





TRANSPORT FINDINGS

Working from Home and Walking during and after COVID

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Findings

We investigate the relationship between people who worked from home during the pandemic and how often they walked before, during, and after COVID. We find that people who worked from home during the pandemic had the largest increases in walking frequency compared to people who did not work from home and people who were unemployed. Similarly, people who work from home also expect to walk more after the pandemic subsides compared to others. After controlling for socio-economic, demographic, and transportation factors, we found that working from home and having a high income are associated with a higher propensity of walking during and after the pandemic.

1. Questions

The COVID-19 pandemic resulted in sudden changes in transportation behavior and how people work. While the initial “stay-at-home” orders shuttered many establishments, those who could do so worked at home. And continued to do so even till after the onset of widespread vaccination and less virulent COVID strains. At the same time, many communities made space for increases in walking (Noland, Iacobucci, and Zhang 2022b). This may have led to increases in walking within one’s community, but if people were working at home there would be less walking while commuting or at their workplace. We examine whether walking behavior has changed by collecting survey data to query respondents on their walking behavior, before, during, and prospectively post-pandemic; in particular we examine whether those working at home may have an increased level of walking. We pose the following questions:

1. Did walking increase during the pandemic and by whom?
2. Who expects to walk more after (relative to before) the pandemic subsides?
3. How did changes in working location affect walking?

2. Methods

We administered two representative surveys of New Jersey adults during the winters of 2020-2021 and 2021-2022 (Noland, Iacobucci, and Zhang 2022a; Noland, Younes, and Zhang 2023). These were conducted well after the initial statewide lockdown period, though some restrictions remained in place during the first survey, including online schooling and mask mandates. A total of 2,451 surveys were collected via a Qualtrics online research panel representative of New Jersey. The surveys included questions about a variety of behaviors and perceptions during and after the pandemic. There were five major areas:

1) work and school, 2) shopping and dining, 3) active travel, 4) transportation and commuting, and 5) attitudes and perceptions. We also asked respondents about their expectations for life when COVID-19 is no longer a threat. The surveys were weighted using PopGen (MARG 2016) with respect to income, gender, age, and ethnicity.

We focus on the responses of respondents related to their walking habits before, during, and expected after the pandemic. We address three walking behaviors: walking at least a few times a week before the pandemic, increasing walking during the pandemic, and planning to walk more after the pandemic subsides. We examine the responses to three questions. The first two questions focus on how often respondents walked before and then during the pandemic, and we indicate they should include walking for exercise or enjoyment. The third question was focused on what experiences they would like to continue after the pandemic – among a set of options, we included “taking more walks”.

We measure walking before the pandemic based on respondents who answered that they either walked “at least a few days a week” or “five or more days a week”. To determine the increase in walking activity, we counted those who reported walking more each week during the pandemic than before. While we don’t measure precise mileage of walking, it is unlikely that most respondents would report reliable measures for the length of their walk. While our estimate is not precise, it does capture the aggregate changes in reported behavior.

We first describe summary statistics for these three variables (walking before, during, and after the pandemic). We present cross tabulations of the three variables by gender, income, and work from home status. We then estimate a binomial logit regression for the variables “Increased walking during the pandemic” and “plans to take more walks” with a focus on whether working at home influences reported walking frequency.

3. Findings

We summarize the changes in walking behavior during COVID-19 and plans to walk more in the future in [Table 1](#). Before the pandemic, around 50% of respondents reported going on walks at least a few times a week. The variation between each survey is not significant. Around 19% of respondents reported an increase in walking during the pandemic, 63% made no change, and 18% reported a decrease. About 42% reported that they plan to go on more walks after the pandemic subsides.

Of those who said they planned to walk more in the future, 59% of them were already frequent walkers before the pandemic. Therefore, 41% of respondents across the two waves who said that they planned to walk more in the future were people who walked less than a few days a week before the start of the pandemic. Thirty-eight percent of those who reported walking every day during the pandemic were people who walked a few days a week or less before the pandemic began.

Table 1. Walking behavior during and after COVID

	First Survey (N = 1,419)	Second Survey (N = 1,032)	Both Surveys (N = 2,451)
Walked at least a few times a week before the pandemic	49.2	47.7	48.4
Increased walking during COVID	17.5	20.2	18.9
No change in walking during COVID	61.6	64.1	62.8
Decrease in walking during COVID	20.8	15.7	18.3
Plan to take more walks after the pandemic subsides	40.2	43.2	41.7

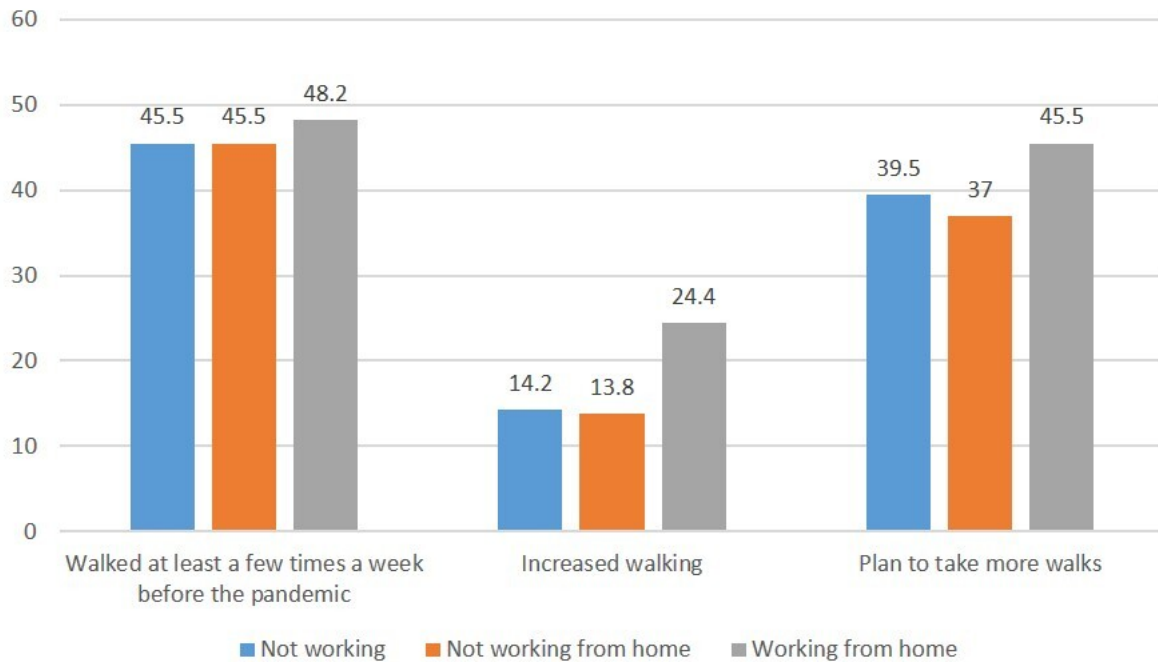


Figure 1. Walking behavior by work type

Working from home, outside the home, or not working (e.g., unemployed, unable to work, retired, or homemaker) during the pandemic revealed some of the largest discrepancies in walking during the pandemic ([Figure 1](#)). Walking before the pandemic did not vary much based on how they worked during the pandemic, thus prior walking behavior was not a determinant of work behavior during the pandemic.

The majority of those who worked from home during the pandemic did not do so before the pandemic. When the pandemic hit, a large proportion of workers began working from home seemingly overnight. Those people were far more likely to increase how much they walked during the pandemic; around 9 to 13 percent more than people who did not work or worked away from their home. In terms of respondent expectations about walking in the future, results from the first survey do not show much difference between categories. In the second survey, when people who worked from home had been doing so for nearly two

years, we found a larger percent of people reporting that they planned to go on more walks; around 11 to 15 percent more than those who did not work at home.

We controlled for other factors in a binomial logit regression (see supplemental material). We found that working from home is still associated with more walking. Respondents who increased walking were more likely **to work from home, be aged less than 50 years old, and to earn at least \$100,000** than other respondents (Table S1). People who planned to go on more walks in the future also worked from home and were more likely to be **women, and have a household income of at least \$50,000** (Table S2). We controlled for ethnicity/race, having children at home, vehicle ownership, and population density by zip code; these were not statistically significant variables in either binary logit regression. Income and being able to work from home were the largest factors associated with increased walking and planning to walk more.

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SUPPLEMENTARY MATERIALS

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