemic. Coefficients are small and positive. They are less likely to live in municipalities that have lower motorization rates (1%), and municipalities that spend less per inhabitant (10%) after the pandemic than before comparing to those in occupations that are not remote-workable. However, these results are not robust to the inclusion of expansion factors. Regarding housing conditions, our results suggest that occupations suitable for remote work move to more rural areas where, due to lower housing costs, they can purchase properties and thus leave their rented homes in urban centers to live in their own houses in less urban areas. The lower motorization rate and expenditure per inhabitant are consistent with rural municipalities as they usually have a smaller budget, and people in rural areas, on average, have lower incomes. These results reinforce the idea that the results of Table 3 are not due to a change in location within a municipality but rather across them.[5]

[5] In Table 16 of the Appendix, more additional results are shown along the same lines, finding that individuals in remote-workable occupations pay less in rent after the pandemic and live in communes with fewer approved works during the pandemic than those in non-remote-workable occupations.

Table 4: Urbanization level using occupation-specific weights

	(1)	(2)	(3)	(4)
	Panel A: Chile (N=352,094)			
Telework x During	-0.02***	-0.01**	-0.01	-0.01
	(0.01)	(0.00)	(0.01)	(0.01)
Telework x After	-0.01	-0.01	-0.00	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)
	Panel B: Perú (N=267,456)			
Telework x During	-0.02***	-0.02***	-0.03***	-0.03***
	(0.00)	(0.00)	(0.01)	(0.01)
Telework x After	-0.03***	-0.03***	-0.02**	-0.02***
	(0.01)	(0.01)	(0.01)	(0.01)
	Panel C: México (N=3,605,720)			
Telework x During	-0.01**	-0.01**	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Telework x After	-0.01**	-0.01	0.00	0.00
	(0.00)	(0.00)	(0.01)	(0.01)
	Panel D: Colombia (N=1,111,157)			
Telework x During	-0.01	-0.03	-0.02	-0.04*
	(0.02)	(0.02)	(0.03)	(0.02)
Telework x After	-0.01	-0.01	-0.02	-0.01
	(0.02)	(0.02)	(0.03)	(0.02)
	Panel E: Brazil (N=4,805,282)			
Telework x During	-0.00	-0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Telework x After	-0.00	0.00	-0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Time and Occupation F.E.	Yes	Yes	Yes	Yes
Education, gender and age	No	Yes	No	Yes
Expansion factor	No	No	Yes	Yes

Note: Standard errors clustered at occupation level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. All regressions include occupation and time fixed effects. The dependent variable takes the value of 1 if the area is urban and 0 if it is rural in the first 4 columns. The last columns regress the distance of the current county of residence compared to the closest large metropolitan area. The even-numbered columns include controls, and columns (3) and (4) consider the expansion factor.

Peru

The results in Panel B of Table 5 cover variables available in the ENAHO data in Peru. The first two columns analyze the housing conditions of individuals in remote-workable occupations versus those in other occupations before and after the pandemic. As in the case of Chile, the variable takes the value of 1 if it is a rented dwelling where the respondent lives and 0 otherwise. In this case, we do not have statistically significant results consistent with previous results that indicate that people migrated to fewer urban areas during the pandemic. We find no difference across occupational categories in the probability of renting during or after the pandemic compared to before.

Columns (3) to (6) summarize the results when we use time-invariant outcomes at the municipality level. Columns (3) and (4) present the results using the fraction of public lighting by the municipality, which is essential as rural municipalities have a higher percentage of public lighting. Columns (5) and (6) show the estimates of the impact on the rate of households with electric stoves, where more urban municipalities have a more significant fraction of these households. The results, which are mostly zero impact, suggest that the migration documented above may have been more within a municipality than across it.

Mexico

Panel C of Table 5 presents results on a measure of urbanization level by population, which considers four categories, ranging from 1 to 4, with 4 being the most rural area. In columns (1) and (2), we see that remote-workable occupations live in more rural areas during and after the pandemic, at least in the specification without the population expansion factor. When this factor is considered, the result increases in magnitude during the pandemic but loses significance after. This result reaffirms the analysis in Table 3, confirming that remote workers live in less urban areas, even considering only urbanization based on the number of inhabitants.

Columns (3) and (4) show the impact of remote work occupations on the rural access index, a time-invariant index computed across municipalities. This specification, like the following columns, seeks to reinforce the main migration result, where the change in urbanization levels is not due to the evolution of the municipalities. Individuals who work in remote-workable occupations live in areas with a higher initial rural accessibility index, in places closer to rural areas, particularly 2 km closer to those areas by the road network. Therefore, this confirms that occupations migrate to more rural areas, as proposed in Table 3, and that these results do not correspond only to a change within a municipality.

Columns (5) and (6) indicate a relative rurality index constructed from 4 variables: population, population density, percentage of built-up land per territorial unit, and distance to localities with more than 50,000 inhabitants. Thus, the results confirm that remote-workable occupations live in areas with higher relative rurality indices. This is sustained after the pandemic in the specification that does not consider the population expansion factor. Considering this factor, the result becomes statistically significant during the pandemic. Again, this supports the idea that agents migrate to less urban areas and that the results do not depend on the change in municipal composition.[6]

[6]In Table 18 of the Appendix, we see results along the same lines considering the report on the variables of average educational level and salary zone. Finding that remote workers live in areas with lower average educational attainment and in the northern border salary zone where the minimum wage is higher.

Table 5: Additional results

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Chile	*Dummy* Rent		Motorization rate		Ln (expend x hab.)	
Telework x during	0.01	0.02	-0.01***	-0.00	-0.01*	-0.01
	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.01)
Telework x after	0.02***	0.02	-0.01*	0.01	-0.04***	-0.02
	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.02)
Observations	353,458		217,220		315,619	
Panel B: Perú	*Dummy* Rent		Public lighting		Electric stove	
Telework x During	0.01	-0.02	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)
Telework x Post	0.01	0.00	-0.01**	-0.00	0.00	0.00**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)
Observations	168,051		190,834		190,834	
Panel C: México	Rural per hab.		Rural Access Index		Relative Rural Index	
Telework x During	0.01*	0.02**	0.00***	0.01	0.00	0.00**
	(0.01)	(0.01)	(0.00)	(0.01)	(0.00)	(0.00)
Telework x After	0.01*	0.02	0.01***	0.01**	0.00*	0.00
	(0.01)	(0.02)	(0.00)	(0.01)	(0.00)	(0.00)
Observations	2,582,747		2,562,303		2,562,303	
Time and Occupation F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Education, gender and age	Yes	Yes	Yes	Yes	Yes	Yes
Expansion factor	No	Yes	No	Yes	No	Yes

Standard errors clustered at occupation level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

6 Impact on remote work

The smaller migration observed in Latin America compared to more developed countries could be due to the fact that firms did not adopt remote work in the same way during and post-pandemic. To assuage this concern, we use data from Brazil, the only country that collected before, during and after the pandemic, information on the location of the work activities. Table 6 shows the results of estimating Eq. 10 but using whether workers report working mostly from home as the outcome of interest. As expected, workers in teleworkable occupations work more from home during and after the pandemic. Although we only have this type of information for Brazil, it is still a strong indication that it is not that these occupations were less likely to implement remote work in Latin America than elsewhere. Individuals worked from home but were less likely to move that home from an urban center than in other contexts.

7 Heterogeneity by initial rurality

Our model suggests that the absence of large migratory flows to rural areas could be due to the shortage of rural regions where workers can conduct their duties from home. Another possibility is

Table 6: Work from home (self-reported) in Brazil.

	(1)	(2)	(3)	(4)
Telework x During	0.08^{***}	0.11^{***}	0.08^{***}	0.11^{***}
	(0.02)	(0.03)	(0.02)	(0.03)
Telework x After	0.12^{***}	0.14^{***}	0.12^{***}	0.14^{***}
	(0.03)	(0.04)	(0.03)	(0.04)
N	974,051		963,633	

Note:: Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. All estimates include controls. Columns (1) and (2) employ the dummy variable indicating whether or not the occupation is teleworkable. Columns (3) and (4) employ the continuous variable. Columns (2) and (4) include weights.

that the increased telework productivity in the city mitigated the migration to rural areas.

If, before the pandemic, an occupation was very rural, this could indicate the possibility of working from that location. However, if the possibility of teleworking does not exist, it could be that these occupations in rural places are working full-time at the office and, thus, are the occupations most likely to move to the city. Unfortunately, we cannot measure telework adoption and cannot differentiate between situations.

We thus interact our interaction between telework and the pandemic indicators with a variable fixed at the occupation level, indicating how prevalent rural locations were amongst individuals practicing that occupation before the pandemic. Results are presented in Table 7 below.

Table 7: Impact of pandemic on urbanization, interacting with initial rurality

	(1)	(2)	(3)	(4)
	Panel A: Chile (N=325,361)			
Telework *x* During	-0.04***	-0.02***	-0.03***	-0.02**
	(0.01)	(0.01)	(0.01)	(0.01)
Telework *x* After	-0.04***	-0.03***	-0.04***	-0.03***
	(0.01)	(0.01)	(0.01)	(0.01)
Telework *x* During *x* Rural	0.30***	0.18***	0.20**	0.12**
	(0.05)	(0.07)	(0.08)	(0.06)
Telework *x* After *x* Rural	0.40***	0.29***	0.44***	0.35***
	(0.08)	(0.08)	(0.06)	(0.06)
	Panel B: Perú (N=269,426)			
Telework *x* During	-0.02***	-0.02***	-0.02***	-0.02***
	(0.00)	(0.00)	(0.01)	(0.01)
Telework *x* After	-0.03***	-0.03***	-0.03***	-0.02***
	(0.01)	(0.01)	(0.01)	(0.01)
Telework *x* During *x* Rural	0.02	-0.04	-0.12	-0.15
	(0.10)	(0.11)	(0.09)	(0.09)
Telework *x* After *x* Rural	0.15*	0.12	0.09	0.07
	(0.09)	(0.09)	(0.06)	(0.08)
	Panel C: México (N=3,922,472)			
Telework *x* During	-0.06	-0.05	-0.04	-0.03
	(0.04)	(0.04)	(0.05)	(0.05)
Telework *x* After	-0.09**	-0.07**	-0.06	-0.05
	(0.04)	(0.04)	(0.05)	(0.05)
Telework *x* During *x* Rural	0.09*	0.07*	0.06	0.04
	(0.05)	(0.04)	(0.06)	(0.06)
Telework *x* After *x* Rural	0.13***	0.10**	0.08	0.06
	(0.05)	(0.04)	(0.06)	(0.06)
	Panel D: Colombia (N=328,034)			
Telework *x* During	-0.04***	-0.07***	-0.06**	-0.11***
	(0.01)	(0.02)	(0.03)	(0.03)
Telework *x* After	-0.05**	-0.04***	-0.08**	-0.07**
	(0.02)	(0.01)	(0.04)	(0.03)
Telework *x* During *x* Rural	0.49***	1.04***	0.73*	1.40***
	(0.17)	(0.29)	(0.39)	(0.40)
Telework *x* After *x* Rural	0.44*	0.37**	0.73	0.72
	(0.22)	(0.18)	(0.52)	(0.44)
	Panel E: Brazil (N=4,841,695)			
Telework *x* During	-0.01***	-0.01**	-0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Telework *x* After	-0.00	0.00	-0.01**	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Telework *x* During *x* Rural	0.12**	0.09*	0.05***	0.03*
	(0.05)	(0.05)	(0.01)	(0.02)
Telework *x* After *x* Rural	0.03	0.00	0.04	0.01
	(0.04)	(0.04)	(0.03)	(0.03)
Time and Occupation F.E.	Yes	Yes	Yes	Yes
Education, gender and age	No	Yes	No	Yes
Expansion factor	No	No	Yes	Yes

Note: Standard errors clustered at occupation level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. All regressions include occupation and year fixed effects and the double interaction between Rural*Telework. Columns (2) and (4) include controls. Columns (3) and (4) are weighted by the expansion factors.

The results are consistent with the hypothesis that rural areas are not favorable for working from home. First, all point estimates for occupations initially in urban areas are negative but small, with the exception of Brazil where they are mostly zero. Moreover, the results suggest that the lack of statistical significance in the results presented in Table 3 is due to substantial heterogeneity.

For occupations initially more present in cities in Chile, Peru and Colombia, there is a decrease in the likelihood of being in urban areas during and after the pandemic of between 2% to 11%. All are statistically significant.

At the same time, the interaction with the initial level of rurality is almost always positive and significantly different from zero in some cases. This result implies that occupations that were more likely to be rural before the pandemic are not so prevalent and are the ones that move to urban zones.

The results are consistent with the predictions of the model of Section 2 and suggest that the difference between Latin America and more developed economies is that rural areas do not have the ability to accommodate work-from-home. If this holds, we should observe a growth in the difference between wages in rural and urban areas, as Result 2 states.

8 Impact on income

We complement the analysis of internal migration with an examination of the impact of telework on income from labor. The literature suggests two opposing mechanisms: a direct positive effect on wages through increased productivity and a potential decrease due to general equilibrium effects (see, e.g., Gokan et al., 2022; Brueckner and Sayantani, 2023; Behrens et al., 2024). Our findings provide evidence of both dynamics, varying significantly across countries and time periods.

Table 8 summarizes the results of estimating Equation (10) using the self-reported income of individuals in each survey. In Chile and Peru, telework had a significant positive impact on income during the pandemic. This effect diminished after the pandemic, suggesting that temporary factors, such as labor protection measures or subsidies were at play. These results are robust to the inclusion of controls and the use of expansion factors and are consistent with negligible long-term urban-rural migration.

In contrast, Mexico displayed a consistent decrease in income for individuals in occupations likely to transition to remote work, both during and after the pandemic. The reduction ranged between 2% and 5%, suggesting that teleworkability in Mexico may be associated with less efficient remote working arrangements in rural areas.

Colombia stands out with large, positive, and statistically significant effects on income during and after the pandemic. These findings may reflect employer investments in telework capabilities during the pandemic, leading to long-term productivity gains for remote workers. The strong income effects in Colombia are consistent with its notable rural-to-urban migration patterns, as shown in Table 7. The results suggest that telework may have amplified existing urban productivity advantages, further widening the rural-urban wage gap.

Brazil, on the other hand, exhibited small and often non-significant coefficients, indicating no substantial impact of telework on income. This lack of effect may reflect structural differences in Brazil's labor market, where telework was either less prevalent or less effective in generating income gains.

Table 8: Impact on income

	(1)	(2)	(3)	(4)
	Panel A: Chile (N=326,616)			
Telework x During	0.07**	0.10***	0.07*	0.09**
	(0.03)	(0.03)	(0.04)	(0.04)
Telework x After	-0.02	-0.02	0.03	0.02
	(0.06)	(0.04)	(0.06)	(0.04)
	Panel B: Perú (N=100,464)			
Telework x During	0.07**	0.06**	0.09***	0.09***
	(0.03)	(0.03)	(0.03)	(0.03)
Telework x After	0.04*	0.04*	0.04	0.04
	(0.02)	(0.02)	(0.04)	(0.04)
	Panel C: México (N=2,749,834)			
Telework x During	-0.02***	-0.02***	-0.02**	-0.02**
	(0.01)	(0.01)	(0.01)	(0.01)
Telework x After	-0.05***	-0.05***	-0.05***	-0.05***
	(0.01)	(0.01)	(0.01)	(0.01)
	Panel D: Colombia (N=1,053,590)			
Telework x During	0.43***	0.32***	0.49***	0.36***
	(0.16)	(0.13)	(0.13)	(0.13)
Telework x After	0.33**	0.30***	0.42***	0.42***
	(0.16)	(0.13)	(0.13)	(0.13)
	Panel E: Brazil (N=4,691,888)			
Telework x During	-0.00	0.01	0.01	0.02**
	(0.01)	(0.01)	(0.01)	(0.01)
Telework x After	-0.03*	-0.01	-0.03**	-0.01
	(0.02)	(0.01)	(0.01)	(0.01)
Time and Occupation F.E.	Yes	Yes	Yes	Yes
Education, gender and age	No	Yes	No	Yes
Expansion factor	No	No	Yes	Yes

Note: Standard errors clustered at occupation level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable is the log of income. Fixed effects by occupation and time are included. Columns (2) and (4) include controls. Columns (3) and (4) weigh observations by expansion factors.

Table 9 reports the estimates of the same exercise but reclassifying occupations by their probability of teleworking, following Dingel and Neiman (2020), as done in Table 4. The results do not change significantly concerning those obtained using an indicator variable. In Chile and Peru, there is an increase in income for individuals working in occupations with a higher probability of being teleworkable only during the pandemic; in Mexico, income decreased during and after the pandemic. In Colombia, earnings are substantially higher after the pandemic for people in occupations with higher suitability for WFH. Finally, there is no effect in Brazil. Thus, Table 9 shows that the results for income are robust to changing the critical variable by using a continuous variable to define suitability to remote work instead of a dichotomous variable.

We further examine whether the effects of telework on income depend on the location. Note that, unlike in the migration analysis, we interact our key variable with an indicator of whether the person lives in an urban area and varies with time. This helps understanding how the urban-rural wage changed for teleworkable occupations.

Table 10 shows that in Peru and Colombia, the positive effects are driven primarily by workers in rural areas, while urban workers benefited less or even experienced losses. This result supports the theoretical prediction of an increase in rural wages when there is migration from urban to rural areas, which is what we found in the previous Section (see Table 7).

In the case of Chile, Table 10 shows an increase of the urban-rural wage gap after the pandemic led by gains in the city. This result is consistent with the model when there is rural to urban migration, explained by the relative advantage of the suburbs under telework. Additional analyses in Table A.6 confirm that teleworkable occupations are less likely to be located further than 30 km. from the cities' center and more likely to be within 10 km. to 30 km.

Finally, Brazil and Mexico display a contrasting dynamic. In Brazil, there seem to be no income impact on occupations suitable for telework, regardless of location. Mexico, on the other hand, shows that the income decrease is driven by workers in rural areas. These findings highlight the varied implications of telework across countries and the importance of contextual labor market factors in shaping outcomes.

Table 9: Impact on income using occupation-specific weights

	(1)	(2)	(3)	(4)
	Panel A: Chile (N=325,347)			
Telework x During	0.07**	0.10***	0.07*	0.10***
	(0.03)	(0.03)	(0.04)	(0.04)
Telework x After	-0.01	-0.01	0.03	0.03
	(0.06)	(0.05)	(0.06)	(0.05)
	Panel B: Perú (N=99,022)			
Telework x During	0.07**	0.07**	0.08**	0.08***
	(0.03)	(0.03)	(0.03)	(0.03)
Telework x After	0.03	0.03*	0.03	0.03
	(0.02)	(0.02)	(0.04)	(0.04)
	Panel C: México (N=2,515,356)			
Telework x During	-0.02***	-0.02***	-0.02**	-0.01*
	(0.00)	(0.00)	(0.01)	(0.01)
Telework x After	-0.06***	-0.05***	-0.05***	-0.05***
	(0.01)	(0.01)	(0.01)	(0.01)
	Panel D: Colombia (N=1,029,283)			
Telework x During	0.50***	0.40***	0.52***	0.43***
	(0.17)	(0.15)	(0.17)	(0.15)
Telework x After	0.36**	0.39***	0.44**	0.50***
	(0.17)	(0.14)	(0.17)	(0.15)
	Panel E: Brazil (N=4,655,784)			
Telework x During	-0.00	0.01	0.01	0.02**
	(0.01)	(0.01)	(0.01)	(0.01)
Telework x After	-0.04**	-0.01	-0.03**	-0.01
	(0.02)	(0.01)	(0.01)	(0.01)
Time and Occupation F.E.	Yes	Yes	Yes	Yes
Education, gender and age	No	Yes	No	Yes
Expansion factor	No	No	Yes	Yes

Note: Standard errors clustered at occupation level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable is the log of income. Fixed effects by occupation and time are included. Columns (2) and (4) include controls. Columns (3) and (4) weigh observations by expansion factors.

Table 10: Impact of pandemic on income, interacting with urban residence.

	(1)	(2)	(3)	(4)
	Panel A: Chile (N=326,616)			
Telework x During	-0.02	0.01	0.01	0.04
	(0.05)	(0.04)	(0.06)	(0.05)
Telework x After	0.00	-0.02	-0.02	-0.04
	(0.07)	(0.05)	(0.06)	(0.05)
Telework x During x Urban	0.10***	0.10***	0.06	0.06
	(0.04)	(0.03)	(0.04)	(0.04)
Telework x After x Urban	-0.02	0.00	0.05	0.07**
	(0.02)	(0.02)	(0.03)	(0.03)
	Panel B: Perú (N=100,464)			
Telework x During	0.22**	0.19**	0.29**	0.26***
	(0.10)	(0.09)	(0.12)	(0.10)
Telework x After	0.17**	0.15*	0.19**	0.17*
	(0.09)	(0.08)	(0.10)	(0.10)
Telework x During x Urban	-0.15*	-0.13*	-0.22*	-0.19**
	(0.09)	(0.07)	(0.11)	(0.09)
Telework x After x Urban	-0.13	-0.11	-0.16	-0.14
	(0.09)	(0.09)	(0.11)	(0.11)
	Panel C: México (N=2,749,834)			
Telework x During	-0.02	-0.02	-0.03*	-0.04**
	(0.02)	(0.01)	(0.02)	(0.02)
Telework x After	-0.04**	-0.04***	-0.05***	-0.05***
	(0.02)	(0.01)	(0.01)	(0.01)
Telework x During x Urban	-0.01	-0.00	0.01	0.03*
	(0.02)	(0.01)	(0.02)	(0.02)
Telework x After x Urban	-0.02	-0.01	-0.01	0.00
	(0.02)	(0.02)	(0.02)	(0.02)
	Panel D: Colombia (N=1,053,592)			
Telework x During	0.70***	0.57***	0.79***	0.65***
	(0.16)	(0.16)	(0.15)	(0.14)
Telework x After	0.53***	0.41***	0.57***	0.48***
	(0.16)	(0.14)	(0.15)	(0.14)
Telework x During x Urban	-0.24***	-0.26***	-0.31***	-0.30***
	(0.08)	(0.08)	(0.08)	(0.07)
Telework x After x Urban	-0.21**	-0.11**	-0.16*	-0.07
	(0.08)	(0.05)	(0.08)	(0.06)
	Panel E: Brasil (N=4,691,888)			
Telework x During	0.03	0.02	0.06*	0.04
	(0.03)	(0.02)	(0.03)	(0.03)
Telework x After	0.02	0.02	0.06*	0.05*
	(0.03)	(0.03)	(0.03)	(0.03)
Telework x During x Urban	-0.04	-0.02	-0.05	-0.02
	(0.03)	(0.03)	(0.03)	(0.03)
Telework x After x Urban	-0.06*	-0.04	-0.09**	-0.06*
	(0.03)	(0.03)	(0.04)	(0.03)
Time and Occupation F.E.	Yes	Yes	Yes	Yes
Education, gender and age	No	Yes	No	Yes
Expansion factor	No	No	Yes	Yes

Standard errors clustered at occupation level in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

9 Heterogeneity by gender

To identify potential gender-specific effects of teleworking, we estimate Equation (10) separately for male and female respondents. Tables 11 and 12 present the results, examining differences in urbanization levels (Columns 1 and 2) and self-reported income (Columns 3 and 4), similar to the analyses in Tables 3 and 8.

The results reveal distinct gender patterns across the five countries. Regarding urbanization, no significant gender differences are observed in Chile, Peru, and Brazil. However, in Mexico, women in teleworkable occupations are slightly more likely to move to urban areas during the pandemic, although the effects are small. In Colombia, women in occupations with high telework suitability are notably more likely to live in rural areas during the pandemic, suggesting a unique gendered migration dynamic in this context.

In terms of income, teleworking appears to contribute to a reduction in the gender wage gap, with larger income gains or smaller declines for women compared to men. In Chile, the overall income increase in teleworkable occupations is more pronounced for women, reflecting a significant driver of the aggregate effect. A similar pattern is seen in Peru, where income increases for women account for the observed positive overall impact. In Mexico, the post-pandemic income decline in teleworkable occupations is more severe for men, resulting in a relatively smaller income loss for women.

Colombia presents a particularly striking case, where women exclusively drive the positive income effects observed during and after the pandemic. The estimates for women are statistically significant and up to twice as large as those for men, highlighting a substantial gendered benefit of teleworking in this country. These findings underline the importance of considering gender-specific impacts when evaluating the broader implications of telework on labor market dynamics.

10 Conclusion

This study investigated the effects of telework in Latin America, specifically in Chile, Mexico, Peru, Colombia, and Brazil, during and after the COVID-19 pandemic. We use a difference-in-difference approach to compare workers in occupations more prone to telework with those in less teleworkable occupations. This comparison allows for assessing how telework has influenced income, the distance between residence and workplace, and internal migration patterns.

The findings reveal that individuals in teleworkable occupations show a small increase (between 1 and 2 percentage points) in their propensity to live in less urban areas during and after the pandemic. Our results also show that people in teleworkable occupations in Chile, Peru and Colombia appear to gain on average, at least during the pandemic. The effects are particularly strong and long-lasting for Colombia. Additionally, the research highlights gender disparities in the impact of telework. Women in teleworkable occupations responded more than men in terms of geographical location and were more likely to move to less urban locations during the pandemic. As a counterpart, women also experienced a higher increase in their income than men, comparing those in occupations that are

Table 11: Men Subsample

	(1)	(2)	(3)	(4)
	Urbanization level		Income	
		Panel A: Chile		
Telework x During	-0.01	-0.01	0.08***	0.07*
	(0.01)	(0.01)	(0.03)	(0.04)
Telework x After	-0.01	-0.01	-0.04	0.01
	(0.01)	(0.01)	(0.06)	(0.06)
Observations	200,741		184,790	
		Panel B: Perú		
Telework x During	-0.03***	-0.03***	0.07**	0.05
	(0.01)	(0.01)	(0.03)	(0.04)
Telework x After	-0.03***	-0.02***	0.03	-0.01
	(0.01)	(0.01)	(0.03)	(0.05)
Observations	140,154		58,637	
		Panel C: México		
Telework x During	0.00	0.01	-0.01**	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Telework x After	-0.00	0.01	-0.06***	-0.07***
	(0.00)	(0.01)	(0.01)	(0.01)
Observations	2,109,302		1,465,653	
		Panel D: Colombia		
Telework x During	-0.01	-0.02	0.35*	0.33*
	(0.02)	(0.04)	(0.19)	(0.19)
Telework x After	0.00	-0.00	0.23	0.27
	(0.02)	(0.04)	(0.18)	(0.18)
Observations	485,268		446,146	
		Panel E: Brazil		
Telework x During	-0.00	0.00	0.00	0.02
	(0.00)	(0.00)	(0.01)	(0.01)
Telework x After	0.00	0.00	-0.02	-0.02
	(0.00)	(0.00)	(0.02)	(0.01)
Observations	2,743,365		2,697,353	
Time and Occupation F.E.	Yes	Yes	Yes	Yes
Education and age	Yes	Yes	Yes	Yes
Expansion factor	No	Yes	No	Yes

Note: Standard errors clustered at occupation level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The outcome is whether the person lives in an urban environment in the first two columns and the log of income in the second two. All regressions include time and occupation fixed effects and controls. Columns (2) and (4) weigh observations by expansion factors.

Table 12: Women subsample

	(1)	(2)	(3)	(4)
	Urbanization level		Income	
	Panel A: Chile			
Telework x During	-0.01**	-0.00	0.11***	0.12***
	(0.00)	(0.00)	(0.04)	(0.04)
Telework x After	-0.00	0.00	0.01	0.03
	(0.01)	(0.01)	(0.04)	(0.04)
Observations	151,334		140,538	
	Panel B: Perú			
Telework x During	-0.02***	-0.03***	0.04	0.10**
	(0.00)	(0.01)	(0.04)	(0.04)
Telework x After	-0.02***	-0.02**	0.05*	0.09*
	(0.01)	(0.01)	(0.03)	(0.05)
Observations	127,259		40,324	
	Panel C: México			
Telework x During	-0.02***	-0.01	-0.02***	-0.02*
	(0.00)	(0.01)	(0.01)	(0.01)
Telework x After	-0.01*	-0.00	-0.05***	-0.04***
	(0.01)	(0.01)	(0.01)	(0.01)
Observations	1,496,410		1,049,697	
	Panel D: Colombia			
Telework x During	-0.04**	-0.06***	0.34***	0.41***
	(0.02)	(0.02)	(0.12)	(0.13)
Telework x After	-0.01	-0.01	0.45***	0.58***
	(0.01)	(0.02)	(0.12)	(0.14)
Observations	625,888		583,136	
	Panel E: Brazil			
Telework x During	-0.00	0.00	0.01	0.02*
	(0.00)	(0.00)	(0.01)	(0.01)
Telework x After	-0.00	-0.00	-0.01	-0.00
	(0.00)	(0.00)	(0.02)	(0.02)
Observations	2,061,914		1,958,428	
Time and Occupation F.E.	Yes	Yes	Yes	Yes
Education and age	Yes	Yes	Yes	Yes
Expansion factor	No	Yes	No	Yes

Note: Standard errors clustered at occupation level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The outcome is whether the person lives in an urban environment in the first two columns and the log of income in the second two. All regressions include time and occupation fixed effects and controls. Columns (2) and (4) weigh observations by expansion factors.

more suitable to WFH.

Extending the research to cover more countries in Latin America is a natural avenue for future research.

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A Additional Tables

Table A.1: Results for Chile on other outcomes

	(1)	(2)	(3)	(4)
	Ln (Rent)		Ln (Approved infrast.)	
Telework x During			-0.29***	-0.13
			(0.05)	(0.08)
Telework x After	-0.21***	-0.18***	-0.09	0.13
	(0.04)	(0.05)	(0.10)	(0.10)
Observations	39,781		220,717	
Time and Occupation F.E.	Yes	Yes	Yes	Yes
Education, gender and age	Yes	Yes	Yes	Yes
Expansion factor	No	Yes	No	Yes

Note:: Standard errors clustered at occupation level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The outcome is the log of the value of rent paid in the first two columns and the log of the approved infrastructure by the municipality in the survey year. Given that the value of rent was not asked in 2020, there is no report for during the pandemic. All regressions include time and occupation fixed effects as well as controls. Columns (2) and (4) weigh observations by expansion factors.

Table A.2: Results for Peru on other outcomes

	(1)	(2)	(3)	(4)
	Ln (Rent)		Ln (Transp. exp.)	
Telework x During	-0.02	0.04	0.23	-0.07
	(0.11)	(0.17)	(0.51)	(0.57)
Telework x After	-0.10	0.02	0.01	0.00
	(0.08)	(0.15)	(0.27)	(0.38)
Observations	11,575		3,975	
Time and Occupation F.E.	Yes	Yes	Yes	Yes
Education, gender and age	Yes	Yes	Yes	Yes
Expansion factor	No	Yes	No	Yes

Note: Standard errors clustered at occupation level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The outcome is the log of the value of rent paid in the first two columns and the log of transportation expenditures. All regressions include time and occupation fixed effects as well as controls. Columns (2) and (4) weigh observations by expansion factors.

Table A.3: Results for Mexico on other outcomes

	(1)	(2)	(3)	(4)
	Average schooling		Min. Wage zone	
Telework x During	-0.02**	-0.04**	-0.00	0.00*
	(0.01)	(0.02)	(0.00)	(0.00)
Telework x After	-0.02	-0.04*	0.01	0.01**
	(0.01)	(0.02)	(0.00)	(00)
Observations	2,562,303		2,582,747	
Time and Occupation F.E.	Yes	Yes	Yes	Yes
Education, gender and age	Yes	Yes	Yes	Yes
Expansion factor	No	Yes	No	Yes

Note: Standard errors clustered at occupation level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The outcome is the average schooling and the minimum wage zone in a fixed year in the municipality of residence. All regressions include time and occupation fixed effects as well as controls. Columns (2) and (4) weigh observations by expansion factors.

Table A.4: Pre-trends: Urbanization Level

	(1)	(2)	(3)	(4)
	Panel A: Chile (base 2017)			
Telework x 2015	0.00	-0.00	0.00	0.00
	(0.01)	(0.01)	(0.00)	(0.00)
Observations	200,779			
	Panel B: Peru (base 2019)			
Telework x 2018	-0.00	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Observations	144,229			
	Panel C: Mexico (base 2019)			
Telework x 2017	-0.01***	-0.01**	-0.00	0.00
	(0.00)	(0.00)	(0.01)	(0.00)
Telework x 2018	-0.01*	-0.01*	0.01*	0.01*
	(0.00)	(0.00)	(0.01)	(0.00)
Observations	2,067,913			
	Panel D: Colombia (base 2019)			
Telework x 2017	0.00	0.00	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Telework x 2018	-0.00	-0.00	0.00	0.00
	(0.00)	(0.00)	(0.01)	(0.01)
Observations	210,225			
	Panel E: Brazil (base 2019)			
Telework x 2017	-0.00	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Telework x 2018	0.00	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Observations	2,400,969			
Time and Occupation F.E.	Yes	Yes	Yes	Yes
Education, gender and age	No	Yes	No	Yes
Expansion factor	No	No	Yes	Yes

Note: Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A.5: Pre-trends income

	(1)	(2)	(3)	(4)
	Panel A: Chile (base 2017)			
Telework x 2015	-0.01	-0.02	-0.02	-0.03
	(0.02)	(0.02)	(0.02)	(0.02)
Observations	187,849			
	Panel B: Peru (base 2019)			
Telework x 2018	0.02	0.01	0.03	0.01
	(0.02)	(0.02)	(0.02)	(0.02)
Observations	53,943			
	Panel C: Mexico (base 2019)			
Telework x 2017	0.01*	0.01*	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Telework x 2018	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.01)	(0.01)
Observations	1,449,549			
	Panel D: Colombia (base 2019)			
Telework x 2017	-0.07**	-0.08*	-0.06	-0.08
	(0.03)	(0.05)	(0.05)	(0.07)
Telework x 2018	-0.02	-0.01	-0.02	-0.01
	(0.02)	(0.02)	(0.02)	(0.02)
Observations	185,082			
	Panel E: Brazil (base 2019)			
Telework x 2017	-0.03***	-0.04***	-0.02***	-0.03***
	(0.01)	(0.01)	(0.01)	(0.01)
Telework x 2018	-0.01	-0.01**	-0.00	-0.01*
	(0.01)	(0.00)	(0.00)	(0.00)
Observations	2,320,149			
Time and Occupation F.E.	Yes	Yes	Yes	Yes
Education, gender and age	No	Yes	No	Yes
Expansion factor	No	No	Yes	Yes

Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Note:

Table A.6: Dist = 1 if distance

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	≤ 10		10 <x $\leq$ 20		20 < x $\leq$ 30		> 30	
				Panel A: Chile (N=350,676)				
Telework x During	0.00	0.01	0.01**	0.01	0.00	0.01	-0.02**	-0.02**
	(0.01)	(0.01)	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)	(0.01)
Telework x After	-0.02**	0.01	0.01*	0.01	0.01*	0.01**	0.00	-0.03***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)
				Panel B: Perú (N=268,900)				
Telework x During	-0.01	-0.01	-	-	-	-	0.01	0.01
	(0.01)	(0.01)	-	-	-	-	(0.01)	(0.01)
Telework x After	-0.01*	-0.01	-	-	-	-	0.01*	0.01
	(0.01)	(0.01)	-	-	-	-	(0.01)	(0.01)
				Panel C: México (N=3,922,748)				
Telework x During	-0.01***	-0.01*	-	-	0.00	-0.00	0.01***	0.01*
	(0.00)	(0.00)	-	-	(0.00)	(0.00)	(0.00)	(0.00)
Telework x After	-0.01**	-0.01**	-	-	0.00	0.00	0.01**	0.01**
	(0.00)	(0.00)	-	-	(0.00)	(0.00)	(0.00)	(0.00)
				Panel D: Colombia (N=912,804)				
Telework x During	0.03	0.04	-	-	-	-	-0.03	-0.04
	(0.02)	(0.03)	-	-	-	-	(0.02)	(0.03)
Telework x After	0.01	0.02	-	-	-	-	-0.01	-0.02
	(0.01)	(0.02)	(.)	(.)	(.)	(.)	(0.01)	(0.02)
Time and Occupation F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Education, gender and age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Expansion factor	No	Yes	No	Yes	No	Yes	No	Yes

Note: Standard errors clustered at occupation level in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.