

Telecommuting during COVID-19: How does it shape the future workplace and workforce?

Xinyi Qian, Principal Investigator

Tourism Center
University of Minnesota

MARCH 2022

Research Report
Final Report 2022-05

To request this document in an alternative format, such as braille or large print, call [651-366-4718](tel:651-366-4718) or [1-800-657-3774](tel:1-800-657-3774) (Greater Minnesota) or email your request to ADArequest.dot@state.mn.us. Please request at least one week in advance.

Technical Report Documentation Page

1. Report No. MN 2022-05	2.	3. Recipients Accession No.	
4. Title and Subtitle Telecommuting during COVID-19: How does it shape the future workplace and workforce?		5. Report Date March 2022	
		6.	
7. Author(s) Xinyi Qian, Ph.D.; Neil Linscheid		8. Performing Organization Report No.	
9. Performing Organization Name and Address Tourism Center University of Minnesota 433 Coffey Hall 1420 Eckles Ave. St. Paul, MN 55108		10. Project/Task/Work Unit No. CTS #2021026	
		11. Contract (C) or Grant (G) No. (c) 1036342 (wo) 1	
12. Sponsoring Organization Name and Address Minnesota Department of Transportation Office of Research & Innovation 395 John Ireland Boulevard, MS 330 St. Paul, Minnesota 55155-1899		13. Type of Report and Period Covered Final Report	
		14. Sponsoring Agency Code	
15. Supplementary Notes https://www.mndot.gov/research/reports/2022/202205.pdf			
16. Abstract (Limit: 250 words) The objective of this research is to assess the impact of temporarily shifting the workforce to telecommuting on: (1) workplace policy changes, employee support, and future telecommuting plans, (2) employees' experience of telecommuting during COVID-19 and forecast of future telecommuting, and (3) differences among geographic areas, life circumstances, and demographic characteristics. The project employed a mixed-method approach, doing focus groups of human resources professionals in April 2021 and surveying workers and employers during the July through September 2021 period. Worker survey: Greater Minnesota respondents were more likely to telecommute no more than one day a week post-pandemic, while Twin Cities respondents were more likely to telecommute two to three days a week. Those with one or more children living at home were more likely to have a formal post-pandemic telecommuting agreement with their employers. Baby boomers were the most likely to telecommute four to five days a week post-pandemic. Gen Z respondents were the most likely to telecommute no more than one day a week post-pandemic. Employer survey: 71.4% of respondents indicated that most employees would return to in-person work post-pandemic, and 24.4% indicated the employers would only support infrequent (less than one day a month) telecommuting post-pandemic. Roughly a quarter indicated their organizations may recruit completely remote talent from outside of Minnesota. Employer representatives, compared to worker survey respondents, were much more likely to indicate their organizations had not developed a telecommuting policy for the future at the time of the survey. Worker survey respondents were much more likely to indicate that employers would support telecommuting anywhere between one and five days a week.			
17. Document Analysis/Descriptors Telecommuting, COVID-19, Workplaces, Labor force, Employees, Employers		18. Availability Statement No restrictions. Document available from: National Technical Information Services, Alexandria, Virginia 22312	
19. Security Class (this report) Unclassified	20. Security Class (this page) Unclassified	21. No. of Pages 138	22. Price

TELECOMMUTING DURING COVID-19: HOW DOES IT SHAPE THE FUTURE WORKPLACE AND WORKFORCE?

FINAL REPORT

Prepared by:

Xinyi Qian, Ph.D.
Tourism Center
University of Minnesota

Neil Linscheid
Extension Center for Community Vitality
University of Minnesota

March 2022

Published by:

Minnesota Department of Transportation
Office of Research & Innovation
395 John Ireland Boulevard, MS 330
St. Paul, Minnesota 55155-1899

This report represents the results of research conducted by the authors and does not necessarily represent the views or policies of the Minnesota Department of Transportation or the University of Minnesota. This report does not contain a standard or specified technique.

The authors, the Minnesota Department of Transportation, and the University of Minnesota do not endorse products or manufacturers. Trade or manufacturers' names appear herein solely because they are considered essential to this report.

ACKNOWLEDGMENTS

The authors would like to acknowledge the help and support from the project champion (Duane Hill, MnDOT), Technical Advisory Panel members (Thomas Gottfried, Paul Czech, and Jennifer Parshley, MnDOT; Cole Hiniker, Metropolitan Council), and the Center for Transportation Studies at the University of Minnesota. We thank the contributions of focus group participants and respondents to the worker and employer surveys. We would also like to thank all the individuals who helped us distribute the two surveys.

TABLE OF CONTENTS

CHAPTER 1: Introduction	1
CHAPTER 2: Focus group methodology and findings.....	2
2.1 Recruiting focus group participants	2
2.2 conducting the focus groups.....	3
2.3 analyzing focus group data	3
2.4 focus group findings	3
2.4.1 Telecommuting policy change since March 2020	3
2.4.2 Expectations of employees	4
2.4.3 Employee support	4
2.4.4 Telecommuting-related policies for the future.....	5
2.4.5 Challenges that telecommuting adds to the workplace.....	7
2.4.6 Opportunities that telecommuting brings to the future workplace	8
2.4.7 Generational difference.....	8
CHAPTER 3: Worker survey implementation and findings	9
3.1 Sample sources.....	9
3.2 Survey implementation	9
3.3 Analyzing worker survey data	9
3.4 Worker survey descriptive statistics.....	9
3.4.1 Respondent characteristics.....	9
3.4.2 Telecommuting during the COVID-19 pandemic	23
3.4.3 Telecommuting prior to the COVID-19 pandemic.....	27
3.4.4 Telecommuting in the future	28
3.4.5 Potential to relocate	31
3.5 Worker survey inferential statistics.....	33

3.5.1 Telecommuting during the COVID-19 pandemic	33
3.5.2 Potential for telecommuting post-pandemic.....	43
CHAPTER 4: Employer survey implementation and findings	56
4.1 SAMPLE SOURCES.....	56
4.2 Survey implementation	56
4.3 analyzing worker survey data	56
4.4 employer survey descriptive statistics.....	56
4.4.1 Employer characteristics.....	56
4.4.2 Telecommuting during the COVID-19 pandemic	59
4.4.3 Telecommuting post-pandemic	62
4.5 Comparison of responses to the questions asked in both employer and worker surveys	65
4.5.1 Employer characteristics.....	65
4.5.2 Telecommuting experience during the COVID-19 pandemic	67
4.5.3 Telecommuting post-pandemic	71
CHAPTER 5: implications and conclusions.....	74
5.1 Worker survey	74
5.2 Employer survey	75
5.3 Comparing survey findings.....	76
REFERENCES.....	77
APPENDIX A Focus group protocol and questions	
APPENDIX B Sponsored message sent to MNSHRM members to recruit focus group participants	
APPENDIX C sign-up form for recruiting focus group participants	
APPENDIX D SAMPLE SOURCES FOR WORKER and employer SURVEYS	
APPENDIX E Worker survey (exported from qualtrics)	
APPENDIX F Employer survey (exported from qualtrics)	

LIST OF FIGURES

Figure 3.1 Worker survey respondents’ generation 10

Figure 3.2 Worker survey respondents’ gender 10

Figure 3.3 Worker survey respondents’ education level..... 11

Figure 3.4 Worker survey respondents’ pre-tax annual household income before COVID-19 11

Figure 3.5 Worker survey respondents’ pandemic-induced income loss 12

Figure 3.6 Worker survey respondents’ ethnicity..... 12

Figure 3.7 Worker survey respondents’ race..... 13

Figure 3.8 Geographic area of worker survey respondents’ primary residence..... 13

Figure 3.9 Usage of reasonable accommodations due to disability(ies) among worker survey respondents
..... 13

Figure 3.10 Telecommuting situation of worker survey respondents who used reasonable
accommodations due to disability(ies)..... 14

Figure 3.11 Job support needed to successfully work at home among worker survey respondents who
used reasonable accommodations due to disability(ies) 14

Figure 3.12 Whether worker survey respondents had any underlying health conditions that make them
more vulnerable to COVID-19..... 15

Figure 3.13 Whether worker survey respondents lived with someone who had underlying health
conditions that make the person more vulnerable to COVID-19 15

Figure 3.14 Worker survey respondents’ COVID-19 vaccination status..... 15

Figure 3.15 Worker survey respondents’ car ownership and driving behavior since the pandemic started
..... 16

Figure 3.16 The transportation mode that worker survey respondents used the most frequently since
the pandemic started 16

Figure 3.17 Worker survey respondents’ pre-pandemic one-way commute length 17

Figure 3.18 Worker survey respondents’ pre-pandemic commute traffic..... 17

Figure 3.19 Whether worker survey respondents had any child living at home during the pandemic 18

Figure 3.20 Age range of child(ren) living at home during the pandemic 18

Figure 3.21 Primary childcare sources among worker survey respondents who had at least one child living at home during the pandemic	19
Figure 3.22 Caregiving responsibilities other than childcare among worker survey respondents	19
Figure 3.23 Worker survey respondents' employment status	19
Figure 3.24 Industry in which worker survey respondents worked	20
Figure 3.25 Worker survey respondents' profession	20
Figure 3.26 Employer operations among worker survey respondents	21
Figure 3.27 Employer size among worker survey respondents	21
Figure 3.28 Whether worker survey respondents were salaried or not	22
Figure 3.29 Number of years with the current employer among worker survey respondents	22
Figure 3.30 Number of hours worked each week among worker survey respondents	22
Figure 3.31 Whether worker survey respondents were able to telecommute during the pandemic	23
Figure 3.32 Worker survey respondents' average weekly telecommuting hours	23
Figure 3.33 Employer's expectation of worker survey respondents' performance during the pandemic.	24
Figure 3.34 Worker survey respondents' self-perceived productivity during the pandemic	24
Figure 3.35 The extent to which worker survey respondents believed their supervisors trusted them while telecommuting during the pandemic.....	25
Figure 3.36 Worker survey respondents' telecommuting experience during the pandemic.....	25
Figure 3.37 Equipment and office furniture support from employers to worker survey respondents	26
Figure 3.38 Worker survey respondents' broadband Internet connection at home	26
Figure 3.39 Availability of dedicated workspace at home among worker survey respondents	27
Figure 3.40 Whether worker survey respondents telecommuted at all prior to the pandemic	27
Figure 3.41 Number of years worker survey respondents had telecommuted prior to the pandemic.....	27
Figure 3.42 Pre-pandemic telecommuting frequency among worker survey respondents who had telecommuted prior to the pandemic	28
Figure 3.43 Reasons that worker survey respondents had not telecommuted prior to the pandemic.....	28

Figure 3.44 Whether the employers of worker survey respondents have developed a telecommuting policy for the future	29
Figure 3.45 Whether the employers of worker survey respondents sought their input when developing a telecommuting policy for the future	29
Figure 3.46 Whether worker survey respondents would be able to telecommute at all post-pandemic .	30
Figure 3.47 Frequency in which worker survey respondents wished to and would be able to telecommute.....	30
Figure 3.48 Likelihood of worker survey respondents’ employers supporting post-pandemic telecommuting.....	31
Figure 3.49 The extent to which worker survey respondents agreed their employers would continue supporting schedule flexibility in the future	31
Figure 3.50 Likelihood of worker survey respondents moving or relocating if they were able to telecommute full-time.....	32
Figure 3.51 Where worker survey respondents would relocate to, among those with likelihood of moving or relocating to different extent	32
Figure 4.1 Employer survey respondents’ industry.....	57
Figure 4.2 Operations of employer survey respondents	57
Figure 4.3 Operation size by type among employer survey respondents	58
Figure 4.4 Employers’ reasonable accommodation practice among survey respondents.....	58
Figure 4.5 Whether employers had a telecommuting policy prior to the pandemic.....	59
Figure 4.6 Whether employers had employees considered as essential during the pandemic	59
Figure 4.7 Employers’ telecommuting practice during COVID-19	60
Figure 4.8 Employers’ expectation of employee performance during the pandemic	60
Figure 4.9 Employers’ perception of employee productivity during COVID-19.....	61
Figure 4.10 Employers’ support of employees during the pandemic	61
Figure 4.11 Employers’ assistance with equipment and office furniture during COVID-19	62
Figure 4.12 Employers’ development of a post-pandemic telecommuting policy	62

Figure 4.13 Whether employers sought employees’ input when developing a telecommuting policy, among those whose employers either had developed or were developing a policy	63
Figure 4.14 Employers’ support of telecommuting in the future, as long as the nature of work allows...	63
Figure 4.15 Employers’ post-pandemic telecommuting arrangements.....	64
Figure 4.16 Employers’ continuous support of schedule flexibility post-pandemic to help employees manage work and personal life.....	64
Figure 4.17 Possibility of recruiting talent from outside of Minnesota who will work completely remotely	65
Figure 4.18 Industry in which employer survey and worker survey respondents worked	66
Figure 4.19 Operation types of organizations for which employer survey and worker survey respondents worked.....	67
Figure 4.20 Availability of telecommuting policy prior to the pandemic	67
Figure 4.21 Expectation of employee performance during the pandemic.....	68
Figure 4.22 Perceived employee productivity while telecommuting during COVID-19.....	68
Figure 4.23 Support of employee schedule flexibility during the pandemic	69
Figure 4.24 Supervisors’ support to help manage work and personal life during the pandemic.....	70
Figure 4.25 Employers’ support of employee well-being during the pandemic.....	70
Figure 4.26 Equipment and office furniture support that employers provided with employees during the pandemic	71
Figure 4.27 Employer size among worker survey respondents (n=672)	72
Figure 4.28 Whether employers sought employees’ input when developing a telecommuting policy for the future.....	72
Figure 4.29 Extent to which organizations would support telecommuting in the future	73
Figure 4.30 Extent to which organizations would continue to support schedule flexibility in the future .	73

LIST OF TABLES

- Table 2.1 Geographic area in which focus group participants’ office are located 2
- Table 2.2 Size of focus group participants’ employers 2
- Table 3.1 Worker survey respondents’ telecommuting feasibility during COVID-19, by generation 33
- Table 3.2 Worker survey respondents’ telecommuting feasibility during COVID-19, by gender 34
- Table 3.3 Worker survey respondents’ telecommuting feasibility during COVID-19, by education 34
- Table 3.4 Worker survey respondents’ telecommuting feasibility during COVID-19, by income..... 35
- Table 3.5 Worker survey respondents’ telecommuting feasibility during COVID-19, by race 36
- Table 3.6 Worker survey respondents’ telecommuting feasibility during COVID-19, by ethnicity 36
- Table 3.7 Worker survey respondents’ telecommuting feasibility during COVID-19, by reasonable accommodations due to disability(ies)..... 37
- Table 3.8 Worker survey respondents’ telecommuting feasibility during COVID-19, by whether having any child living at home 37
- Table 3.9 Worker survey respondents’ telecommuting feasibility during COVID-19, by whether having caregiving responsibilities other than children..... 38
- Table 3.10 Worker survey respondents’ telecommuting feasibility during COVID-19, by geographic area 39
- Table 3.11 Greater Minnesota respondents’ telecommuting feasibility during COVID-19, small urban areas vs. rural areas..... 39
- Table 3.12 Regression results for the average number of weekly telecommuting hours during COVID-19 40
- Table 3.13 Average number of weekly telecommuting hours during COVID-19, by education level and household income 40
- Table 3.14 Average number of weekly telecommuting hours during COVID-19, by race..... 41
- Table 3.15 Average number of weekly telecommuting hours during COVID-19, by ethnicity..... 41
- Table 3.16 Average number of weekly telecommuting hours during COVID-19, by reasonable accommodation due to disability(ies) 41

Table 3.17 Average number of weekly telecommuting hours during COVID-19, by having any child living at home and caregiving responsibilities other than child(ren).....	42
Table 3.18 Average number of weekly telecommuting hours during COVID-19, by geographic area.....	42
Table 3.19 Average number of weekly telecommuting hours during COVID-19, by geographic type in Greater Minnesota	42
Table 3.20 Average number of weekly telecommuting hours during COVID-19, by one-way commute length and commute traffic	42
Table 3.21 Worker survey respondents' telecommuting probability post-pandemic, by generation	43
Table 3.22 Worker survey respondents' telecommuting probability post-pandemic, by gender	43
Table 3.23 Worker survey respondents' telecommuting probability post-pandemic, by education	44
Table 3.24 Worker survey respondents' telecommuting probability post-pandemic, by income level	45
Table 3.25 Worker survey respondents' telecommuting probability post-pandemic, by race	45
Table 3.26 Worker survey respondents' telecommuting probability post-pandemic, by ethnicity	46
Table 3.27 Worker survey respondents' telecommuting probability post-pandemic, by reasonable accommodations due to disability(ies).....	46
Table 3.28 Worker survey respondents' telecommuting probability post-pandemic, by whether having any child living at home	47
Table 3.29 Worker survey respondents' telecommuting probability post-pandemic, by whether having caregiving responsibilities other than children.....	48
Table 3.30 Worker survey respondents' telecommuting probability post-pandemic, by geographic area	48
Table 3.31 Greater Minnesota respondents' telecommuting probability post-pandemic, small urban areas and rural areas	49
Table 3.32 Worker survey respondents' telecommuting frequency post-pandemic, by generation	49
Table 3.33 Worker survey respondents' telecommuting frequency post-pandemic, by gender	50
Table 3.34 Worker survey respondents' telecommuting frequency post-pandemic, by education level .	50
Table 3.35 Worker survey respondents' telecommuting frequency post-pandemic, by household income	51
Table 3.36 Worker survey respondents' telecommuting frequency post-pandemic, by race	51

Table 3.37 Worker survey respondents’ telecommuting frequency post-pandemic, by ethnicity	52
Table 3.38 Worker survey respondents’ telecommuting frequency post-pandemic, by reasonable accommodations due to disability(ies).....	52
Table 3.39 Worker survey respondents’ telecommuting frequency post-pandemic, by whether having any child living at home during the pandemic.....	53
Table 3.40 Worker survey respondents’ telecommuting frequency post-pandemic, by whether having caregiving responsibilities other than children.....	53
Table 3.41 Worker survey respondents’ telecommuting frequency post-pandemic, by geographic area	54
Table 3.42 Greater Minnesota respondents’ telecommuting frequency post-pandemic, small urban areas and rural areas	54
Table 3.43 Average number of weekly telecommuting hours during COVID-19, by one-way commute length.....	54
Table 3.44 Average number of weekly telecommuting hours during COVID-19, by one-way commute traffic	55

LIST OF ABBREVIATIONS

MnDOT: Minnesota Department of Transportation

EXECUTIVE SUMMARY

Research objectives

During COVID-19, many employers, to comply with stay-at-home orders, asked employees to telecommute. In fact, some businesses, both in the U.S. and other parts of the world, have decided to allow employees to telecommute permanently (if employees choose to do so). This is the first time in history that we have witnessed a temporary shift of a large portion of the workforce to telecommuting, providing a unique opportunity to assess the impact of telecommuting on the workforce and the workplace. Telecommuting relates directly to transportation demand and pattern, congestion mitigation, and population migration, as well as to the sustainability, livability, and prosperity of communities. Therefore, many government agencies, including those of transportation, have inherent and long-term interests in understanding the impact of shifting the workforce to telecommuting.

The objective of this research is to assess the impact of temporarily shifting the workforce to telecommuting on: (1) workplace policy changes and support related to telecommuting, (2) population migration as employees react to the temporary shift to telecommuting and subsequent workplace policy change, and (3) differences by employees' demographic characteristics, life circumstances, and geographic areas.

Research methods

This was a mixed-method project, using both qualitative and quantitative methods. We first conducted six focus groups of human resource professionals. Each focus group had at least five participants. The focus groups generated in-depth, nuanced, qualitative data on the impact of temporarily shifting the workforce to telecommuting, any subsequent policy change, employee support during telecommuting, and longer-term plans.

Using insight from the focus groups, past literature, and the Technical Assistance Panel (TAP), we then developed two questionnaires: (1) an online questionnaire of workers and (2) another online questionnaire of employers. Both surveys were administered during the July through September 2021 period.

The worker survey collected information on the impact of temporary telecommuting on workers' productivity, their attitude toward and future plans for telecommuting, whether their work was conducive to telecommuting, whether they perceived their employers as supportive of telecommuting, and anticipated changes in their transportation behaviors. We also collected information on workers' demographic characteristics, life circumstances, and their employers (location, size, and industry type).

The employer survey collected information on changes in workforce productivity during temporary telecommuting, any policy changes (or lack thereof) regarding telecommuting, willingness to continue supporting telecommuting post-pandemic, and potentially other innovative methods for flexible work scheduling. The questionnaire also collected information on employers' location, size, and industry type.

Research findings and significance: Worker survey

Geographic area, life circumstances, and demographic characteristics all made differences in telecommuting availability during COVID-19, average weekly telecommuting hours during COVID-19, post-pandemic telecommuting possibility, and post-pandemic telecommuting frequency.

Many differences also emerged by the geographic area in which respondents lived. Twin Cities respondents were more likely to still telecommute at the time of the survey, while respondents from Greater Minnesota were more likely to have already been back to in-person work or had never received permission to telecommute. Greater Minnesota respondents had longer average weekly telecommuting hours than Twin Cities respondents during the pandemic. Greater Minnesota respondents were more likely to telecommute no more than 1 day a week post-pandemic, while Twin Cities respondents were more likely to telecommute 2-3 days a week. Interestingly, there was no difference in telecommuting four to five days a week post-pandemic between Twin Cities and Greater Minnesota respondents.

Among respondents whose one-way commute time was 46 minutes or longer, those with very or somewhat heavy traffic had the most weekly telecommuting hours. In other words, respondents with a long commute *and* heavy commute traffic tried to telecommute as much as they possibly could, which was not surprising.

Having child(ren) living at home was another factor that made lots of difference. Those with child(ren) living at home were more likely to either be back at in-person work already or transitioning back to in-person work, and less likely to be still telecommuting at the time of the survey. Additionally, those with child(ren) living at home were more likely to have a formal post-pandemic telecommuting agreement with their employers. Lastly, those without child(ren) living at home were more likely to telecommute four to five days a week post-pandemic. This finding corresponded with the finding that baby boomers, who were most likely empty nesters, were most likely to telecommute four to five days a week.

Popular perception regards younger workers as digital natives, hence more likely to telecommute. Our findings painted a different picture: It was the baby boomers who were the most likely to telecommute four to five days a week post-pandemic. Gen X respondents were the most likely to telecommute two to three days a week, followed closely by millennial respondents. Gen Z respondents (i.e., the youngest generation) were most likely to telecommute no more than one day a week post-pandemic.

There was significant racial difference in average weekly telecommuting hours during COVID-19 (though not in telecommuting availability during COVID-19). White respondents had significantly higher weekly telecommuting hours compared to respondents of all other races. The finding showed the importance of not just asking if workers had the chance to telecommute. Nuances often lie in the more detailed picture (e.g., asking the average weekly telecommuting hours).

Lastly, both education level and household income made significant differences in average weekly telecommuting hours and post-pandemic telecommuting frequency. Compared to all other respondents, those with a high school education or less and those with less than \$50,000 household

income had significantly fewer weekly telecommuting hours and were much more likely to telecommute no more than one day a week post-pandemic.

Research findings and significance: Employer survey

Most employers are small to medium-sized organizations with fewer than 500 employees. Employers operating entirely within Minnesota tend to be small with fewer than 100 employees. Those headquartered in Minnesota with operations elsewhere are more likely to have 500 or more employees. Those with operations in Minnesota but headquartered elsewhere are most likely to be medium-sized, with 100-499 employees.

Less than 60% either already had a post-pandemic telecommuting policy or were developing one, while nearly 40% indicated that they had not developed one at the time of the survey. Therefore, it was not surprising to find that 71.4% of respondents indicated that most employees would return to in-person work post-pandemic. Employers tended to be split in terms of post-pandemic telecommuting frequency. While close to half of respondents indicated that employers would support telecommuting for anywhere between one and five days a week, another 24.4% indicated the employers would only support infrequent (less than one day a month) telecommuting post-pandemic. The latter finding corroborates the finding that only 14.6% of respondents agreed that most employees would telecommute for as many days as they desire post-pandemic.

Lastly, a little more than a quarter of respondents — a sizable portion of the sample — indicated their organizations may recruit talent from outside of Minnesota who will work completely remotely. However, complete remote work may not be as prevalent a phenomenon as previously forecast.

Comparing worker survey and employer survey findings

Employer representatives were more likely to perceive no change in expectations of employee performance, while workers tended to perceive higher expectations. Workers were also more likely to perceive themselves as more productive, while employer representatives tended to perceive employee productivity as either having not changed or having declined.

Respondents to the two surveys were consistent in their perception of employers' support of schedule flexibility and work-life balance, which was encouraging. Meanwhile, employer representatives were more likely to believe their organizations supported employees' well-being, while worker survey respondents were more likely to stay neutral or disagree.

Lastly, employer representatives, compared to worker survey respondents, were a lot more likely to indicate their organizations had not developed a telecommuting policy for the future at the time of the survey. One possible explanation was the different industry representations in the two samples. The same explanation could be applicable to the finding that worker survey respondents were a lot more likely to indicate that employers would support telecommuting anywhere between one and five days a week.

CHAPTER 1: INTRODUCTION

Telecommuting relates directly to transportation demand and pattern, congestion mitigation, and population migration, as well as to the sustainability, livability, and prosperity of communities. Therefore, many government agencies, including those of transportation, have inherent and long-term interests in this topic. During the COVID-19 pandemic, many employers, to comply with stay-at-home orders, asked employees to telecommute. This is the first time in history that we have witnessed a temporary shift of a large portion of the workforce to telecommuting, providing a unique opportunity to assess the impact of telecommuting.

The objective of this research is to assess the impact of temporarily shifting the workforce to telecommuting on: (1) workplace policy changes and support related to telecommuting, (2) population migration as employees react to the temporary shift to telecommuting and subsequent workplace policy change, and (3) differences among geographic areas, employer sizes, and industry types.

This research provided much-needed, data-driven evidence on the impact of temporarily shifting to telecommuting on future workplaces and workforce — workplace policy change and support (or lack thereof) regarding telecommuting, workforce productivity, and potential change in population migration. This research will benefit transportation agencies in Minnesota in both immediate and longer-term transportation planning and congestion mitigation efforts.

CHAPTER 2: FOCUS GROUP METHODOLOGY AND FINDINGS

2.1 RECRUITING FOCUS GROUP PARTICIPANTS

The co-Principal Investigator (PI) made the first contact with Minnesota Society for Human Resource Management (MNSHRM). The PI followed up and spoke with the Executive Director of MNSHRM. A sponsored message was subsequently sent to the organization’s members, inviting them to sign up for a focus group. The sign-up form was developed and administered using Qualtrics. The sponsored message is attached as Appendix A and the sign-up form as Appendix B at the end of this technical memo.

More than 90 individuals signed up for the focus groups in 72 hours. There were three criteria for participant selection:

1. First come first serve, i.e., the earlier one signed up, the more likely one would be chosen as a focus group participant
2. Feasibility to have enough participants for each focus group, as some time slots received large numbers of sign-ups while others did not
3. Balance of geographic location and entity size

Altogether, 30 individuals participated in six focus groups, conducted between April 8 and April 30, 2021. The geographic area in which the participants’ offices are located is listed in Table 1. The size of the participants’ employers is listed in Table 2.

Table 2.1 Geographic area in which focus group participants’ office are located

Geographic area	Count
Suburbs of the Twin Cities Metropolitan Area	10
Minneapolis or St. Paul	9
Exurbs of the Twin Cities Metropolitan Area	3
Central Minnesota	3
Southern Minnesota	3
Duluth	2

Table 2.2 Size of focus group participants’ employers

Employer size	Count
Less than 100 employees	12
100 – 499 employees	11
500 – 999 employees	1
1,000 employees or more	6

2.2 CONDUCTING THE FOCUS GROUPS

All the individuals selected as focus group participants received an invitation email. The email provided information on focus group details (including focus group date and time) and asked each individual to confirm availability to participate in the focus group. Upon receiving confirmation, a calendar invitation with the Zoom link was sent to the participant. A few days prior to the focus group, a reminder email that included the list of main and probe questions was sent to the participants. The list of questions that we asked during each focus group, developed, and approved as a part of Task 1 deliverable, is attached as Appendix C. All participants also received the research information sheet for their records. Each focus group lasted for no longer than 90 minutes and was conducted and recorded via Zoom. After the focus groups, each participant received a \$50 check as a thank you.

2.3 ANALYZING FOCUS GROUP DATA

The transcription of each focus group was analyzed using Nvivo. We coded for themes that emerged from the data for each question, while paying attention to any theme that may be common across questions. After the initial coding, we reviewed all the themes and coding, combining duplicative themes and creating new themes where needed. Our analysis results are presented next. These results inform the subsequent development of the employer and worker survey instruments (Task 4).

2.4 FOCUS GROUP FINDINGS

2.4.1 Telecommuting policy change since March 2020

2.4.1.1 Formal changes

Formal change to telecommuting policies took place in a variety of ways. Three focus group participants said their employers now have a telecommuting policy for the first time, three described custom-designed remote working agreements, and another three mentioned contact tracing by tracking by which employees go into the office on which date for how long. Another participant described how the employer had always had formal policies on telecommuting, but the policy has been simplified since the onset of the pandemic. Two participants said their workplaces had been strictly in-person prior to the pandemic but would adopt a hybrid approach after the pandemic. Another two participants made it clear that they could not “close the door” due to the nature of their operations, thus, most employees still do their work in-person.

2.4.1.2 Informal changes

Eighteen participants discussed informal policy changes regarding telecommuting. Telecommuting policy was informal in the workplaces of 13 participants. One said, “It is not formal, pretty simple, pretty automatic, reviewed by managers monthly to make sure the format is still working and people have what they need to work from home. We are surprised by how well it works.” Another participant stated, “Anyone who wants to work from home and can is now allowed to work from home. We are working on the employee handbook, but mostly, it’s up to managers to decide and manage.”

Five participants mentioned blanket approval of telecommuting for those employees whose work affords the feasibility. One participant mentioned “blanket work-from-home approval for those who can,” and another said, “The Executive Director decided everyone who can work from home would do so.”

2.4.2 Expectations of employees

2.4.2.1 Performance

There were multiple aspects to expectations of employee performance. Seven focus group participants said there had been no change to performance expectations, while six mentioned that expectations are now more results-oriented or data-driven. In the words of one participant: “More black and white... numbers stand out.”

Two participants talked about changes in organization culture, as leadership began to pay more attention to employee well-being, which, according to one participant, is also “good to retaining employees.” Meanwhile, participants discussed the struggle with managers micro-managing their staff and the need to train managers to set clear expectations while prioritizing employee well-being. Lastly, three participants mentioned increase in productivity and efficiency, as more work gets done, while two other participants lamented losing the personal aspect in relationships with co-workers.

2.4.2.2 Work hours

When it comes to expectations of work hours, the standout message was flexibility and grace, as 12 participants touched on this theme. One participant said, “Managers are encouraged to give as much flexibility as possible to employees, especially those with kids at home or other caregiving responsibilities,” while another participant stated, “We’ve increased our flexibility in terms of when you get things done.” Two participants did mention expectations of core hours, i.e., employees need to be present during those hours, but the expectations are flexible otherwise.

Three participants discussed encouraging employees to take time off to take care of themselves. One described how the organization closed office on select Fridays, so employees could have time off. Lastly, two participants described how their organizations partnered with an outside entity to provide childcare support to their employees.

2.4.3 Employee support

Focus group participants discussed a variety of ways in which employers have supported employees. Sixteen participants mentioned equipment, office furniture, and Internet connection. Among them, 10 said their organizations let employees take whatever they needed in order to telecommute, with one mentioning the employer offered to ship equipment to employees’ residences. Four mentioned providing employees with a set amount of stipend to purchase equipment or furniture. Two participants described how they listened to employees’ needs and then responded as quickly as possible. Two specifically mentioned the transition from using desktop computers in the office to purchasing laptops

for employees. One participant mentioned monthly internet cost support, while another mentioned the employer provided hotspots to a few employees.

The second most frequently discussed theme was employee well-being (n=12). One participant said, “Employers are now supporting employees from a well-being and mental health perspective,” while another stated, “We really look for markers of stress and make sure they take care of themselves.” A few participants also mentioned taking advantage of employee wellness programs that were already in place as employee benefits. Two others specifically identified employee assistance programs as a resource for employee well-being.

Another theme, closely related to employee well-being, was virtual social time for employees (n=9). For example, one participant’s employer has been doing monthly “fun town halls” when employees could stay connected socially. Another participant mentioned “sip and paint virtual sessions for employees to relax.”

Seven participants mentioned their employers have sent something nice to employees—sometimes in creative ways. One participant mentioned sending care packages to employees’ residence. Another said, “We mailed gift cards to employees, and they chose whichever restaurant they wanted to order food from, then had a lunch together over Zoom.”

Two other identified themes were checking in with employees and better communications with employees. In terms of checking in with employees, one participant said, “Check-ins early on... one on one with every employee, with a list of questions.” Another stated, “Every couple of weeks, I’d check in with employees, have individual conversations.” When it comes to communications with employees, one illuminating quote was: “One thing that we did do as far as communication goes, is the agency started an all-agency meeting once a month, which has been great. We rarely had those meetings when we were all together.”

2.4.4 Telecommuting-related policies for the future

The majority of the participants mentioned “hybrid” when discussing telecommuting-related policies for the future. “Hybrid” refers to any of the three following arrangements:

- For an individual employee: a few days working in the office and the other days telecommuting. Twenty-one participants mentioned this type of hybrid arrangement. It is worth noting that one participant stated that telecommuting one day per week would be used as a reward for high performing employees.
- Team-based hybrid: one team in the office a few select days, while another team in the office for other select days. Two participants described this type of hybrid arrangement.
- Organization-wide: some staff working in the office every day, some hybrid (as defined in the first bullet point), and others working completely remotely. Ten participants stated this would be the policy their entities would put in place for the future.

Flexible scheduling was the second most frequently identified theme, mentioned by 13 participants. One participant said, “People recognize where and how they work the best ... we will have a lot more flexible schedule,” while another participant stated, “I think we will continue to be more flexible than we were a year ago.”

Six participants mentioned that future work arrangements will be determined position by position. One participant said, “Look at job functions and let teams make their decisions.” Another stated, “We are looking at departments and positions to make tailored decisions.”

Five participants discussed the need for a process so employees can gradually transition back into the office. For example, one participant described how the organization would divide employees into tiers and gradually bring employees back (starting with the first tier).

There were also five participants who discussed how their organizations were trying to decide what policies to have for the future. One participant stated, “We need to fully define what remote working looks like, from days in the office to dress code.” Another said, “We really need to define what ‘remote’ looks like, due to every state has different laws and tax implications.”

When discussing future policies on work arrangement, participants also touched on a variety of other related themes. Ten participants mentioned talent pools, which entails various considerations:

- A bigger talent pool, given possible telecommuting arrangements and the feasibility of conducting interviews via video conferencing
- Telecommuting as a talent recruitment tool, as more people prefer telecommuting
- The need to implement telecommuting policy to retain talent
- Hiring an individual from another state is a lot of work, due to taxes and laws

Another theme is the need to be in person. Some positions, due to the nature of the work, require employees to be in person. Others identified the need to be in person to build relationships with colleagues and clients.

The need (or lack thereof) of office space also came up in focus group discussions. Two participants mentioned eliminating some office space; two discussed remodeling the entire office space to accommodate hybrid work arrangements in the future, and one participant pointed out employees would need quiet space at least sometimes.

Five participants mentioned home Internet and work equipment. Three participants mentioned their employers are considering whether to provide hybrid and remote employees with a stipend for home internet. In terms of work equipment, two participants wondered whether they would need to double the amount of equipment they currently have, so that employees with a hybrid work arrangement would have equipment both in the office and at home.

A few participants also mentioned considerations related to transportation. Two specified that public transportation is important to their employees. Another two mentioned their employers' deliberation on whether to continue paying for parking expenses as an employee benefit.

Lastly, three participants mentioned clients' needs. For example, some offerings could be conducted virtually, while others still need to be offered in-person.

2.4.5 Challenges that telecommuting adds to the workplace

Focus group participants identified seven challenges that telecommuting has added to the workplace. The most frequently mentioned challenge was employee engagement. One participant stated, "Employee engagement can be a challenge—how do you keep remote employees invested, connected, and not isolated?" The lack of fun social environment and the lost personal connection contributed to the challenge with employee engagement.

The second most frequently identified challenge was organizational culture. Multiple focus group participants brought up the pandemic-induced change from expecting employees to work in the office to telecommuting. The subsequent challenge with organization culture lies in creating and maintaining an organizational culture that accommodates flexibility and a variety of work modes. One participant pointed out the challenge for telecommuting leaders to connect with and lead the teams effectively, with concerns of rigidity, micromanagement, and over control.

Talent pool and employee resentment were both mentioned frequently, too. The challenge with talent pool is manifested in at least three ways: (1) laws and tax implications of having employees in different states can be challenging, (2) equity in pay, when considering living expenses in different locations, and (3) the possibility of losing talent if the employer does not offer flexibility or any telecommuting option post-pandemic. The main cause of employee resentment is having some employees in the office and others telecommuting. A few participants mentioned that in-office employees resented telecommuting employees while wondering why they could not telecommute. One participant specifically mentioned making sure telecommuting employees should not be penalized for working remotely.

Another challenge is work-life balance. Participants mentioned employees being overworked and difficulty with work-life separation (i.e., not able to disconnect at the end of the day). Participants also mentioned employees not adapting to telecommuting, including not turning on the camera while attending virtual meetings and not taking virtual meetings seriously (e.g., last-minute cancellation). Technology is another challenge that participants identified; for example, poor broadband connection at home, significantly increased IT budget, and employees not using Internet-based technology for work.

Lastly, employee performance could be a challenge, too. The following quote provides great insight in this regard:

"I think trying to help companies not write all their policies for the bottom 10% who are going to cause all of the trouble... but try to stay above that and say, 'Let's assume everyone is going to

act like an adult and let's write our policy that way, and we will deal with the other folks when we have to."

2.4.6 Opportunities that telecommuting brings to the future workplace

Flexibility was identified as the biggest opportunity that telecommuting brings to the future workplace. Seven participants identified flexible scheduling, especially given childcare and other caregiving responsibilities. Two participants described a tailored approach based on each employee's circumstances, rather than having blanket policies. One participant mentioned that employees have become more relaxed given the increased flexibility afforded by telecommuting.

The second most frequently identified opportunity was talent pool (n=6). One participant said, "Definitely expanded talent pool for some positions," while another stated, "You can go anywhere now to find people, so not only to find an employee, but for diversity reasons, both diversity of people and diversity of ideas."

Two participants identified increased productivity and efficiency. Two other participants mentioned wider geographic reach to find clients and partners with virtual offerings. One said, "We moved all our trainings virtually, some pre-recorded. These have been great. We've got people all over the world."

Lastly, one participant mentioned that leadership needs to change their mindset and adapt to telecommuting. Another participant described how telecommuting during the pandemic has opened her eyes to how employees at her organizations work and communicate, hence sensing opportunities for better internal communications.

2.4.7 Generational difference

The theme of generational difference emerged organically from focus group discussions. Four participants mentioned generational difference in their attitudes toward telecommuting, and older generations prefer working in the office, while younger generations enjoy telecommuting. One participant stated, "Older generations would still doubt if telecommuting would work," and another said, "Older ones tend to want to work in the office. The younger ones want to work remotely. So, a hybrid model may keep everyone happy."

CHAPTER 3: WORKER SURVEY IMPLEMENTATION AND FINDINGS

3.1 SAMPLE SOURCES

The worker survey sample came from three types of sources. See Appendix D for the list of samples sources:

1. The research team purchased a panel from Qualtrics, an online survey service provider. The University of Minnesota contracts with Qualtrics, enabling the research team to receive preferential pricing for the panel.
2. The research team paid for a sponsored message, which was sent to the Minnesota Society of Human Resource Management.
3. The survey was distributed through the contacts and professional networks of the research team, MnDOT personnel, and the Technical Assistance Panel of the project (see Appendix A for details).

3.2 SURVEY IMPLEMENTATION

The survey instrument was developed based on literature review, focus group results, and consultation with the Technical Assistance Panel of the project. After the survey questions were approved, the survey was created and tested in Qualtrics. A PDF version of the survey exported from Qualtrics is in Appendix E. The survey was launched in mid-July 2021 and closed at the end of September 2021, hence in the field for data collection for a total of two and a half months.

3.3 ANALYZING WORKER SURVEY DATA

Completed responses were downloaded from Qualtrics. The data was cleaned and checked in SPSS (version 26.0), a statistical data analysis software. Descriptive analysis was performed for each variable. Comparative analysis was conducted using chi-square tests to compare categorical variables, Analysis of Variance to compare means, and regression to assess the relationship between continuous variables.

3.4 WORKER SURVEY DESCRIPTIVE STATISTICS

3.4.1 Respondent characteristics

3.4.1.1 Demographic characteristics

We asked respondents a variety of demographic questions, including age, gender, education level, annual pre-tax household income before COVID-19, income loss due to COVID-19, ethnic origin, race, and geographic area of primary residence.

Respondents' age ranged from 19 to 81, with an average of 39 (Median=38, SD=12.5). Close to half of respondents were millennials (46.9%; Figure 3.1), followed by Gen X (35.2%), baby boomers and older (10.5%), and Gen Z (7.3%).

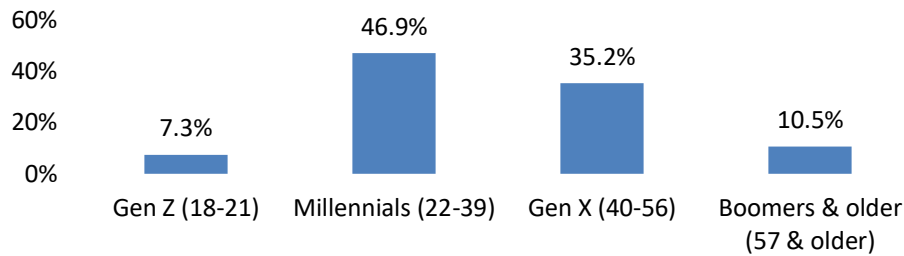


Figure 3.1 Worker survey respondents' generation (n=1249)

Close to half of respondents identified themselves as female (56.5%; Figure 3.2) and 42.0% as male. Additionally, 1.0% identified as "other," and 0.6% preferred not to answer the question.

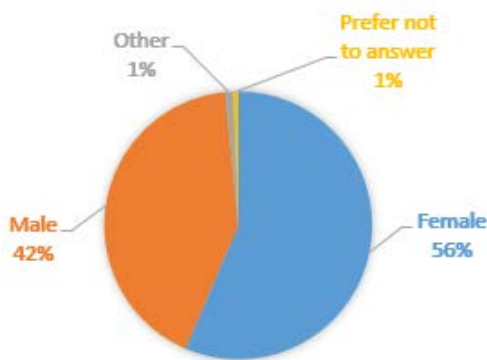


Figure 3.2 Worker survey respondents' gender (n=1050)

More than 40% of respondents had a four-year degree (42.6%; Figure 3.3), and 20.3% had a graduate or professional degree. Fifteen percent of respondents had some college education, and 12.2% had a two-year degree. Ten percent were high school graduates, and 0.5% had less than a high school education.

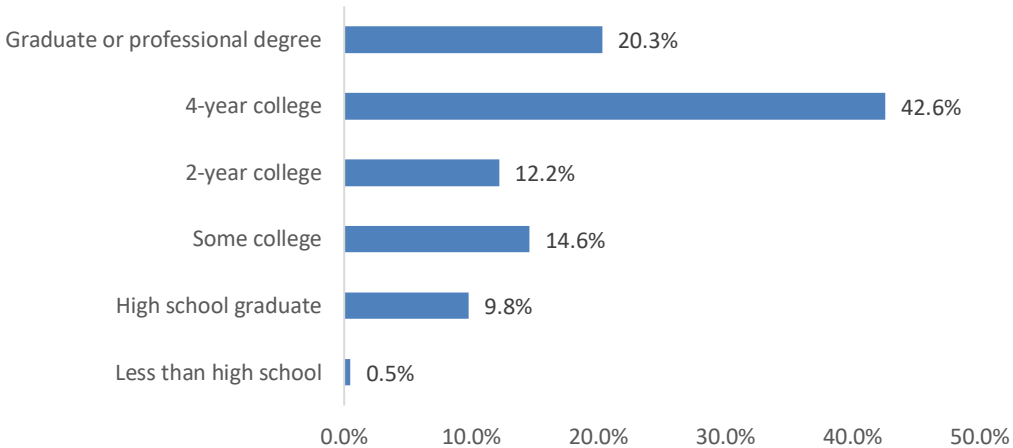


Figure 3.3 Worker survey respondents' education level (n=1251)

We also asked about respondents' pre-tax annual household income before COVID-19 (Figure 3.4). Six percent of respondents earned less than \$25,000, and 13.5% earned between \$25,000 and \$49,999. Seventeen percent had a pre-tax annual household income between \$50,000 and \$74,999, 18.6% earned between \$75,000 and \$99,999; 14.7% earned between \$100,000 and \$124,999, and 10.7% earned between \$125,000 and \$149,999. The pre-tax annual household income of 10.2% respondents ranged between \$150,000 and \$199,999, and 9.3% had a pre-tax annual household income of \$200,000 or more.

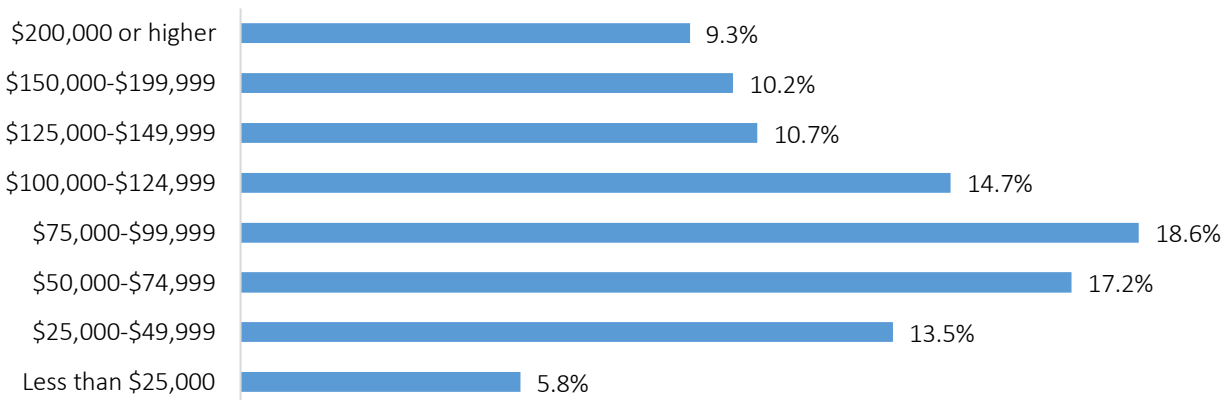


Figure 3.4 Worker survey respondents' pre-tax annual household income before COVID-19 (n=1248)

The COVID-10 pandemic created significant economic loss. While 44.4% respondents did not have any income loss (Figure 3.5), 33.2% had had income loss but have since recovered, and another 16.2% had income loss and have not recovered. Four percent of respondents were not sure about pandemic-induced income loss, and 2.2% preferred not to answer the question.

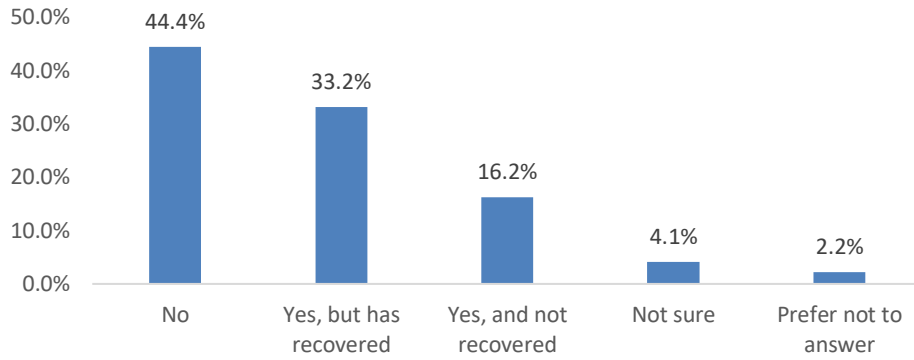


Figure 3.5 Worker survey respondents' pandemic-induced income loss (n=1253)

The majority of respondents were not of Hispanic, Latino, or Spanish origin (83%; Figure 3.6). Close to 10% were Mexican, Mexican American, or Chicano (8.5%), followed by 4.2% Cuban, and 2.6% Puerto Rican. Another 1.7% identified as another Hispanic, Latino, or Spanish origin. According to U.S. Census (2021), 6.1% of Minnesota residents are of Hispanic origin and 93.9% are not.

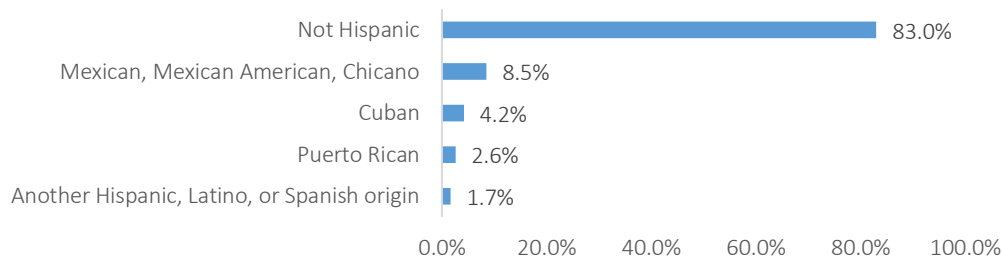


Figure 3.6 Worker survey respondents' ethnicity (n=1252)

The majority of respondents were White (75.2%; Figure 3.7). Close to 10% were Black or African American (9.5%), and 5.3% were Asian or Asian American. Five percent were multiracial, 1.4% were American Indian or Alaska Native, and 0.6% were Native Hawaiian or Pacific Islander. Three percent self-identified as “other” race.

According to U.S. Census (2021), 77.5% of Minnesota residents were White alone, 7.0% Black of African American, and 5.2% Asian. Additionally, 6.1% were multiracial, 1.2% American Indian and Alaska Native, and 0.1% Native Hawaiian and Other Pacific Islander.

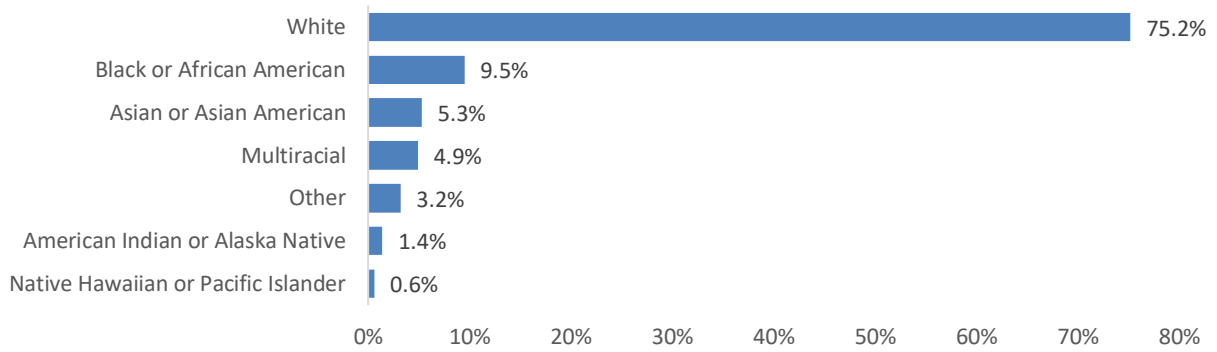


Figure 3.7 Worker survey respondents' race (n=1251)

Sixty percent of respondents lived in the Twin Cities Metro Area (Figure 3.8), while 40% lived in Greater Minnesota. Among those living in Greater Minnesota, 25.1% lived in small urban areas (Duluth, East Grand Forks, La Crescent, Mankato, Moorhead, Rochester, and St. Cloud), while 74.9% lived in rural areas.



Figure 3.8 Geographic area of worker survey respondents' primary residence (n=1248)

3.4.1.2 Reasonable accommodations due to disability(ies)

The majority of respondents did not use reasonable accommodations due to disability(ies) (88%; Figure 3.9), and 12% did.

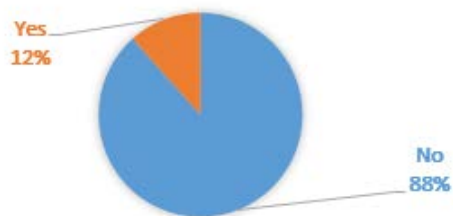


Figure 3.9 Usage of reasonable accommodations due to disability(ies) among worker survey respondents (n=1253)

Among respondents using reasonable accommodations due to disability(ies), 55.2% had been telecommuting prior to the pandemic (Figure 3.10), while 44.8% started telecommuting because of the pandemic.

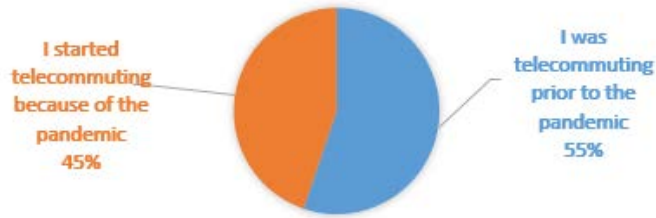


Figure 3.10 Telecommuting situation of worker survey respondents who used reasonable accommodations due to disability(ies) (n=145)

Among respondents using reasonable accommodations due to disability(ies), 42.8% strongly agreed that they had the job support needed to successfully work at home (Figure 3.11), 29.7% agreed, and 14.5% somewhat agreed. Two percent somewhat disagreed, 1.4% disagreed, and 2.1% strongly disagreed. Another 7.6% neither agreed nor disagreed.

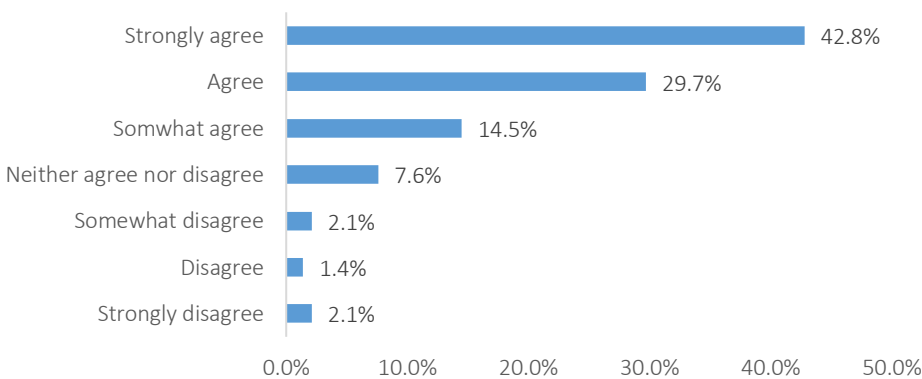


Figure 3.11 Job support needed to successfully work at home among worker survey respondents who used reasonable accommodations due to disability(ies) (n=145)

3.4.1.3 Health conditions and vaccine status

The majority of respondents (71.1%) did not have any underlying health conditions that make them more vulnerable to COVID-19 (Figure 3.12), while 21.4% did. Another 7.5% were not sure.

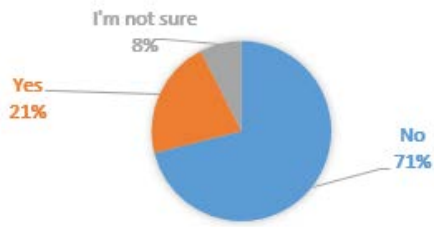


Figure 3.12 Whether worker survey respondents had any underlying health conditions that make them more vulnerable to COVID-19 (n=1253)

More than 70% of respondents (72.5%) did not live with someone who had underlying health conditions that make the person more vulnerable to COVID-19 (Figure 3.13), while 24% did. Another 3.5% were not sure.

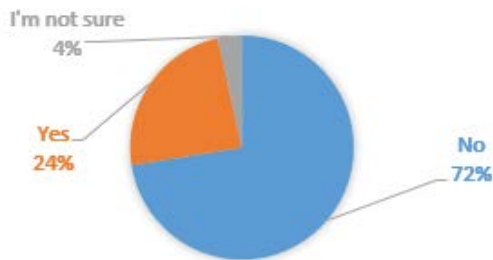


Figure 3.13 Whether worker survey respondents lived with someone who had underlying health conditions that make the person more vulnerable to COVID-19 (n=1253)

In terms of COVID-19 vaccination status, 77.2% of respondents were fully vaccinated (Figure 3.14), and 5.1% were partially vaccinated. Meanwhile, 3.3% were not vaccinated but scheduled an appointment to get vaccinated. Lastly, 14.5% were not vaccinated and did not have an appointment to get vaccinated.

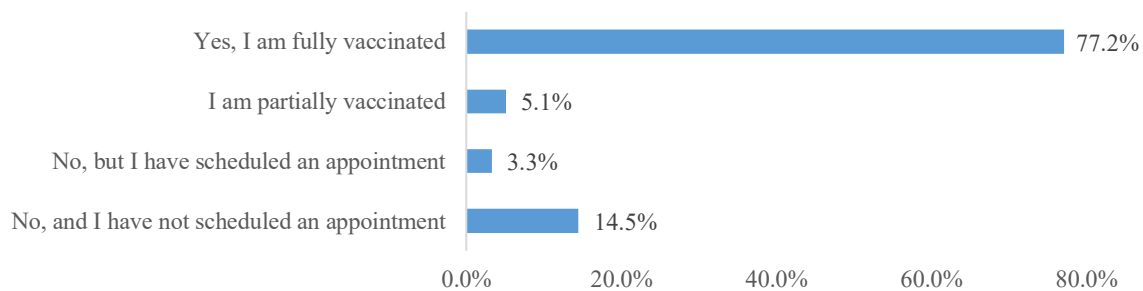


Figure 3.14 Worker survey respondents' COVID-19 vaccination status (n=1244)

3.4.1.4 Transportation situations since the pandemic started

We asked respondents about their car ownership and driving behavior since the pandemic started. Ninety percent of respondents owned a car and drove it (Figure 3.14). Four percent owned a car but didn't drive it. Three percent did not own a car but had a driver's license, while another 3% did not own a car and did not have a driver's license.

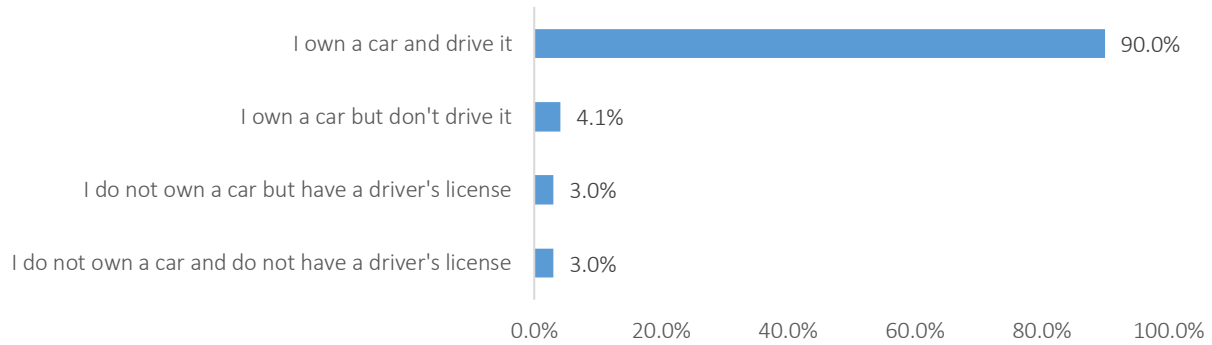


Figure 3.15 Worker survey respondents' car ownership and driving behavior since the pandemic started (n=1254)

When it comes to transportation mode, 87.5% of respondents drove their own car (Figure 3.15). Walking was the main transportation mode for 3.3% of respondents, and 2.2% used car share. None of the other transportation modes was used by more than 2% of respondents.

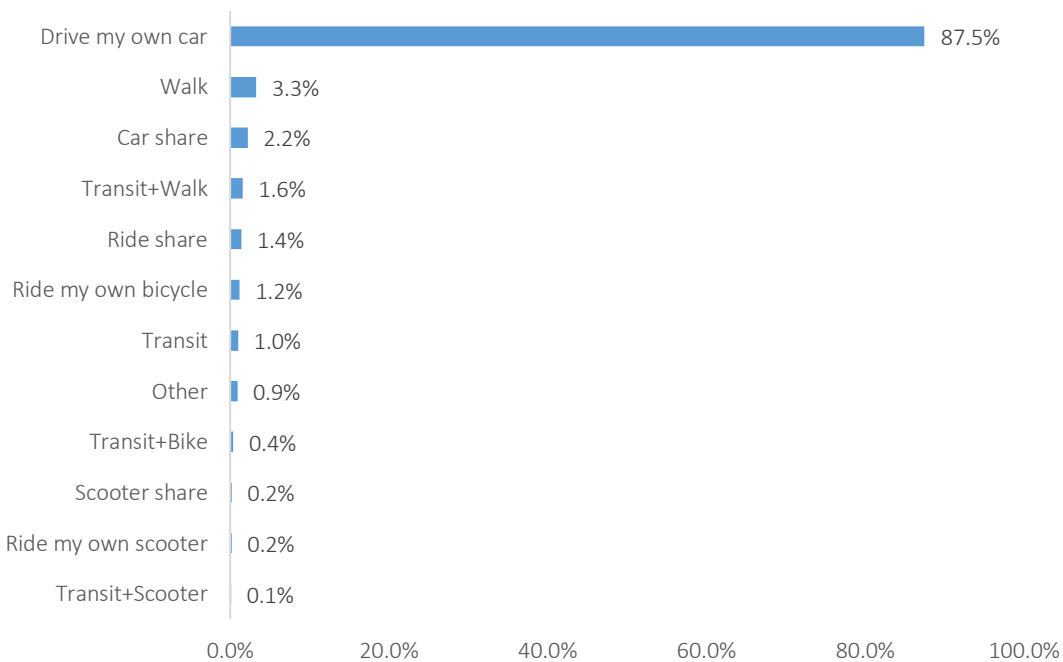


Figure 3.16 The transportation mode that worker survey respondents used the most frequently since the pandemic started (n=1254)

3.4.1.5 Pre-pandemic commute situations

Prior to the pandemic, the one-way commute time of 28.3% respondents was no more than 15 minutes (Figure 3.16), while 37.7% had a one-way commute between 16 and 30 minutes. Twenty percent of respondents had a one-way commute between 31 and 45 minutes, and 7.7% between 46 and 60 minutes. For 3.4% of respondents, one-way commute time was more than 60 minutes. Work location varied for 2.5% of respondents.

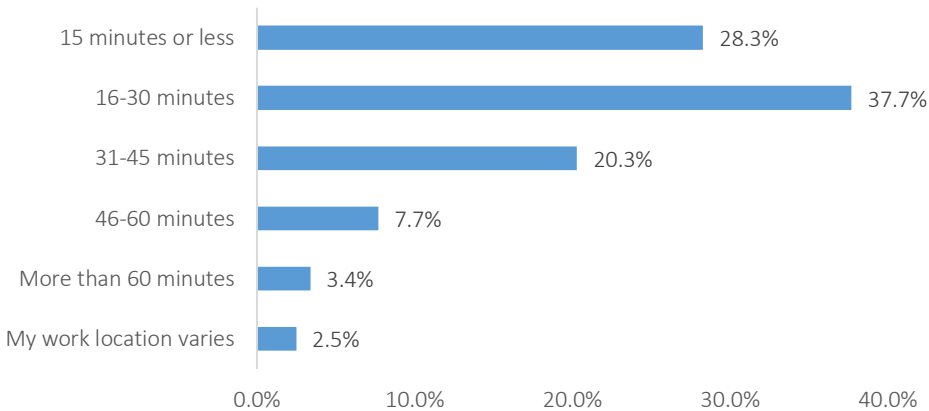


Figure 3.17 Worker survey respondents' pre-pandemic one-way commute length (n=1180)

Prior to the pandemic, commute traffic was very heavy for 6.6% of respondents (Figure 3.17), somewhat heavy for 18.1% of respondents, and a little heavy for 21.1%. Close to 30% described their commute traffic as normal (28.5%). Commute traffic was a little light for 5.7% of respondents, somewhat light for 6%, and very light for 11.9%. Lastly, commute traffic varied for 2.2% of respondents, as their work locations varied.

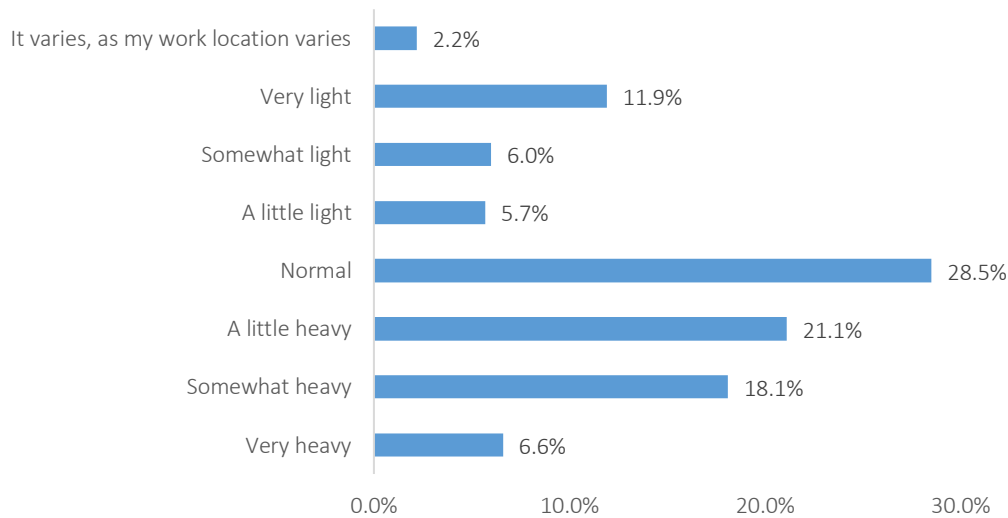


Figure 3.18 Worker survey respondents' pre-pandemic commute traffic (n=1155)

3.4.1.6 Caregiving responsibilities

More than half of respondents (53.3%) had at least one child living at home during the pandemic (Figure 3.18), while 41.4% did not. Five percent had at least one child living at home from time to time.

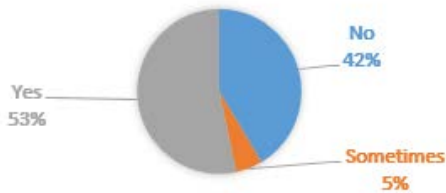


Figure 3.19 Whether worker survey respondents had any child living at home during the pandemic (n=1253)

Among respondents who had at least one child living at home either full-time or sometimes during the pandemic, 18.8% had at least one child younger than five years old (Figure 3.19), 29.4% had at least one child between five and 12 years old, and 23.8% had at least one child between 13 and 17 years old.

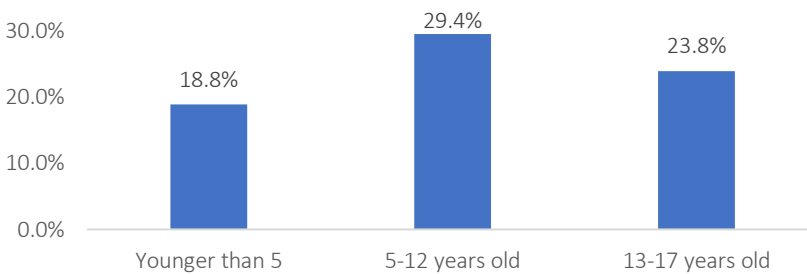


Figure 3.20 Age range of child(ren) living at home during the pandemic (n=734)

Among respondents who had at least one child living at home either full-time or sometimes during the pandemic, 26.9% identified mother as providing the majority of childcare (Figure 3.19), followed distantly by “equally between both parents” (15.5%), and father (14.9%). Close to 10% of respondents (9.5%) indicated their child(ren) went to school, and 5.7% used a childcare provider. Approximately 5% identified themselves doing the majority of childcare as single parents (5.4%), while 4.8% identified another family member.

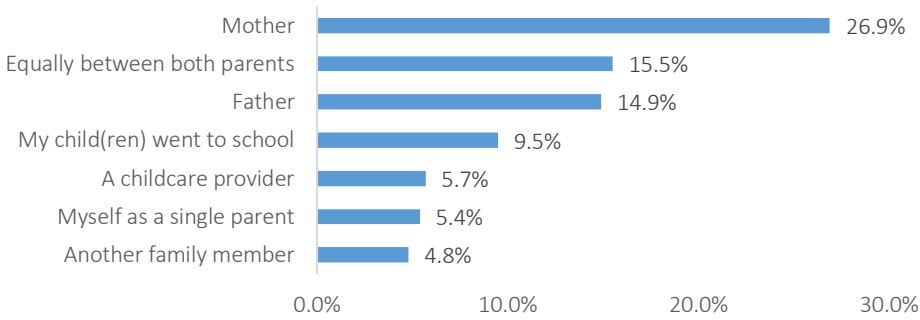


Figure 3.21 Primary childcare sources among worker survey respondents who had at least one child living at home during the pandemic (n=734)

The majority of respondents did not have caregiving responsibilities other than childcare (77.3%; Figure 3.20). More than 10% had spousal care responsibility (13.4%), 6.6% had elderly care responsibility, and 2.7% had both spousal and elderly care responsibilities.

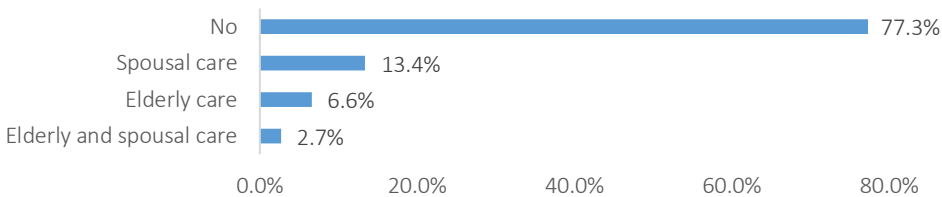


Figure 3.22 Caregiving responsibilities other than childcare among worker survey respondents (n=1251)

3.4.1.7 Employment characteristics

The majority of respondents were working full-time (87.1%; Figure 3.21), while 12.9% were working part-time.



Figure 3.23 Worker survey respondents' employment status (n=1253)

In terms of industry, 11.9% worked in health service (Figure 3.22), 11.4% in professional and business services, and 11.2% in wholesale and retail trade. Nine percent worked in financial service, another 9% in manufacturing, and 8.5% in information. Eight percent worked in education, 7.3% in transportation, and 5.1% in public administration. No other industry claimed more than 5% of respondents.

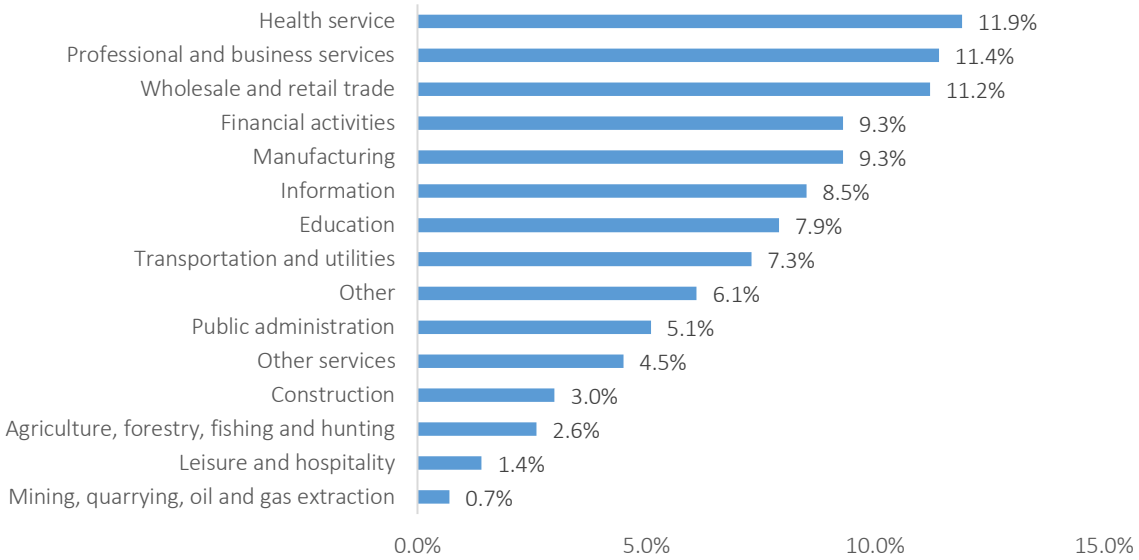


Figure 3.24 Industry in which worker survey respondents worked (n=1254)

More than a quarter of respondents identified “professional and related” as their profession (26.8%; Figure 3.23), followed by management, business and financial occupations (22.8%). Close to 15% identified office and administrative support (13.7%), followed by service (12.5%) and sales and related (11.3%). Five percent identified production, and 3% identified construction and extraction. No other profession was identified by more than 3% of respondents.

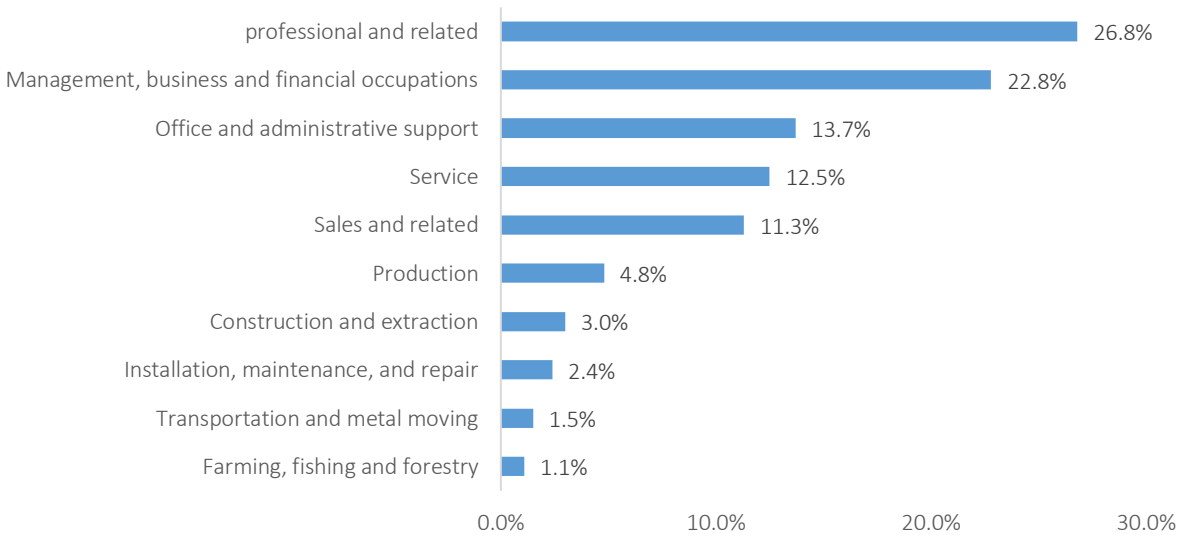


Figure 3.25 Worker survey respondents' profession (n=1252)

More than half of respondents' employers had their operations solely in Minnesota (56.2%; Figure 3.24). For 27.7% of respondents, their employers were headquartered in Minnesota with operations outside of

the state. For 16.1% of respondents, their employers had operations in Minnesota but were headquartered outside of the state.

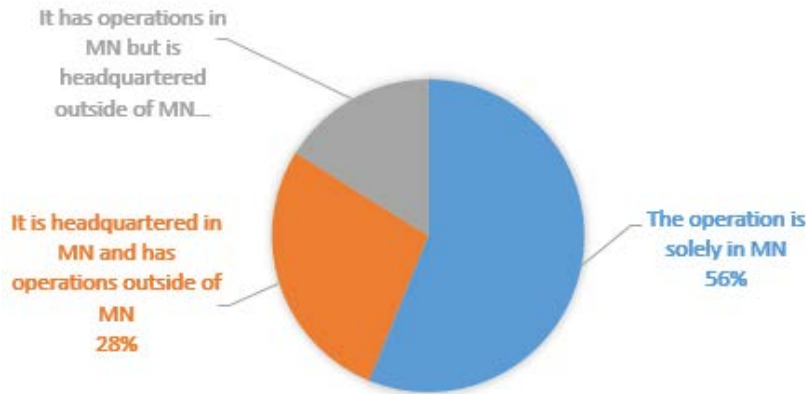


Figure 3.26 Employer operations among worker survey respondents (n=1249)

In terms of employer size, 34.2% of respondents indicated their employers had less than 100 employees (Figure 3.25). A quarter of respondents (25.3%) indicated their employers had 100-499 employees, and 14.7% had 500-999 employees. The employers of 25.7% respondents had 1,000 or more employees. It is worth noting that half of respondents did not answer this question, indicating that many respondents did not know their employers' size.

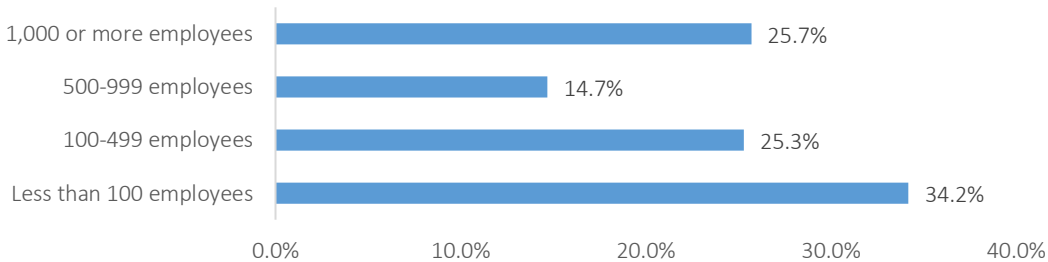


Figure 3.27 Employer size among worker survey respondents (n=672)

Close to two-thirds of respondents were salaried employees (64.0%; Figure 3.26), while 34.0% were not. Two percent were not sure whether they were salaried or not.

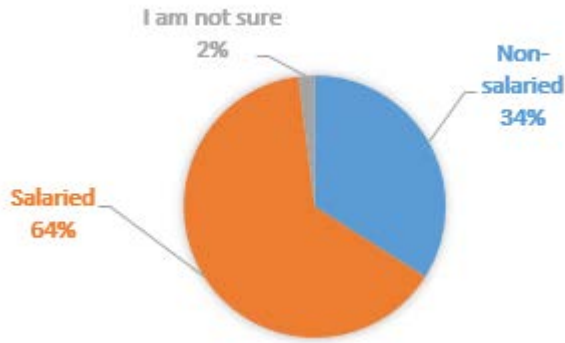


Figure 3.28 Whether worker survey respondents were salaried or not (n=1229)

Respondents' average tenure with their current employers was 7.8 years (Median=5, SD=8.1). A quarter of respondents have been with the current employer for no more than two years (25.8%; Figure 3.27), and 27.2% for 2.5 to five years. More than 20% of respondents have been with the current employer for six to 10 years (23.2%), and another 23.9% for 11 years or more.

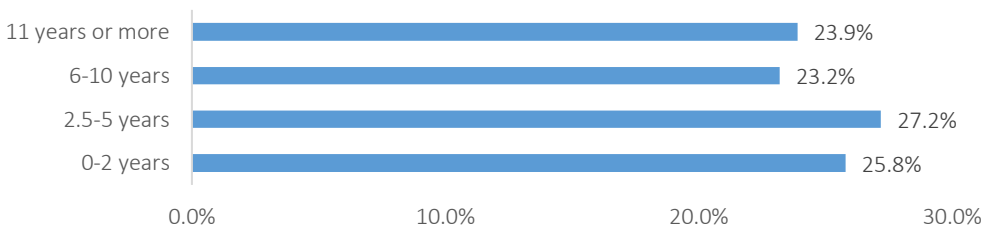


Figure 3.29 Number of years with the current employer among worker survey respondents (n=1252)

Respondents worked 38 hours per week on average (Median=40, SD=6.8). Close to a third worked 20-39 hours each week (31.5%; Figure 3.28), and 44.5% worked 40 hours each week. Close to a quarter worked more than 40 hours each week (24.0%).



Figure 3.30 Number of hours worked each week among worker survey respondents (n=1251)

3.4.2 Telecommuting during the COVID-19 pandemic

We asked respondents if they were able to telecommute during the COVID-19 pandemic, since it started in March 2020. More than half (57.5%) indicated they were able to and were still telecommuting at the time of the survey (Figure 3.29). Twenty percent of respondents indicated they were able to telecommute but transitioning back to in-person work, while 19.1% indicated they were able to telecommute but already back to in-person work at the time of the survey. Lastly, 3.6% of respondents indicated their employers never gave them permission to telecommute, although they could have.

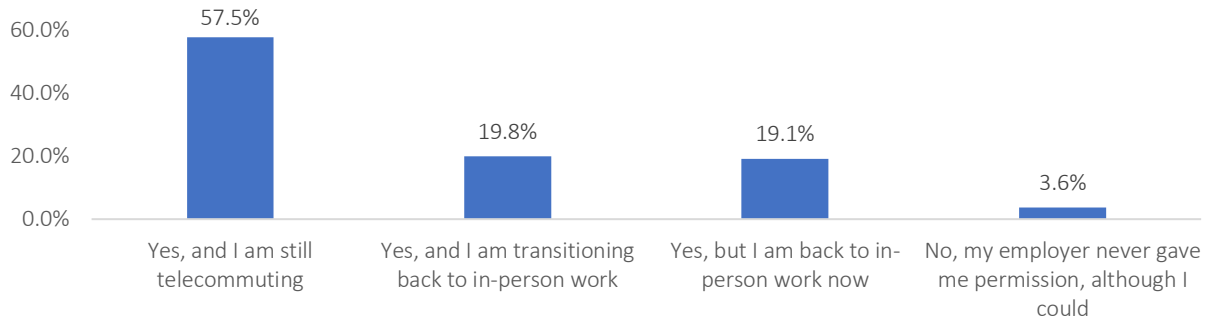


Figure 3.31 Whether worker survey respondents were able to telecommute during the pandemic (n=1253)

The average weekly telecommuting hours was between one and 20 for 36.0% of respondents (Figure 3.30). For 22.3% of respondents, it was 21-39 hours. Close to 30% of respondents (27.3%) telecommuted an average of 40 hours per week. Another 27.3% telecommuted more than 40 hours per week. Among those who telecommuted no more than 40 hours per week, the average number of weekly telecommuting time was 25 hours (Median=30, SD=14.4).

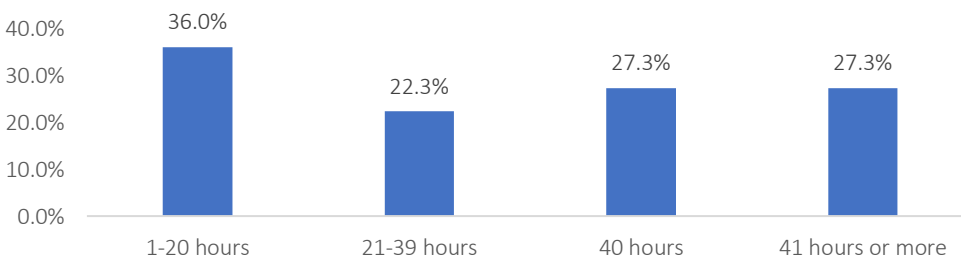


Figure 3.32 Worker survey respondents' average weekly telecommuting hours (n=1246)

More than 40% of respondents (44.6%) indicated there had been no change in employer expectation of their performance during the pandemic (Figure 3.31). A quarter indicated that performance expectation has become more results driven. While 19.6% felt performance expectation had become higher, 10.6% thought it had become lower.

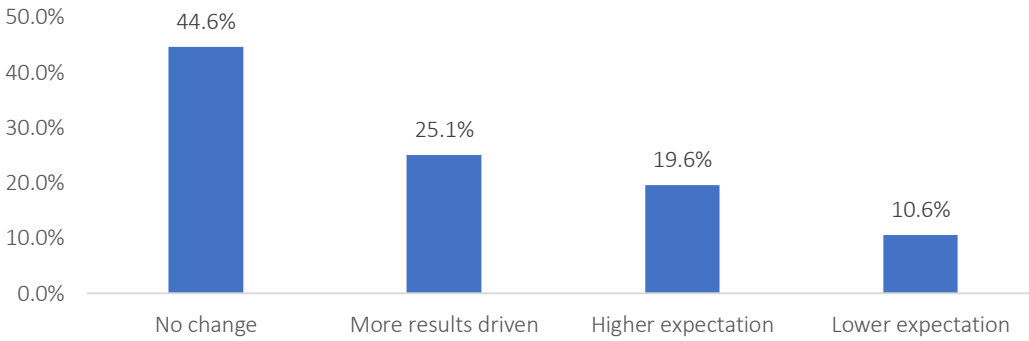


Figure 3.33 Employer's expectation of worker survey respondents' performance during the pandemic (n=1252)

When it comes to respondents' self-perceived work productivity, 56.5% felt they got more done. Specifically, 17.7% thought they got a lot more done, 24.8% felt "somewhat more," and 14.0% identified "a little more" (Figure 3.32). Close to 30% of respondents (28.3%) believed their productivity has remained about the same. On the other hand, 15.3% felt they got less done. In particular, 10.6% felt they got a little less done, 2.9% felt "somewhat less," and 1.8% identified "a lot less."

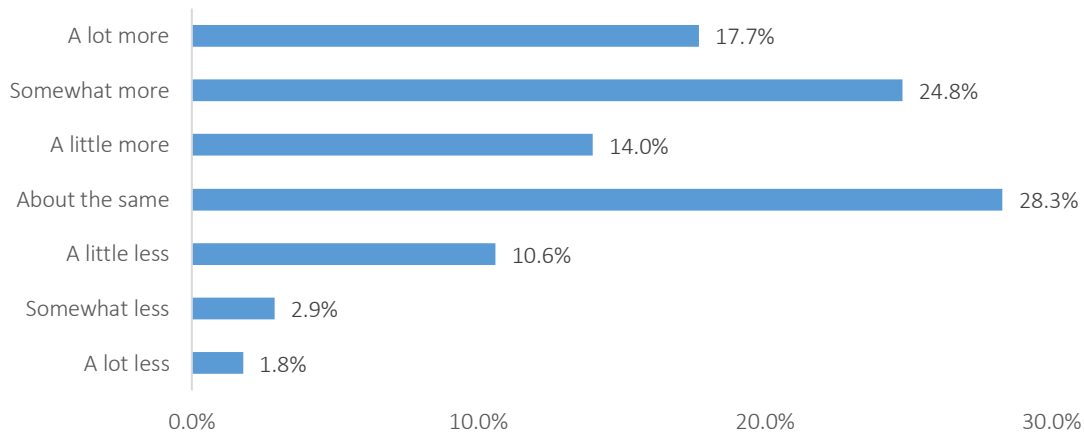


Figure 3.34 Worker survey respondents' self-perceived productivity during the pandemic (n=1247)

A vast majority of respondents (93.8%) felt their supervisors trusted them, to different extents, when telecommuting during the pandemic. Specifically, 43.9% indicated their supervisors were completely trustful, 29.5% identified mostly trustful, 12.3% somewhat trustful, and 8.0% a little trustful. Meanwhile, 6.2% of respondents felt their supervisors were distrustful to different extents. In particular, 2.9% indicated their supervisors were a little distrustful, 1.4% identified somewhat distrustful, another 1.4% indicated mostly distrustful, and 0.5% completely distrustful.

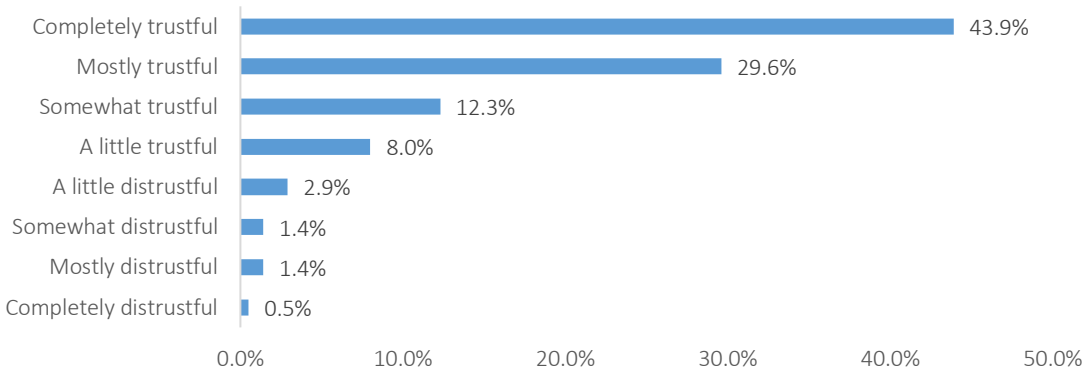


Figure 3.35 The extent to which worker survey respondents believed their supervisors trusted them while telecommuting during the pandemic (n=1248)

A majority of respondents (87.5%) strongly or somewhat agreed they had the schedule flexibility needed to manage their personal and family responsibilities, and 80.8% strongly or somewhat agreed they had support from their supervisors to help them manage work and personal life (Figure 3.34). Close to 80% of respondents (78.4%) strongly or somewhat agreed their employers supported their well-being, and 73.5% strongly or somewhat agreed they had work-life balance. More than half of respondents (55.9%) strongly or somewhat agreed there was a lack of social connection with colleagues.

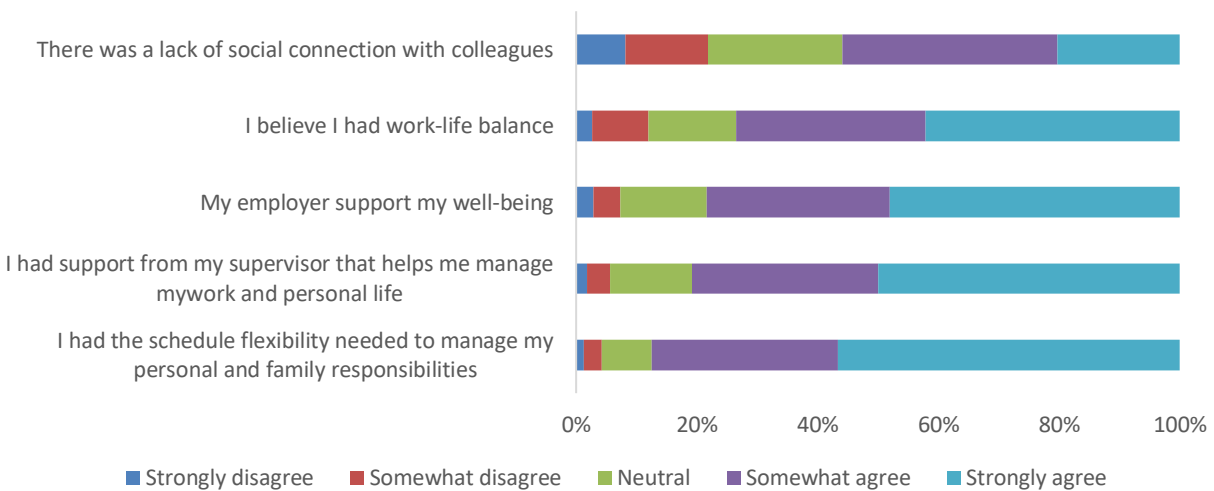


Figure 3.36 Worker survey respondents' telecommuting experience during the pandemic

When it comes to equipment and office furniture support from employers, 57.5% of respondents indicated that employers let them take equipment home, and 22.1% indicated that employers let them take office furniture home (Figure 3.35). Each of the following items was identified by at least 10% of respondents: purchased equipment and shipped it to their home (15.0%), paid for full or partial home Internet cost (14.8%), provided a stipend to purchase equipment (14.0%), and provided a stipend to purchase office furniture (10.8%). Eight percent of respondents indicated their employers shipped office

furniture to their homes, and 7.7% indicated their employers purchased office furniture and shipped it to their homes.

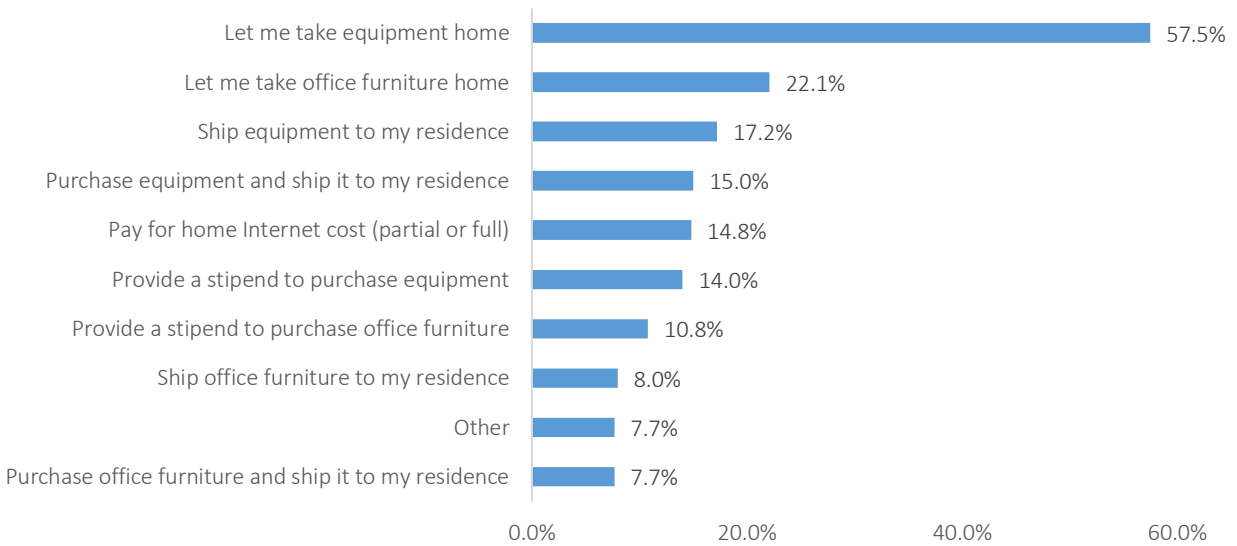


Figure 3.37 Equipment and office furniture support from employers to worker survey respondents

We also asked about respondents’ broadband internet connection and workspace availability at home. The majority of respondents (80.9%) indicated their broadband internet connection was stable and had reasonable speed. Nine percent felt their internet connection was stable but low speed. Five percent indicated their internet connection had reasonable speed but was unstable. Two and a half percent of respondents used a hot spot, and 2.6% did not have broadband connection at home.

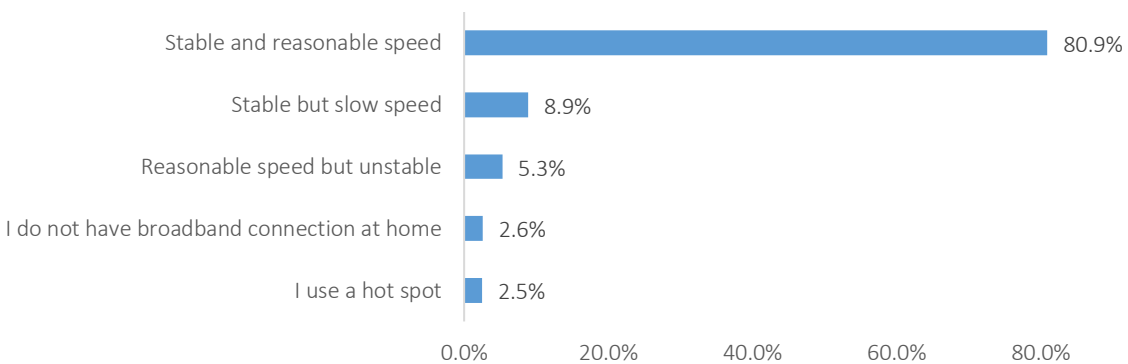


Figure 3.38 Worker survey respondents’ broadband Internet connection at home (n=1254)

More than 60% of respondents (61.5%) had a dedicated workspace with a door at home (Figure 3.37). Seventeen percent had a workspace without a door. Thirteen percent had a flat surface in a common area, while 8.5% did not have a dedicated workspace at home.

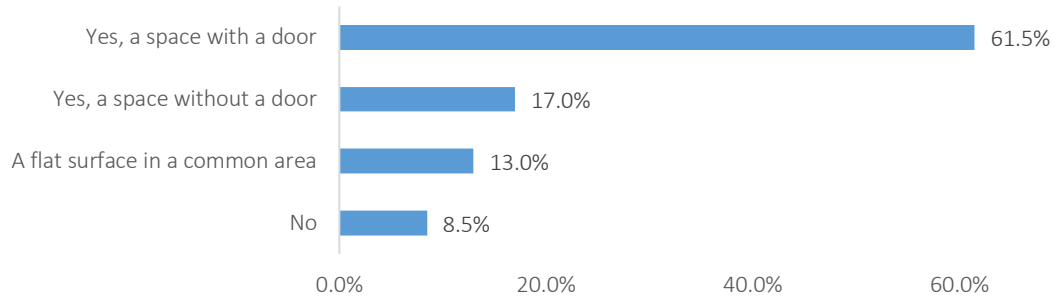


Figure 3.39 Availability of dedicated workspace at home among worker survey respondents (n=1251)

3.4.3 Telecommuting prior to the COVID-19 pandemic

We asked respondents whether they had telecommuted at all prior to the pandemic. Two-thirds of respondents (67.7%) indicated they did, with 41.0% having had a formal agreement with their employers and 26.7% having had an informal agreement (Figure 3.8). Close to one-third of respondents (32.2%) indicated they could have telecommuted but had not.

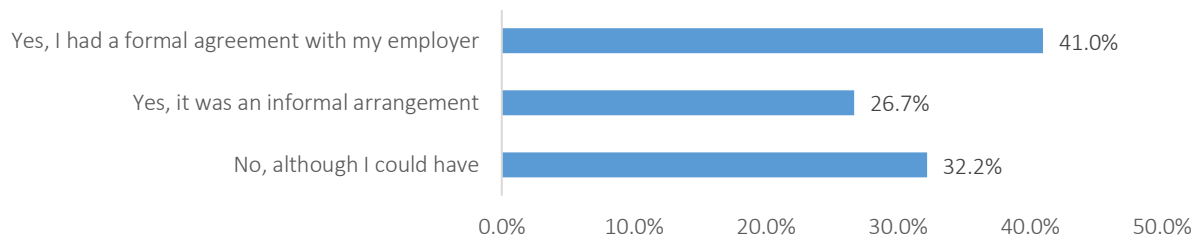


Figure 3.40 Whether worker survey respondents telecommuted at all prior to the pandemic (n=1253)

Among those who telecommuted prior to the pandemic (regardless of frequency), they averaged 3.4 years of telecommuting (Median=2, SD=4.2). Close to 40% of respondents (38.4%) had telecommuted no more than one year prior to the pandemic (Figure 3.9), 20.7% had telecommuted for two years, 24.0% for 2.5 to five years, and 16.9% for more than five years.

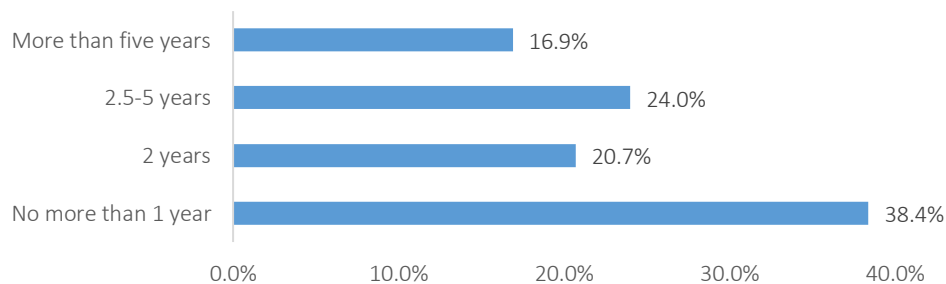


Figure 3.41 Number of years worker survey respondents had telecommuted prior to the pandemic (n=846)

Among those who had telecommuted prior to the pandemic, 24.8% had telecommuted infrequently (Figure 3.40), 19.2% for one to three days a month, and 16.5% for one day per week. Twenty-one percent had telecommuted two to three days a week, 6.7% four days a week, and 11.7% five days a week.

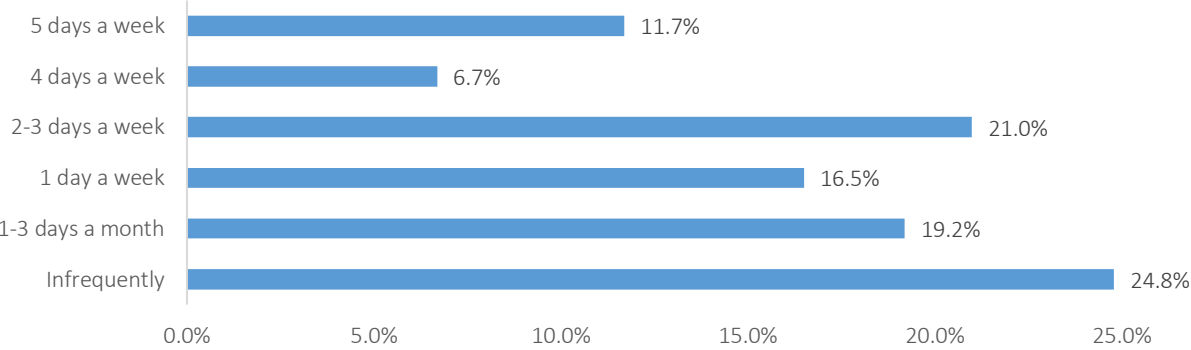


Figure 3.42 Pre-pandemic telecommuting frequency among worker survey respondents who had telecommuted prior to the pandemic (n=847)

In terms of reason(s) for not telecommuting prior to the pandemic, 36.8% preferred working in their offices (Figure 3.41), 28.7% perceived the senior leadership not supporting telecommuting, 26.6% indicated their office location was easier for life and daily schedule, and 21.9% perceived their supervisors not supporting telecommuting.

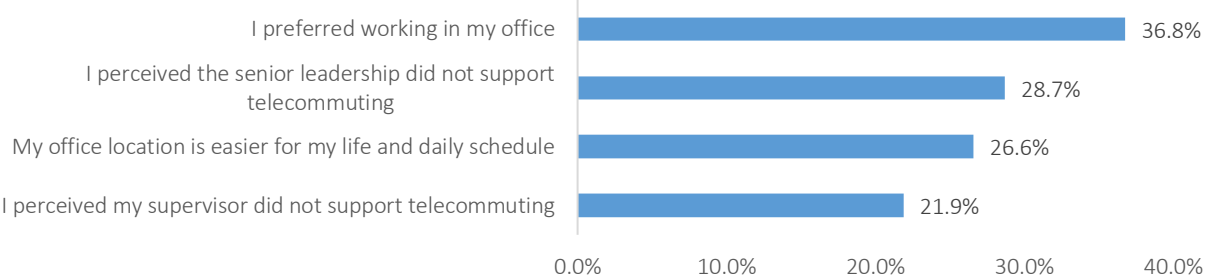


Figure 3.43 Reasons that worker survey respondents had not telecommuted prior to the pandemic

3.4.4 Telecommuting in the future

We asked respondents whether their employers have developed a telecommuting policy for the future. Close to half (47.4%) said yes, and 27.5% indicated the policy was being developed at the time of the survey (Figure 3.42). Meanwhile, 12.9% said no, and 12.1% had no idea.

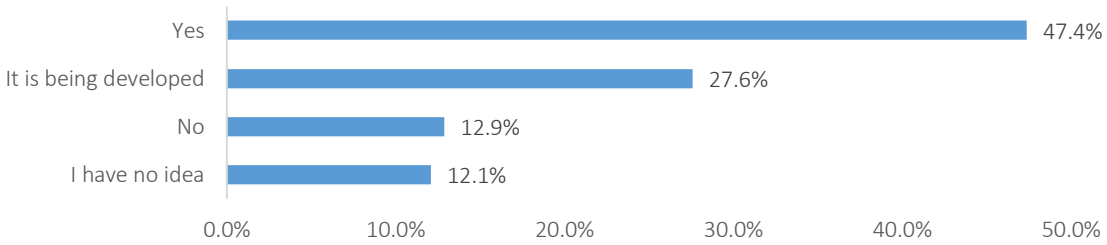


Figure 3.44 Whether the employers of worker survey respondents have developed a telecommuting policy for the future (n=1252)

Among those whose employers either have developed or were developing a telecommuting policy for the future, 67.4% indicated that employers sought their input when developing the policy (Figure 3.43), 27.5% said no, and 5.1% were not sure.

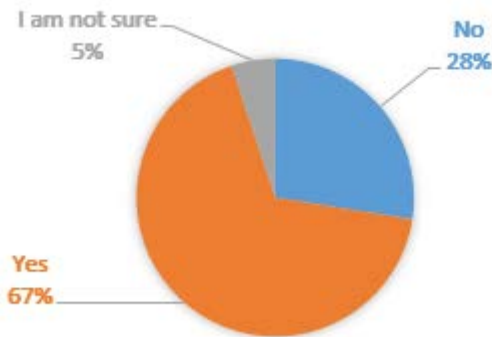


Figure 3.45 Whether the employers of worker survey respondents sought their input when developing a telecommuting policy for the future (n=938)

Three-quarters of respondents (75.3%) indicated they would be able to telecommute post-pandemic at the time of the survey, with 51.1% having a formal agreement with their employers and 24.2% having an informal agreement (Figure 3.44). Nine percent of respondents would not be able to telecommute post-pandemic, although it is feasible, and 3% indicated the nature of their jobs require in-person work. Lastly, 11.8% of respondents did not know yet at the time of the survey.

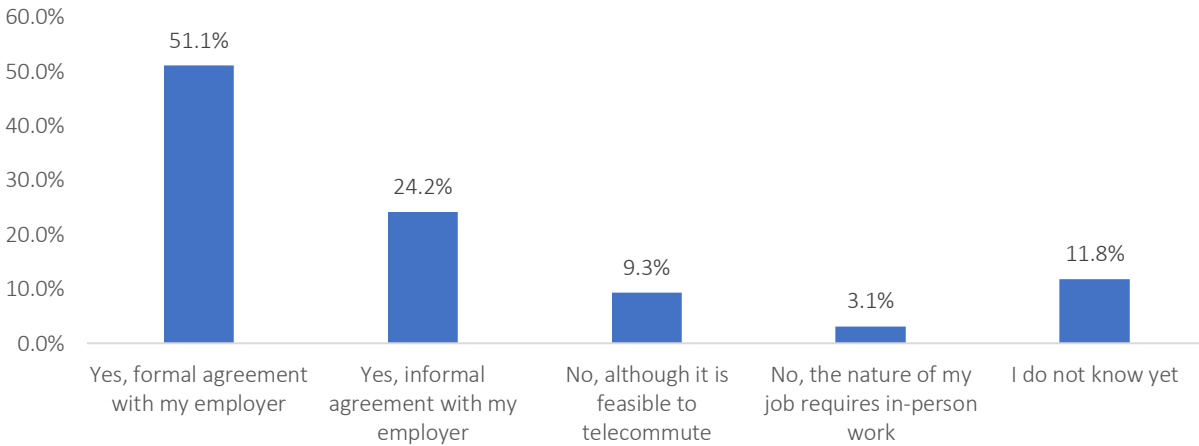


Figure 3.46 Whether worker survey respondents would be able to telecommute at all post-pandemic

We also asked participants how frequently they would be able to and wish they could telecommute. There was not much difference between what they would be able to and what they wish they could (Figure 3.45). While 29.6% wished they could telecommute five days a week, 27.7% would be able to. Twelve percent wished they could telecommute four days a week, while 11.1% would be able to. Close to one-third of respondents (32.4%) wished they could telecommute 2-3 days a week, and 35.5% would be able to. Ten percent wished they could telecommute one day a week, and 10.1% would be able to. Seven percent wished they could telecommute 1-3 days a month, while 9.7% would be able to. Lastly, 8.5% wished they could telecommute infrequently, and 5.9% would be able to.

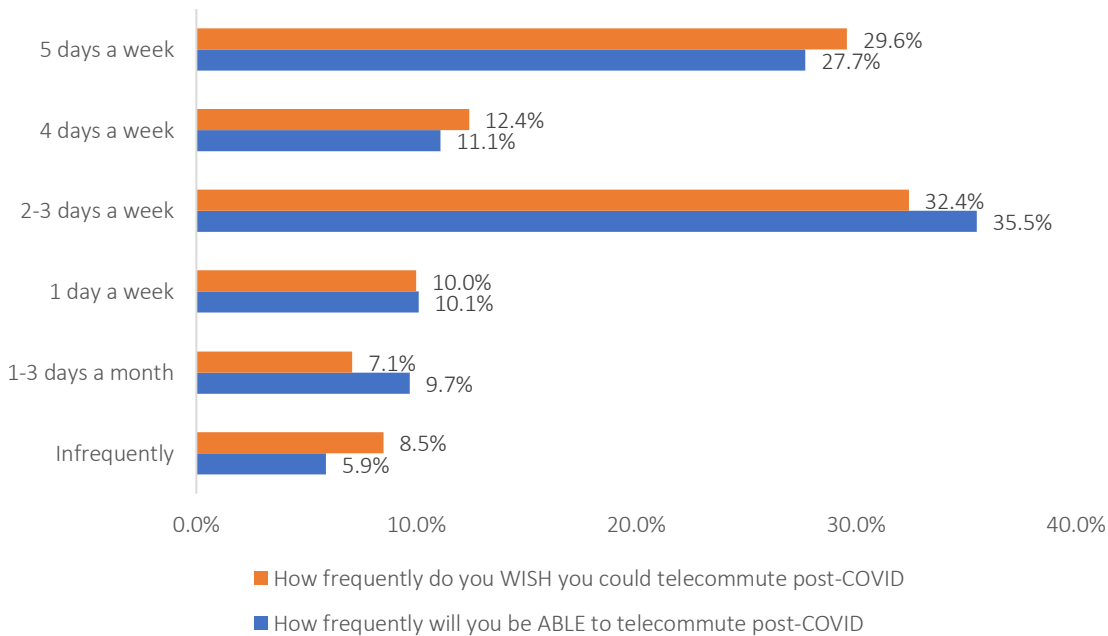


Figure 3.47 Frequency in which worker survey respondents wished to and would be able to telecommute

In terms of perceived employer’s support of post-pandemic telecommuting, 62.0% believed their employers would extremely or somewhat support it (Figure 3.46). Twenty percent of respondents remained neutral. Eleven percent thought their employers would be somewhat unlikely to support post-pandemic telecommuting, and 6.8% believed it would be extremely unlikely.

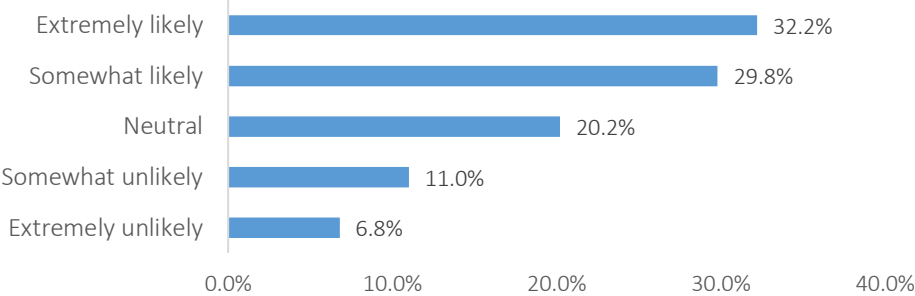


Figure 3.48 Likelihood of worker survey respondents’ employers supporting post-pandemic telecommuting (n=1213)

Three-quarters of respondents strongly or somewhat agreed their employers would support schedule flexibility in the future (Figure 3.47), and 5.9% somewhat or strongly disagreed. Thirteen percent remained neutral, and 1.7% indicated they did not know.

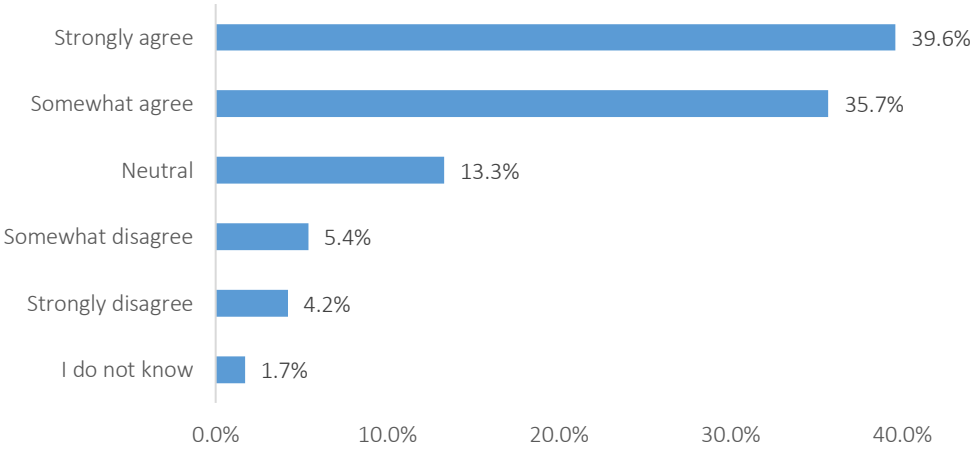


Figure 3.49 The extent to which worker survey respondents agreed their employers would continue supporting schedule flexibility in the future (n=1251)

3.4.5 Potential to relocate

We asked respondents whether they would consider moving or relocating if they were able to telecommute full-time, and 40.8% indicated likelihood to different extents (Figure 3.48). Specifically, 12.1% indicated highly likely, 15.1% somewhat likely, and 13.6% a little likely. On the other hand, 39.2%

indicated unlikelihood to different extents. In particular, 21.3% indicated highly unlikely, 11.2% somewhat unlikely, and 6.7% a little unlikely. Lastly, 20.0% were not sure yet.

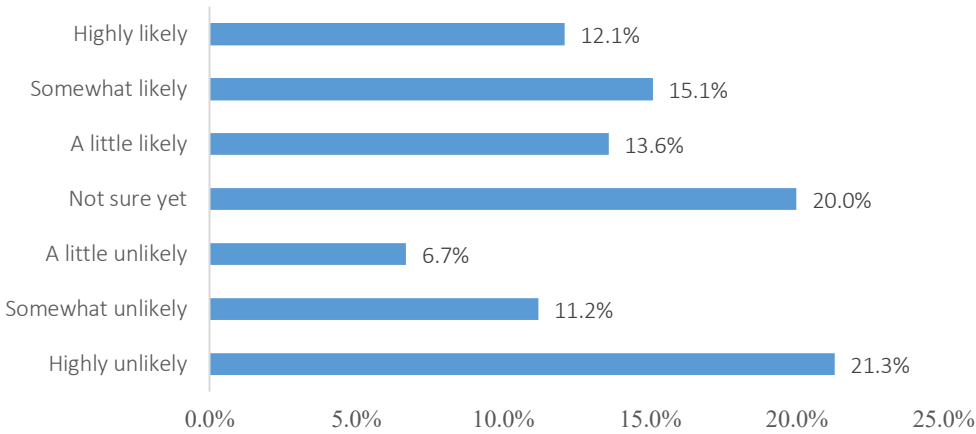


Figure 3.50 Likelihood of worker survey respondents moving or relocating if they were able to telecommute full-time (n=1209)

Among those with a likelihood of moving or relocating to different extents, 26.4% would relocate to a suburb in the Twin Cities Metro Area, 24.7% to Minneapolis or St. Paul city proper, and 21.9% to outside of Minnesota (Figure 3.49). Fourteen percent would relocate to a rural area in Minnesota, and 12.7% to a small city in Greater Minnesota (e.g., Duluth, Rochester).

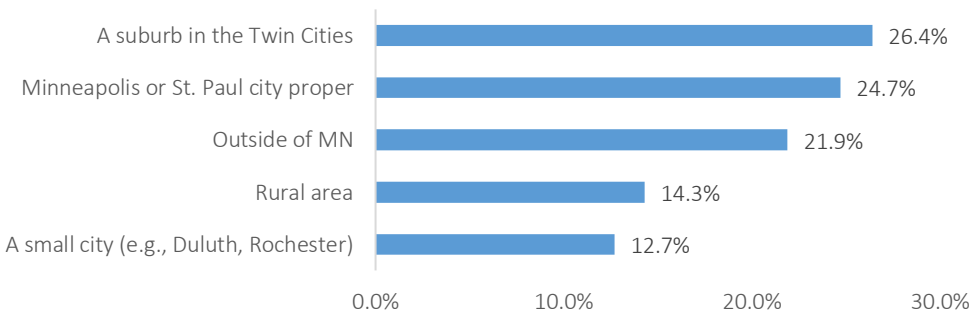


Figure 3.51 Where worker survey respondents would relocate to, among those with likelihood of moving or relocating to different extent (n=489)

3.5 WORKER SURVEY INFERENTIAL STATISTICS

3.5.1 Telecommuting during the COVID-19 pandemic

3.5.1.1 Telecommuting feasibility during COVID-19

For each generation, more than half had been telecommuting and still were at the time of the survey (Table 3.1), ranging from 54.8% of millennials to 61.0% Gen Xers. Some respondents had been telecommuting and were transitioning back to in-person work, ranging from 13.6% of baby boomers and older respondents to 23.1% Gen Zers. Other respondents had been telecommuting but were already back to in-person work at the time of the survey, from 15.7% Gen Xers to 22.0% baby boomers and older respondents. Lastly, 2.2% Gen Zers indicated they could have telecommuted but their employers never gave them permission, while 5.3% baby boomers and older respondents indicated so.

Table 3.1 Worker survey respondents' telecommuting feasibility during COVID-19, by generation

	Yes, and I am still telecommuting	Yes, and I am transitioning back to in-person work	Yes, but I am back to in-person work now	No, my employer never gave me permission, although I could
Gen Z (n=91)	56.0%	23.1%	18.7%	2.2%
Millennials (n=586)	54.8%	20.6%	21.0%	3.6%
Gen X (n=439)	61.0%	19.8%	15.7%	3.4%
Baby Boomers & Older (n=132)	59.1%	13.6%	22.0%	5.3%
All respondents (n=1248)	57.5%	19.8%	19.1%	3.6%

Note: Chi-square test not feasible, due to small cell sizes.

There was no gender difference in telecommuting feasibility ($\chi^2=4.02$, $p>0.05$; Table 3.2). Sixty percent of males and 56.4% of females had been telecommuting and still were at the time of the survey. About 20% of each gender had been telecommuting and were transitioning back to in-person work. Nineteen percent of females and 16.8% of males had been telecommuting but were back to in-person work at the time of the survey. Lastly, 4.6% of females and 2.5% of males could have telecommuted but their employers never gave them permission.

Table 3.2 Worker survey respondents' telecommuting feasibility during COVID-19, by gender

	Statistics					χ^2	Sig.
	Yes, and I am still telecommuting	Yes, and I am transitioning back to in-person work	Yes, but I am back to in-person work now	No, my employer never gave me permission, although I could			
Female (n=592)	56.4%	20.3%	18.8%	4.6%	4.02	n.s.	
Males (n=441)	59.6%	21.1%	16.8%	2.5%			
Females & males (n=1033)	57.8%	20.6%	17.9%	3.7%	--		

Note: Only females and males were included in the analysis, due to small sample sizes of other gender categories.

For each education level, more than 55% had been telecommuting and still were at the time of the survey (Table 3.3), ranging from 56.3% of those with a graduate or professional degree to 58.1% of those with some college education or a two-year degree. Some respondents had been telecommuting and transitioning back to in-person work, ranging from 15.0% of those with some college education or a two-year degree to 23.3% of those with a high school or less education. Other respondents had been telecommuting but were already back to in-person work at the time of the survey, from 17.1% of those with a high school or less education to 21.3% of those with a graduate or professional degree. Lastly, 1.6% of those with a graduate or professional degree indicated they could have telecommuted but their employers never gave them permission, while 6.3% of those with some college education or a two-year degree indicated so.

Table 3.3 Worker survey respondents' telecommuting feasibility during COVID-19, by education

	Yes, and I am still telecommuting	Yes, and I am transitioning back to in-person work	Yes, but I am back to in-person work now	No, my employer never gave me permission, although I could
High school or less (n=129)	56.6%	23.3%	17.1%	3.1%
Some college & 2-year degree (n=334)	58.1%	15.0%	20.7%	6.3%
4-year degree (n=533)	57.8%	21.6%	17.6%	3.0%
Graduate or professional degree (n=254)	56.3%	20.9%	21.3%	1.6%
All respondents (n=1250)	57.4%	19.8%	19.1%	3.6%

Note: For the independent variable, some categories were combined, due to small sample sizes. Chi-square test not feasible, due to small cell sizes.

For each pre-pandemic, pre-tax annual household income level, more than half had been telecommuting and still were at the time of the survey (Table 3.4), ranging from 52.3% of those with less than a \$50,000 household income to 60% of those with a household income of \$100,000 or more. Some respondents had been telecommuting and were transitioning back to in-person work, ranging from 16.8% of those with a household income between \$50,000 and \$99,999 to 22.4% of those with a

household income of less than \$50,000. Other respondents had been telecommuting but already back to in-person work at the time of the survey, from 17% of those with a household income of \$100,000 or more to 22.4% of those with a household income between \$50,000 and \$99,999. Lastly, 0.8% of those with a household income of \$150,000 or more indicated they could have telecommuted but their employers never gave them permission, while 7.1% of those with a household income of less than \$50,000 indicated so.

Table 3.4 Worker survey respondents’ telecommuting feasibility during COVID-19, by income

	Yes, and I am still telecommuting	Yes, and I am transitioning back to in-person work	Yes, but I am back to in-person work now	No, my employer never gave me permission, although I could
Less than \$50,000 (n=241)	52.3%	22.4%	18.3%	7.1%
\$50,000-\$99,999 (n=447)	56.8%	16.8%	22.4%	4.0%
\$100,000-\$149,999 (n=316)	60.4%	20.3%	16.8%	2.5%
\$150,000 and more (n=243)	60.5%	21.8%	16.9%	0.8%
All respondents (n=1247)	57.6%	19.7%	19.1%	3.6%

Note: For the independent variable, some categories were combined, due to small sample sizes. Chi-square test not feasible, due to small cell sizes.

All racial groups other than Black or African American had at least 50% of respondents who had been telecommuting and still were at the time of the survey (Table 3.5). Specifically, 48.7% of Black or African American respondents indicated so, 58.8% of White respondents and 59.1% Asian or Asian American respondents indicated so. Some respondents had been telecommuting and were transitioning back to in-person work, ranging from 15.6% of “all other” races to 24.4% of Black or African American respondents. Other respondents had been telecommuting but already back to in-person work at the time of the survey, from 16.7% of Asian or Asian American respondents to 24.4% or Black of African American respondents. Lastly, 2.5% of Black or African American respondents indicated they could have telecommuted but their employers never gave them permission, while 4.5% of Asian or Asian American respondents and 4.7% of “all other” races indicated so.

Table 3.5 Worker survey respondents' telecommuting feasibility during COVID-19, by race

	Yes, and I am still telecommuting	Yes, and I am transitioning back to in-person work	Yes, but I am back to in-person work now	No, my employer never gave me permission, although I could
White (n=940)	58.8%	19.6%	18.1%	3.5%
Black or African American (n=119)	48.7%	24.4%	24.4%	2.5%
Asian or Asian American (n=66)	59.1%	19.7%	16.7%	4.5%
Multiracial (n=61)	55.7%	18.0%	23.0%	3.3%
All other (American Indian, Alaska Native, native Hawaiian, other) (n=64)	56.3%	15.6%	23.4%	4.7%
All respondents (n=1250)	57.6%	19.8%	19.1%	3.5%

Note: For the independent variable, some categories were combined, due to small sample sizes. Chi-square test not feasible, due to small cell sizes.

For both ethnicity categories, more than 55% of respondents had been telecommuting and still were at the time of the survey (Table 3.6). Some respondents had been telecommuting and were transitioning back to in-person work, with 26.3% of Hispanic respondents and 18.5% non-Hispanic respondents indicating so. Twenty percent of non-Hispanic respondents and 15.5% Hispanic respondents had been telecommuting but already back to in-person work at the time of the survey. Lastly, 3.9% of non-Hispanic respondents and 1.4% Hispanic respondents indicated they could have telecommuted but their employers never gave them permission.

Table 3.6 Worker survey respondents' telecommuting feasibility during COVID-19, by ethnicity

	Yes, and I am still telecommuting	Yes, and I am transitioning back to in-person work	Yes, but I am back to in-person work now	No, my employer never gave me permission, although I could
Not Hispanic, Latino, or Spanish origins (n=1038)	57.7%	18.5%	19.8%	3.9%
Hispanic, Latino, or Spanish origins (n=213)	56.8%	26.3%	15.5%	1.4%
All respondents (n=1251)	57.6%	19.8%	19.1%	3.5%

Note: Some categories were combined, due to small sample sizes. Chi-square test not feasible, due to small cell sizes.

Telecommuting feasibility was almost identical among those using reasonable accommodations due to disability(ies) and those who did not (Table 3.7). Among those using reasonable accommodations, 57.9% were still telecommuting at the time of the survey, 20.7% were transitioning back to in-person work, 17.9% were back to in-person work, and 3.4% never received permission from employers to telecommute, although it was feasible. Among respondents not using reasonable accommodations, 57.5% were still telecommuting at the time of the survey, 19.7% were transitioning back to in-person

work, 19.2% were back to in-person work, and 3.6% never received permission from employers to telecommute.

Table 3.7 Worker survey respondents' telecommuting feasibility during COVID-19, by reasonable accommodations due to disability(ies)

	Yes, and I am still telecommuting	Yes, and I am transitioning back to in-person work	Yes, but I am back to in-person work now	No, my employer never gave me permission, although I could
Not using reasonable accommodations (n=1107)	57.5%	19.7%	19.2%	3.6%
Using reasonable accommodations (n=145)	57.9%	20.7%	17.9%	3.4%
All respondents (n=1252)	57.5%	19.8%	19.1%	3.6%

Note: Chi-square test not feasible, due to small cell sizes.

There is a significant difference in telecommuting feasibility by presence of children at home ($\chi^2=7.99$, $p<0.05$; Table 3.8). While 60.7% of those without child(ren) at home had been and still were telecommuting at the time of the survey, 55.4% of those with child(ren) at home indicated so. Respondents with child(ren) at home were more likely to transition back to or were already back to in-person work, compared to those without child(ren) at home. Lastly, 4.4% of respondents without child(ren) at home indicated they could have telecommuted but their employers never gave them permission, but only 2.7% of those with child(ren) at home indicated so.

Table 3.8 Worker survey respondents' telecommuting feasibility during COVID-19, by whether having any child living at home

	Statistics				χ^2	Sig.
	Yes, and I am still telecommuting	Yes, and I am transitioning back to in-person work	Yes, but I am back to in-person work now	No, my employer never gave me permission, although I could		
No (n=519)	60.7%	17.1%	17.7%	4.4%	7.99	<0.05
Yes (n=668)	55.4%	21.7%	20.2%	2.7%		
Respondents with and without any child living at home during COVID-19 (n=1187)	57.7%	19.7%	19.1%	3.5%	--	

Note: Those who sometimes had any child living at home were not included in the analysis, due to small sample size.

Some respondents had caregiving responsibilities other than childcare, while others did not. For both categories, more than 55% of respondents had been telecommuting and still were at the time of the survey (Table 3.9). Some respondents had been telecommuting and were transitioning back to in-person

work, with 21.8% of respondents with other caregiving responsibilities and 19.2% without indicating so. While 12.7% of those with other caregiving responsibilities had been telecommuting but were already back to in-person work at the time of the survey, 21.0% of those without indicated so. Lastly, 1.8% of those with other caregiving responsibilities and 4.1% of those without indicated they could have telecommuted but their employers never gave them permission.

Table 3.9 Worker survey respondents’ telecommuting feasibility during COVID-19, by whether having caregiving responsibilities other than children

	Statistics			
	Yes, and I am still telecommuting	Yes, and I am transitioning back to in-person work	Yes, but I am back to in-person work now	No, my employer never gave me permission, although I could
No other caregiving responsibility (n=967)	55.6%	19.2%	21.0%	4.1%
Other caregiving responsibilities – elderly, spousal, or both (n=284)	63.7%	21.8%	12.7%	1.8%
All respondents (n=1251)	57.5%	19.8%	19.1%	3.6%

Note: For the independent variable, some categories were combined, due to small sample sizes. Chi-square test not feasible, due to small cell sizes.

There was a significant difference in telecommuting feasibility by the geographic area in which respondents lived ($\chi^2=23.66$, $p<0.0005$; Table 3.10). While 60.9% of respondents living in the Twin Cities indicated they had been and still were telecommuting, 52.5% of those living in Greater Minnesota indicated so. Some respondents had been telecommuting and were transitioning back to in-person work, with 21.1% of respondents living in the Twin Cities and 17.9% of those living in Greater Minnesota indicating so. While 24.5% of respondents living in Greater Minnesota indicated they had been telecommuting but were already back to in-person work at the time of the survey, only 15.5% of those living in the Twin Cities indicated so. Lastly, 5.2% of those living in Greater Minnesota indicated they could have telecommuted but their employers never gave them permission, but only 2.6% of those living in the Twin Cities indicated so.

Table 3.10 Worker survey respondents' telecommuting feasibility during COVID-19, by geographic area

	Statistics					χ^2	Sig.
	Yes, and I am still telecommuting	Yes, and I am transitioning back to in-person work	Yes, but I am back to in-person work now	No, my employer never gave me permission, although I could			
Twin Cities Metro Area (n=744)	60.9%	21.1%	15.5%	2.6%	23.66	<0.0005	
Greater Minnesota (n=503)	52.5%	17.9%	24.5%	5.2%			
All respondents (n=1247)	57.5%	19.8%	19.1%	3.6%	--		

Among respondents living in Greater Minnesota, 57.1% of those living in small urban areas and 50.8% of those living in rural areas were still telecommuting at the time of the survey. Twenty percent of small urban area residents and 17.4% of rural residents had been telecommuting and were transitioning back to in-person work at the time of the survey. Twenty percent of respondents in small urban areas and 25.9% of rural residents had been telecommuting but were back to in-person work at the time of the survey. Lastly, 3.2% of small urban area residents and 5.9% of rural area residents never received permission to telecommute, although they could have.

Table 3.11 Greater Minnesota respondents' telecommuting feasibility during COVID-19, small urban areas vs. rural areas

	Statistics			
	Yes, and I am still telecommuting	Yes, and I am transitioning back to in-person work	Yes, but I am back to in-person work now	No, my employer never gave me permission, although I could
Small urban areas in Greater MN (n=126)	57.1%	19.8%	19.8%	3.2%
Rural areas in Greater MN (n=374)	50.8%	17.4%	25.9%	5.9%
All Greater MN respondents (n=500)	52.4%	18.0%	24.4%	5.2%

Note: Chi-square test not feasible, due to small cell sizes.

3.5.1.2 The average number of weekly telecommuting hours during COVID-19

Age had a significant effect on the average number of weekly telecommuting hours during COVID-19 ($\beta=0.20$, $p<0.0005$; Table 3.12). The older a respondent was, the higher the average number of weekly

telecommuting hours would be. Gender, on the other hand, had no significant effect of the average number of weekly telecommuting hours ($\beta=-0.01$, $p>0.05$).

Table 3.12 Regression results for the average number of weekly telecommuting hours during COVID-19

Constant	14.23 (1.55)*
Gender (Female=1)	-0.01 (0.94)
Age in 2021	0.20 (0.04)*
R-squared	0.039
No. observations	895

*Note: Only females and males are included in analysis. Standard errors are reported in parentheses. * $p<0.0005$.*

There was no significant interaction effect of education level and household income on the average weekly telecommuting hours during the pandemic (Table 3.13). However, education level ($F=3.66$, $p<0.05$) and household income ($F=12.59$, $p<0.0005$) each had significant effects. Respondents with a high school or less education had significantly fewer weekly telecommuting hours compared to all the other respondents. Those with some college education or a two-year degree had much fewer weekly telecommuting hours compared to those with a four-year degree. In terms of household income, respondents with less than a \$50,000 annual household income had significantly lower weekly telecommuting hours compared to all other respondents.

Table 3.13 Average number of weekly telecommuting hours during COVID-19, by education level and household income

MANOVA	Df	Pillai	f Value	p Value
Education level	3	0.01	3.66	0.012
Household income	3	0.04	12.59	<0.0005
Education level * Household income	9	0.03	1.44	0.167

There was significant racial difference in the average number of weekly telecommuting hours ($F=22.66$, $p<0.0005$; Table 3.14). Specifically, White respondents had significantly higher weekly telecommuting hours compared to respondents of all other races.

Table 3.14 Average number of weekly telecommuting hours during COVID-19, by race

	ANOVA			
	Mean	Standard deviation	F	Sig.
White (n=788)	26.97 _{abcd}	26.97	22.66	<0.0005
Black or African American (n=109)	15.96 _a	13.87		
Asian or Asian American (n=62)	18.50 _b	15.42		
Multiracial (n=50)	20.96 _c	15.82		
All other (n=55)	18.85 _d	14.96		
All respondents (n=1064)	24.64	14.38	--	

Note: Means with pairing subscripts within rows are significantly different at the $p < 0.05$, based on Tukey post hoc paired comparisons.

There was no significant difference between Hispanic and non-Hispanic respondents in the average number of weekly telecommuting hours ($F = 1.25$, $p > 0.05$; Table 3.15). Hispanic respondents telecommuted an average of 25.67 hours per week, non-Hispanic respondents 24.42 hours.

Table 3.15 Average number of weekly telecommuting hours during COVID-19, by ethnicity

	ANOVA			
	Mean	Standard deviation	F	Sig.
Not Hispanic, Latino, or Spanish origin (n=861)	24.42	14.86	1.25	0.26
Hispanic, Latino, or Spanish origin (n=204)	25.67	12.15		
All respondents (n=1065)	24.66	14.38	--	

There was a significant difference in the average number of weekly telecommuting hours between those using reasonable accommodations due to disability(ies) and those who did not ($F = 36.57$, $p < 0.0005$; Table 3.16). While those not using reasonable accommodations telecommuted an average of 25.66 hours per week, those using reasonable accommodations only telecommuted an average of 17.81 hours per week.

Table 3.16 Average number of weekly telecommuting hours during COVID-19, by reasonable accommodation due to disability(ies)

	ANOVA			
	Mean	Standard deviation	F	Sig.
Not using reasonable accommodations (n=929)	25.66	14.22	36.57	<0.0005
Using reasonable accommodations due to disability(ties) (n=136)	17.81	13.64		
All respondents (n=1065)	24.66	14.38	--	

There was no significant difference in the average number of weekly telecommuting hours by the presence of child(ren) at home, caregiving responsibilities other than childcare, or their interaction effects (Table 3.17).

Table 3.17 Average number of weekly telecommuting hours during COVID-19, by having any child living at home and caregiving responsibilities other than child(ren)

MANOVA	Df	Pillai	f Value	p Value
Having any child living at home	1	0.001	0.08	0.779
Caregiving responsibilities other than child(ren)	1	0.002	1.05	0.305
Having any child living at home * Caregiving responsibilities other than child(ren)	1	0.003	0.18	0.667

There was significant difference in the average number of weekly telecommuting hours by the geographic area in which respondents lived ($F=7.94$, $p<0.01$; Table 3.18). Those living in Greater Minnesota telecommuted an average of 26.12 hours per week, but the number was 23.59 for those living in the Twin Cities.

Table 3.18 Average number of weekly telecommuting hours during COVID-19, by geographic area

	ANOVA			
	Mean	Standard deviation	F	Sig.
Twin Cities Metro Area (n=637)	23.59	14.61	7.94	0.005
Greater Minnesota (n=424)	26.12	13.89		
All respondents (n=1061)	24.60	14.38	--	

Among Greater Minnesota respondents, there was no significant difference in the average number of weekly telecommuting hours between residents in small urban areas and those in rural areas ($F=1.73$, $p>0.05$; Table 3.19).

Table 3.19 Average number of weekly telecommuting hours during COVID-19, by geographic type in Greater Minnesota

	ANOVA			
	Mean	Standard deviation	F	Sig.
Small urban areas in Greater MN (n=125)	29.74	13.27	1.73	0.189
Rural areas in Greater MN (n=371)	27.86	14.06		
All Greater MN respondents (n=496)	28.33	13.87	--	

There is significant interaction effect on the average number of weekly telecommuting hours during the pandemic ($F=2.01$, $p<0.05$; Table 3.20). Specifically, among respondents whose one-way commute time was 46 minutes or longer, those with very or somewhat heavy traffic had significantly more weekly telecommuting hours, compared to those with a little heavy, normal, or light commute traffic.

Table 3.20 Average number of weekly telecommuting hours during COVID-19, by one-way commute length and commute traffic

MANOVA	Df	Pillai	f Value	p Value
One-way commute length	3	1.06	1.08	0.36
Commute traffic	3	3.33	0.37	0.77
One-way commute length * Commute traffic	9	1.58	2.01	0.027

3.5.2 Potential for telecommuting post-pandemic

3.5.2.1 Telecommuting probability post-pandemic

Overall, 58.2% of respondents had a formal agreement with their employers for post-pandemic telecommuting, ranging from 35.5% of Gen Zers to 66.1% of Gen Xers (Table 3.21). In terms of having an informal agreement with one's employer for post-pandemic telecommuting, it ranged from 23.7% Gen Xers to 38.2% of Gen Zers. Approximately 9% of millennials and Gen Xers would not telecommute despite it being feasible, and 18.4% of Gen Zers indicated so. Lastly, 1.0% of Gen Xers indicated the nature of their jobs require in-person work, and 7.9% of Gen Zers indicated so.

Table 3.21 Worker survey respondents' telecommuting probability post-pandemic, by generation

	No, the nature of my job requires in-person work	No, although feasible to telecommute	Yes, informal agreement with employer	Yes, formal agreement with employer
Gen Z (n=76)	7.9%	18.4%	38.2%	35.5%
Millennials (n=524)	5.0%	9.4%	28.2%	57.4%
Gen X (n=384)	1.0%	9.1%	23.7%	66.1%
Baby Boomers & Older (n=113)	2.7%	15.9%	31.9%	49.6%
All respondents (n=1097)	3.6%	10.6%	27.7%	58.2%

Note: Chi-square test not feasible, due to small cell sizes.

There was no gender difference in telecommuting feasibility by gender ($\chi^2=6.08$, $p>0.05$; Table 3.22). Sixty percent of males and 55.0% of females had a formal agreement with their employers for post-pandemic telecommuting. Close to 30% of both genders had an informal agreement with their employers. Ten percent of females and 8.9% of males would not telecommute post-pandemic, despite it being feasible. Lastly, 2.5% of males and 5.4% of females indicated the nature of their jobs require in-person work.

Table 3.22 Worker survey respondents' telecommuting probability post-pandemic, by gender

	Statistics					χ^2	Sig.
	No, the nature of my job requires in-person work	No, although feasible to telecommute	Yes, informal agreement with employer	Yes, formal agreement with employer			
Female (n=516)	5.4%	10.1%	29.5%	55.0%	6.08	n.s.	
Males (n=404)	2.5%	8.9%	28.7%	59.9%			
Females & males (n=920)	4.1%	9.6%	29.1%	57.2%	--		

Note: Only females and males were included in the analysis, due to small sample sizes of other gender categories.

In terms of having a formal agreement with one’s employer for post-pandemic telecommuting, 60.0% of those with a graduate or professional degree, 61.2% of those with a four-year degree, 56.2% of those with some college education or a two-year degree, and 45.1% of those with high school or less education indicated so (Table 3.23). When it came to having an informal agreement with one’s employer, 36.3% of those with a high school or less education and approximately 27% of each of the other three categories indicated so. Approximately 10% of each category indicated they would not telecommute post-pandemic, despite it being feasible. Lastly, 2.6% of those with a graduate or professional degree and 2.5% of those with a four-year degree indicated the nature of their jobs require in-person work, while 5.3% of those with some college education or a two-year degree and 5.9% of those with a high school or less education indicated so.

Table 3.23 Worker survey respondents’ telecommuting probability post-pandemic, by education

	No, the nature of my job requires in-person work	No, although feasible to telecommute	Yes, informal agreement with employer	Yes, formal agreement with employer
High school or less (n=102)	5.9%	12.7%	36.3%	45.1%
Some college & 2-year degree (n=283)	5.3%	11.7%	26.9%	56.2%
4-year degree (n=482)	2.5%	9.8%	26.6%	61.2%
Graduate or professional degree (n=230)	2.6%	10.0%	27.4%	60.0%
All respondents (n=1097)	3.6%	10.6%	27.7%	58.2%

Note: Some categories were combined, due to small sample sizes. Chi-square test not feasible, due to small cell sizes.

The percentage of respondents with a formal post-pandemic telecommuting agreement with their employers steadily increased as household income increased, from 46.7% among those with less than a \$50,000 household income to 67.7% among those with a household income of \$150,000 or more (Table 3.24). While 34.9% of respondents with less than a \$50,000 household income had an informal post-pandemic telecommuting agreement with their employers, 29% of those with a \$50,000-\$99,999 household income did, and it was 24% for each of the \$100,000-\$149,999 and the \$150,000 and more household income ranges. Five percent of those with a \$150,000 or more household income indicated they would not be able to telecommute post-pandemic, although it would be feasible; for each of the other household income groups, more than 10% of respondents indicated so. Lastly, 6.2% of those with less than a \$50,000 household income and 4% of those with a \$50,000-\$99,999 household income indicated the nature of their jobs require in-person work; 1.8% of those with a \$100,000-\$149,999 and 2.7% of those with a \$150,000 or more household income indicated so.

Table 3.24 Worker survey respondents' telecommuting probability post-pandemic, by income level

	No, the nature of my job requires in-person work	No, although feasible to telecommute	Yes, informal agreement with employer	Yes, formal agreement with employer
Less than \$50,000 (n=195)	6.2%	12.3%	34.9%	46.7%
\$50,000-\$99,999 (n=389)	4.1%	12.9%	28.8%	54.2%
\$100,000-\$149,999 (n=284)	1.8%	10.6%	23.9%	63.7%
\$150,000 and more (n=226)	2.7%	5.3%	24.3%	67.7%
All respondents (n=1094)	3.6%	10.6%	27.7%	58.1%

Note: Some categories were combined, due to small sample sizes. Chi-square test not feasible, due to small cell sizes.

For feasibility of analysis, we grouped together American Indian, Alaska Native, Native Hawaiian, and Other into one “All other” group (Table 3.25). Sixty percent of White respondents, 56.4% of Asian or Asian American respondents, 52.7% of Black or African American respondents, 50% of multiracial respondents, and 47.9% of “all other” respondents had a formal agreement with their employers for post-pandemic telecommuting. Thirty-five percent of multiracial respondents and one-third of “all other” respondents had an informal post-pandemic telecommuting agreement with their employers; 27% of each of the other three racial groups indicated so. Fourteen percent of Black or African American respondents and 12.7% of Asian or Asian American respondents indicated they would not telecommute post-pandemic, although it would be feasible; 10% of each of the other three racial groups indicated so. Eight percent of “all other” respondents and 5.5% of Black or African American respondents indicated their jobs require in-person work; less than 5% of each of the other three racial groups indicated so.

Table 3.25 Worker survey respondents' telecommuting probability post-pandemic, by race

	No, the nature of my job requires in-person work	No, although feasible to telecommute	Yes, informal agreement with employer	Yes, formal agreement with employer
White (n=836)	3.0%	9.8%	27.0%	60.2%
Black or African American (n=110)	5.5%	14.5%	27.3%	52.7%
Asian or Asian American (n=55)	3.6%	12.7%	27.3%	56.4%
Multiracial (n=48)	4.2%	10.4%	35.4%	50.0%
All other (American Indian, Alaska Native, native Hawaiian, other) (n=48)	8.3%	10.4%	33.3%	47.9%
All respondents (n=1097)	3.6%	10.5%	27.7%	58.2%

Note: Some categories were combined, due to small sample sizes. Chi-square test not feasible, due to small cell sizes.

Among respondents with Hispanic origins, 72.4% had formal post-pandemic telecommuting agreements with employers, and 55.2% of non-Hispanic respondents indicated so (Table 26). Thirty percent of non-Hispanic respondents had informal post-pandemic telecommuting agreements with their employers, and 15.3% indicated so. Eleven percent of non-Hispanic respondents would not telecommute post-pandemic, although it would be feasible; 8.2% of Hispanic respondents indicated so. Lastly, 4.1% of Hispanic respondents indicated the nature of their jobs require in-person work, and 3.4% of non-Hispanic respondents indicated so.

Table 3.26 Worker survey respondents' telecommuting probability post-pandemic, by ethnicity

	No, the nature of my job requires in-person work	No, although feasible to telecommute	Yes, informal agreement with employer	Yes, formal agreement with employer
Not Hispanic, Latino, or Spanish origins (n=902)	3.4%	11.0%	30.4%	55.2%
Hispanic, Latino, or Spanish origins (n=196)	4.1%	8.2%	15.3%	72.4%
All respondents (n=1097)	3.6%	10.5%	27.7%	58.3%

Note: Some categories were combined, due to small sample sizes. Chi-square test not feasible, due to small cell sizes.

In terms of having a formal post-pandemic telecommuting agreement with one's employer, 52.3% of respondents with reasonable accommodations due to disability(ies) and 59% of those without did so (Table 3.27). When it comes to having an informal telecommuting agreement with one's employers, 32.6% of respondents with reasonable accommodations and 27% without did so. Eight percent of those with reasonable accommodations and 11% of those without would not telecommute post-pandemic, although it'd be feasible. Lastly, 6.8% of those with reasonable accommodations and 3.1% of those without indicated the nature of their jobs require in-person work.

Table 3.27 Worker survey respondents' telecommuting probability post-pandemic, by reasonable accommodations due to disability(ies)

	No, the nature of my job requires in-person work	No, although feasible to telecommute	Yes, informal agreement with employer	Yes, formal agreement with employer
Not using reasonable accommodations (n=967)	3.1%	10.9%	27.0%	59.0%
Using reasonable accommodations (n=132)	6.8%	8.3%	32.6%	52.3%
All respondents (n=1099)	3.5%	10.6%	27.7%	58.2%

Note: Chi-square test not feasible, due to small cell sizes.

There was a significant difference in post-pandemic telecommuting probability between those with child(ren) living at home and those without ($\chi^2=8.65$, $p<0.05$; Table 3.28). While 62.6% of those with child(ren) living at home had formal telecommuting agreements with their employers, 53.8% of those without did. While 25.6% of those with child(ren) living at home had informal agreements, 30.5% of

those without did. Twelve percent of those without child(ren) living at home indicated they would not telecommute post-pandemic, although it'd be feasible; 8.7% of those with child(ren) living at home did. Lastly, a little more than 3% of each category indicated the nature of their jobs require in-person work.

Table 3.28 Worker survey respondents' telecommuting probability post-pandemic, by whether having any child living at home

	Statistics					χ^2	Sig.
	No, the nature of my job requires in-person work	No, although feasible to telecommute	Yes, informal agreement with employer	Yes, formal agreement with employer			
No (n=439)	3.6%	12.1%	30.5%	53.8%	8.65	<0.05	
Yes (n=609)	3.1%	8.7%	25.6%	62.6%			
Respondents with and without any child living at home during COVID-19 (n=1048)	3.3%	10.1%	27.7%	58.9%	--		

Note: Those who sometimes had any child living at home were not included in the analysis, due to small sample size.

For feasibility of analysis, we grouped together all respondents with caregiving responsibilities other than childcare: elderly, spousal, or both. There was a significant difference in post-pandemic telecommuting probability between those with other caregiving responsibilities and those without ($\chi^2=11.32$, $p<0.05$; Table 3.29). Specifically, 66.2% of those with other caregiving responsibilities and 55.6% of those without had formal post-pandemic telecommuting agreements with their employers. Twenty percent of those with other caregiving responsibilities and 30% of those without had informal agreements with their employers. Approximately 10% of each group indicated they would not telecommute post-pandemic, although it'd be feasible. Lastly, a little more than 3% of each group indicated the nature of their jobs require in-person work.

Table 3.29 Worker survey respondents’ telecommuting probability post-pandemic, by whether having caregiving responsibilities other than children

	Statistics					χ^2	Sig.
	No, the nature of my job requires in-person work	No, although feasible to telecommute	Yes, informal agreement with employer	Yes, formal agreement with employer			
No other caregiving responsibility (n=826)	3.6%	10.7%	30.1%	55.6%	11.32	<0.05	
Other caregiving responsibilities – elderly, spousal, or both (n=272)	3.3%	10.3%	20.2%	66.2%			
All respondents (n=1098)	3.6%	10.6%	27.7%	58.2%	--		

Note: Some categories were combined, due to small sample sizes.

There was no significant difference in post-pandemic telecommuting probability between Twin Cities respondents and those living in Greater Minnesota ($\chi^2=7.16$, $p>0.05$; Table 3.30). Among Twin Cities respondents, 59.7% had formal agreements with their employers and 28.4% had informal agreements. Among Greater Minnesota respondents, 55.7% had formal agreements with their employers and 26.7% had informal agreements. Nine percent of Twin Cities respondents and 13% of Greater Minnesota respondents indicated they would not telecommute post-pandemic, although it’d be feasible. Lastly, 2.9% of Twin Cities respondents and 4.6% of Greater Minnesota respondents indicated the nature of their jobs require in-person work.

Table 3.30 Worker survey respondents’ telecommuting probability post-pandemic, by geographic area

	Statistics					χ^2	Sig.
	No, the nature of my job requires in-person work	No, although feasible to telecommute	Yes, informal agreement with employer	Yes, formal agreement with employer			
Twin Cities Metro Area (n=658)	2.9%	9.0%	28.4%	59.7%	7.16	n.s.	
Greater Minnesota (n=438)	4.6%	13.0%	26.7%	55.7%			
All respondents (n=1098)	3.6%	10.6%	27.7%	58.1%	--		

Among respondents from Greater Minnesota, 59.5% of those living in small urban areas and 54.6% of rural residents had a formal agreement with one’s employer for post-pandemic telecommuting (Table 3.31). Twenty-seven percent of small urban residents and 26.2% of rural residents had informal agreements with employers. Ten percent of small urban residents and 14.2% of rural residents would not telecommute post-pandemic, although it would be feasible to do so. Lastly, 3.6% of small urban residents and 4.9% of rural residents indicated the nature of their jobs require in-person work.

Table 3.31 Greater Minnesota respondents' telecommuting probability post-pandemic, small urban areas and rural areas

	No, the nature of my job requires in-person work	No, although feasible to telecommute	Yes, informal agreement with employer	Yes, formal agreement with employer
Small urban areas in Greater MN (n=111)	3.6%	9.9%	27.0%	59.5%
Rural areas in Greater MN (n=324)	4.9%	14.2%	26.2%	54.6%
All Greater MN respondents (n=435)	4.6%	13.1%	26.4%	55.9%

Note: Chi-square test not feasible, due to small cell sizes.

3.5.2.2 Telecommuting frequency post-pandemic

If respondents indicated they would be able to telecommute post-pandemic, by having either a formal or an informal agreement with one's employer, we asked a follow-up question: How frequently will you be able to telecommute post-pandemic? In this section, we assess how post-pandemic telecommuting frequency differs by demographic characteristics, usage of reasonable accommodations, caregiving responsibilities, geographic area in which one resides, and commute situations.

Post-pandemic telecommuting frequency differed significantly between generations ($\chi^2=45.13$, $p<0.0005$; Table 3.32). While 47.8% of baby boomers and older respondents would telecommute 4-5 days a week, only 21.4% of Gen Z respondents would. While 39.1% of Gen Z respondents would telecommute 2-3 days a week, only 19.6% of Gen Z respondents would. Close to 60% of Gen Z respondents (58.9%) would telecommute no more than one day a week post-pandemic, 27.7% of millennials would. In short, Gen Z respondents are a lot more likely to telecommute infrequently.

Table 3.32 Worker survey respondents' telecommuting frequency post-pandemic, by generation

	Statistics				
	No more than 1 day a week	2-3 days a week	4-5 days a week	χ^2	Sig.
Gen Z (18-21 years old) (n=56)	58.9%	19.6%	21.4%	45.13	<0.0005
Millennials (23-39 years old) (n=448)	27.7%	35.7%	36.6%		
Gen X (40-56 years old) (n=345)	18.8%	39.1%	42.0%		
Baby Boomers & Older (57 and older) (n=90)	22.2%	30.0%	47.8%		
All respondents (n=939)	25.8%	35.5%	38.8%	--	

Note: Some categories were combined, due to small sample sizes.

There was significant gender difference in post-pandemic telecommuting frequency ($\chi^2=7.69$, $p<0.05$; Table 3.33). While 43.1% of females would telecommute 4-5 days a week, 33.5% of males would. While 37.7% of males would telecommute 2-3 days a week, 31.7% of females would. Lastly, 25.2% of females

and 28.8% of males would telecommute no more than one day a week. In summary, females would telecommute more frequently than males post-pandemic.

Table 3.33 Worker survey respondents' telecommuting frequency post-pandemic, by gender

	Statistics				
	No more than 1 day a week	2-3 days a week	4-5 days a week	χ^2	Sig.
Females (n=436)	25.2%	31.7%	43.1%	7.69	<0.05
Male (n=358)	28.8%	37.7%	33.5%		
All respondents (n=794)	26.8%	34.4%	38.8%	--	

Note: Only females and males were included in the analysis, due to small sample sizes of other gender categories. For the dependent variable, some categories were combined, due to small sample sizes.

There was significant difference in post-pandemic telecommuting frequency by education level ($\chi^2=31.93$, $p<0.0005$; Table 3.34). Respondents with some college education or a two-year degree were the most likely to telecommute 4-5 days post-pandemic (44.2%), while those with a high school or less education were the least likely (26.5%). Respondents with a four-year degree (39.3%) or a graduate/professional degree (37.3%) were more likely to telecommute 2-3 days a week compared to those with some college education or a two-year degree (30.5%) or those with high school or less education (24.1%). Lastly, respondents with a high school or less education (49.4%) were a lot more likely to telecommute no more than one day a week than the other respondents.

Table 3.34 Worker survey respondents' telecommuting frequency post-pandemic, by education level

	Statistics				
	No more than 1 day a week	2-3 days a week	4-5 days a week	χ^2	Sig.
High school or less (n=83)	49.4%	24.1%	26.5%	31.93	<0.0005
Some college & 2-year degree (n=233)	25.3%	30.5%	44.2%		
4-year degree (n=422)	22.3%	39.3%	38.4%		
Graduate or professional degree (n=201)	23.9%	37.3%	38.8%		
All respondents (n=939)	25.8%	35.4%	38.9%	--	

Note: For independent and dependent variables, some categories were combined, due to small sample sizes.

There was significant difference in post-pandemic telecommuting frequency by pre-pandemic pre-tax household income ($\chi^2=45.16$, $p<0.0005$; Table 3.35). Respondents with less than a \$50,000 household income were a lot more likely to telecommute no more than one day a week while a lot less likely to telecommute 2-3 days a week, compared to the other respondents. Meanwhile, there was not much difference in telecommuting 4-5 days a week post-pandemic across income groups.

Table 3.35 Worker survey respondents’ telecommuting frequency post-pandemic, by household income

	Statistics				χ^2	Sig.
	No more than 1 day a week	2-3 days a week	4-5 days a week			
Less than \$50,000 (n=159)	45.3%	18.9%	35.8%	45.16	<0.0005	
\$50,000-\$99,999 (n=322)	21.7%	37.0%	41.3%			
\$100,000-\$149,999 (n=249)	22.9%	41.0%	36.1%			
\$150,000 and more (n=207)	20.8%	39.1%	40.1%			
All respondents (n=937)	25.8%	35.4%	38.7%	--		

Note: For independent and dependent variables, some categories were combined, due to small sample sizes.

Close to half of respondents in “all other” racial groups (48.7%) and 42.0% of Black or African American respondents would telecommute no more than one day a week post-pandemic (Table 3.36). Meanwhile, 29.3% of multiracial respondents, 23.9% of Asian or Asian American respondents, and 22.3% of White respondents would telecommute no more than one day a week post-pandemic. Close to 40% of White (38.2%) and Asian or Asian American (37.0%) respondents would telecommute 2-3 days a week, while 26.8% of multiracial respondents and 26.1% of Black or African American respondents would. Only 12.8% of respondents in the “all other” racial groups would telecommute 2-3 days a week. When it comes to telecommuting 4-5 days a week post-pandemic, 43.9% of multiracial respondents, 39.5% of White respondents, 39.1% of Asian or Asian American respondents, and 38.5% of respondents in the “all other” racial groups would, while 31.8% of Black of African American respondents would.

Table 3.36 Worker survey respondents’ telecommuting frequency post-pandemic, by race

	No more than 1 day a week	2-3 days a week	4-5 days a week
White (n=726)	22.3%	38.2%	39.5%
Black or African American (n=88)	42.0%	26.1%	31.8%
Asian or Asian American (n=46)	23.9%	37.0%	39.1%
Multiracial (n=41)	29.3%	26.8%	43.9%
All other (American Indian, Alaska Native, native Hawaiian, other) (n=39)	48.7%	12.8%	38.5%
All respondents (n=940)	25.6%	35.4%	38.9%

Note: For independent and dependent variables, some categories were combined, due to small sample sizes. Chi-square test not feasible, due to small cell sizes.

There was no significant difference in post-pandemic telecommuting frequency between respondents with Hispanic origin and those without ($\chi^2=4.70$, $p>0.05$; Table 3.37). Among respondents with Hispanic origin, 33.7% would telecommute 4-5 days a week, 42.4% 2-3 days a week, and 23.8% no more than one day a week. Among respondents without Hispanic origin, 40.1% would telecommute 4-5 days a week, 33.8% 2-3 days a week, and 26.1% no more than one day a week.

Table 3.37 Worker survey respondents' telecommuting frequency post-pandemic, by ethnicity

	Statistics				
	No more than 1 day a week	2-3 days a week	4-5 days a week	χ^2	Sig.
Not Hispanic, Latino, or Spanish origin (n=769)	26.1%	33.8%	40.1%	4.70	n.s.
Hispanic, Latino, or Spanish origin (n=172)	23.8%	42.4%	33.7%		
All respondents (n=941)	25.7%	35.4%	38.9%	--	

Note: For independent and dependent variables, some categories were combined, due to small sample sizes.

There was significant difference in post-pandemic telecommuting frequency between respondents using reasonable accommodations due to disability(ies) and those who did not ($\chi^2=9.26$, $p<0.05$; Table 3.38). Surprisingly, while 24.1% of respondents not using reasonable accommodations would telecommute no more than one day a week, 37.5% of those who do would. Additionally, 39.8% of those not using reasonable accommodations would telecommute 4-5 days a week, while 32.1% of those who do would.

Table 3.38 Worker survey respondents' telecommuting frequency post-pandemic, by reasonable accommodations due to disability(ies)

	Statistics				
	No more than 1 day a week	2-3 days a week	4-5 days a week	χ^2	Sig.
Not using reasonable accommodations (n=829)	24.1%	36.1%	39.8%	9.26	<0.05
Using reasonable accommodations (n=112)	37.5%	30.4%	32.1%		
All respondents (n=941)	25.7%	35.4%	38.9%	--	

Note: For dependent variable, some categories were combined, due to small sample sizes.

There was significant difference in post-pandemic telecommuting frequency between respondents with child(ren) living at home during the pandemic and those without ($\chi^2=18.99$, $p<0.0005$; Table 3.39). One-third of respondents with child(ren) living at home during the pandemic would telecommute 4-5 days a week post-pandemic, while 47.4% of those without would. Forty percent of those with child(ren) living at home during the pandemic would telecommute 2-3 days a week post-pandemic, while 30.0% of those without would. Lastly, 27.0% of those with child(ren) living at home during the pandemic would telecommute no more than one day a week post-pandemic, and 22.6% of those without would.

Table 3.39 Worker survey respondents' telecommuting frequency post-pandemic, by whether having any child living at home during the pandemic

	Statistics				
	No more than 1 day a week	2-3 days a week	4-5 days a week	χ^2	Sig.
No (n=367)	22.6%	30.0%	47.4%	18.99	<0.0005
Yes (n=537)	27.0%	39.9%	33.1%		
All respondents (n=904)	25.2%	35.8%	38.9%	--	

Note: Those who sometimes had any child living at home were not included in the analysis, due to small sample size. For dependent variable, some categories were combined, due to small sample sizes.

There was no significant difference in post-pandemic telecommuting frequency between respondents with caregiving responsibilities other than children and those without ($\chi^2=2.13$, $p>0.05$; Table 3.40). Among respondents with caregiving responsibilities other than childcare, 34.9% would telecommute 4-5 days a week, 38.7% 2-3 days a week, and 26.4% no more than one day a week. Among respondents with no other caregiving responsibilities, 40.0% would telecommute 4-5 days a week, 34.5% 2-3 days a week, and 25.5% no more than one day a week.

Table 3.40 Worker survey respondents' telecommuting frequency post-pandemic, by whether having caregiving responsibilities other than children

	Statistics				
	No more than 1 day a week	2-3 days a week	4-5 days a week	χ^2	Sig.
No other caregiving responsibility (n=705)	25.5%	34.5%	40.0%	2.13	n.s.
Other caregiving responsibilities – elderly, spousal, or both (n=235)	26.4%	38.7%	34.9%		
All respondents (n=940)	25.7%	35.5%	38.7%	--	

Note: For independent and dependent variables, some categories were combined, due to small sample sizes.

There was significant difference in post-pandemic telecommuting frequency between respondents living in the Twin Cities Metro Area and those living in Greater Minnesota ($\chi^2=6.57$, $p<0.05$; Table 3.41). While 29.4% of Greater Minnesota respondents would telecommute no more than one day a week, 23.5% of Twin Cities respondents would. Close to 40% of Twin Cities respondents (38.2%) would telecommute 2-3 days a week, while 30.8% of Greater Minnesota respondents would. In terms of telecommuting 4-5 days a week post-pandemic, 39.7% of Greater Minnesota respondents and 38.2% of Twin Cities respondents would.

Table 3.41 Worker survey respondents' telecommuting frequency post-pandemic, by geographic area

	Statistics				
	No more than 1 day a week	2-3 days a week	4-5 days a week	χ^2	Sig.
Twin Cities Metro Area (n=578)	23.5%	38.2%	38.2%	6.57	<0.05
Greater Minnesota (n=360)	29.4%	30.8%	39.7%		
All respondents (n=938)	25.8%	35.4%	38.8%	--	

Note: For dependent variable, some categories were combined, due to small sample sizes.

In Greater Minnesota, there was no significant difference in post-pandemic telecommuting frequency between those living in small urban areas and those living in rural areas ($\chi^2=0.96$, $p>0.05$; Table 3.42).

Table 3.42 Greater Minnesota respondents' telecommuting frequency post-pandemic, small urban areas and rural areas

	Statistics				
	No more than 1 day a week	2-3 days a week	4-5 days a week	χ^2	Sig.
Small urban areas in Greater MN (n=96)	26.0%	30.2%	43.8%	0.96	0.62
Rural areas in Greater MN (n=261)	30.7%	30.7%	38.7%		
All Greater MN respondents (n=357)	29.4%	30.5%	40.1%	--	

Note: For dependent variable, some categories were combined, due to small sample sizes.

There was no significant difference in post-pandemic telecommuting frequency by one-way commute length ($\chi^2=9.82$, $p>0.05$; Table 3.43). The percentage of respondents telecommuting 4-5 days a week post-pandemic ranged from 31.8% among those whose one-way commute lasts 16-30 minutes to 40.4% among those whose one-way commute was no longer than 15 minutes. The percentage of respondents telecommuting 2-3 days a week post-pandemic ranged from 30.6% among those whose one-way commute was no longer than 15 minutes to 42.4% among those whose one-way commute lasts 16-30 minutes. The percentage of respondents telecommuting no more than one day a week post-pandemic ranged from 22.8% among those whose one-way commute lasts 31-45 minutes to 29.0% among those whose one-way commute was no more than 15 minutes.

Table 3.43 Average number of weekly telecommuting hours during COVID-19, by one-way commute length

	Statistics				
	No more than 1 day a week	2-3 days a week	4-5 days a week	χ^2	Sig.
15 minutes or less (n=245)	29.0%	30.6%	40.4%	9.82	n.s.
16-30 minutes (n=336)	28.9%	39.3%	31.8%		
31-45 minutes (n=184)	22.8%	42.4%	34.8%		
46 minutes or more (n=115)	26.1%	35.7%	38.3%		
All respondents (n=880)	27.3%	37.0%	35.7%	--	

Note: For independent and dependent variables, some categories were combined, due to small sample sizes

There was no significant difference in post-pandemic telecommuting frequency by one-way commute traffic ($\chi^2=7.49$, $p>0.05$; Table 3.44). In terms of telecommuting 4-5 days a week post-pandemic, 36.9% of those with a little heavy commute traffic, 35.6% of those with normal traffic, 31.8% of those with somewhat or heavy traffic, and another 31.8% of those with light traffic would. Approximately 35% of those with light commute traffic (34.4%) and those with a little heavy commute traffic (35.4%) would telecommute 2-3 days a week, while 38.1% of those with normal traffic and 43.6% with somewhat or very heavy traffic would. Lastly, 33.9% of those with light commute traffic would telecommute no more than one day a week, 27.7% of those with a little heavy traffic, 26.3% of those with normal traffic, and 24.6% with somewhat or very heavy traffic would.

Table 3.44 Average number of weekly telecommuting hours during COVID-19, by one-way commute traffic

	Statistics			χ^2	Sig.
	No more than 1 day a week	2-3 days a week	4-5 days a week		
Very or somewhat heavy (n=211)	24.6%	43.6%	31.8%	7.49	n.s.
A little heavy (n=195)	27.7%	35.4%	36.9%		
Normal (n=247)	26.3%	38.1%	35.6%		
A little, somewhat, or very light (n=192)	33.9%	34.4%	31.8%		
All respondents (n=845)	27.9%	38.0%	34.1%	--	

Note: For independent and dependent variables, some categories were combined, due to small sample sizes

CHAPTER 4: EMPLOYER SURVEY IMPLEMENTATION AND FINDINGS

4.1 SAMPLE SOURCES

The employer survey sample came from two sources. See Appendix D for the list of samples sources:

1. The research team paid for a sponsored message, which was sent to the Minnesota Society of Human Resource Management.
2. The survey was distributed through the contacts and professional networks of the research team, MNDOT personnel, and the Technical Assistance Panel of the project (see Appendix A for details).

4.2 SURVEY IMPLEMENTATION

The survey instrument was developed based on literature review, focus group results, and consultation with the Technical Assistance Panel of the project. After the survey questions were approved, the survey was created and tested in Qualtrics. A PDF version of the survey exported from Qualtrics is in Appendix F. The survey was launched in mid-July 2021 and closed at the end of September 2021, hence in the field for data collection for a total of two and a half months.

4.3 ANALYZING WORKER SURVEY DATA

Completed responses were downloaded from Qualtrics. The data was cleaned and checked in SPSS (version 26.0), a statistical data analysis software. Descriptive analysis was performed for each variable.

4.4 EMPLOYER SURVEY DESCRIPTIVE STATISTICS

4.4.1 Employer characteristics

Respondents represent a variety of industries (Figure 4.1). Specifically, 13.1% came from manufacturing, 12.1% from professional and business services, and 10.1% from public administration. At least six percent came from financial activities (8.6%), transportation and utilities (8.1%), health service (7.6%), education (7.6%), and other services (6.6%). At least four percent came from construction (4.5%), wholesale and retail trade (4.0%), and agriculture, forestry, fishing and hunting (4.0%). Lastly, 2.5% came from leisure and hospitality, 1.5% from information, and 0.5% from mining, quarrying, oil and gas extraction.

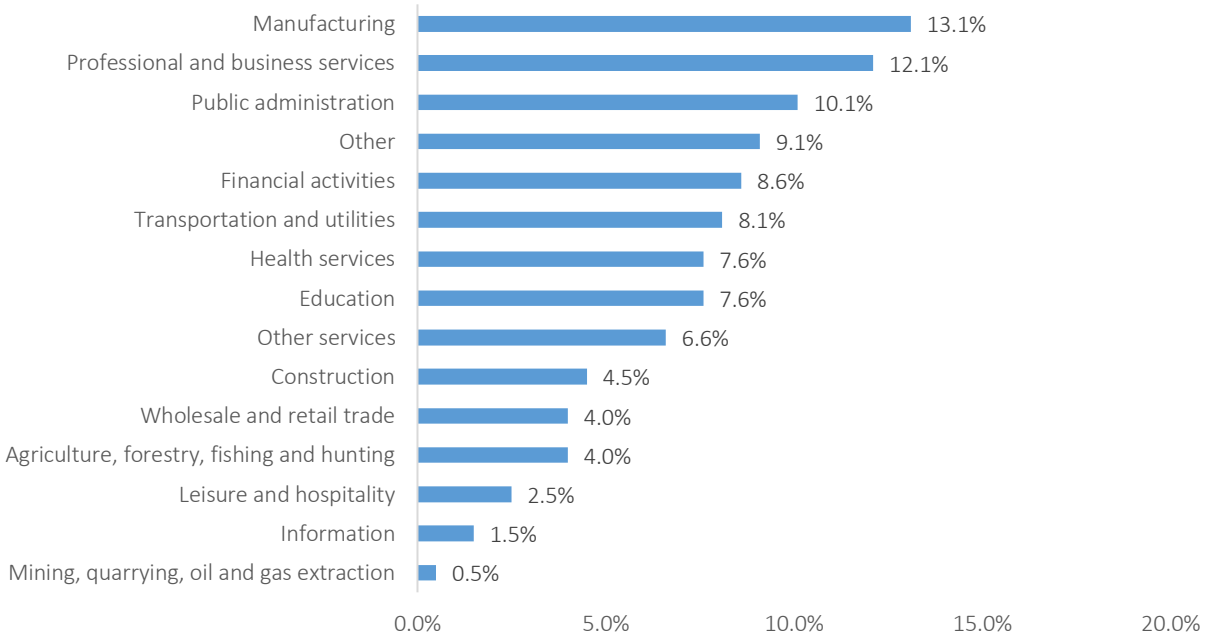


Figure 4.1 Employer survey respondents' industry (n=198)

Approximately two-thirds of respondents worked for entities that operate solely in Minnesota (66.2%; Figure 4.2). A little more than a quarter worked for entities that are headquartered in Minnesota with operations outside of the state (25.8%). Lastly, 8.1% of respondents worked for entities that had operations in Minnesota but are headquartered outside of the state.

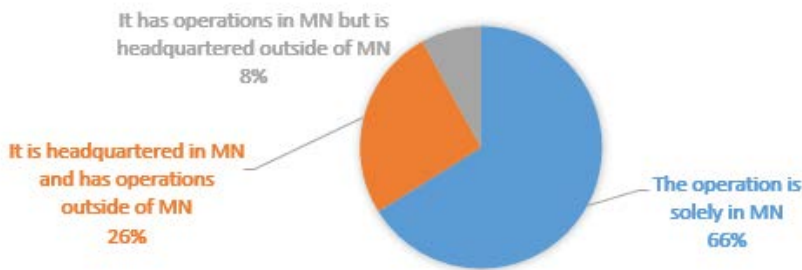


Figure 4.2 Operations of employer survey respondents (n=198)

Among those with solely operations in Minnesota, 61.0% had less than 100 employees, 18.6% 100-499 employees, 8.5% 500-999 employees, and 11.9% had 1,000 or more employees (Figure 4.3). Among those headquartered in Minnesota with operations outside of the state, 20.0% had less than 100 employees in their Minnesota headquarters; half had 100-499 employees in their Minnesota headquarters, 10.0% 500-999 employees, and 20.0% had 1,000 or more employees at their Minnesota headquarters. Among those with operations in Minnesota but headquartered outside of the state,

25.0% had less than 100 employees at their Minnesota operations, 68.8% 100-499 employees; none had 500-999 employees, and 6.3% had 1,000 or more employees at their Minnesota operations.

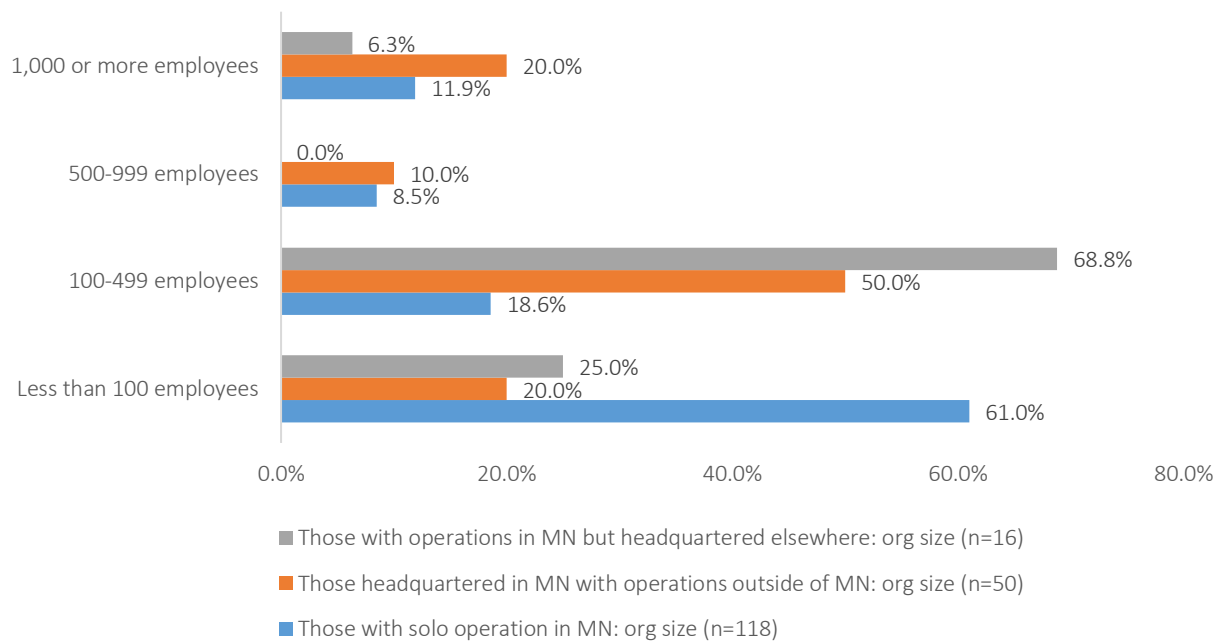


Figure 4.3 Operation size by type among employer survey respondents

Regarding reasonable accommodations due to disability(ies), 61.5% had employees who started telecommuting due to the pandemic and used reasonable accommodations. A little more than 20% had employees already telecommuting prior to the pandemic because of reasonable accommodations (21.9%). Lastly, 16.6% were not sure.

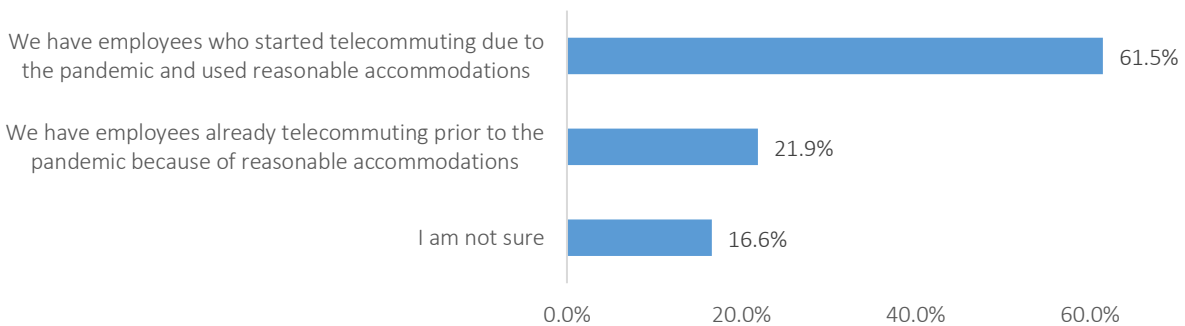


Figure 4.4 Employers' reasonable accommodation practice among survey respondents (n=187)

When asked whether employers had a telecommuting policy prior to the pandemic, 25.8% of respondents indicated the employers did not, as the company culture preferred in-person work (Figure 4.5), while another 23.2% indicated no, as the nature of the operations required in-person work. Close to 20% indicated they had only informal arrangements with employees (18.2%), 16.67% had a formal policy, and 16.2% had tailored telecommuting agreements with individual employees.



Figure 4.5 Whether employers had a telecommuting policy prior to the pandemic (n=198)

The majority of respondents (81.8%) indicated the employers had employees who are considered as essential during COVID-19 (Figure 4.6). Fifteen percent indicated no, while 3% of respondents did not know.

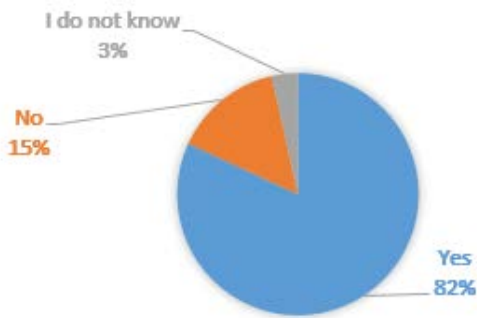


Figure 4.6 Whether employers had employees considered as essential during the pandemic (n=198)

4.4.2 Telecommuting during the COVID-19 pandemic

More than one-third (34.8%) of employers indicated most of their employees worked in-person due to the nature of their work (Figure 4.7), although only 23.2% of respondents indicated the employers did not have a telecommuting policy prior to the pandemic because the nature of the operations required in-person work (Figure 4.5, above). More than a quarter of respondents (26.8%) let whoever could telecommute do so without a formal policy, and 17.2% let whoever could telecommute do so while developing a formal policy. Fourteen percent of employers had had a telecommuting policy prior to the pandemic and continued using the policy, while 7.1% simplified the telecommuting policy they had had prior to the pandemic.

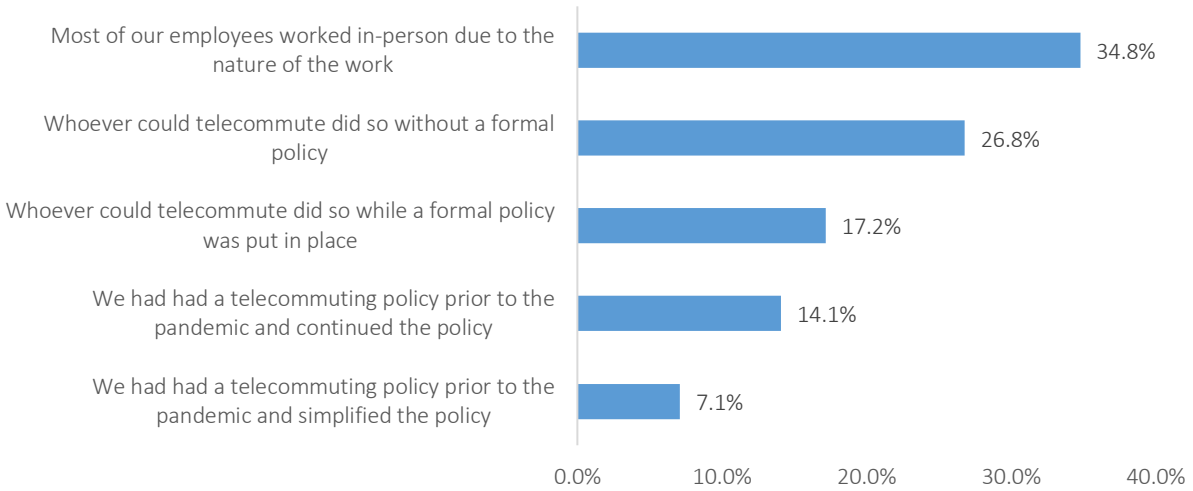


Figure 4.7 Employers' telecommuting practice during COVID-19 (n=198)

More than two-thirds of respondents (69.2%) indicated there was no change in expectation of employee performance during the pandemic (Figure 4.8). Seventeen percent indicated performance expectation became more results-driven, 9.1% identified lower expectation, and 4.5% indicated higher expectation.

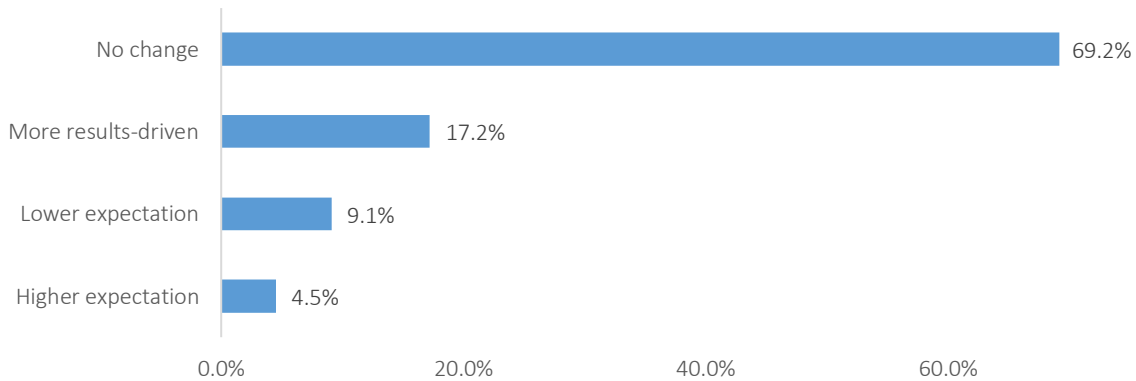


Figure 4.8 Employers' expectation of employee performance during the pandemic (n=198)

When it comes to employee productivity, 9.7% of respondents indicated their employees got a lot more done, 18.1% somewhat more, and 9.7% a little more (Figure 4.9). Forty percent believed productivity remained the same as pre-pandemic. Fifteen percent indicated their employees got a little less done, 5.9% somewhat less, and 4.3% a lot less.

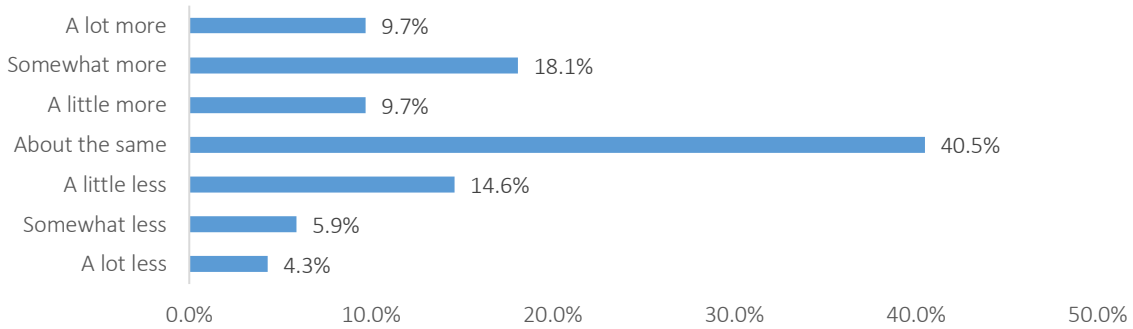


Figure 4.9 Employers' perception of employee productivity during COVID-19 (n=185)

We also asked about employers' support of employees' well-being, work-life balance, and schedule flexibility, as well as supervisors' trust in employees during the pandemic. Ninety percent of respondents somewhat or strongly agreed their organizations supported employees' well-being, and 86.3% somewhat or strongly agreed their organizations gave employees schedule flexibility as much as possible. A little more than 80% somewhat or strongly agreed supervisors supported work-life balance (81.7%), and 74.9% somewhat or strongly agreed supervisors trusted employees while telecommuting.

Meanwhile, 17.8% stayed neutral about supervisors' trust of employees during telecommuting, and 13.2% stayed neutral about supervisors' support of work-life balance. Additionally, 8.6% stayed neutral regarding support of schedule flexibility, and 7.3% stayed neutral on organizational support of employees' well-being.

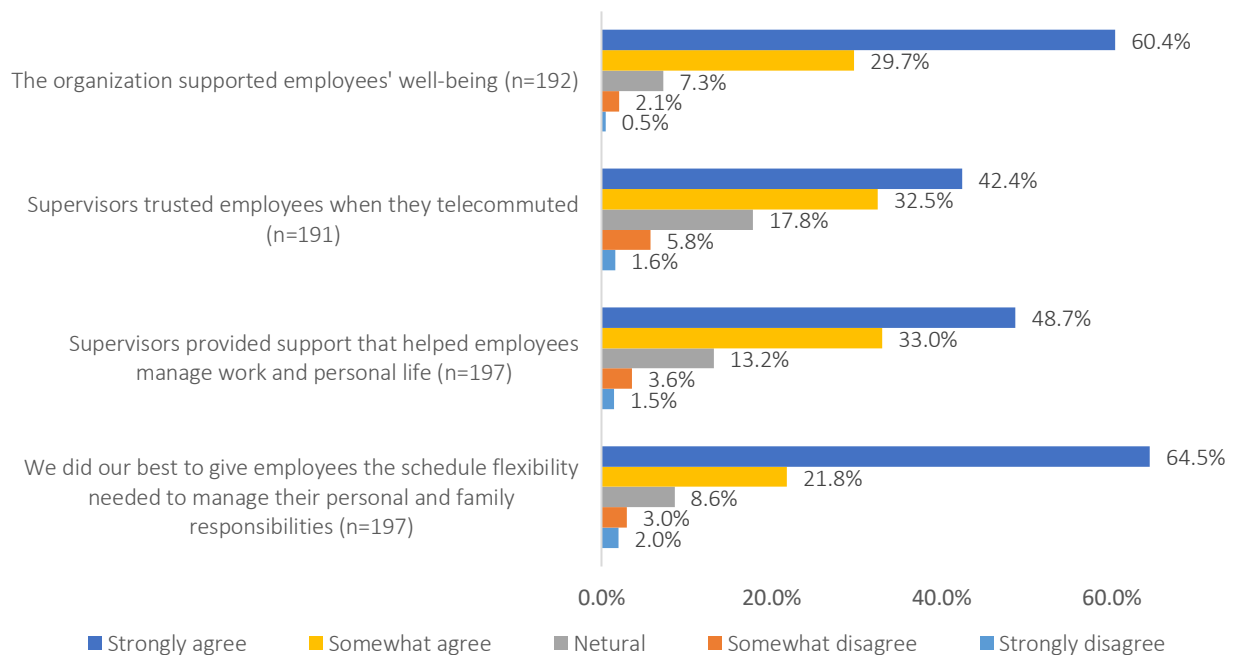


Figure 4.10 Employers' support of employees during the pandemic

When it comes to assisting employees with equipment and office furniture while telecommuting during the pandemic, 78.3% of employers let employees take equipment home (Figure 4.11), and 33.8% let employees take office furniture home. Close to 20% purchased equipment and shipped it to employees' residence (18.7%), and 15.2% shipped equipment to employees' residence. Nine percent provided employees with a stipend to purchase equipment, 8.1% provided a stipend to purchase office furniture, and 7.6% paid for home internet cost (partial or full). Lastly, 3.0% purchased office furniture and shipped it to employees' residence, and 2.5% shipped office furniture to employees' residence.

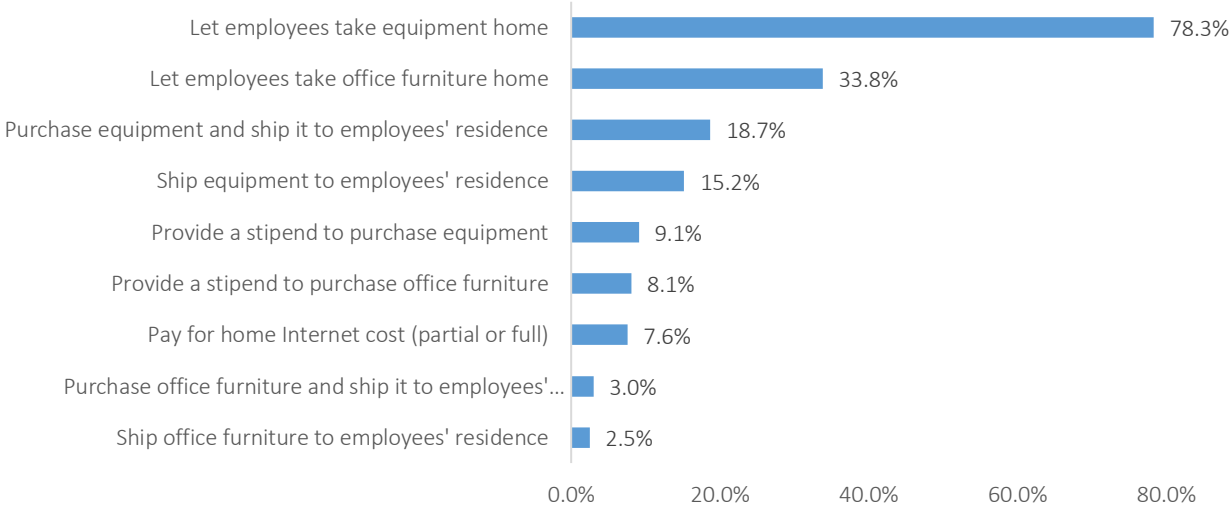


Figure 4.11 Employers' assistance with equipment and office furniture during COVID-19

4.4.3 Telecommuting post-pandemic

Close to 40% of respondents (38.4%) indicated the employers have not developed a telecommuting policy for the future at the time of the survey (Figure 4.12), while another 36.9% indicated the employers have already developed a policy. A little more than 20% of respondents (22.2%) indicated the employers were developing a post-pandemic telecommuting policy at the time of the survey, and 2.5% did not know.

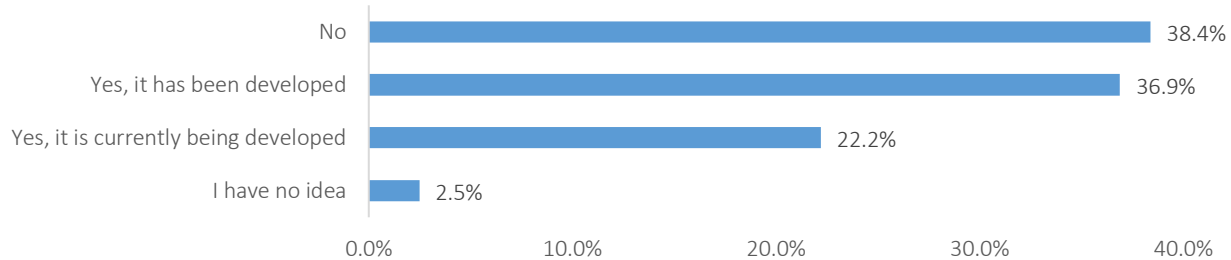


Figure 4.12 Employers' development of a post-pandemic telecommuting policy (n=198)

To the respondents whose employers either already developed or were developing a post-pandemic telecommuting policy, we asked a follow-up question: has your organization sought employees' input when developing a telecommuting policy for the future? The majority of respondents (73.3%) said yes, 19.0% said no, and 7.8% did not know (Figure 4.13).

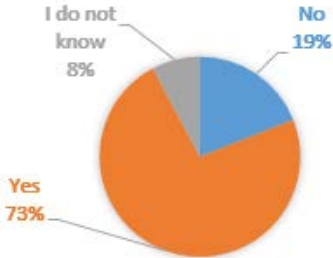


Figure 4.13 Whether employers sought employees' input when developing a telecommuting policy, among those whose employers either had developed or were developing a policy (n=116)

Thirty percent of respondents indicated the employers would support telecommuting 1-3 days a week (Figure 4.13), followed by infrequently (24.4%), and as many days as desired (18.8%). Twelve percent of respondents were not sure, another 11.2% said no, and 3.6% indicated the employers would support telecommuting 1-3 days a month.

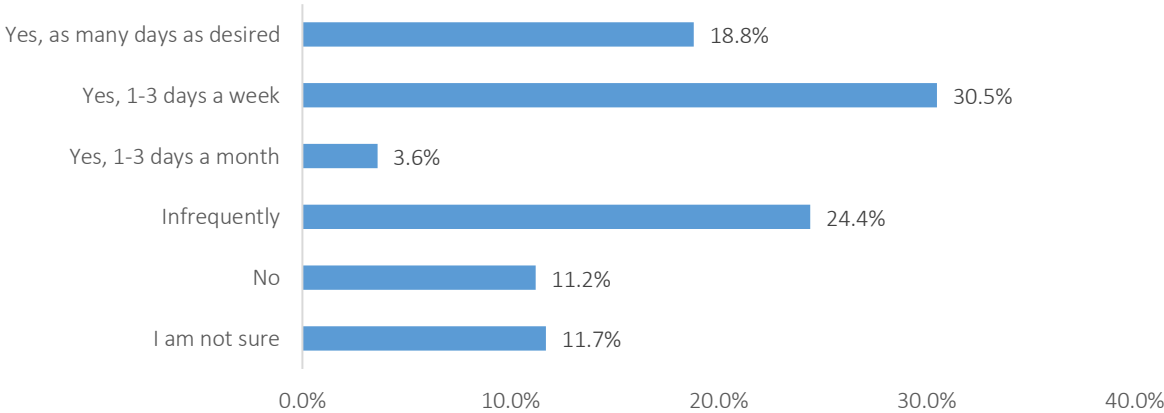


Figure 4.14 Employers' support of telecommuting in the future, as long as the nature of work allows (n=197)

We asked about employers' post-pandemic telecommuting arrangements. More than 70% of respondents (71.4%) indicated that most employees would return to in-person work, and 65.2% indicated some staff will work in the office every day, while others will partially or completely telecommute (Figure 4.14). One-third of respondents indicated most employees would telecommute a few days of the week and work in the office the other days. Close to a quarter of respondents (23.5%) indicated that different teams would be in the office on different days, with only a few employees in the office almost every day. Lastly, 14.6% of respondents indicated that most employees would telecommute for as many days as they would like.

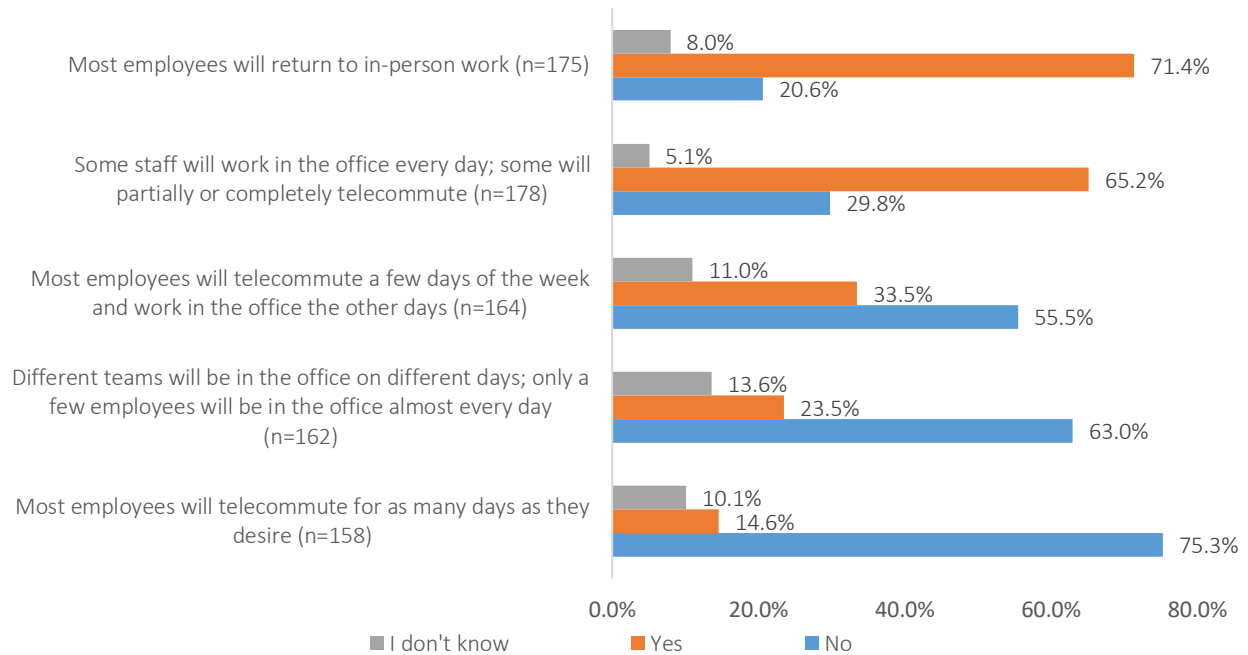


Figure 4.15 Employers' post-pandemic telecommuting arrangements

In terms of continuous support of schedule flexibility post-pandemic, 31.8% strongly agreed that the employers would continue to support schedule flexibility post-pandemic, and 39.4% somewhat agreed (Figure 4.15). Meanwhile, 5.1% somewhat disagreed that the employers would continue to support schedule flexibility post-pandemic, and 8.1% strongly disagreed. Thirteen percent stayed neutral, and 2.5% did not know.

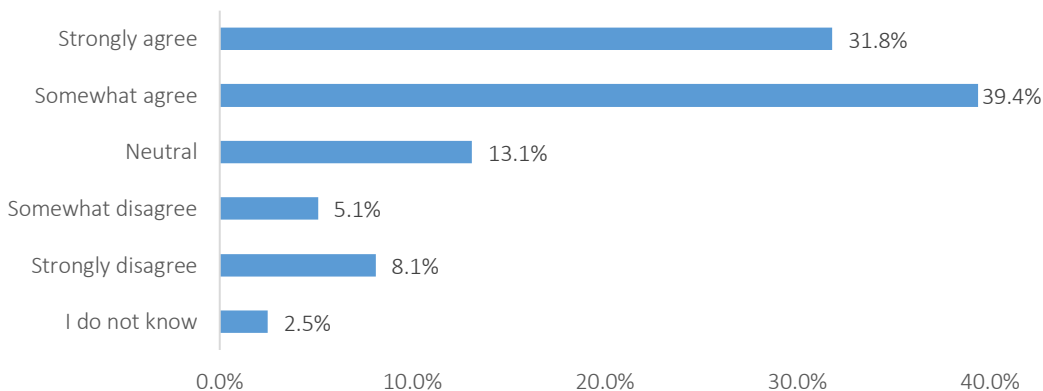


Figure 4.16 Employers' continuous support of schedule flexibility post-pandemic to help employees manage work and personal life (n=198)

When asked if their organizations would recruit talent from outside of Minnesota who will work completely remotely, 33.8% chose no, as the nature of the operation requires in-person work (Figure 4.16). A little more than a quarter (26.3%) chose yes, as long as the nature of the job is feasible for

telecommuting. Nineteen percent indicated no, as the organization culture prefers in-person work. Fifteen percent were not sure, and 5.6% indicated no, due to overly complicated tax and regulations.

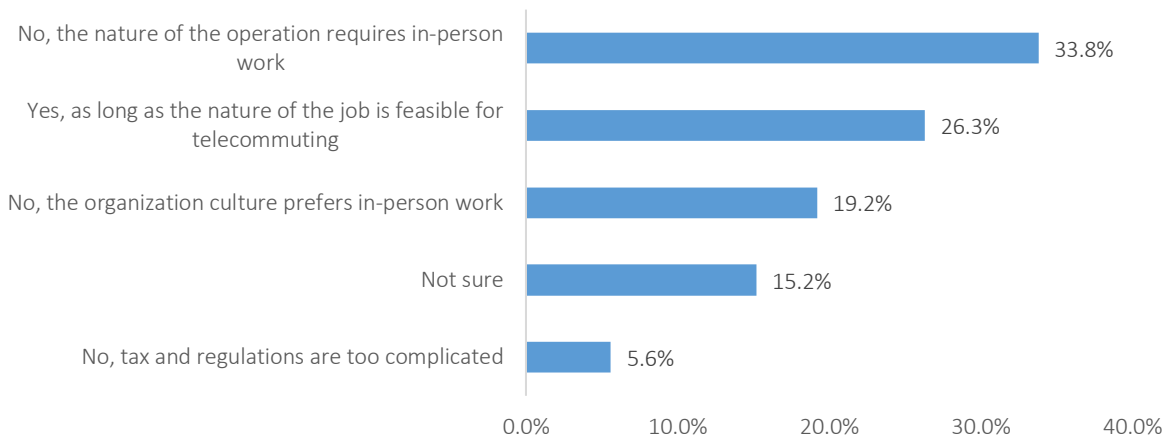


Figure 4.17 Possibility of recruiting talent from outside of Minnesota who will work completely remotely (n=198)

4.5 COMPARISON OF RESPONSES TO THE QUESTIONS ASKED IN BOTH EMPLOYER AND WORKER SURVEYS

4.5.1 Employer characteristics

Compared to respondents of the worker survey, more respondents to the employer survey represented the following industries: manufacturing, public administration, leisure and hospitality, and agriculture, forestry, and hunting (Figure 4.17). Meanwhile, more worker survey respondents worked in information, wholesale and retail trade, and health services.

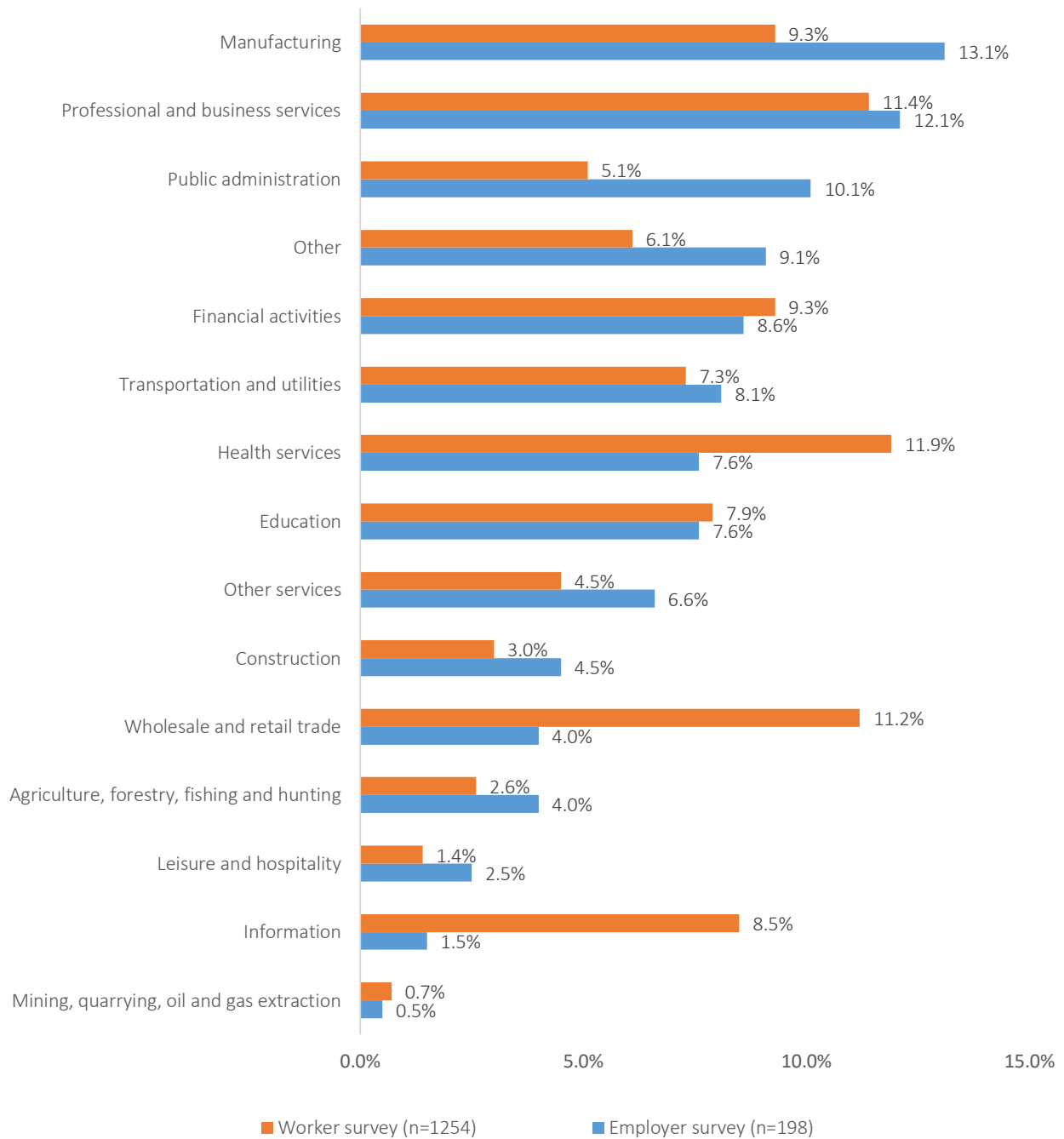


Figure 4.18 Industry in which employer survey and worker survey respondents worked

A higher percentage of employer survey respondents worked for organizations that operate solely in Minnesota (Figure 4.18), while a higher percentage of worker survey respondents worked for organizations that had operations in Minnesota but were headquartered outside of the state. Similar percentages of employer survey and worker survey respondents worked for organizations that are headquartered in Minnesota with operations outside of the state.

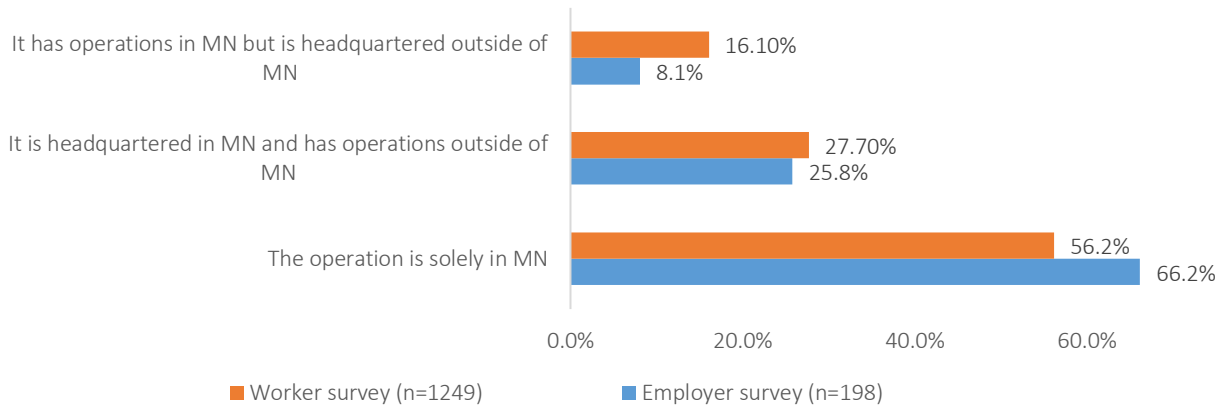


Figure 4.19 Operation types of organizations for which employer survey and worker survey respondents worked

A greater percentage of worker survey respondents indicated their organizations had formal policy, tailored telecommuting agreements, or informal arrangements with individual employees prior to the pandemic (Figure 4.19). At the same time, there was also a higher percentage of worker survey respondents who indicated their organizations did not have telecommuting policy prior to the pandemic, although they could have telecommuted. Meanwhile, almost no worker survey respondents indicated the lack of pre-pandemic telecommuting policy was because the nature of the operations requires in-person work, while 23.2% of employer survey respondents indicated so.

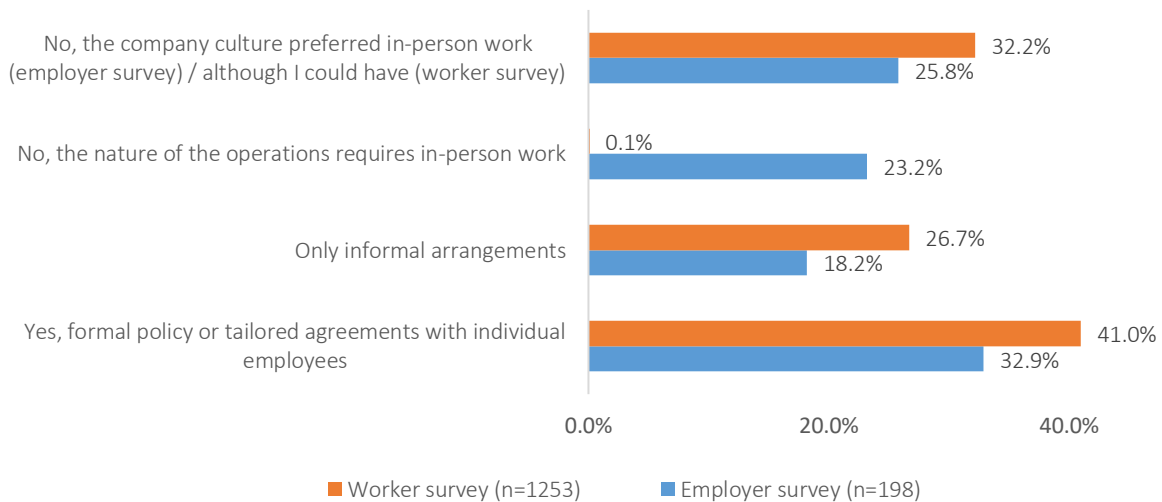


Figure 4.20 Availability of telecommuting policy prior to the pandemic

4.5.2 Telecommuting experience during the COVID-19 pandemic

In terms of expectation of employee performance during the pandemic, a much higher percentage of employer survey respondents chose “no change,” while a much greater percentage of worker survey

respondents indicated “higher expectation” (Figure 4.20). There was also a higher percentage of worker survey respondents indicating “more results-driven.”

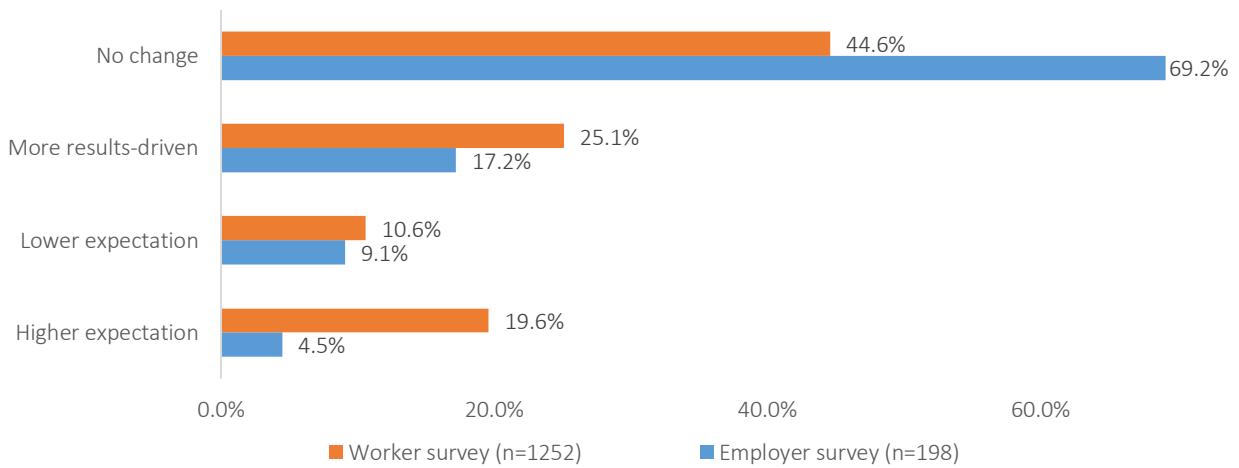


Figure 4.21 Expectation of employee performance during the pandemic

When it comes to employees’ productivity while telecommuting during the pandemic, a much higher percentage of worker survey respondents indicated a little more, somewhat more, and a lot more (Figure 4.21). A much greater percentage of employer survey respondents indicated “about the same.” There was a higher percentage of employer survey respondents who indicated a little less, somewhat less, or a lot less.

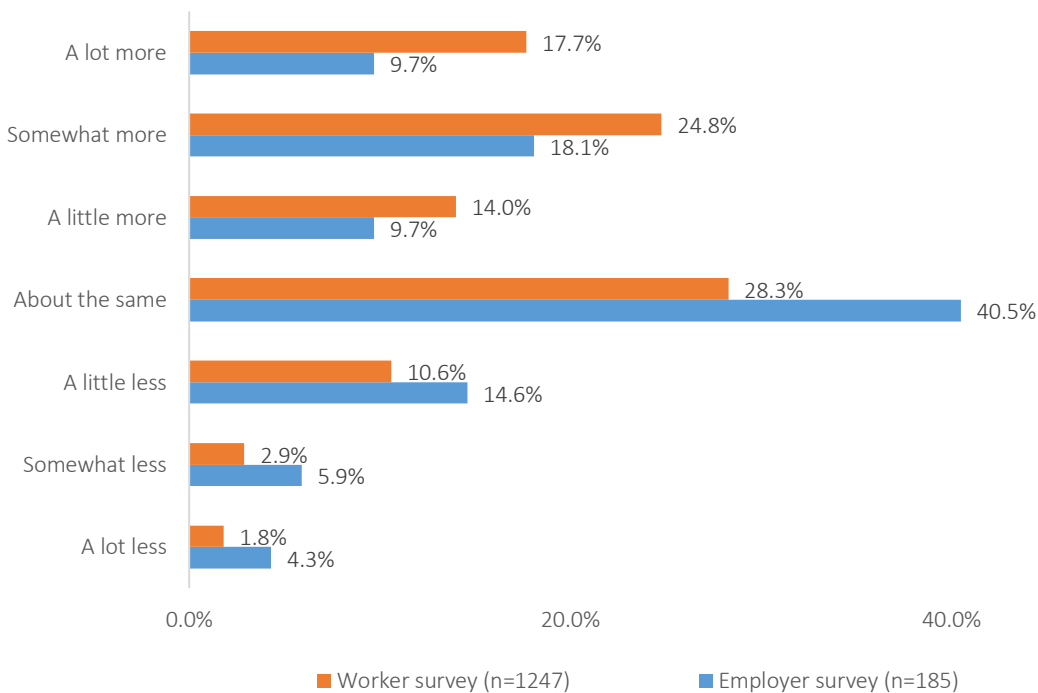


Figure 4.22 Perceived employee productivity while telecommuting during COVID-19

We asked about employers' support of schedule flexibility during the pandemic. Close to 90% of both employer survey respondents (86.3%) and worker survey respondents (87.5%) strongly or somewhat agreed that employers did their best to provide employees with schedule flexibility during the pandemic, although a slightly higher percentage of employer survey respondents strongly agreed, while a somewhat higher percentage of worker survey respondents somewhat agreed (Figure 4.22). Nine percent of employer survey respondents and 8.3% of worker survey respondents stayed neutral. Five percent of employer survey respondents and 4.2% of worker survey respondents somewhat or strongly disagreed.

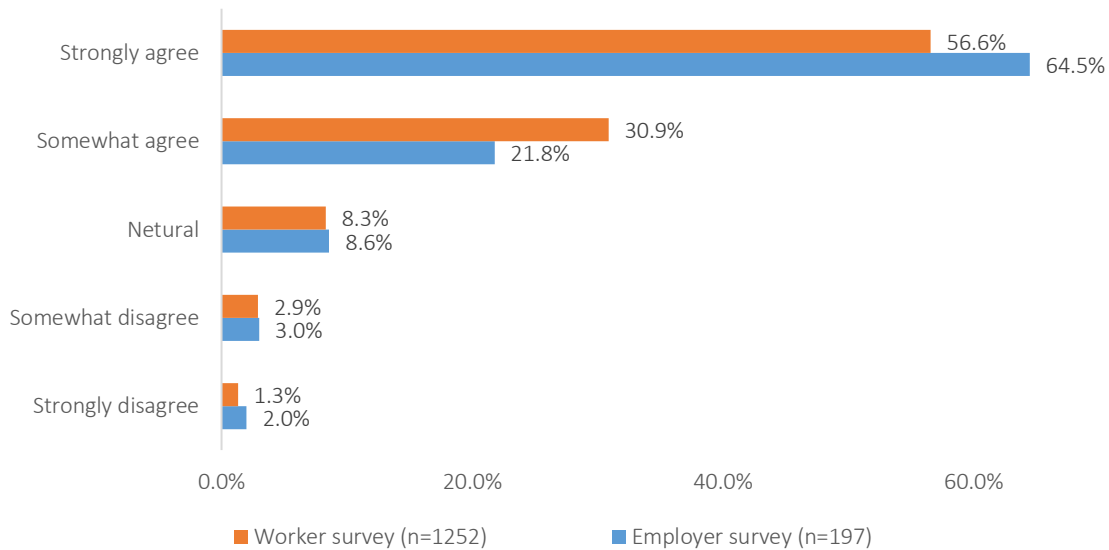


Figure 4.23 Support of employee schedule flexibility during the pandemic

The majority of both employer survey respondents (81.7%) and worker survey respondents (80.8%) strongly or somewhat agreed that supervisors provided support to help employees manage work and personal life during the pandemic (Figure 4.23). Approximately 13% of respondents to both surveys stayed neutral. Five percent of employer survey respondents and 5.6% of worker survey respondents somewhat or strongly disagreed.

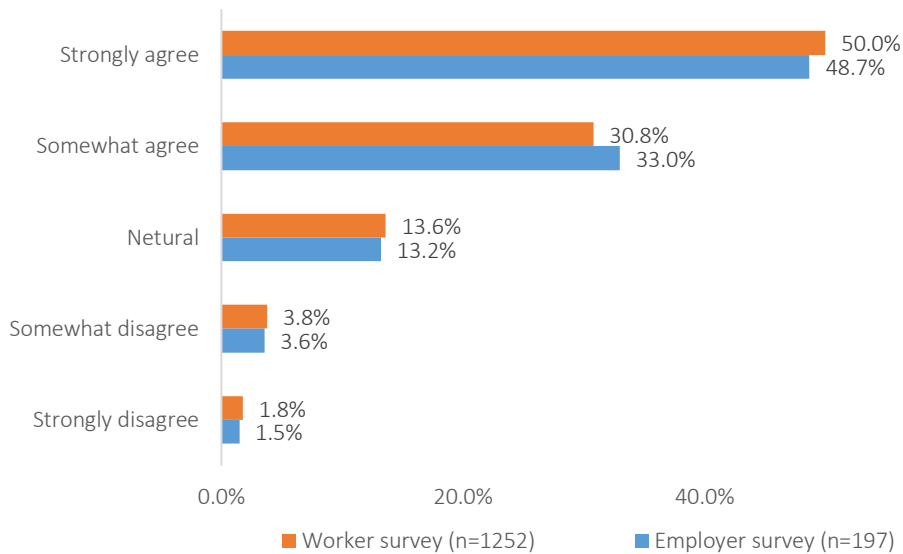


Figure 4.24 Supervisors’ support to help manage work and personal life during the pandemic

Sixty percent of employer survey respondents strongly agreed that their organizations supported employees’ well-being, while 48.0% of worker survey respondents did (Figure 4.24). Thirty percent of respondents to each survey somewhat agreed. While 7.3% of employer survey respondents stayed neutral, 14.3% of worker survey respondents stayed neutral. Seven percent of worker survey respondents somewhat or strongly disagreed that the employers supported employees’ well-being, but only 2.6% of employer survey respondents did so.

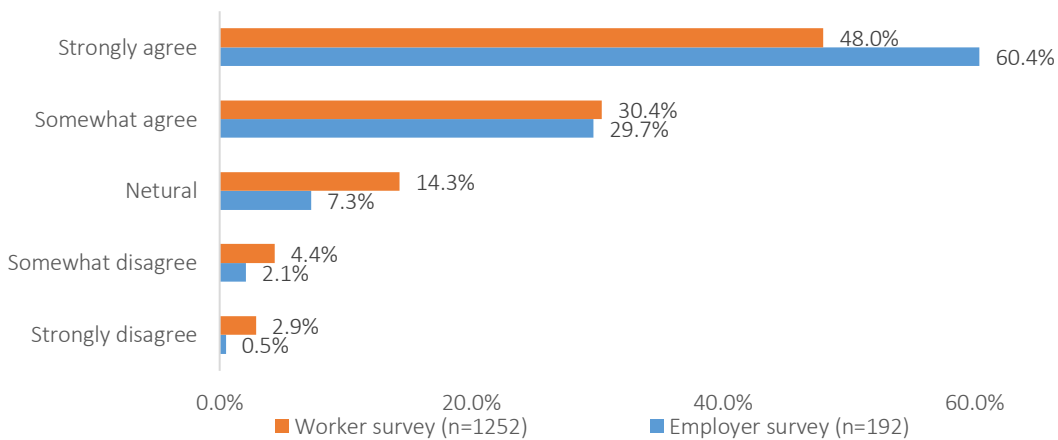


Figure 4.25 Employers’ support of employee well-being during the pandemic

In terms of providing employees with equipment and office furniture support, higher percentages of employer survey respondents identified letting employees take equipment home and letting employees take office furniture home. Worker survey respondents were more likely to indicate their employers provided a stipend to purchase office furniture, paid for home internet cost, purchased office furniture and shipped it to their residences, and shipped office furniture to their residences.

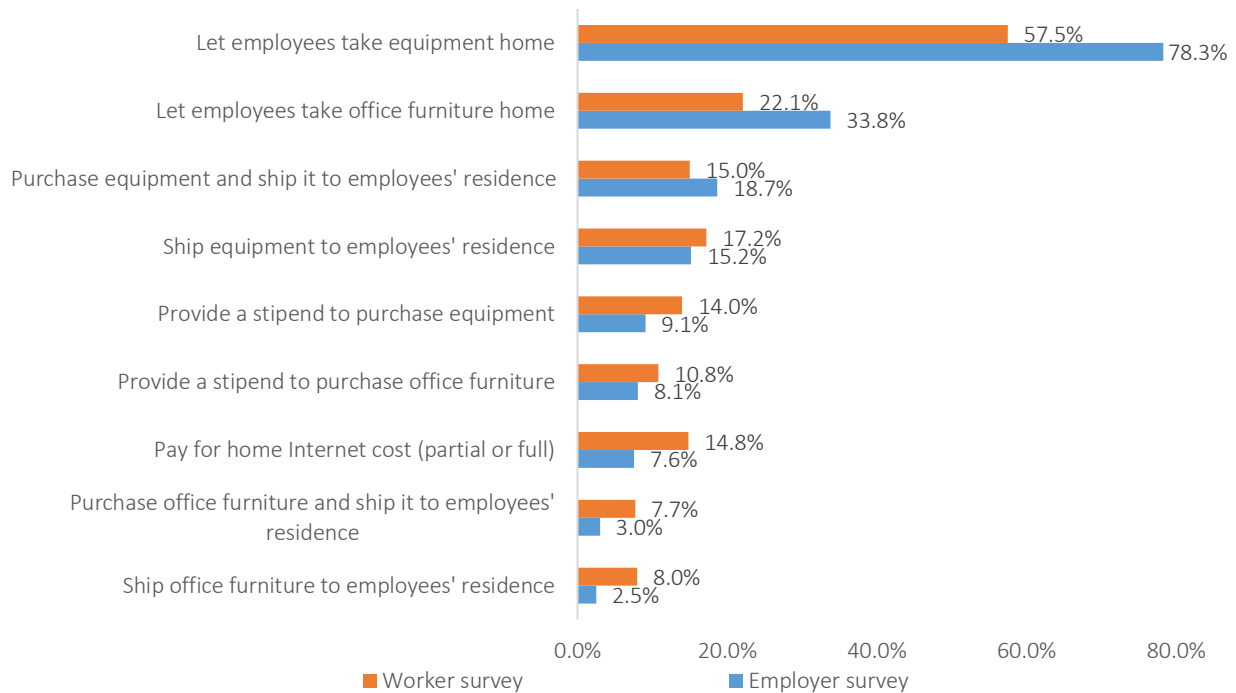


Figure 4.26 Equipment and office furniture support that employers provided with employees during the pandemic

4.5.3 Telecommuting post-pandemic

We asked several questions regarding post-pandemic telecommuting in both employer and worker surveys. Employer survey respondents were a lot more likely to indicate their organizations have not developed a telecommuting policy for the future at the time of the survey (Figure 4.26). Worker survey respondents were a lot more likely to indicate they did not know. There were also higher percentages of worker survey respondents who indicated their employers were either developing a policy or had already done so.

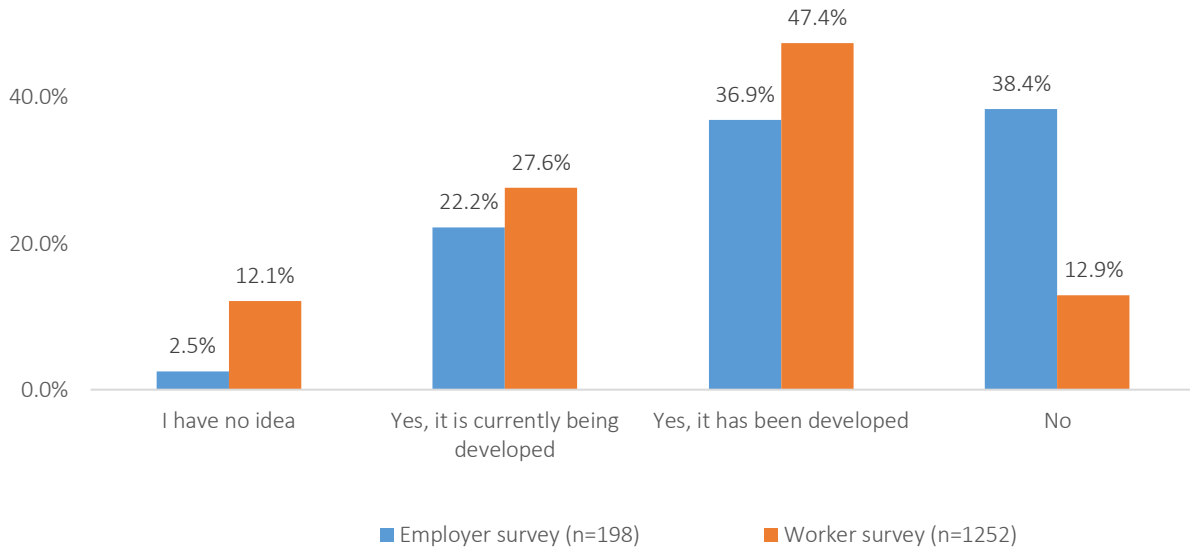


Figure 4.27 Employer size among worker survey respondents (n=672)

For those who indicated the employers either were developing a telecommuting policy for the future or had already done so, we asked whether employers sought employees’ input when developing the policy. Employer survey respondents were a little more likely to indicate yes, while worker survey respondents were more likely to indicate no (Figure 4.27).

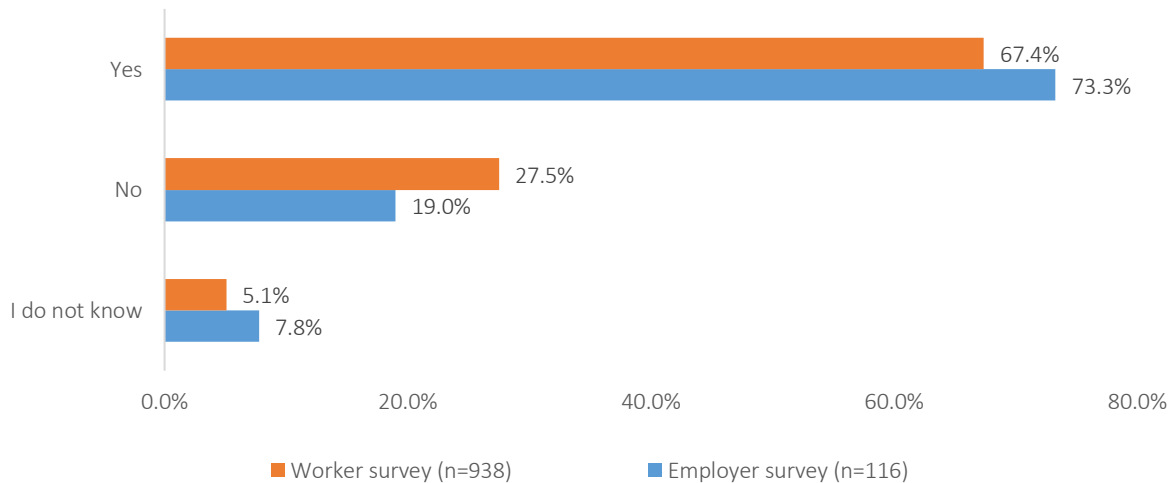


Figure 4.28 Whether employers sought employees’ input when developing a telecommuting policy for the future

In terms of telecommuting frequency post-pandemic, employer survey respondents were a lot more likely to select “infrequently,” while worker survey respondents were a lot more likely to select 1-3 days a month, 1-3 days a week, and 4-5 days a week (Figure 4.28). The percentages of respondents indicating no or not sure were almost identical.

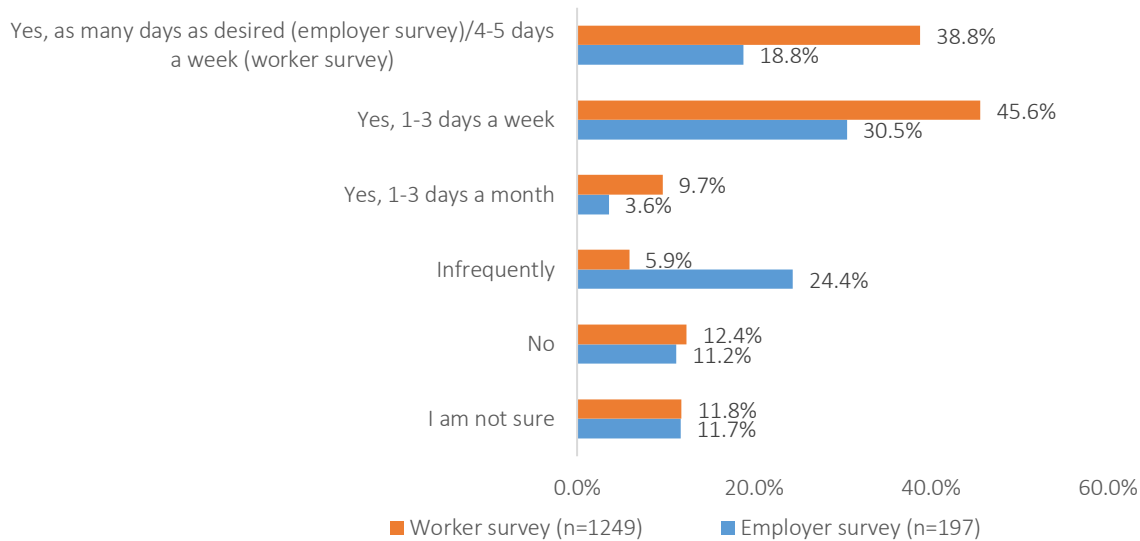


Figure 4.29 Extent to which organizations would support telecommuting in the future

Three-quarters of worker survey respondents and 71.2% of employer survey respondents strongly or somewhat agreed that their organizations would continue to support schedule flexibility in the future to help employees manage work and personal life (Figure 4.29), although worker survey respondents were more likely to strongly agree, while employer survey respondents were more likely to somewhat agree. Thirteen percent of respondents to each survey stayed neutral, and five percent of respondents to each survey somewhat disagreed. While 4.2% of worker survey respondents strongly disagreed, 8.1% of employer survey respondents did so. Lastly, 1.7% of worker survey respondents indicated they did not know, and 2.5% of employer survey respondents did so.

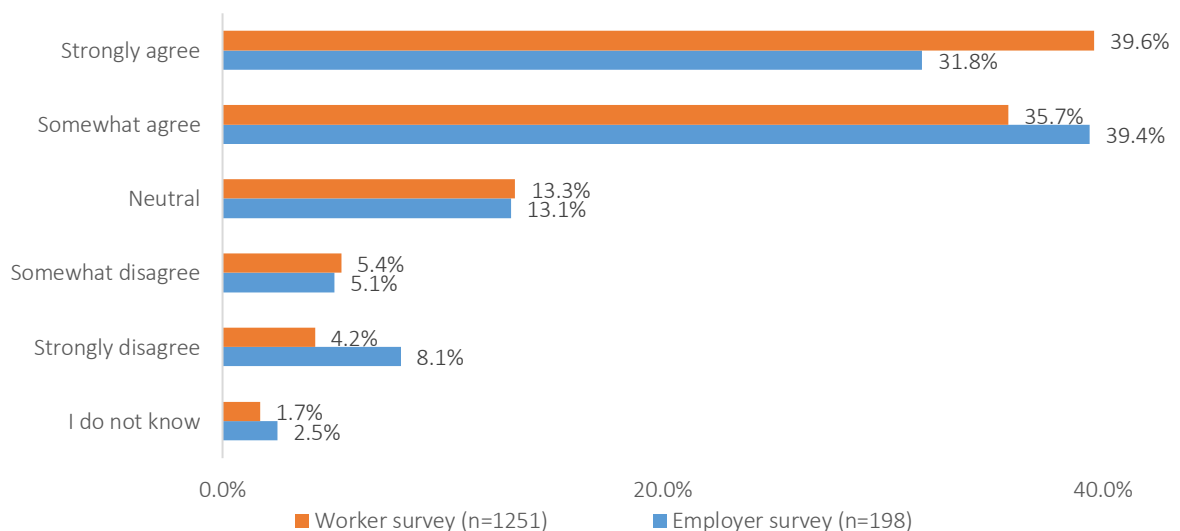


Figure 4.30 Extent to which organizations would continue to support schedule flexibility in the future

CHAPTER 5: IMPLICATIONS AND CONCLUSIONS

5.1 WORKER SURVEY

We assessed differences in availability of telecommuting during COVID-19, average weekly telecommuting hours during COVID-19, post-pandemic telecommuting possibility, and post-pandemic telecommuting frequency. As a reminder, both worker and employer surveys were administered from mid-July 2021 through the end of September 2021.

There is significant generational difference in post-pandemic telecommuting frequency. Popular perception also points to younger workers as digital natives, hence more likely to telecommute. Our findings are more nuanced: Gen Z respondents (i.e., the youngest generation) are more likely than all the older generations to telecommute no more than one day a week post-pandemic; additionally, Gen X respondents were the most likely to telecommute two to three days a week, followed closely by millennial respondents. It is the baby boomers who are the most likely to telecommute four to five days a week post-pandemic.

We did not find racial difference in availability of telecommuting during COVID-19, post-pandemic telecommuting possibility, or post-pandemic telecommuting frequency. However, there is significant difference in average weekly telecommuting hours during COVID-19, as White respondents have significantly higher weekly telecommuting hours compared to respondents of all other races. This finding shows the importance of not just asking if workers have the chance to telecommute. Nuances often lie in the more detailed picture (e.g., asking the average weekly telecommuting hours).

Both education level and household income made significant differences in the average weekly telecommuting hours and post-pandemic telecommuting frequency. Compared to all other respondents, those with a high school education or less and those with less than a \$50,000 household income had significantly fewer weekly telecommuting hours and are much more likely to telecommute no more than one day a week post-pandemic.

Surprising findings emerged about using reasonable accommodations due to disability(ies). Respondents using reasonable accommodations had much lower average weekly telecommuting hours, and they were a lot more likely to telecommute no more than one day a week.

Having child(ren) living at home was one of the two factors that made the most difference. Those with child(ren) living at home were more likely to either be back in-person already or transitioning back to in-person work, and less likely to be still telecommuting at the time of the survey. Additionally, those with child(ren) living at home were more likely to have a formal post-pandemic telecommuting agreement with their employers. Lastly, those without child(ren) living at home were more likely to telecommute four to five days a week post-pandemic. This finding corresponds with the finding that baby boomers, who were most likely to be empty nesters, were also the most likely to telecommute four to five days a week.

The other factor that made the most difference was the geographic area in which respondents lived. Twin Cities respondents were more likely to still telecommute at the time of the survey, while respondents from Greater Minnesota were more likely to have already been back to in-person work or have never received permission to telecommute (although they could). Meanwhile, Greater Minnesota respondents had longer average weekly telecommuting hours than Twin Cities respondents during the pandemic. Interestingly, there was no difference in telecommuting four to five days a week post-pandemic between Twin Cities and Greater Minnesota respondents, although Greater Minnesota respondents were more likely to telecommute no more than one day a week, while Twin Cities respondents were more likely to telecommute two to three days a week.

Lastly, it was not surprising that, among respondents whose one-way commute time was 46 minutes or longer, those with very or somewhat heavy traffic had the most weekly telecommuting hours. In other words, respondents with a long commute and heavy commute traffic tried to telecommute as much as they possibly could.

5.2 EMPLOYER SURVEY

Most employers are small to medium-sized organizations, with fewer than 500 employees. In comparison, those with a solo operation in Minnesota tend to be small, with fewer than 100 employees, while those headquartered in Minnesota with operations elsewhere are more likely to have 500 or more employees. Those with operations in Minnesota but headquartered elsewhere are most likely to be medium-sized, with 100-499 employees.

Given that most respondents indicated their organizations had “essential” employees, it was very likely that each of these organizations had at least a few employees who continued working on-site during the pandemic. At the same time, the pandemic could be regarded as a catalyst for employers to adopt telecommuting for employees who need reasonable accommodations due to disability(ies).

It is interesting that while 32.9% of respondents indicated their organizations had either formal telecommuting policies or tailored agreements with individual employees prior to the pandemic, only 21.2% of respondents indicated they had had a pre-pandemic telecommuting policy when asked about telecommuting arrangements during the pandemic. On the other hand, while only 23.2% of respondents, when asked about pre-pandemic telecommuting policy, indicated the nature of the operations at their organizations requires in-person work, 34.8% indicated most of their employees worked in-person during the pandemic due to the nature of the work and 33.8% of respondents agreed that, due to the in-person nature of the operations, their organizations would not recruit talent from outside of Minnesota to work completely remotely.

It was surprising that less than 60% either already had a post-pandemic telecommuting policy or were developing one, while nearly 40% indicated that they had not developed one at the time of the survey. Therefore, it was not surprising to find that 71.4% of respondents indicated that most employees would return to in-person work post-pandemic.

Employers tend to be split in terms of post-pandemic telecommuting frequency. While close to half of respondents indicated that employers would support telecommuting for anywhere between one and five days a week, another 24.4% indicated the employers would only support infrequent (less than one day a month) telecommuting post-pandemic. The latter finding corroborates the finding that only 14.6% of respondents agreed that most employees would telecommute for as many days as they desire post-pandemic.

A little more than a quarter of respondents— a sizable portion of the sample — indicated their organizations may recruit talent from outside of Minnesota to work completely remotely. However, complete remote work may not be as prevalent a phenomenon as previously forecast.

5.3 COMPARING SURVEY FINDINGS

Employer representatives were more likely to perceive no change in expectations of employee performance, while workers tended to perceive change, especially higher expectations. Workers were also more likely to perceive themselves as more productive, while employer representatives tended to perceive employee productivity as either not having changed or having declined.

Respondents to the two surveys were consistent in their perception of employers' support of schedule flexibility and work-life balance, which was encouraging. Meanwhile, employer survey respondents were more likely to believe their organizations supported employees' well-being, while worker survey respondents were more likely to stay neutral or disagree. In terms of employers' assistance with equipment and office furniture, workers perceived receiving more help with office furniture, while employer representatives perceived greater support in letting employees take equipment and office furniture home.

Lastly, employer representatives were a lot more likely to indicate their organizations had not developed a telecommuting policy for the future at the time of the survey. One possible explanation was the different industry representations in the two samples. The same explanation could be applicable to the finding that worker survey respondents were a lot more likely to indicate that employers would support telecommuting anywhere between one and five days a week.

REFERENCES

U.S. Census (2021). Minnesota: 2020 Census. <https://www.census.gov/library/stories/state-by-state/minnesota-population-change-between-census-decade.html>. Retrieved Nov 2, 2021.

APPENDIX A
FOCUS GROUP PROTOCOL AND QUESTIONS

A.1 RECRUITMENT TEXT

You are invited to be in an online focus group discussion, using Zoom, about telecommuting changes in your business due to the COVID-19 pandemic. This project is sponsored by the Minnesota Department of Transportation (MnDOT). The project purpose is to understand how telecommuting will impact future transportation patterns and planning. MnDOT would like your help to understand how telecommuting has changed in your organization in response to COVID-19. Today's focus group will last from an hour to 90 minutes. You will receive a \$50 check as a thank you for your participation. The interview will be recorded so that I will be able to accurately report your statements. Please know that your participation in this study is confidential and completely voluntary. There are no penalties if you decline to participate. The recordings and transcripts from the interviews will be kept private. Recordings and transcripts will only be accessible to MnDOT and U of M employees whose work requires access, pursuant to court order, and by any other person or entity authorized by state or federal law. In any report we might publish, we will not include any information that will make it possible to identify you or any other participant.

*** Shortened versions of the above will be created in social media, but prior to registering, all potential participants will see the above paragraph.

A.2 INFORMATION PROVIDED TO PARTICIPANTS

Telecommuting during COVID-19: How does it shape the future workplace and workforce Focus Group Component

You are invited to be in a research study of the changes to telecommuting policies in Minnesota businesses. You were selected as a possible participant because you are either a business owner, business manager, or HR professional with knowledge of your organization's telecommuting policies. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by: Xinyi Qian, Ph.D., Tourism Specialist, and Neil Linscheid, Extension Educator, University of Minnesota Extension.

Procedures:

If you agree to be in this study, we would ask you to participate in a group discussion that will last from 60 minutes to 90 minutes. The session will be recorded using the Zoom software.

Confidentiality:

The records of this study will be kept private. In any sort of report we might publish, we will not include any information that will make it possible to identify a subject. Only members of the research team will have access to the recordings or transcriptions of the recordings.

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University of Minnesota.

Contacts and Questions:

The researcher(s) conducting this study is (are): Xinyi Qian, and Neil Linscheid. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact them at gianx@umn.edu, 612-625-5668.

This research has been reviewed and approved by an IRB within the Human Research Protections Program (HRPP). To share feedback privately with the HRPP about your research experience, call the Research Participants' Advocate Line at 612-625-1650 or go to <https://research.umn.edu/units/hrpp/research-participants/questions-concerns>. You are encouraged to contact the HRPP if:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.
- You have questions about your rights as a research participant.
- You want to get information or provide input about this research.

You will be given a copy of this information to keep for your records.

A.3 FOCUS GROUP INTERVIEW GUIDE AND QUESTIONS

1. Opening statement:

Thank you for participating in this focus group discussion today. This project is sponsored by the Minnesota Department of Transportation (MnDOT). The project purpose is to understand how telecommuting will impact future transportation patterns and planning. MnDOT would like your help to understand how telecommuting has changed in your organization in response to COVID-19. Today's focus group will last from one hour to 90 minutes. You will receive a \$50 check as a thank you for your participation. The interview will be recorded so that I will be able to accurately report your statements. Please know that your participation in this study is confidential and completely voluntary. There are no penalties if you decline to participate. The recordings and transcripts from the interviews will be kept private. In any report we might publish, we will not include any information that will make it possible to identify you or any other participant.

2. Introductions (first name only)

3. Review Information Sheet

4. Focus group questions:

- (1) How have your workplace policies changed with regard to telecommuting since March 2020?
 - A. Prompt for information about both formal and informal policies
 - B. Prompt: Prior to Covid-19: How did you determine which positions were eligible for telecommuting? If an employee requested to telecommute, what was the approval process? Has COVID-19 changed the eligibility and approval process?

- (2) How have your organization's expectations about employees (performance, work schedule, communications, etc.) changed?
- A. Prompt: Do you have performance management measures in place?
 - B. Prompt: Did work hours become more flexible to accommodate childcare and health care?
- (3) How has the way your organization supports employees who telecommute changed since March 2020?
- ***If additional prompts are needed some examples might include:
- Communications changes (formal check-ins between an employee and his/her supervisor? Formal organizational virtual communication strategies?)
 - Technological changes (Internet cost support? Equipment support?)
 - Management changes
 - Team engagement changes
 - Coordination
 - Logistics (home office furniture support? Different packages for parking or mass transit?)
- (4) What types of telecommuting related policies is your organization considering for the future?
- a. Approximately what percentage of your workforce do you anticipate will be telecommuting one year from now? Five years from now?
 - b. Will you offer any hybrid work schedules (telecommuting for a few days, and working in the office on the other days)?
- (5) What challenges has telecommuting added to your organization?
- (6) What opportunities do you see for your organization's future with regards to telecommuting?

APPENDIX B
SPONSORED MESSAGE SENT TO MNSHRM MEMBERS TO
RECRUIT FOCUS GROUP PARTICIPANTS



Hello Xinyi,

You are invited to participate in an online focus group discussion, using Zoom, about telecommuting in your organization due to the COVID-19 pandemic. **You will receive a \$50 check as a thank you for your participation.** [Click here](#) to fill out a brief signup form: <https://z.umn.edu/telesign>

This project is sponsored by the Minnesota Department of Transportation (MnDOT), which needs your help understand how telecommuting will impact future transportation patterns and planning. Please know that your participation in this study is confidential and completely voluntary. There are no penalties if you decline to participate.

The focus group will last from an hour to 90 minutes and will be recorded. The recordings and transcripts from the interviews will be kept private. Recordings and transcripts will only be accessible to MnDOT and U of M employees whose work requires access, pursuant to court order, and by any other person or entity authorized by state or federal law. In any report we might publish, we will not include any information that will make it possible to identify you or any other participant. Please contact Dr. Xinyi Qian (qianx@umn.edu, 612-625-5668) if you have questions about this research project.

The Minnesota State SHRM Council's mission is to be the resource and advocate in Human Resources for professionals and SHRM Affiliate Chapters in and around Minnesota.

Office: 952-237-9258 | Email: admin@mnshrm.com | [Unsubscribe](#)



APPENDIX C

SIGN-UP FORM FOR RECRUITING FOCUS GROUP PARTICIPANTS

MNDOT Telecommuting Project Focus Group Interest Form

You are invited to participate in an online focus group discussion, using Zoom, about telecommuting changes in your business due to the COVID-19 pandemic. **You will receive a \$50 check as a thank you for your participation.** Sponsored by the Minnesota Department of Transportation (MNDOT), the project purpose is to understand how telecommuting will impact future transportation patterns and planning.

Your participation in this study is confidential and completely voluntary. There are no penalties if you decline to participate.

The focus group will last from an hour to 90 minutes and will be recorded. The recordings and transcripts from the interviews will be kept private. Recordings and transcripts will only be accessible to MnDOT and U of M employees whose work requires access, pursuant to court order, and by any other person or entity authorized by state or federal law. In any report we might publish, we will not include any information that will make it possible to identify you or any other participant.

Please contact Dr. Xinyi Qian (qianx@umn.edu, 612-625-5668) if you have questions about this research project.

Your name:

Please indicate the number of employees in your organization:

- Less than 100
 - 100 - 499
 - 500 - 999
 - 1,000 or more
-

Which one of the following dates works the best for you? Please check all that apply.

- Thursday, April 8
 - Friday, April 9
 - Monday, April 12
 - Tuesday, April 20
 - Wednesday, April 21
 - Friday, April 23
 - Monday, April 26
 - Friday, April 30
-

Display This Question:

If Which one of the following dates works the best for you? Please check all that apply. = Thursday, April 8

Which of the following time period on Thursday, April 8 will work for you? Check all that apply.

- 11am-12:30pm
 - 2:30pm-4pm
-

Display This Question:

If Which one of the following dates works the best for you? Please check all that apply. = Friday, April 9

Which of the following time period on Friday, April 9 will work for you? Check all that apply.

- 2pm-3:30pm
 - 2:30pm-4pm
 - 3pm-4:30pm
 - 3:30pm-5pm
-

Display This Question:

If Which one of the following dates works the best for you? Please check all that apply. = Monday, April 12

Which of the following time period on Monday, April 12 will work for you? Check all that apply.

- 2pm-3:30pm
 - 2:30pm-4pm
-

Display This Question:

If Which one of the following dates works the best for you? Please check all that apply. = Tuesday, April 20

Which of the following time period on Tuesday, April 20 will work for you? Check all that apply.

- 1pm-2:30pm
 - 1:30pm-3pm
 - 4pm-5:30pm
-

Display This Question:

If Which one of the following dates works the best for you? Please check all that apply. = Wednesday, April 21

Which of the following time period on Wednesday, April 21 will work for you? Check all that apply.

- 3pm-4:30pm
 - 3:30pm-5pm
 - 4pm-5:30pm
-

Display This Question:

If Which one of the following dates works the best for you? Please check all that apply. = Friday, April 23

Which of the following time period on Friday, April 23 will work for you? Check all that apply.

- 2:30pm-4pm
 - 3pm-4:30pm
 - 3:30pm-5pm
 - 4pm-5:30pm
-

Display This Question:

If Which one of the following dates works the best for you? Please check all that apply. = Monday, April 26

Which of the following time period on Monday, April 26 will work for you? Check all that apply.

- 2:30pm-4pm
 - 3pm-4:30pm
 - 3:30pm-5pm
 - 4pm-5:30pm
-

Display This Question:

If Which one of the following dates works the best for you? Please check all that apply. = Friday, April 30

Which of the following time period on Friday, April 30 will work for you? Check all that apply.

- 2:30pm-4pm
 - 3pm-4:30pm
 - 3:30pm-5pm
 - 4pm-5:30pm
-

Do you prefer to participate in a focus group using a language other than English?

- Yes
 - No
-

Display This Question:

If Do you prefer to participate in a focus group using a language other than English? = Yes

In which language would you like to participate in the focus group?

- Spanish
 - Hmong
 - Somali
 - Other, please specify: _____
-

Please let us know your email address - we will email you to confirm the focus group date and time:

Thank you for your interest in being a focus group participant. We look forward to working with you.

APPENDIX D

SAMPLE SOURCES FOR WORKER AND EMPLOYER SURVEYS

	Employer survey	Worker survey
Purchase a Qualtrics panel for the worker survey: University of Minnesota is a Qualtrics client and receives discounted panel pricing	N	Y
HR Professionals who participated in Task 2 focus groups (participants included HR professionals from higher education institutions in Minnesota)	Y	Y
<i>State agencies, professional organizations, nonprofit organizations:</i>		
Leverage the contacts that MnDOT already has: 1. Lists of manufacturers in various districts; 2. Statewide press distribution list; 3. Constant Contact newsletters in various districts	Y	Y
Metro Transit	Y	Y
Other transit providers	Y	Y
Minnesota Council of Nonprofits	Y	Y
MN Council of Disabilities	Y	Y
Minnesota Department of Employment and Economic Development (DEED): Chet Bodin & other regional labor market analysts	Y	Y
DEED staff working on accessibility issues (Thomas, the TAP member, should have a contact)	Y	Y
Federal Reserve Bank of Minneapolis	Y	Y
Economic development professionals' networks (SE, SW, S, NE)	Y	Y
Regional Development Commissions (MnDOT has relationships)	Y	Y
Cheryal Hill of Region 5 and the transportation advisory council in other regions	Y	Y
Minnesota Association of Convention and Visitors Bureaus	Y	Y
Minnesota Chamber of Commerce Executives	Y	Y
League of Minnesota Cities	Y	Y
Association of Minnesota Counties	Y	Y
Minnesota Workforce Boards	Y	Y

Minnesota Human Resource Management State Council	Y	Y
Center for Rural Policy Research	Y	Y

Extension and other on-campus connections:

Community Economics Educators at University of Minnesota Extension	Y	Y
Alumni of the Business Retention and Expansion program offered by Extension Center for Community Vitality	Y	Y
Extension Regional Directors	Y	Y
Frank Douma and Adeel Ahmed, Humphrey School of Public Affairs (they have done work on telecommuting)	Y	Y

Media and social media:

Social media channels of the Tourism Center, Community Vitality, Extension, and MnDOT	Y	Y
---	---	---

APPENDIX E
WORKER SURVEY (EXPORTED FROM QUALTRICS)

MnDOT telecommuting project - Worker Survey

The Minnesota Department of Transportation (MnDOT) and the University of Minnesota Tourism Center are partnering to understand Minnesota workers' experience of telecommuting before, during, and after the COVID-19 pandemic. Your contributions are vital to the project and much appreciated.

The survey takes 15-20 minutes to complete. Survey results will be provided in summary format, and your individual responses will remain anonymous. Project results will be made available through a report posted on MnDOT and the Tourism Center websites.

If you have any questions, please contact Dr. Xinyi Qian, the Principle Investigator of the project: 612-625-5668, qianx@umn.edu. Thank you so much for your time and contribution!

What is your gender?

- Male
 - Female
 - Other
 - Prefer not to answer
-

In what year were you born? _____

What is the zip code of your primary residence? _____

What is the zip code of your primary work location? _____

Which one of the following best describes your education level?

- Less than high school
- High school graduate
- Some college
- 2 year degree
- 4 year degree
- Graduate or Professional degree

What was your pre-tax annual household income before the pandemic?

- Less than \$25,000
- \$25,000 - \$49,999
- \$50,000 - \$74,999
- \$75,000 - \$99,999
- \$100,000 - \$124,999
- \$125,000 - \$149,999
- \$150,000 - \$199,999
- \$200,000 or higher

Has your household experienced income loss due to the pandemic?

- Yes, but has recovered
- Yes, and not recovered
- No
- Not sure
- Prefer not to answer

Which of the following best describes your current employment status?

- Working full-time, including self-employed

- Working part-time, including self-employed
- Full-time student
- Student while working
- Unemployed and looking for work
- Unemployed and not looking for work
- Full-time parent or homemaker
- Retired
- Other

Are you of Hispanic, Latino, or Spanish origin?

- No
- Mexican, Mexican Am., Chicano
- Puerto Rican
- Cuban
- Another Hispanic, Latino, or Spanish origin

What is your race?

- White
- Black or African American
- American Indian or Alaska Native
- Asian or Asian American
- Native Hawaiian or Pacific Islander
- Multiracial
- Other

Do you use reasonable accommodations due to disability(ies)?

- Yes
- No

Do you have any child living at home with you during the pandemic?

- Yes
- Sometimes
- No

Display This Question:

*If Do you have any child living at home with you during the pandemic? = Yes
Or Do you have any child living at home with you during the pandemic? = Sometimes*

How many child(ren) are...

- Younger than 5 at the time _____
- 5-12 years old at the time _____
- 13-17 years old at the time _____

Display This Question:

*If Do you have any child living at home with you during the pandemic? = Yes
Or Do you have any child living at home with you during the pandemic? = Sometimes*

Who provided the majority of childcare during the pandemic? Check all that apply.

- Mother
- Father
- I had help from another family member
- I had a childcare provider (e.g., daycare, nanny, babysitter, learning pod)
- My child(ren) went to school
- Myself as a single parent
- Equally between both parents

Do you have caregiving responsibilities other than childcare?

- No
- Elderly care
- Spousal care
- Elderly and spousal care

Do you have any underlying health conditions that make you more vulnerable to COVID-19 than the average person?

- Yes
- No
- I am not sure

Do you live with any individual who has underlying health conditions that make the person more vulnerable to COVID-19 than the average person?

- Yes
- No
- I am not sure

Have you received the COVID-19 vaccine?

- Yes, I am fully vaccinated
- I am partially vaccinated
- No, but I have scheduled an appointment
- No, and I have not scheduled an appointment

Which of the following best describes your car ownership and driving behavior since the pandemic started?

- I own a car and drive it
- I own a car but don't drive it
- I do not own a car but have a driver's license

- I do not own a car and do not have a driver's license

Which of the following transportation mode have you used the most frequently since the pandemic started?

- Drive my own car
- Car share
- Ride share
- Transit
- Ride my own bicycle
- Bicycle share
- Walk
- Ride my own scooter
- Scooter share
- Transit + bike
- Transit + walk
- Trainsit + scooter
- Other, please specify: _____

How would you describe the broadband Internet connection that you have at home?

- Stable and reasonable speed
- Stable but slow speed
- Reasonable speed but unstable
- I use a hot spot
- I do not have broadband connection at home

For the remaining questions, please think of the job on which you spend the most hours, if you have more than one job.

Which one of the following best describes the industry in which you work?

- Agriculture, forestry, fishing and hunting
- Mining, quarrying, oil and gas extraction
- Construction
- Manufacturing
- Wholesale and retail trade
- Transportation and utilities
- Information
- Financial activities
- Professional and business services
- Education
- Health services
- Leisure and hospitality
- Other services
- Public administration
- Other, please specify: _____

Which one of the following best describes your profession?

- Management, business, and financial occupations
- Professional and related
- Service
- Sales and related
- Office and administrative support
- Farming, Fishing and forestry
- Construction and extraction
- Installation, maintenance, and repair
- Production
- Transportation and material moving

Which one of the following best describes your employer?

- The operation is solely in MN
- It is headquartered in MN and has operations outside of MN
- It has operations in MN but is headquartered outside of MN

Display This Question:

If Which one of the following best describes your employer? = The operation is solely in MN

What is the size of your employer?

- Less than 100 employees
- 100-499 employees
- 500-999 employees
- 1,000 or more employees
- I am not sure

Display This Question:

If Which one of the following best describes your employer? = It is headquartered in MN and has operations outside of MN

What is the size of your employer's MN headquarter?

- Less than 100 employees
- 100-499 employees
- 500-999 employees
- 1,000 or more employees
- I am not sure

Display This Question:

If Which one of the following best describes your employer? = It has operations in MN but is headquartered outside of MN

What is the size of your employer's operations in MN?

- Less than 100 employees
- 100-499 employees

- 500-999 employees
- 1,000 or more employees
- I am not sure



How many years have you been with the current employer? (Enter zero if less than one year)

How many hours, on average, do you work each week?

▼ 20 ... 46 or more

Are you a salaried or non-salaried employee?

- Salaried
- Non-salaried
- I am not sure

Prior to the pandemic, how long was your one-way commute? Please think of the commuting method you used the most frequently.

▼ 15 minutes or less ... Not applicable

Which one of the following best describes the traffic during your commute prior to the pandemic? Please think of the commuting method you used the most frequently.

▼ Very heavy ... Not applicable

Were you able to telecommute during the pandemic?

- Yes, and I am still telecommuting
- Yes, and I am transitioning back to in-person work
- Yes, but I am back to in-person work now
- No, my employer never gave me permission, although I could
- No, the nature of my job requires in-person work

Skip To: Q35 If Were you able to telecommute during the pandemic? = No, the nature of my job requires in-person work

How many hours a week, on average, were you able to telecommute during the pandemic?

▼ 1 ... 41 or more

Had you telecommuted at all prior to the pandemic?

- Yes, I had a formal agreement with my employer
- Yes, it was an informal arrangement
- No, although I could have
- No, the nature of my job required in-person work

Skip To: Q35 If Had you telecommuted at all prior to the pandemic? = No, the nature of my job required in-person work

Display This Question:

If Had you telecommuted at all prior to the pandemic? = Yes, I had a formal agreement with my employer

Or Had you telecommuted at all prior to the pandemic? = Yes, it was an informal arrangement



How many years had you telecommuted prior to the pandemic? _____

Display This Question:

If Had you telecommuted at all prior to the pandemic? = Yes, I had a formal agreement with my employer

Or Had you telecommuted at all prior to the pandemic? = Yes, it was an informal arrangement

Q39 How frequently had you telecommuted prior to the pandemic?

▼ Infrequently ... 5 days a week

I had not telecommuted prior to the pandemic, because... (check all that apply)

- I perceived the senior leadership did not support telecommuting
- I perceived my supervisor did not support telecommuting
- I preferred working in my office
- My office location is easier for my life and daily schedule

Has your employer developed a telecommuting policy for the future?

- Yes
- It is being developed
- No
- I have no idea

Display This Question:

If Has your employer developed a telecommuting policy for the future? = Yes

Or Has your employer developed a telecommuting policy for the future? = It is being developed

Has your employer sought your input when developing a telecommuting policy for the future?

- Yes
- No
- I am not sure

Will you be able to telecommute at all post-pandemic?

▼ Yes, formal agreement with employer ... I do not know yet

Skip To: Q46 If Will you be able to telecommute at all post-pandemic? = No, the nature of my job requires in-person work

Display This Question:

*If Will you be able to telecommute at all post-pandemic? = Yes, formal agreement with employer
Or Will you be able to telecommute at all post-pandemic? = Yes, informal arrangement with employer*

How frequently will you be able to telecommute post-pandemic?

▼ Infrequently ... 5 days a week

How likely do you think your employer would support continued telecommuting after it is safe to work in-person again?

▼ Extremely unlikely ... Extremely likely

How frequently do you wish you could telecommute post-pandemic?

▼ Infrequently ... 5 days a week

Will you consider moving or relocating if you were able to telecommute full-time?

▼ Highly likely ... Highly unlikely

Display This Question:

*If Will you consider moving or relocating if you were able to telecommute full-time? = Highly likely
Or Will you consider moving or relocating if you were able to telecommute full-time? = Somewhat likely
Or Will you consider moving or relocating if you were able to telecommute full-time? = A little likely*

Where would you move or relocate to?

▼ Minneapolis or St. Paul city proper ... Outside of MN

How much do you agree with this statement: My employer will continue to support schedule flexibility in the future to help me manage work and personal life.

▼ Strongly agree ... I do not know

Which of the following best describes your employer's expectation of your performance during the pandemic?

- No change
- More results-driven
- Lower expectation
- Higher expectation

Did you find that you got more or less done when you telecommuted during the pandemic?

▼ A lot more ... A lot less

To what extent do you believe your supervisor trusted you when you telecommuted during the pandemic?

▼ Completely trustful ... Completely distrustful

How much do you agree with the following statements about your work during the pandemic:

	Strongly agree	Somewhat agree	Neutral	Somewhat disagree	Strongly disagree
I had the schedule flexibility needed to manage my personal and family responsibilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had support from my supervisor that helps me manage my work and personal life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My employer supported my well-being.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe I had work-life balance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There was a lack of social connection with colleagues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Did you have a dedicated work space at home during the pandemic?

- Yes, a space with a door
- Yes, a space without a door
- A flat surface in a common area
- No



Which of the following support did your employer provide for telecommuting during the pandemic? Check all that apply.

- Pay for home Internet cost (partial or full)
- Let me take equipment home
- Let me take office furniture home
- Provide a stipend to purchase equipment
- Provide a stipend to purchase office furniture
- Ship equipment to my residence
- Ship office furniture to my residence
- Purchase equipment and ship it to my residence
- Purchase office furniture and ship it to my residence
- Other, please specify: _____

Display This Question:

If Do you use reasonable accommodations due to disability(ies)? = Yes

Which telecommuting situation best describes you?

- I was telecommuting prior to the pandemic as a reasonable accommodation.
- I started telecommuting because of the pandemic and I have reasonable accommodations.

Display This Question:

If Do you use reasonable accommodations due to disability(ies)? = Yes

How much do you agree that you have the job support needed to successfully work at home?

▼ Strongly agree ... Strongly disagree

Thank you so much for taking the time to complete this survey! If you are interested in participating in a follow-up survey in early 2022, please provide your email address in a separate form by clicking this [link](#). Please be assured that your answers to this survey are completely separate from the form. Your answers will NOT be linked to the email address you are going to provide.

APPENDIX F
EMPLOYER SURVEY (EXPORTED FROM QUALTRICS)

MnDOT telecommuting project - Employer Survey

The Minnesota Department of Transportation (MnDOT) and the University of Minnesota Tourism Center are partnering to understand Minnesota employers' experience of telecommuting before, during, and after the COVID-19 pandemic. Your contributions are vital to the project and much appreciated.

The survey takes 10 minutes to complete. Survey results will be provided in summary format, and your individual responses will remain anonymous. Project results will be made available through a report posted on MnDOT and the Tourism Center websites.

If you have any questions, please contact Dr. Xinyi Qian, the Principal Investigator of the project: 612-625-5668, qianx@umn.edu. Thank you so much for your time and contribution!

Which one of the following best describes the industry to which your organization belong?

- Agriculture, forestry, fishing and hunting
- Mining, quarrying, oil and gas extraction
- Construction
- Manufacturing
- Wholesale and retail trade
- Transportation and utilities
- Information
- Financial activities
- Professional and business services
- Education
- Health services
- Leisure and hospitality
- Other services
- Public administration
- Other

Which one of the following best describes your organization?

- The operation is solely in MN
- It is headquartered in MN and has operations outside of MN
- It has operations in MN but is headquartered outside of MN

Display This Question:

If Which one of the following best describes your organization? = The operation is solely in MN

What is the size of your organization?

- Less than 100 employees
- 100-499 employees
- 500-999 employees
- 1,000 or more employees

Display This Question:

If Which one of the following best describes your organization? = It is headquartered in MN and has operations outside of MN

What is the size of your MN operations?

- Less than 100 employees
- 100-499 employees
- 500-999 employees
- 1,000 or more employees

Display This Question:

If Which one of the following best describes your organization? = It has operations in MN but is headquartered outside of MN

What is the size of your operations in MN?

- Less than 100 employees
- 100-499 employees
- 500-999 employees
- 1,000 or more employees

What is the zip code of your organization's primary location in MN (e.g., corporate office, MN headquarter)?

- Please type the zip code in this box _____
- We have multiple locations but no "primary" location

Did your organization have employees who were considered as essential during the pandemic?

- Yes
- No
- I do not know

Did your organization have a telecommuting policy prior to the pandemic?

- Yes, formal policy
- Yes, tailored agreements with individual employees
- Only informal arrangements
- No, the company culture preferred in-person work
- No, the nature of the operations requires in-person work

Which one of the following best describes your organization around reasonable accommodations?

- We have employees already telecommuting prior to the pandemic because of reasonable accommodations.
- We have employees who started telecommuting due to the pandemic and used reasonable accommodations.
- I am not sure.

Has your organization developed a telecommuting policy for the future?

- Yes, it has been developed
- Yes, it is currently being developed
- No
- I have no idea

Display This Question:

If Has your organization developed a telecommuting policy for the future? = Yes, it has been developed

Or Has your organization developed a telecommuting policy for the future? = Yes, it is currently being developed

Has your organization sought employees' input when developing a telecommuting policy for the future?

- Yes
- No
- I do not know

How much will your organization support telecommuting in the future, as long as the nature of work allows?

- Yes, as many days as desired
- Yes, 1-3 days a week
- Yes, 1-3 days a month
- Infrequently
- No
- I am not sure

Please indicate if each of the following statements will be applicable to the future of your organization:

	Yes	No	I do not know
Some staff will work in the office every day; some will partially or completely telecommute.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Different teams will be in the office on different selected days; only a few employees will be in the office almost every day.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most employees will telecommute a few days of the week and work in the office the other days.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most employees will telecommute for as many days as they desire.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most employees will return to in-person work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How much do you agree that your organization will continue to support schedule flexibility in the future to help employees manage work and personal life?

- Strongly agree
- Somewhat agree
- Neutral
- Somewhat disagree
- Strongly disagree
- I do not know

Will your organization or MN operations recruit talent from outside of MN who will work completely remotely?

- Yes, as long as the nature of the job is feasible for telecommuting
- Not sure
- No, tax and regulations are too complicated
- No, the organization culture prefers in-person work
- No, the nature of the operation requires in-person work

Which of the following best describes telecommuting at your organization during the pandemic?

- We had had a telecommuting policy prior to the pandemic and continued the policy
- We had had a telecommuting policy prior to the pandemic and simplified the policy
- Whoever could telecommute did so while a formal policy was put in place
- Whoever could telecommute did so without a formal policy
- Most of our employees worked in-person due to the nature of the work

Which of the following best describes your organization's expectation of employee performance during the pandemic?

- No change
- More results-driven
- Lower expectation
- Higher expectation

Overall, did your employees get more or less done when they telecommuted during the pandemic?

- A lot more
- Somewhat more
- A little more
- About the same
- A little less
- Somewhat less
- A lot less

How much do you agree with the following statements about your organization during the pandemic:

	Strongly agree	Somewhat agree	Neutral	Somewhat disagree	Strongly disagree
We did our best to give employees the schedule flexibility needed to manage their personal and family responsibilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supervisors provided support that helped employees manage work and personal life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supervisors trusted employees when they telecommuted.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The organization supported employees' well-being.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Which of the following support did your organization provide for telecommuting employees during the pandemic? Check all that apply.

Pay for home Internet cost (partial or full)

- Let employees take equipment home
- Let employees take office furniture home
- Provide a stipend to purchase equipment
- Provide a stipend to purchase office furniture
- Ship equipment to employees' residence
- Ship office furniture to employees' residence
- Purchase equipment and ship it to employees' residence
- Purchase office furniture and ship it to employees' residence
- Other, please specify: _____

Thank you for taking the time to complete the survey. As a thank-you, we would like to invite you to participate in a random drawing of gift cards. There will be one (1) \$200 gift card, two (2) \$100 gift cards, and four (4) \$50 gift cards. If you agree to participate, your name will be entered into the random drawing. If you win one of the gift cards, we will contact you via your preferred method. Click [here](#) to complete an independent Google Form. Your survey response is NOT linked to the Google Form.