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Data to Insights for a Better Canada



Working from home: Productivity and preferences

by Tahsin Mehdi and René Morissette

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Working from home: Productivity and preferences

by **Tahsin Mehdi** and **René Morissette**

The COVID-19 pandemic has led to a significant increase in telework since mid-March 2020. At the beginning of 2021, 32% of Canadian employees aged 15 to 69 worked most of their hours from home, compared with only 4% in 2016.¹ A change of such magnitude raises several questions. To what extent are teleworkers more or less productive now relative to when they were at their usual place of work? For those who are less productive, what are the main barriers to productivity? Once the pandemic is over, how many Canadians would prefer to work most of their hours at home or outside the home?

Answers to these questions are crucial to inform discussions about the **sustainability** of telework in a post COVID-19 context.

To shed light on these questions, this study uses the supplement to the Labour Force Survey of February 2021. The focus is on employees aged 15 to 64 who are **new teleworkers**, i.e. who usually worked outside the home prior to the COVID-19 pandemic but worked most of their hours at home during the week of February 14 to 20, 2021.² To facilitate productivity comparisons between now and when employees were at their usual place of work, the analysis is restricted to those who have been with the same employer since at least March 2019, i.e. at least one year prior to the economic lockdown of mid-March 2020.

The vast majority of new teleworkers report being at least as productive at home as they were in their usual place of work

Of all new teleworkers, 90% reported being at least as productive, i.e. accomplishing at least as much work per hour at home as they did previously in their usual place of work. More than half (58%) reported accomplishing about the **same** amount of work per hour while roughly one third (32%) reported accomplishing **more** work per hour (Table 1). The remaining 10% mentioned that they accomplished **less** work per hour while working at home than they did previously in their usual place of work. Very similar trends are found for men and women.³

The likelihood of accomplishing **more** work per hour varied across industries and workers' characteristics. For example, the percentage of new teleworkers reporting doing more work per hour was relatively high in public administration (41%) as well as in health care and social assistance (45%). In contrast, the corresponding percentage was lower in goods-producing industries (31%) and educational services (25%). Likewise, unmarried individuals with no children reported less often (24%) than married individuals (35%) accomplishing more work per hour. Most of these differences remained in multivariate analyses.⁴

Conclusions about how much work new teleworkers accomplish at home are, if anything, strengthened when the amount of work accomplished per day, instead of the amount of work accomplished per hour, is considered. This is the case for several reasons.

1. The 2021 estimate comes from the Labour Force Survey (LFS) supplement of January 2021 and refers to employees who actually worked at least 1 hour during the LFS reference week. The 2016 estimate comes from the General Social Survey. Although 14% of employees aged 15 to 69 usually worked **some** of their hours from home in 2016, only 4% worked **most** of their hours from home.

2. Full-time students, full-time members of the Canadian Armed Forces, and records fully imputed are excluded, yielding a sample with 2,758 observations.

3. Tabulations available upon request also show that regardless of age, educational attainment, marital status, industry, occupation, and whether or not they have children, men and women reported to a similar extent accomplishing at least as much work per hour at home as they did in the past.

4. These analyses use ordered logit models and control for sex, age, education, marital status, presence of children, region, dwelling status, industry, firm size, and union status. In contrast, several of the differences shown in Table 1 (e.g., between renters and individuals living in an owned dwelling) are no longer statistically significant in multivariate analyses.

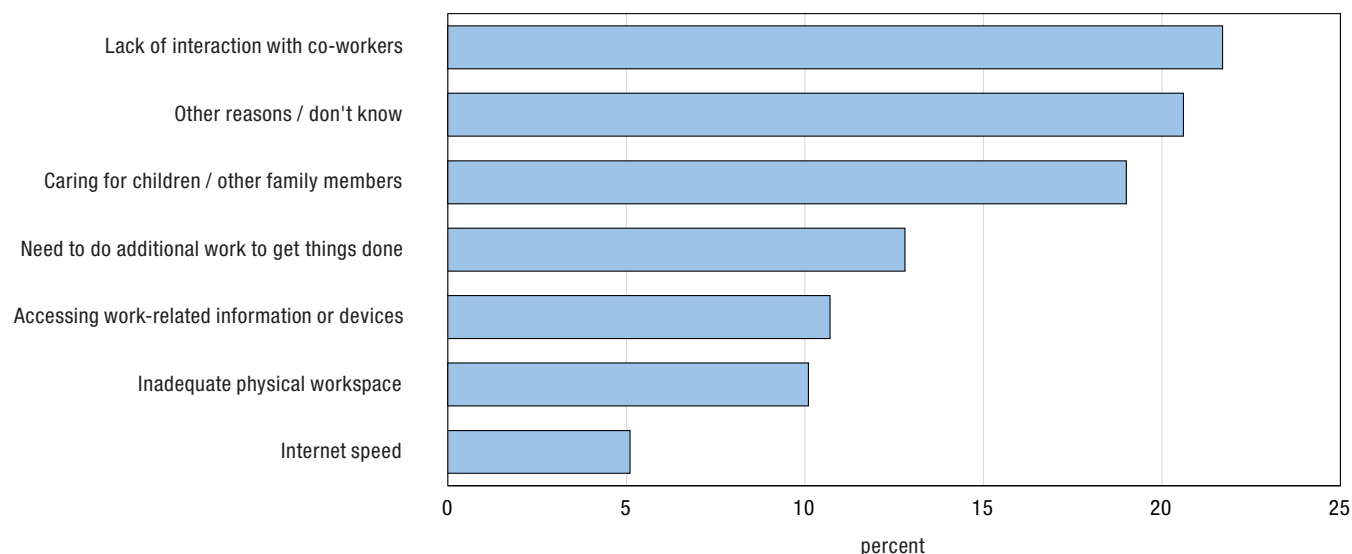


First, a large proportion (48%) of the employees who report doing **more** work per hour also report working **longer** hours per day than they did in the past. Second, virtually none of the workers who report accomplishing **at least as much** work per hour at home as they did previously now work **shorter** hours per day. Lastly, close to half (44%) of the employees who report doing **less** work per hour now work **longer** hours per day while being at home, thereby potentially offsetting—at least in part—their lower (than pre-pandemic) productivity measured on an hourly basis.^{5 6}

Barriers to productivity

The employees who reported doing less work per hour faced different barriers to productivity. About one in five (22%) reported a lack of interaction with co-workers as the main reason why they accomplish less work per hour (Chart 1). Close to 20% reported having to care for children or other family members. The remainder faced different challenges, such as accessing work-related information or devices (11%), having to do additional work to get things done (13%), having an inadequate physical workspace (10%), or experiencing difficulty with internet speed (5%).⁷

Chart 1
Main barrier to productivity among teleworkers who now accomplish less work per hour



Note: Due to high sampling variability (coefficients of variation ranging between 16.5% and 33.3%), these estimates should be interpreted with caution.

Sources: Statistics Canada, Labour Force Survey and Labour Force Survey supplement, February, 2021.

5. That being said, it should be emphasized that the degree to which the amount of work accomplished per hour approximates productivity, i.e. **output** per hour, varies across sectors. For example, if productivity in educational services is defined by the amount of learning that takes place among students in a given hour, then the amount of work performed at home by teachers—who need to combine teaching and technical tasks in an online environment—might be a poor proxy for their productivity. A similar argument can be made in the health care sector, where online consultations offer a narrower range of possibilities (e.g. no manual inspection of the body) than in-person consultations.

6. Overall, 35% of all new teleworkers reported working longer hours per day while only 3% reported working shorter hours.

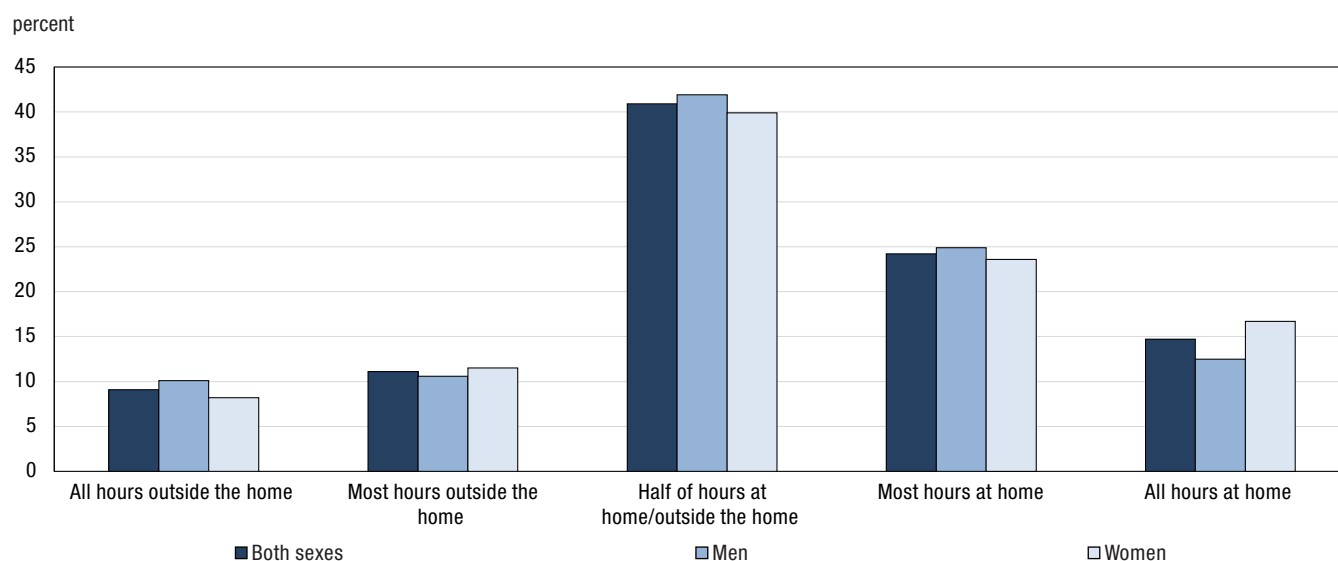
7. Given the relatively small sample of employees reporting reduced productivity, these numbers must be interpreted with caution.



New teleworkers report diverse preferences for telework

New teleworkers were also asked the degree to which they would prefer working from home or outside the home once the COVID-19 pandemic is over. Eighty percent indicated that they would like to work **at least half** of their hours from home once the pandemic is over.⁸ Forty-one percent indicated that they would prefer working about half of their hours at home and the other half elsewhere while 39% preferred working most (24%) or all (15%) of their hours at home (Chart 2). The remaining 20% reported that they would prefer working most (11%) or all (9%) of their hours outside the home.

Chart 2
Preferences of new teleworkers for telework once the COVID-19 pandemic is over



Sources: Statistics Canada, Labour Force Survey and Labour Force Survey supplement, February, 2021.

This diversity of preferences is observed regardless of the socio-economic groups considered.⁹ For example, 43% of the new teleworkers employed in large firms in the commercial sector indicated that they would like to work most or all of their hours at home once the pandemic is over. Forty-percent would prefer working half of their hours from home and the other half elsewhere. The remaining 17% would prefer working most or all of their hours outside the home.

As expected, worker's preferences for telework are positively associated with their productivity. Of all employees who reported doing more work per hour, 57% preferred working most or all their hours **at** home (Table 2). This is almost twice the rate of 30% observed among other employees. Virtually all of this difference remains in multivariate analyses. This finding is important: it confirms that workers' assessments of the amount of work they perform per hour is a strong predictor of their preferences for telework.

Of all groups considered, teachers were the most likely to prefer working most or all of their hours **outside** the home. Fifty-four percent of them expressed such preferences. This is three times the percentage observed for other employees (18%). Most of this difference holds in multivariate analyses.

8. This percentage remains unchanged when attention is restricted to full-time employees, who represent 96% of new teleworkers.

9. It is also observed in the United States. See Bloom (2020).



Conclusion

Whether relatively high rates of telework will persist once the COVID-19 pandemic is over depends on at least three conditions. First, to satisfy employers' requirements, employees must generally be as productive at home as they were in the office. Second, employees must express strong preferences for telework in a post COVID-19 context. Third, employers must be willing and able to accommodate employees' demand for telework.

Using workers' assessments, this study shows that, at least in February 2021, the first two of these conditions appear to be largely satisfied in Canada. Ninety-percent of new teleworkers report accomplishing at least as much work per hour at home as they did in the office. Eighty-percent would prefer to work at least half of their hours from home once the pandemic is over. Furthermore, for the minority of employees who report reduced productivity at home, some barriers to productivity, namely an inadequate physical workspace and the need to take care of children and other family members, would likely be reduced over time as schools fully re-open and employers provide further tools to make telework more feasible.

One challenge for employers will be to accommodate the diversity of preferences for telework expressed by their employees. If workers' preferences for telework do not fully align with those of employers, a new form of job mismatch might emerge once the pandemic is over. On the other hand, increased feasibility of telework will likely increase the pool of potential employers for job seekers, and vice-versa. In the end, job mismatch could be significantly reduced in a virtual global labour market.

Table 1
Percentage of new teleworkers who reported accomplishing less work per hour, the same amount of work per hour, or more work per hour, compared with the time when they were working outside the home, by selected characteristics

	Accomplishes less work per hour	Accomplishes about the same amount of work per hour	Accomplishes more work per hour
	percent		
Overall	9.5	58.0	32.4
Sex			
Men	9.7	59.5	30.8
Women	9.4	56.7	33.9
Age			
15 to 34	8.6 ^E	62.2	29.1
35 to 50	10.1	57.7	32.2
51 to 64	9.5	54.4	36.1
Education			
No postsecondary education (PSE)	7.7 ^E	56.3	36.0
PSE below bachelor's degree	9.3	63.8	26.9
Bachelor's degree	7.8	58.5	33.8
Above bachelor's degree	13.5	52.2	34.3
Occupational skill level			
Low	6.2 ^E	63.5	30.3
Medium	9.9	57.7	32.5
High	9.9	57.3	32.8
Marital status and presence of children			
Married/common-law, with children	9.9	55.5	34.7
Married/common-law, without children	8.7 ^E	56.3	35.0
Not married or common-law, with children	F	62.7	32.6
Not married or common-law, without children	11.1 ^E	65.0	23.9
Region			
Atlantic provinces	12.6 ^E	56.9	30.5
Quebec	7.2 ^E	57.8	35.0
Ontario	8.6	59.0	32.4
Manitoba and Saskatchewan	13.0	52.9	34.0
Alberta	11.5 ^E	52.2	36.3
British Columbia	14.5 ^E	61.4	24.1

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	Accomplishes less work per hour	Accomplishes about the same amount of work per hour	Accomplishes more work per hour
	percent		
Overall	9.5	58.0	32.4
Dwelling owned by household member			
Yes	9.5	56.0	34.5
No	9.7 ^E	66.1	24.2
Industry			
Goods-producing industries	8.8 ^E	60.3	30.9
Trade, transportation and warehousing	7.8 ^E	64.1	28.1
Finance and insurance	5.7 ^E	56.8	37.5
Professional, scientific and technical services	9.7 ^E	62.3	27.9
Education, law and social, community and government services	13.4 ^E	60.9	25.7
Health care and social assistance	8.9 ^E	46.5	44.6
Public administration	9.2 ^E	50.1	40.7
Other	13.2 ^E	60.7	26.1
Occupation			
Management	6.7 ^E	58.4	34.9
Business, finance, and administration	8.6	56.4	35.1
Natural and applied sciences	10.1 ^E	58.3	31.5
Education, law and social, community and government services	13.8 ^E	58.7	27.6
Sales and services	6.9 ^E	60.4	32.8
Other	12.1 ^E	59.9	28.0 ^F
Hourly wage tier			
Less than \$31.74 per hour	9.2	62.7	28.0
\$31.74 per hour to less than \$46.15	8.7	59.1	32.2
\$46.15 per hour or more	10.6	52.6	36.9
Firm size (number of employees) - commercial sector			
Less than 20	F	69.4	21.8 ^E
20 to 99	8.9 ^E	61.6	29.5
100 to 500	12.7 ^E	58.9	28.4
Over 500	8.1	59.4	32.5
Unionized - commercial sector			
Yes	6.2 ^E	64.1	29.6
No	9.4	60.0	30.6

^E use with caution

^F too unreliable to be published

Notes: The sample consists of employees aged 15 to 64 who have at least 24 months of tenure with their employer, who usually worked outside the home prior to the COVID-19 pandemic but worked most of their hours at home during the reference week of February 2021. Full-time students, full-time members of the Canadian Armed Forces and records fully imputed are excluded. The commercial sector excludes public administration, educational services, and health care and social assistance. Jobs requiring a low skill level either require secondary school or occupation-specific training or have on-the-job training provided for these occupations. Jobs requiring a medium skill level usually require college education, specialized training or apprenticeship training. Jobs requiring a high skill level usually require university education. Goods-producing industries include agriculture, forestry, fishing and hunting; mining, quarrying, oil and gas extraction; construction; manufacturing. Numbers may not add to 100.0 due to rounding.

Sources: Statistics Canada, Labour Force Survey and Labour Force Survey supplement, February, 2021.



Table 2
Preferences of new teleworkers for telework once the COVID-19 pandemic is over

	Most or all hours outside the home	Half of hours at home/ outside the home	Most or all hours at home
	percent		
Overall	20.2	40.9	38.9
Sex			
Men	20.8	41.9	37.4
Women	19.8	39.9	40.3
Age			
15 to 34	23.1	40.9	36.0
35 to 50	17.6	41.6	40.8
51 to 64	21.9	39.7	38.5
Education			
No postsecondary education (PSE)	17.5 ^E	34.0	48.5
PSE below bachelor's degree	17.9	42.5	39.7
Bachelor's degree	19.9	41.1	39.0
Above bachelor's degree	24.4	41.5	34.2
Occupational skill level			
Low	23.4	33.8	42.8
Medium	16.8	42.6	40.5
High	21.5	41.1	37.4
Marital status and presence of children			
Married/common-law, with children	18.4	41.0	40.7
Married/common-law, without children	21.6	37.9	40.5
Not married or common-law, with children	13.0 ^E	54.3	32.7
Not married or common-law, without children	24.6	41.1	34.4
Region			
Atlantic provinces	28.5	36.3	35.2
Quebec	18.6	46.0	35.5
Ontario	18.8	40.9	40.3
Manitoba and Saskatchewan	22.0	34.8	43.3
Alberta	24.0	33.7	42.3
British Columbia	23.2	39.1	37.7
Dwelling owned by household member			
Yes	19.0	41.4	39.7
No	25.1	39.0	35.9
Industry			
Goods-producing industries	18.5 ^E	49.4	32.2
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Sales and services	20.2 ^E	36.5	43.3
Other	25.3 ^E	37.9	36.8
Teacher			
Yes	53.8	28.5	17.6 ^E
No	18.3	41.6	40.1
Hourly wage tier			
Less than \$31.74 per hour	19.4	38.9	41.7
\$31.74 per hour to less than \$46.15	20.1	42.0	37.9
\$46.15 per hour or more	21.2	41.7	37.1



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20 to 99	22.1 ^E	41.6	36.3
100 to 500	20.1	42.7	37.2
Over 500	16.7	40.4	42.9
Unionized - commercial sector			
Yes	19.5 ^E	33.5	47.0
No	18.2	42.3	39.5
Works longer hours			
Yes	19.8	43.0	37.2
No	20.5	39.7	39.8
Accomplishes more work per hour			
Yes	7.7	35.4	56.9
No	26.2	43.5	30.3

^E use with caution

Notes: The sample consists of employees aged 15 to 64 who have at least 24 months of tenure with their employer, who usually worked outside the home prior to the COVID-19 pandemic but worked most of their hours at home during the reference week of February 2021. Full-time students, full-time members of the Canadian Armed Forces and records fully imputed are excluded. The commercial sector excludes public administration, educational services, and health care and social assistance. Jobs requiring a low skill level either require secondary school or occupation-specific training or have on-the-job training provided for these occupations. Jobs requiring a medium skill level usually require college education, specialized training or apprenticeship training. Jobs requiring a high skill level usually require university education. Goods-producing industries include agriculture, forestry, fishing and hunting; mining, quarrying, oil and gas extraction; construction; manufacturing. Numbers may not add to 100.0 due to rounding.

Sources: Statistics Canada, Labour Force Survey and Labour Force Survey supplement, February, 2021.

References

Bloom, N. 2020. "How Working from Home Works Out". Policy Brief, Stanford Institute for Economic Policy Research.