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FIRM AND WORKING FROM HOME ON JOB SATISFACTION

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Happier at Work? The Impact of Working at an Employee-Owned Firm and Working from Home on Job Satisfaction

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ABSTRACT

This paper examines the impact of working for an ESOP firm and Working-From-Home (WFH) on job satisfaction in the National Longitudinal Survey of Youth 1997 (NLSY97) and the General Social Science (GSS) survey. It finds that job satisfaction is higher for employees in ESOPs than for observationally similar workers in non-ESOP firms and for WFH workers than for their non-WFH peers. Fixed effect analysis of the NLSY97 finds that both ESOP and WFH employment raise job satisfaction for the same worker when he/she changes work status. The channels through which the two conditions raise satisfaction appear to differ: ESOPs raise satisfaction by increasing worker participation on collective workplace or firm decisions while WFH raise satisfaction by increasing worker flexibility in their individual work activity. Both participation and flexibility also raise job satisfaction independently. The data further show ESOPs had more extensive WFH than non-ESOP firms during the Covid-19 pandemic.

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Satisfaction with one's job is a central component of personal well-being and labor market behavior. It is strongly linked to overall life satisfaction and influences key economic decisions, such as whether to remain in a job or quit, how much to invest in human capital at work, and effort at work. Even when compensating differentials equalize wages at the margin, differences in working conditions can generate substantial inframarginal differences in job satisfaction, benefiting those with greater preferences for a desirable condition.

This paper examines the effect on worker happiness of two work conditions that have gained prominence in the United States: employment in a firm with an Employee Stock Ownership Plan (ESOP) that gives workers a *collective* influence on firm decisions as owners of the firm and working from home (WFH) that gives workers flexibility in their *personal* work activity. We measure worker happiness by their responses to questions on job satisfaction.

ESOPs were established by the US Congress in 1974 as a tax-privileged retirement fund that gives employees an ownership stake in their firm with a role in firm governance that reflects their share of ownership. They are the US's most successful form of employee ownership. In the Covid-19 pandemic ESOP firms that had not used WFH much before the crisis introduced WFH more rapidly than other firms (Xu, Blasi, Kruse, and Freeman 2024), seemingly reflecting the greater weight ESOPs gave to workers' concerns about avoiding the contagious disease.

WFH was a niche work location prior to the 2020 Covid-19 pandemic, dominated by the self-employed, for whom home was the natural work location.¹ In the pandemic many firms introduced WFH as a temporary shift of work, often responding to public health officials closing "non-essential" business sites, with the understanding that work would resume at regular workplaces once the pandemic ended. After the pandemic, however, many workers found that they preferred to work at home despite managers wanting them to return to their office or other business location. This made WFH one of the most highly contested conditions of work.²

In this paper we estimate the impact of ESOPs and WFH on worker happiness measured by questions on job satisfaction and explore the channels or mediating mechanisms by which ESOP ownership or WFH raises well-being. We compare job satisfaction between observably similar workers in the National Longitudinal Survey of Youth 1997 cohort (NLSY97) and in various waves of the General Social Survey (GSS) and use the NLSY97 to assess the effect of ESOP and likely WFH on the *same* worker when that worker changes ESOP or likely WFH status.

Consistent with findings in other data sets, our analysis shows that workers in an ESOP report higher job satisfaction than non-ESOP workers with similar characteristics and that WFH workers report higher job satisfaction than non-WFH workers with similar measured characteristics. These results persist in the NLSY97 when we add worker fixed effects to regression models, indicating that job satisfaction improves for the *same* worker when they change

¹ Evidence from the May 2004 supplement of the Current Population Survey (BLS, September 2005, Tables 1 and 7) shows that 7.5% of workers (10,309 out of the total employed 136,602) reported working at home for pay. Of these, 3,349 were paid wage and salary workers and 6,960 were self-employed, indicating that about two-thirds (6,960 out of 10,309) of those working at home for pay were self-employed.

² Evidence on WFH prior to the pandemic shows that, as of February 2020, 9% of workers reported teleworking (BLS, October 2022, Table 9), compared with a pandemic-driven peak of 35.4% in May 2020 (BLS, May 2020, Table 1). The rate remained at 23.6% in January 2025 (BLS, January 2025, Table 1).

ESOP status. As the NLSY97 gathered information on WFH in only one year, we used a proxy for WFH in longitudinal analysis -- the tele-workability of a workers' occupation -- in our fixed effect analysis of WFH and find that job satisfaction improved for the *same* worker when they shift to occupations with higher tele-workable conditions. Looking at the channels through which ESOPs and WFH impact job satisfaction, the survey data shows that ESOP raises well-being by giving workers a collective participation in firm decision-making while WFH raises well-being by enhancing individual flexibility in personal work activity. Finally, the evidence shows that ESOP firms made greater use of WFH in the Covid-19 pandemic than non-ESOP firms.

1. Survey Data: NLSY97 and GSS

We analyze the NLSY97 and GSS data sets because they contain data on ESOP and WFH work conditions, on worker perceptions of job satisfaction and on workplace practices, such flexibility or participation in governance that are potential channels through which ESOPs and WFH impact worker happiness.

The NLSY97 (<https://www.bls.gov/nls/nlsy97.htm>) is a longitudinal data set based on nearly 9,000 workers born during the years 1980 through 1984 in the US that allows us to estimate the relation between job satisfaction and ESOP in cross-section comparisons of different workers and in fixed effect comparisons of the *same* worker over time. Because the NLSY97 asked about WFH in only one-year 2021 for a limited sample of workers,³ we develop a proxy for the likelihood of working WFH based on whether the occupation has job tasks that give it a high or low “teleworkable” potential (Dingle and Niemann, 2020) for a fixed effect analysis of WFH. The NLSY97 also did not ask workers about participation in firm decisions, so we are limited to examining the effect of flexibility of work as a mediating factor in job satisfaction.

The GSS (<https://gss.norc.umd.edu/>) is a cross-section survey that asked whether a worker was working WFH in waves before and after the pandemic, and whether worker had a capital stake in the firm through an ESOP or other financial instrument. We use the 2014, 2018, and 2022 waves of the GSS data when both the ESOP and WFH measures are available. Special GSS modules about worker participation and voice in firm governance give it particular importance in analysing the participation channel in job satisfaction. For some questions, however, the GSS's sampling structure (see Appendix A) questions only a small subsample of participants, which gives a wide band of uncertainty about estimated results.

By analyzing data sets with different strengths and weaknesses, we ideally obtain results that give a more complete and more generalizable picture of the relation between the ESOP and WFH and job satisfaction than if we had examined only one survey.

Table 1 presents summary statistics for the key variables in our study.⁴ Supporting our examining the two surveys together, we note that work satisfaction averages between 0.75 and 0.80 across all cross-sectional and longitudinal samples. The WFH indicators are also similar across datasets. In the GSS cross-sectional waves, the share of workers reporting WFH increases from 0.17 in 2014 to 0.33 in 2022, consistent with the expansion of remote work following the

³ Those with non-hourly pay and not paid overtime, which excludes most blue-collar and service workers.

⁴ Appendix Table A1 gives definitions of other variables.

COVID-19 pandemic. The NLSY97 measure of WFH hours aligns with this pattern, showing the high rate of WFH and an average of 23.49 weekly hours WFH for those reporting any WFH in 2021, the sole year it asked about WFH, seemingly spurred by the pandemic.

The mean values of ESOP, by contrast, vary substantially across surveys and years. The GSS reports a smaller proportion of workers in ESOPs than the NLSY97. The GSS's question might have produced low estimates of by asking respondents if they were covered which some may have interpreted as being fully vested while others paid little attention if their ESOP was dwarfed in value by a 401k retirement plan. The NLSY97 ESOP question is very different. It is part of a general question that asks if "Employers make benefits available to respondents" with "Employee Stock Ownership Plan(s)" listed as a benefit. These responses could produce high estimates of ESOP participation if workers confused ESOP with other forms of stock ownership, such as stock purchase plans which encourage workers to buy shares at discounted prices. The NLSY97 sample is, moreover, restricted to workers in a four-year age band who hold jobs lasting at least 26 weeks, or at least 2 weeks since the date of last interview, which may also skew ESOP incidence upward.⁵ Neither survey validated workers responses by identifying their employer and asking if the employer filled out tax form 5500 as required under the Employee Retirement Income Security Act. But given the way that form 5500 collects data even that information yields variation in the rate of participation in an ESOP.⁶

⁵ Appendix Figure A1 gives the longitudinal trend of ESOP participation in the NLSY97 in participation rates across survey years. Appendix Table A2 reports detailed measures of employee ownership in the GSS: ESOP participation, non-ESOP stock ownership, and upper- and lower-bound definitions of stock and bonus measures, along with their mean values across survey waves.

⁶ Blasi and Kruse (2025) point out that widely used estimate by the National Center for Employee Ownership (NCEO) (2024) estimate that about 10.8 million employees, or almost 8 percent of the private sector workforce, are ESOP participants has some ambiguities due to the overlap of reporting numbers in different pension program – notably between ESOPs and KSOPs, that allows employees to own shares of company stock through an ESOP, but which do not report the numbers who did choose the ESOP.

Table 1. Mean Values of Major Variables in NLS97 and GSS

	1997-2021 NLSY97	2021 NLSY97	2014 GSS	2018 GSS	2022 GSS
Job Satisfaction ^a	0.75	0.79	0.76	0.77	0.79
EO Measures ^b					
ESOP	0.15	0.24	0.02	0.09	0.02
Stock	/	/	0.08	0.12	0.06
Bonus	/	/	0.15	0.37	0.13
WFH Measures ^c					
WFH (Dummy)	/	0.59	0.29	0.35	0.46
WFH (Detailed)	/	0.33	0.17	0.20	0.35
WFH Hour	/	23.49	/	/	/
% reporting					
Mainly at Home	/	/	0.03	0.04	0.20
Once a Week or More	/	/	0.14	0.16	0.17
Once a Month or Less	/	/	0.11	0.15	0.09
Never	/	/	0.71	0.65	0.54
% reporting Weekly WFH					
More than 40	/	0.08	/	/	/
20 to 40	/	0.25	/	/	/
Less than 20	/	0.27	/	/	/
Zero	/	0.41	/	/	/
Occupation is Tele-workable^d	0.33	0.43	/	/	/

Notes to Table 1

Means are based on sample weights. “/” in the table indicates that the variable is unavailable.

a) Job satisfaction question for NLSY97 is “Which of the following best describes how you feel about your job, like it very much, like it fairly well, think it is OK, dislike it somewhat, dislike it very much?”, normalized to range from 0 to 1, with 0 for disliking it very much and 1 for liking it very much. GSS question is “All in all, how satisfied would you say you are with your job, very satisfied, somewhat satisfied, not too satisfied, not at all satisfied?”, normalized to range from 0 to 1, with 1 for “very satisfied”.

b) ESOP question for NLSY97 is “Employers make benefits available to respondent” with Employee Stock Ownership Plan(s)” as one of listed benefits, with 1 for benefit is available. GSS question is “Are you a member of an Employee Stock Ownership Plan, commonly called an ESOP?”, with 1 for ESOP membership and 0 otherwise. It also asks “Do you own any shares of stock in the company where you now work, either directly or through some type of retirement or stock plan?”, coded 1 for ownership of non-ESOP stock; and “In your job, are you eligible for any type of performance-based pay, such as individual or group bonuses or any type of profit-sharing?”, coded 1 for workers eligible for group bonuses or profit-sharing, and 0 for others.

c) WFH question for NLSY97 asks “Hours per week respondent worked at home.” The dummy WFH variable is 1 for positive hours and 0 otherwise. The detailed WFH variable is normalized to range from 0 to 1, with 0 for zero hours, 0.2 for 0 to 10 hours, 0.4 for 10 to 20 hours, 0.6 for 20 to 30 hours, 0.8 for 30 to 40 hours, and 1 for 40 or more hours. WFH hour is actual hours for those reporting any. GSS question is “How often do you work at home as part of your job?” The dummy WFH variable gives 0 for never working at home and 1 otherwise. The detailed WFH variable ranges from 0 to 1, with 0 for never working from home, 0.2 for a few times a year, 0.4 for about once a month, 0.6 for about once a week, 0.8 for more than once a week, and 1 for working mainly at home.

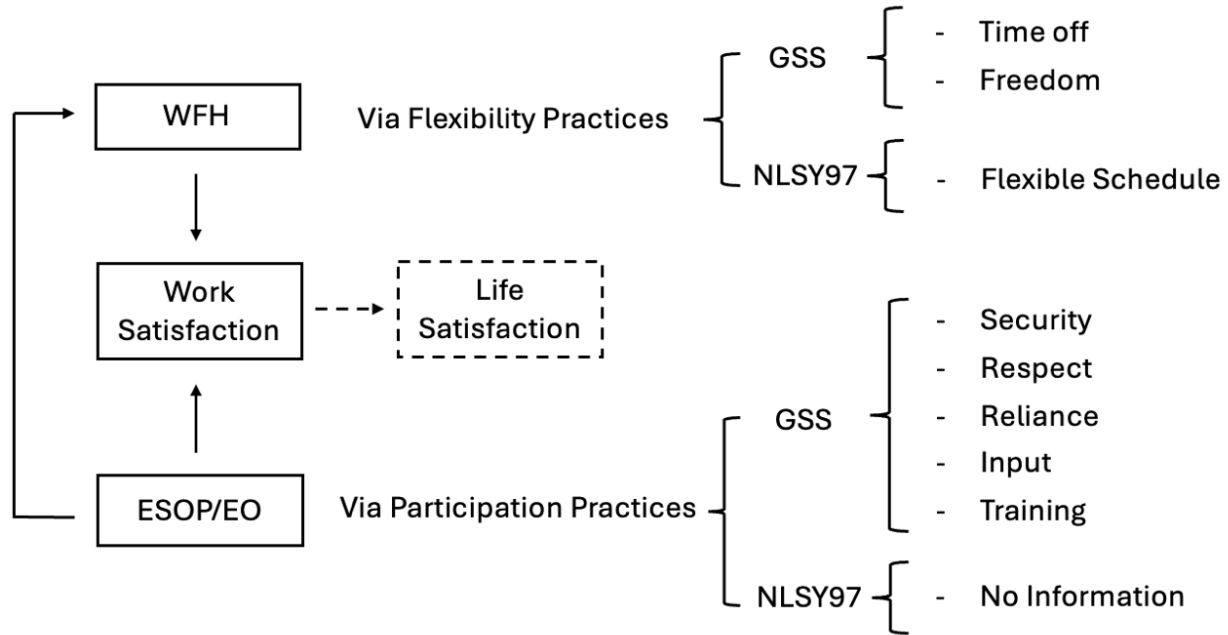
d) Tele-workable occupation is from Dingle and Nieman (2020) classification based on O*Net data on actual work tasks.

2. Channels of Effects: Individual Control vs Collective Voice

The flow diagram in Figure 1 shows the main features of our model of how ESOP/EO and WFH affect job satisfaction through different channels or mechanisms. ESOPs improve workers' lives through participatory workplace practices that give employees a *collective* voice in business decisions. Working in an ESOP as an owner should lead workers to identify more with the firm's goals than working in a non-ESOP firm.

By contrast, WFH improves workers' lives by giving workers control over the timing, pacing, and mode of *personal* daily work that allows them to better fit work to their needs and preferences. It resembles self-employment or contract work where the worker does the work with little direct supervision and in-person interaction with the firm. Working from home should not lead workers to identify more with the firm's goals and could reduce it compared to working at a firm workplace.

Figure 1. Pathways from WFH and ESOP to Job Satisfaction/Life Satisfaction



The left side of the flow diagram shows job satisfaction as the dependent variable. Consistent with studies that show job satisfaction is a major factor in life satisfaction,⁷ we find that that this holds in the NLSY97 and GSS,⁸ but eschew analyzing the potentially complicated ways

⁷ Ferrer-i-Carbonell and Frijters (2004) found job satisfaction to be a strong predictor of life satisfaction. Green (2010) shows that higher job satisfaction also shapes long-term well-being and labor mobility decisions. Chadi and Hetschko (2018, 2021) show that changes in job quality, whether through promotions, improved working conditions, or shifts into more desirable roles, improve life satisfaction largely mediated through job satisfaction.

⁸ Appendix Tables C1 shows that job satisfaction is positively linked to life satisfaction in our data sets.

in which job satisfaction and well-being in other domains interact to produce life satisfaction.⁹ Our focus is on the two conditions of work, their interconnections, and link to job satisfaction.

We label individual actions effectuated by WFH as *flexibility* practices and collective actions associated with ESOPs as *participation* practices. The right-hand side of Figure 1 shows the questions that we chose as best suited to measure the proposed routes of impact in the two surveys. NSLY97 asks directly about having a flexible schedule. The GSS asks about the ease of taking time off during work to attend to personal or family matters (*Time off*) and the freedom to decide how to carry out one's own work (*Freedom*), which we combine into a single flexibility measure. On participation, the GSS has modules about such practices as good job security (*Security*), being treated with respect at the workplace (*Respect*), relying on colleagues when help is needed (*Reliance*), having opportunities for input through involvement in task forces for decision-making (*Input*), receiving formal training from the current employer within the last 12 months (*Training*). The NLSY97 had no questions on worker participation in workplace decisions.

Our empirical analysis begins by regressions that estimate the direct effects of working in an ESOP ($ESOP_i$) or working from home (WFH_i) on job satisfaction $JobSat_i$

$$(1) JobSat_i = \beta_0 + \beta_1 ESOP_i + \beta_2 WFH_i + X_i' \gamma + \delta Industry_i + \phi WP_i + \varepsilon_i, \text{ where}$$

X_i is a vector of individual characteristics including age and its square, gender, marital status, and educational attainment; $Industry_i$ is a set of industry fixed effects; and WP_i is a measure for Work Pressure, viewed as an intrinsic part of the workers' job.¹⁰

We first estimate the effect of *ESOP* and *WFH* on *JobSat* separately (with β_1 or β_2 set to 0), which connects to prior studies that look solely at one of the two conditions. Then we estimate the effect of the two conditions combined. Extending the analysis to the longitudinal NLSY97, we add dummy variables for person fixed effects to estimate the effects of ESOP and WFH on the *same* worker,¹¹ with the effects identified from workers who changed ESOP or WFH status.¹²

⁹ Judge and Watanabe (1993) show that there is reciprocal relation between job satisfaction and life satisfaction. See also Bowling, Eschleman, and Wang (2010), Helliwell and Huang (2010, 2014), and Erdogan et al. (2012).

¹⁰ In the GSS, we use the statement "I have too much work to do everything well" to indicate perceived work pressure. In the NLSY97, we use a binary indicator for whether the respondent worked overtime on their main job. These controls allow us to adjust for work pressure that can affect both WFH and self-reported satisfaction. The findings remain largely unchanged with the work pressure indicator omitted from the analysis.

¹¹ Studies of job satisfaction show that satisfaction depends on both personal dispositions and workplace experiences. Staw and Ross (1985) reported within-person stability in job attitudes while Clark (1999, 2001) found that changes in wages, job characteristics, and broader work conditions altered satisfaction though some persistence remains. Böckerman, P., & Ilmakunnas, P. (2009) show that job disamenities reduce satisfaction and increase quit intentions in panel estimates. Georgellis and Lange (2007) document that participation in organizational decision-making is associated with sustained improvements in satisfaction over time. Green (2006) highlights the role of job intensity in shaping long-run satisfaction trends, while De Neve and Ward (2017) provide broader evidence that happiness at work exhibits persistence and can contribute to productivity over extended periods.

¹² Absent any measure of why persons changed WFH or ESOP, the estimates may not extend to workers who did not change were they to change status in the future.

3. Empirical Results

Table 2 gives statistical results from estimates of equation (1) with ESOP as the condition of work. The results in column (1) for the entire NLSY97 dataset, with multiple observations on individuals, show a strong positive relation between being in an ESOP and job satisfaction. The results in column (2), limited to 2021 highlight the relation in the only year in which the NLSY97 also had data on WFH, shows a similar strong relation of ESOPs on satisfaction. In contrast, the GSS results are mixed: an insignificant positive effect for the 2014 wave in column (3), an insignificant negative effect for the 2018 wave in column (4) but a positive significant effect with a very large coefficient for the 2022 wave in column (5)¹³. Just as Table 1 showed wide variation in estimates of the percentage of workers in an ESOP firm across the waves of the GSS, Table 2 shows wide variation in estimated effects on job satisfaction, possibly for the same reason -- the variation in sample design of the GSS described in Appendix A.

Table 2. Estimated Regression Coefficients on Impact of ESOP (measured as 0/1 dichotomous variable) on Job Satisfaction

	(1)	(2)	(3)	(4)	(5)
	1997-2021	2021	2014	2018	2022
	NLSY97	NLSY97	GSS	GSS	GSS
ESOP	0.021*** (0.003)	0.033*** (0.010)	0.079 (0.057)	-0.043 (0.044)	0.106** (0.049)
N	88,407	4,447	1,237	1,409	1,914
Y Mean	0.74	0.77	0.78	0.79	0.79

Notes: Estimates use all waves of NLSY97 in Column (1) and 2021 wave in Column (2) and use the 2014, 2018, 2022 waves of the GSS. Column (1) uses sample that includes respondents who participated in all or any of the survey years and controls for key demographic characteristics including gender, age, and ethnicity. Columns (2) to (5) include variables for individual's age and its square, gender, marital status, and educational attainment, for industry with 2-digit level dummy variables per the 2007 Census industry classification codes, and measure of work pressure. All specifications apply GSS or NLSY97 sample weights and robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3 records estimates of equation (1) with job satisfaction regressed on WFH as the condition of work. Here we measure WFH measured in three ways based on the survey questions: first as a 0-1 dummy variable for whether the worker reported any WFH in the relevant period (Panel A); second by scaling responses to the questions from 0 to 1 depending on the number of WFH hours in the NLSY97 and according to the categories of WFH time in the GSS survey (Panel B); and by the categories organized into high-middle-low to see whether the responses fit into an inverse U shape, with satisfaction rising and then stabilizing or falling when they do all or almost work at home (Panel C). As the different ways of measuring WFH does not affect the results, we use the scaled WFH variable, as defined in Panel B of Table 1, for all subsequent analyses. The inverse U is consistent with workers preferring a hybrid location of work.

Most of the calculations show that WFH raised job satisfaction. The NLSY97 estimates in column (1) show a positive significant impact of WFH on job satisfaction that increases (Panel A and B) and with some indication of an inverse-U shape in Panel C, where the bulk of the positive

¹³ As ESOPs make greater use of bonuses and profit-sharing than other firms (Freeman, Kruse, Blasi (2010) we introduced a measure of bonus and profit-sharing to the regression. Appendix Table B1 shows that bonus and profit-sharing has a substantial effect on job satisfaction that reduces the estimated effect of the ESOP.

impact on satisfaction occurs for the category of persons working 20-40 WFH hours per week, and drops to insignificant small positive for those working more than 40 hours per week.

The GSS estimates in columns (2) to (4) vary with the wave of the survey. The 2014 and 2018 waves estimate that WFH had a significant positive effect on job satisfaction, as in the NLSY97 results but the 2022 wave has small insignificant WFH effects. The 2018 panel shows an inverse U impact of WFH but neither the 2014 wave nor the 2022 wave shows such a pattern.

Table 3. Estimated Regression Coefficients on Impact of WFH on Job Satisfaction

	(1)		(2)	(3)	(4)
	2021		2014	2018	2022
	NLSY97		GSS	GSS	GSS
Panel A: Estimated Coefficients from Regression of Job Satisfaction on WFH as Dummy Variable					
WFH	0.020*		0.073***	0.055***	0.024
	(0.012)		(0.018)	(0.017)	(0.018)
Panel B: Estimated Coefficients from Regression of Job Satisfaction on WFH Scaled from High to Low					
WFH Scaled by Category	0.028*		0.102***	0.073***	0.023
	(0.015)		(0.023)	(0.022)	(0.027)
Panel C: Estimated Coefficients from Regression of Job Satisfaction on Intensity of WFH					
WFH < 20 Hours	0.012	WFH Once a Month or Less	0.046**	0.041*	0.028
	(0.013)		(0.023)	(0.024)	(0.024)
WFH 20 to 40 Hours	0.029**	WFH Once a Week or More	0.086***	0.070***	0.026
	(0.014)		(0.020)	(0.020)	(0.020)
WFH > 40 Hours	0.026	WFH Mainly at Home	0.085***	0.043	0.016
	(0.022)		(0.029)	(0.027)	(0.036)
N	2,140		1,237	1,409	1,914
Y Mean	0.81		0.78	0.79	0.79

Notes: Estimates use the 2014, 2018, 2022 waves of the GSS, and the 2021 wave of the NLSY97. All include variables for individual's age and its square, gender, marital status, and educational attainment, for industry with 2-digit level dummy variable per the 2007 Census industry classification codes, and measure of work pressure and apply GSS or NLSY97 sample weights and robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Finally, we examine the estimates of the effect of ESOP and WFH on job satisfaction when we include both conditions in the same equation, with NSLY97 estimates limited to 2021 because it was the only year the survey asked about WFH. Having both ESOP and WFH in the same equation changes some of the coefficients estimated in Tables 2 and 3, which indicates that the two work conditions are correlated, which we explore further in Section 5.

Table 4. Estimated Regression Coefficients for Effects of ESOP and WFH on Job Satisfaction

	(1)	(2)	(3)	(4)
	2021	2014	2018	2022
	NLSY97	GSS	GSS	GSS
ESOP	0.038***	0.068	-0.045	0.103**
	(0.014)	(0.059)	(0.045)	(0.049)
WFH	0.016	0.072***	0.055***	0.023
	(0.018)	(0.018)	(0.017)	(0.018)
N	1,721	1,237	1,409	1,914
Y Mean	0.79	0.78	0.79	0.79

Notes: Estimates use 2014, 2018, 2022 waves of the GSS, and the 2021 wave of the NLSY97. All include variables for individual's age and its square, gender, marital status, and educational attainment, and 2-digit level dummy

variables per the 2007 Census industry classification codes, and measure of work pressure and apply GSS or NLSY97 sample weights and robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The NLSY97 regression in Table 4 shows a stronger impact for ESOP than WFH on job satisfaction while the GSS regressions vary across waves, with stronger impacts for WFH than for ESOP in the 2014 and 2018 waves but greater impact for ESOP than WFH in 2022.¹⁴ We conclude that these data suggest that while ESOP and WFH are largely associated with higher job satisfaction, the cross section comparisons are insufficient to pin down those effects. This motivates a fixed effect analysis of the contribution of ESOP and WFH on job satisfaction in the longitudinal NLSY97.

Fixed Effect Estimates of the ESOP and WFH Contribution to Job Satisfaction

The 20 years of NLSY97 data on ESOP status and job satisfaction provides a sample of 88,407 observations on 8,691 different workers that allows us to test the extent to which the estimated effects of ESOPs on job satisfaction in Tables 2-4 reflect the impact of changes in work conditions on satisfaction over time for the *same* person (as opposed to the possible selectivity of workers with innately higher job satisfaction into ESOP firms or WFH work). For this test, we added dummy variables for individuals to our job satisfaction regression and produced the fixed effect estimates of the ESOP effect on job satisfaction in column (1) of Table 5.¹⁵ The estimated coefficient on ESOP is about the same as the estimated coefficient in the cross section in Table 2, which implies that most if not all of the positive link between ESOPs and job satisfaction occurs when workers change between ESOP and non-ESOP status.

Table 5. Fixed Effect Estimates of ESOP Employment and Being in Job with Telework Potential on Job Satisfaction: NLSY97

	Job Satisfaction, Wave 1997-2021		
	(1)	(2)	(3)
ESOP	0.025*** (0.003)		0.022*** (0.003)
Tele-workable Proxy for WFH		0.047*** (0.003)	0.044*** (0.003)
N	88,407	94,846	87,335
Y Mean	0.74	0.75	0.74
Person FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Notes: Specifications are estimated using the longitudinal NLSY97 data. Sample consists of respondents who participated in any or all of the survey years. All specifications include year fixed effects to absorb time-specific shocks and person fixed effects to control for unobserved, time-invariant individual heterogeneity.

As NLSY97 asked about WFH only in 2021 and only for persons paid non hourly rates with no overtime payment, a fixed effect analysis on the reported WFH in the NLSY97 is

¹⁴ While the variation in GSS results could reflect sampling issues, it is also possible that the large WFH effects in the 2014 and 2018 waves reflect the strong preference for WFH among the modest proportion working from home in that period while the weaker WFH effects in the 2022 GSS and 2021 NLSY97 reflect the influx into WFH of workers with less innate preference for WFH.

¹⁵ Table 5 uses sample that consists of respondents who participated in any or all of the survey years. Findings are similar when the sample is restricted to respondents who participated in all of the survey years.

impossible. To see whether WFH raised the job satisfaction of an individual worker, we found a proxy variable for WFH in every year that can track likely changes in a workers' WFH status. The proxy variable is the Dingle and Neiman (2020) index of the potential for work to be done at home in different occupations based on the O*Net data on the job tasks performed by workers. The index varies greatly among occupations: some occupations have high levels of potential for telework (e.g. Financial analysts and Software developers) while others have low levels of potential (e.g. Physician assistants and Maintenance workers). If actual work from home is strongly connected to the telework variable, then regressing job satisfaction on the telework index of the occupation of the worker in a given year along with the other variables in our analysis and with dummy variables for each worker would identify at least part of the effect of WFH on job satisfaction for the *same* worker. To see if the actual WFH is strongly related to the telework index, we regressed different measures of WFH in 2021, the only time the NLSY97 asked for WFH, on the telework index. Appendix Table D1 shows that all of our measures of WFH were significantly related to the telework proxy variable.

Column (2) of Table 5 gives the coefficient for the fixed effect regression of job satisfaction on the telework proxy for WFH for the NLSY97 for the 1997-2021 period. The coefficient is substantial and significant and thus consistent with WFH raising the job satisfaction of the same worker. Column (3) gives the fixed effect regression of job satisfaction on both ESOP and the telework proxy and has a similar outcome. Both ESOP and the proxy for WFH based on the telework index for workers' occupation are positively associated with job satisfaction for the same worker.

But there is a problem with the 2021 NLSY97 measure of WFH: the survey did not ask the WFH question to all workers. It asked only of workers who were paid non hourly rates with no overtime, a largely white-collar group that makes up 37% of the NLSY97 work force. The absence of data on the WFH of hourly workers makes it unclear how well the proxy index fits their WFH experience. While additional probes of the telework-index in Appendix D suggest that it is still a valid proxy for actual WFH, we should be leery about the magnitude of the estimated effect.

4. Flexibility and Participation as Channels of Impact

We turn next to the hypothesized paths by which ESOP and WFH affect job satisfaction. Here we rely more on the GSS dataset because it asked workers about their participation in dealing with collective issues facing workers and the firm and about flexibility at work whereas the NLSY97 asked only about flexibility. To test the Figure 1 hypothesis that WFH works largely through individual flexibility while ESOP works largely through participation, we first estimate variants of equation (2):

$$(2a) \text{ Participation}_i = \alpha_0 + \alpha_1 \text{ESOP}_i + \mathbf{X}_i' \pi + \delta \text{Industry}_i + \phi \text{WP}_i + v_i$$

$$(2b) \text{ Flexibility}_i = \alpha_0 + \alpha_1 \text{WFH}_i + \mathbf{X}_i' \pi + \delta \text{Industry}_i + \phi \text{WP}_i + v_i$$

The hypothesis that ESOP contributes more to participation than to flexibility implies a greater estimated α_1 effect in (2a) than in (2b) while the hypothesis that WFH contributes more to flexibility than to participation implies a greater estimated α_1 in (2b) than in (2a).

Then, we add the flexibility and participation measures to job satisfaction equation (1) to see the extent to which entering them in the equation reduced the estimated coefficients of ESOP and/or WFH.

$$(3a) JobSat_i = \theta_0 + \theta_1 ESOP_i + \theta_2 Participation_i + X_i' \lambda + \delta Industry_i + \phi WP_i + \eta_i$$

$$(3b) Job Sat_i = \theta_0 + \theta_1 WFH_i + \theta_2 Flexibility_i + X_i' \lambda + \delta Industry_i + \phi WP_i + \eta_i$$

If participation is a channel for ESOP to affect *JobSat* the estimated coefficient on ESOP should be lower in equation (3) than in the comparable equation (1) which excludes the participation variable. Similarly, if flexibility is a channel for WFH to impact *JobSat*, the estimated coefficient on WFH in (3) should be lower in equation (3) than in the comparable equation (1) which excludes the flexibility variable.

Table 6 presents the regression analyses of participation and flexibility as a mediating mechanism for the impact of ESOP and WFH on job satisfaction. The regression results in Panel A show that participation is significantly related to participation in the 2014 and 2022 waves of the GSS and is weakly positively related to participation in the 2018 wave. Panel B shows that WFH has a large impact on flexibility in the NLSY97 and in two of the three GSS waves.¹⁶

Table 6. Estimated Regression Coefficient for ESOP Operating through the Participation Channel and WFH Operating Through the Flexibility Channel

	(1)	(2)	(3)	(4)
	2021	2014	2018	2022
	NLSY97	GSS	GSS	GSS
Panel A. Estimated Coefficient from Regressing Participation on ESOP				
ESOP		0.631**	0.194	0.884***
		(0.259)	(0.185)	(0.150)
N		468	1,386	854
Y Mean		3.46	3.50	3.49
Panel B. Estimated Coefficient from Regressing Flexibility on WFH				
WFH	0.314***	0.033	0.153***	0.261***
	(0.033)	(0.061)	(0.058)	(0.043)
N	1,761	1,232	1,404	1,899
Y Mean	0.67	1.55	1.63	1.64

Notes: Estimates use the 2014, 2018, 2022 waves of the GSS, and the 2021 wave of the NLSY97. All include variables for individual's age and its square, gender, marital status, and educational attainment, for industry with 2-digit level dummy variable per the 2007 Census industry classification codes, and measure of work pressure and apply GSS or NLSY97 sample weights and robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The final test of participation and flexibility operating as mediating channels for ESOP and WFH, respectively, is the extent to which their addition to job satisfaction equation reduces the coefficient on ESOP and WFH, respectively.

Panel A of Table 7 shows the estimated effect of ESOP on job satisfaction absent the participation variable, the estimated effect of ESOP on job satisfaction, and the estimated effect of

¹⁶ Appendix Tables B3 and B4 show comparable results to Table 6 when the participation and flexibility measures are included in the analysis separately.

participation on job satisfaction. The addition of participation reduces the coefficient on ESOP from 0.079 (without participation) to 0.028 in the 2014 wave and reduces the coefficient on ESOP from 0.106 (without participation) to 0.020 in the 2022 wave, thus accounting for the bulk of the ESOP effect. It also reduces the negative estimated coefficient of ESOP in the 2018 wave. Note further that the mediating mechanism has a stronger positive effect on job satisfaction than the ESOP variable. It is significant in all three waves while ESOP is negligible.

Table 7. Estimated Regression Coefficients on ESOP/WFH and Mediating Mechanism on Job Satisfaction

	(1)	(2)	(3)	(4)
	2021	2014	2018	2022
	NLSY97	GSS	GSS	GSS
Panel A. Estimated Coefficient from Regressing Job Satisfaction on ESOP and Participation				
<i>ESOP Coefficient from Table 2 without Participation</i>		0.079	-0.043	0.106**
		(0.057)	(0.044)	(0.049)
ESOP		0.028	-0.056	0.020
		(0.053)	(0.038)	(0.047)
Participation		0.096***	0.067***	0.090***
		(0.016)	(0.009)	(0.013)
N		468	1,386	854
Y Mean		0.77	0.79	0.80
Panel B. Estimated Coefficient from Regressing Job Satisfaction on WFH and Flexibility				
<i>WFH Coefficient from Table 3 without Flexibility</i>	0.028*	0.102***	0.073***	0.023
	(0.015)	(0.023)	(0.022)	(0.027)
WFH	0.003	0.099***	0.059***	-0.007
	(0.018)	(0.023)	(0.022)	(0.027)
Flexibility	0.059***	0.086***	0.086***	0.113***
	(0.014)	(0.015)	(0.013)	(0.014)
N	1,761	1,232	1,404	1,899
Y Mean	0.79	0.78	0.79	0.79

Notes: Estimates use the 2014, 2018, 2022 waves of the GSS, and the 2021 wave of the NLSY97. All include variables for individual's age and its square, gender, marital status, and educational attainment, for industry with 2-digit level dummy variable per the 2007 Census industry classification codes, and measure of work pressure and apply GSS or NLSY97 sample weights and robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Panel B of Table 7 gives the results of the analogous calculations for flexibility being a mediating variable for the impact of WFH on job satisfaction. Column 1 shows that adding the flexibility variable reduces the estimated coefficient in the NLSY97 from 0.028 (without flexibility) to 0.003. Columns (2) – (4) show that the flexibility variable also reduces the estimated coefficients on WFH below the estimates without flexibility. But the most striking finding is that, as in panel A, the mediating channel, in this case flexibility, has a greater impact on job satisfaction than the work condition.¹⁷

That the mediating factors of participation or flexibility had greater impacts on job satisfaction than the work conditions, suggests that there is considerable heterogeneity in flexibility and participation that goes beyond our ESOP and WFH variables.

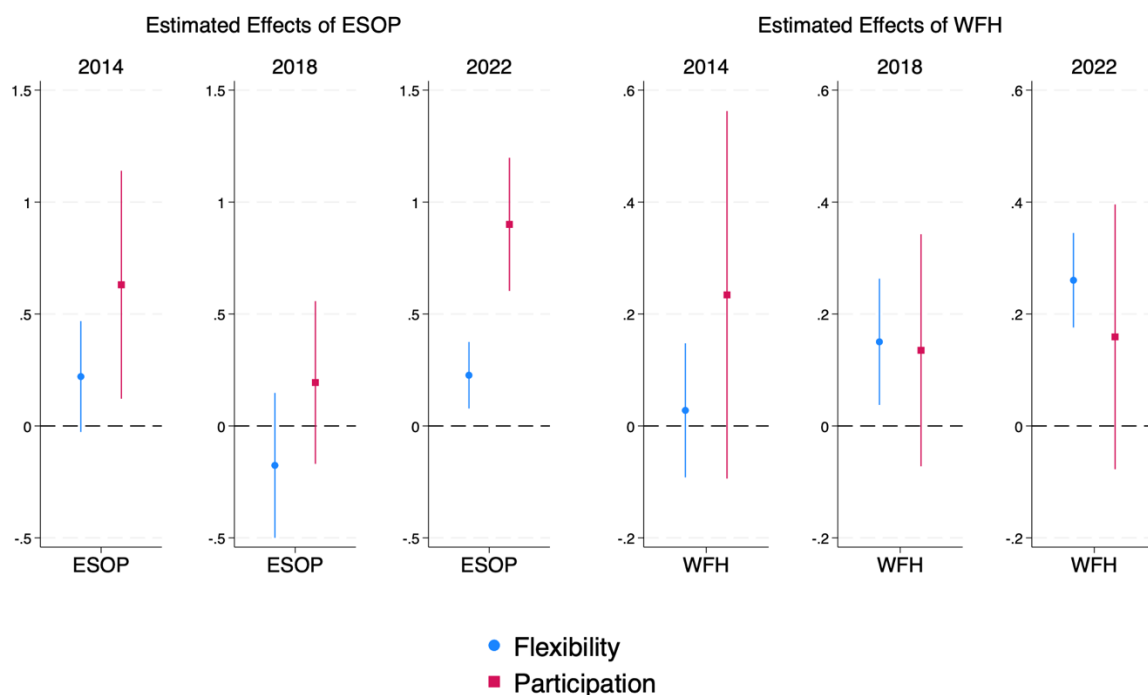
Finally, we tested the hypothesis laid out in the Figure 1 flow diagram that ESOP works

¹⁷ Appendix Tables B5 and B6 show comparable results to Table 7 when the participation and flexibility measures are included in the analysis separately.

primarily by the participation channel while WFH works primarily by the flexibility channel by comparing the estimated coefficients of regressions of flexibility on the two work conditions with the estimated coefficients of regressions of participation on the two work conditions. Figure 2 summarizes this analysis in terms of the mean and 95% confidence interval of the estimated coefficients of participation and flexibility on ESOP and WFH for each the waves of the GSS. The estimates for ESOPs in the left-hand part of the figure shows that in each wave ESOP had a bigger impact on participation than on flexibility. The estimate for WFH in the right-hand part of the figure gives a more mixed picture, with WFH having a greater coefficient on participation than on flexibility in the 2014 wave, a similar coefficient on participation as on flexibility in the 2018 wave, but a more precisely estimated and larger estimated effect on flexibility than participation in the 2022 wave.

The data thus support the claim that ESOP works more through participation than flexibility but are ambiguous on the claim that WFH works more through flexibility than participation.

Figure 2. Comparison of Estimated Coefficients and 95% Confidence Interval of Estimates of The Effect of ESOP and WFH on Flexibility and Participation



Notes: Figure plots the regression coefficients and corresponding 95% confidence intervals from Table 6 and Appendix Table B7.

5. The Impact of ESOPs on WFH

Thus far we have treated the ESOP and WFH as independent and conditions with no link between them, while noting that the statistical analysis suggests there may be a positive connection.

Given that persons working at home are unlikely to mingle with co-workers to form an ESOP the most likely reason for any positive link between ESOPs and WFH is that the maximand of an ESOP firm presumably includes the well-being of worker-owners in their role of workers as well as owners while the maximand of a non-ESOP firm considers only the interests of owners, ESOP firms ought to be more responsive to worker desires for WFH than otherwise comparable non-ESOP firms. We used the NLSY97 2021 evidence on ESOPs and WFH and the three GSS panels to test this expectation by estimating the impact of ESOP on workers report of WFH.

Table 8 summarizes the results of this analysis in terms of regression coefficients on ESOP. Column (1) shows that workers who reported that they had an ESOP at their firm were about 13 percentage points more likely to work from home than others, with a mean percentage WFH in the sample of 34%. Column (2) shows a huge differential in WFH hours between ESOP and other workers: 6 hours more worked WFH per week by ESOP workers than the average of 14 hours. In the GSS, the coefficients on ESOP are positive in all waves, and statistically significant in the post-pandemic wave 2022.¹⁸ These results support the positive association between ESOP participation and WFH adoption reported by Xu, Blasi, Kruse, and Freeman (2024; Figures 1 and 2) in their analysis of 649 firms during the crisis.

Table 8. Estimates of The Impact of ESOP on WFH

	WFH (1)	WFH Hour (2)	WFH (3)	WFH (4)	WFH (5)
		2021 NLSY97	2014 GSS	2018 GSS	2022 GSS
ESOP	0.132*** (0.024)	6.468*** (1.070)	0.111 (0.076)	0.015 (0.045)	0.129* (0.077)
N	1,722	1,722	1,239	1,413	1,942
Y Mean	0.34	14.26	0.24	0.25	0.33

Notes: Estimates use the 2014, 2018, 2022 waves of the GSS, and the 2021 wave of the NLSY97. All include variables for individual's age and its square, gender, marital status, and educational attainment, for industry with 2-digit level dummy variable per the 2007 Census industry classification codes, and measure of work pressure and apply GSS or NLSY97 sample weights and robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

6. Conclusion

This study has examined the connection between job satisfaction and two work conditions that have generated considerable academic and public attention – *working at an employee-owned ESOP firm and working from home* – in the NLSY97 and GSS surveys. The data in the surveys provides strong support for the positive effect of both conditions on satisfaction. Cross-section analysis showed that job satisfaction is higher for employees in ESOPs than for observationally similar workers in non-ESOP firms and is higher for WFH workers than for their non-WFH peers. Fixed effect analysis in the NLSY97 confirms that working for an ESOP raises job satisfaction for

¹⁸ On the notion that it is always insightful to have a case or two to show that interpretation of the data has some grounding in reality, we note that the National Center for Employee Ownership (NCEO, 2022) documents how Clarkson Grain, a 30 percent employee-owned agribusiness in Illinois, moved its non-production staff to remote work for three months and implemented staggered shifts for production workers to reduce exposure risk in the early stage of the pandemic. Similarly, the Vermont Employee Ownership Center (VEOC, 2024) related how King Arthur Baking Company, a 100 percent employee-owned firm, credited its ESOP model with strengthening organizational resilience and flexibility to shift operations and staffing arrangements to meet the changing health dangers conditions.

the *same* worker when that worker changes ESOP status over time. Absent longitudinal data on WFH in NLSY97, our proxy WFH based on the telework index of an occupation supported the conclusion that the impact of WFH on job satisfaction was also for the *same* worker over time. The findings further show a link between ESOPs and WFH, with ESOPs expanding their WFH arrangements more than non-ESOP firms during the Covid-19 pandemic, potentially reflecting the greater weight ESOP firms give to the well-being of their worker-owners than non-ESOP firms give to their non-owner workers.

The evidence that ESOPs raise satisfaction largely through the channel of increasing workers' participation in collective workplace and firm decisions while WFH raises satisfaction largely through giving workers greater control over their own work activity is weaker than that on the level of satisfaction. There are three reasons for this. The first is that NLSY97 had no questions about workers' influence on workplace or firm decisions, so the finding on collective participation depends solely on the GSS. The second is that neither survey had information on an alternative channel for WFH to increase job satisfaction: the savings in commuting time associated with WFH. The third is the evidence that the mediating factors of participation or flexibility had greater impacts on job satisfaction than ESOP and WFH, which directs attention to heterogeneity in the practices or policies determining job satisfaction beyond the presence of ESOP or WFH. Some firms or managers within a non-ESOP firm may involve workers in workplace or firm decisions while some ESOPs or managers within the ESOP may fail to deliver greater worker involvement. Analogously, some firms or managers may provide work flexibility in business facilities while some WFH arrangements may demand that workers deliver output on a schedule that limits their flexibility in work at home.

These issues direct attention to the value of developing new survey modules or questions targeted at the way firms and workers decide on the allocation of job tasks and responsibilities beyond the ownership and location of work – for instance, questions asking workers their role in rearranging work with a new technology or with a crisis that demands change (per the cases in footnote 18) or questions about how a firm or manager handles worker requests to rearrange work time or take time off for personal reasons. Questioning workers and managers about how their firm deals with specific problems could offer insight into the determinants of job satisfaction beyond employee ownership and location of jobs on which we have focused – the heterogeneity of policies and practices within firms with the same ownership structure and in the same location of work.

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Appendix A

The GSS is a repeated cross-sectional survey of U.S. adults that collects information on work arrangements, compensation, and subjective well-being, with detailed modules on employee ownership and compensation. We analyze the 2014, 2018, and 2022 waves of the GSS which had measures of the WFH and ESOP status of every worker. The GSS contains an indicator for working from home and more finely grained measures to reflect gradations of WFH levels. We construct multiple EO measures: indicators for ESOP participation, stock ownership outside of ESOPs, and participation in group bonuses or profit-sharing. Measures of subjective well-being include work satisfaction and life satisfaction (available in 2018 and 2022). The GSS did not ask employee ownership questions in every wave or to the full sample but relied on questions in the Shared Capitalism Module and the Employee Compensation Module. These modules were administered to the full sample in 2014 and 2018 (ballots A, B, and C) but only to two-thirds of the sample in 2022 (ballots B and C). This variation in survey administration creates problems of comparability over time and in interpreting changes as trends over time.

The NLSY97 collects detailed information on employment history, job characteristics, and subjective well-being of a cohort of respondents born between 1980 and 1984, who were in their early forties during the 2021 wave. This allows us to observe changes in work conditions over time for the same individuals. Subjective well-being is measured using work satisfaction and life satisfaction, available in multiple waves. We leverage the survey's longitudinal feature to conduct panel analyses for life satisfaction in the 2006–2008 period and for work satisfaction from 1997 through 2021.¹⁹ The cohort's age profile means our estimates capture the experiences of mid-career workers in their forties, which differs from the full working-age spectrum represented in the GSS.²⁰ For WFH, the NLSY97 includes measures of usual weekly WFH hours in 2021, which we use to construct an indicator for working from home and a categorical measure of WFH hours. The EO measure is an indicator for ESOP participation.

¹⁹ In the NLSY97 dataset, our analysis uses information for respondents' primary job (Job #1) only, even though some respondents hold multiple jobs.

²⁰ Notably, when controlling for whether GSS respondents are in their forties, the results align more closely with the NLSY97 estimates, suggesting that age composition may partially account for differences in the observed effects across the two datasets.

Figure A1. ESOP Participation: NLSY97 from 1997 to 2021

Notes: Authors' calculations using NLSY97 data. The sample includes respondents who participated in all survey years. Estimates are weighted using sample weights.

Table A1. Variable Definitions

	Variable	Description
Demographic Characteristics (GSS & NLSY97)	Age	Continuous
	Female	Binary: 1 indicating female
	Marital Status	Categorical: never married; married; widowed, divorced, separated
	Education	Categorical: less than high school; high school; some college; college and above
Industry (GSS & NLSY97)	2-digit 2007 Census	Categorical: Agriculture; Transportation and Utilities; Construction; Manufacturing; Wholesale trade; Retail Trade; Information; Finance and Insurance; Professional Services; Educational Services and Health Care; Arts and Recreation; Other Services; Public Administration
Work Pressure (GSS & NLSY97)	Overwork (GSS)	Categorical: "I have too much work to do everything well" (strongly agree, agree, disagree, strongly disagree)
	Overtime (NLSY97)	Binary: 1 indicating respondent was paid in overtime
Flexibility (GSS & NLSY97)	Time off (GSS)	Binary: 1 indicating that it is not difficult to take time off during work to handle personal or family matters
	Freedom (GSS)	Binary: 1 indicating being given a lot of freedom to decide how to perform one's own work
	Flexible Schedule (NLSY97)	Binary: 1 indicating that the employer provides a flexible work schedule as a benefit to the respondent
Participation (GSS)	Security	Binary: 1 indicating agreement with the statement "The job security is good."
	Respect	Binary: 1 indicating agreement with the statement "At the place where I work, I am treated with respect."
	Reliance	Binary: 1 indicating agreement with the statement "The people I work with can be relied on when I need help."
	Input	Binary: 1 indicating involvement in any task force for decision-making
	Training	Binary: 1 indicating having received formal training from the current employer in the last 12 months
Life Satisfaction (GSS & NLSY97)	Life Satisfaction	Normalized to range from 0 to 1, with 1 indicating the most satisfied

Notes: Table reports the definitions and coding of variables used in the analysis.

Table A2. Measures of Employee Ownership in the GSS

Measure	2014	2018	2022
1. ESOP	2.31%	8.61%	1.57%
2. Non-ESOP Stock	7.50%	11.63%	5.88%
3. Stock Lower-Bound (Any shares of stock, either directly or through some type of retirement or stock plan)	9.81%	21.26%	8.06%
4. Stock Upper-Bound (No.3 plus “I do not know if I own stock in my company”)	13.28%	29.51%	9.73%
5. Bonus Lower-Bound (No.6 excluding solely individual-based performance pay)	15.10%	36.74%	12.93%
6. Bonus Upper-Bound (Eligible for any type of performance-based pay, such as individual or group bonuses or any type of profit-sharing)	16.58%	40.58%	15.32%

Notes: Authors calculation using GSS sample weights. Sample includes full-time or part-time private-sector workers at firms with stock ownership potential and excludes self-employed, government workers, and workers at firms without stock.

Appendix B

Appendix B contains supplementary tables that provide empirical results using different measures of variable than in the main text to test the robustness and consistency of findings to somewhat different specifications.

Table B1. The Impact of ESOP on Satisfaction With and Without Bonus

	Job Satisfaction					
	(1)	(2)	(3)	(4)	(5)	(6)
	2014 GSS		2018 GSS		2022 GSS	
ESOP	0.066 (0.062)	0.047 (0.066)	-0.044 (0.045)	-0.045 (0.044)	0.103** (0.049)	0.090* (0.048)
Stock	-0.036 (0.040)	-0.051 (0.043)	0.003 (0.031)	0.002 (0.031)	0.009 (0.044)	-0.005 (0.045)
Bonus		0.036 (0.028)		0.003 (0.016)		0.028 (0.025)
WFH	0.101*** (0.023)	0.102*** (0.023)	0.073*** (0.022)	0.073*** (0.022)	0.022 (0.027)	0.020 (0.027)
N	1,237	1,237	1,409	1,409	1,914	1,914
Y Mean	0.78	0.78	0.79	0.79	0.79	0.79

Notes: Estimates use the 2014, 2018, and 2022 waves of the GSS data. All specifications include measures of the individual characteristics of workers -- age and its square, gender, marital status, and educational attainment, and 2-digit level dummy variables according to the 2007 Census industry classification codes, and measure of work pressure. All estimates apply GSS sample weights and robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B2. The Impact of ESOP on Satisfaction With Detailed WFH Levels

Job Satisfaction					
	(1) 2021 NLSY97		(2) 2014 GSS	(3) 2018 GSS	(4) 2022 GSS
ESOP	0.039** (0.014)	ESOP	0.072 (0.061)	-0.046 (0.045)	0.105** (0.049)
WFH < 20 Hours	0.004 (0.016)	WFH Once a Month or Less	0.045** (0.023)	0.040* (0.024)	0.028 (0.024)
WFH 20 to 40 Hours	0.017 (0.017)	WFH Once a Week or More	0.086*** (0.020)	0.071*** (0.020)	0.026 (0.020)
WFH > 40 Hours	0.007 (0.026)	WFH Mainly at Home	0.084*** (0.029)	0.043 (0.027)	0.015 (0.036)
N	1,721		1,237	1,409	1,914
Y Mean	0.79		0.78	0.79	0.79

Notes: Estimates use the 2014, 2018, 2022 waves of the GSS, and the 2021 wave of the NLSY97. All include variables for individual's age and its square, gender, marital status, and educational attainment, for industry with 2-digit level dummy variable per the 2007 Census industry classification codes, and measure of work pressure and apply GSS or NLSY97 sample weights and robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B3. The Impact of ESOP on Participation: Separate Participation Measures

	(1)	(2)	(3)
	2014	2018	2022
	GSS	GSS	GSS
Security: The job security is good			
ESOP	0.109*** (0.025)	-0.083 (0.084)	0.074*** (0.024)
N	1,236	1,402	1,922
Y Mean	0.88	0.90	0.92
Respect: At the place where I work, I am treated with respect			
ESOP	0.084*** (0.025)	-0.005 (0.045)	0.028 (0.021)
N	1,241	1,409	1,941
Y Mean	0.91	0.94	0.92
Reliance: The people I work with can be relied on when I need help			
ESOP	0.091*** (0.025)	0.085*** (0.032)	0.079*** (0.026)
N	1,230	1,398	1,908
Y Mean	0.90	0.91	0.91
Input: Respondent involved in any task force for decision-making			
ESOP	-0.001 (0.163)	-0.022 (0.066)	0.429*** (0.114)
N	473	1,409	897
Y Mean	0.31	0.26	0.27
Training: Respondent received formal training from current employer in the last 12 months			
ESOP	0.339*** (0.110)	0.221** (0.095)	0.286*** (0.100)
N	474	1,410	920
Y Mean	0.49	0.49	0.46

Notes: Estimates use the 2014, 2018, and 2022 waves of the GSS data. All specifications include measures of the individual characteristics of workers -- age and its square, gender, marital status, and educational attainment, and 2-digit level dummy variables according to the 2007 Census industry classification codes, and measure of work pressure. All estimates apply GSS sample weights and robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B4. The Impact of WFH on Flexibility: Separate Flexibility Measures

	(1)	(2)	(3)
	2014	2018	2022
	GSS	GSS	GSS
Time off: It is not hard to take time off during my work to take care of personal or family matters			
WFH	-0.073	0.029	0.143***
	(0.045)	(0.044)	(0.035)
N	1,237	1,410	1,936
Y Mean	0.69	0.74	0.75
Freedom: I am given a lot of freedom to decide how to do my own work			
WFH	0.098***	0.120***	0.114***
	(0.035)	(0.028)	(0.023)
N	1,236	1,410	1,915
Y Mean	0.86	0.89	0.89

Notes: Estimates use the 2014, 2018, and 2022 waves of the GSS data. All specifications include measures of the individual characteristics of workers -- age and its square, gender, marital status, and educational attainment, and 2-digit level dummy variables according to the 2007 Census industry classification codes, and measure of work pressure. All estimates apply GSS sample weights and robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B5. The Impact of ESOP on Satisfaction: Separate Participation Measures

	Job Satisfaction		
	(1) 2014 GSS	(2) 2018 GSS	(3) 2022 GSS
ESOP	0.028 (0.057)	-0.046 (0.039)	0.049 (0.047)
Security	0.075 (0.049)	0.130*** (0.040)	0.233*** (0.043)
Respect	0.297*** (0.056)	0.221*** (0.035)	0.266*** (0.047)
Reliance	0.151*** (0.046)	0.095*** (0.031)	0.016 (0.038)
Input	0.033 (0.027)	-0.004 (0.016)	0.046** (0.022)
Training	0.029 (0.026)	0.031* (0.016)	0.023 (0.021)
N	468	1,386	854
Y Mean	0.77	0.79	0.80

Notes: Estimates use the 2014, 2018, and 2022 waves of the GSS data. All specifications include measures of the individual characteristics of workers -- age and its square, gender, marital status, and educational attainment, and 2-digit level dummy variables according to the 2007 Census industry classification codes, and measure of work pressure. All estimates apply GSS sample weights and robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B6. The Impact of WFH on Satisfaction: Separate Flexibility Measures

	Job Satisfaction		
	(1) 2014 GSS	(2) 2018 GSS	(3) 2022 GSS
WFH	0.086** (0.022)	0.054** (0.022)	-0.009 (0.027)
Time off	0.029 (0.019)	0.061*** (0.019)	0.078*** (0.018)
Freedom	0.177*** (0.032)	0.129*** (0.026)	0.172*** (0.024)
N	1,232	1,404	1,899
Y Mean	0.78	0.79	0.79

Notes: Estimates use the 2014, 2018, and 2022 waves of the GSS data. All specifications include measures of the individual characteristics of workers -- age and its square, gender, marital status, and educational attainment, and 2-digit level dummy variables according to the 2007 Census industry classification codes, and measure of work pressure. All estimates apply GSS sample weights and robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B7. Testing Reverse Pathways

	(1)	(2)	(3)
	2014	2018	2022
	GSS	GSS	GSS
Panel A. Estimated Coefficient from Regressing Flexibility on ESOP			
ESOP	0.221*	-0.176	0.227***
	(0.126)	(0.165)	(0.076)
N	1,236	1,408	1,916
Y Mean	1.55	1.63	1.64
Panel B. Estimated Coefficient from Regressing Participation on WFH			
WFH	0.234	0.135	0.159
	(0.167)	(0.106)	(0.120)
N	467	1,387	858
Y Mean	3.45	3.50	3.48

Notes: Estimates use the 2014, 2018, and 2022 waves of the GSS data. All specifications include measures of the individual characteristics of workers -- age and its square, gender, marital status, and educational attainment, and 2-digit level dummy variables according to the 2007 Census industry classification codes, and measure of work pressure. All estimates apply GSS sample weights and robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix C

Appendix C presents regression estimates of the effect of job satisfaction on life satisfaction. Life satisfaction is positive when regressed on job satisfaction in both NLSY97 and GSS for the period when the life satisfaction measure is available. These results are consistent with a cross-domain spillover effect, whereby improvements in job satisfaction lead to higher overall life satisfaction.

Table C1. The Impact of Job Satisfaction on Life Satisfaction in NLSY97 and GSS

	Life Satisfaction		
	(1)	(2)	(3)
	2006-2008 NLSY97	2018 GSS	2022 GSS
Job Satisfaction	0.060*** (0.021)	0.233*** (0.029)	0.175*** (0.023)
N	8,904	1,408	1,749
Y Mean	0.74	0.75	0.80
Individual & Industry	/	Yes	Yes
Person FE	Yes	/	/

Notes: Estimates use the longitudinal 2006, 2007, and 2008 waves of the NLSY97, and cross-sectional 2018 and 2022 waves of the GSS. Life satisfaction in the NLSY97 is based on two sets of questions: in 2006 and 2007, “Would you say that overall this has been a very good, pretty good, pretty bad, or very bad time in your life?”; and in 2008, “All things considered, how satisfied are you with your life as a whole these days?” (1 = extremely dissatisfied, 10 = extremely satisfied), all normalized to range from 0 to 1, with 1 indicating the most satisfied. Life satisfaction in the GSS is based on the question “If you were asked to rate your overall life from 0 to 10, where 10 represents the best possible state and 0 the worst possible state, how would you rate your life today?”, normalized to range from 0 to 1, with 1 indicating the most satisfied. Specification (1) applies person fixed effects. Specifications (2) and (3) include variables for individual’s age and its square, gender, marital status, and educational attainment, for industry with 2-digit level dummy variable per the 2007 Census industry classification codes, and measure of work pressure. All estimates apply NLSY97 or GSS sample weights and robust standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix D

Appendix D provides an analysis of using the teleworkability of an occupation as a proxy for actual work-from-home arrangements in the NLSY97 data. Specifically, we assess the validity of using an occupation-level teleworkability score, based on the Dingel and Neiman (2020) classification, as a substitute for individual-level WFH behavior in the 2021 wave of the NLSY97. We find consistent evidence that the teleworkability measure is positively correlated with the self-reported WFH measure, suggesting that teleworkability is a plausibly valid proxy for actual WFH behavior. This consistent relationship establishes teleworkability as a plausible and useful proxy for studying WFH in datasets where direct measures are unavailable or suffer from non-random missingness. The following tables present supporting evidence for this relationship.

Table D1. Estimated Coefficients of Regressing WFH on Teleworkable: 2021 NLSY97

	(1) WFH Dummy	(2) WFH Detailed	(3) WFH Hour	(4) WFH Fraction
Teleworkable	0.233*** (0.028)	0.195*** (0.020)	8.806*** (1.000)	0.204*** (0.022)
N	2,100	2,100	2,100	2,075
Y Mean	0.59	0.32	13.86	0.35
R-squared	0.19	0.25	0.21	0.25

Notes: Estimates use the 2021 wave of the NLSY97. All specifications include measures of personal attributes that include age and its square, gender, marital status, and educational attainment, and control for industry. All estimates apply NLSY97 sample weights and robust standard errors.

Tabel D2. Estimated Coefficients of Regressing Job Satisfaction on WFH and Teleworkable: 2021 NLSY97

Sample:	Job Satisfaction					
	(1) Non-Missing WFH	(2) Non-Missing WFH & Missing WFH	(3) Missing WFH	(4) Non-Missing WFH	(5) Non-Missing WFH	(6) Non-Missing WFH & Missing WFH
WFH (Detailed)	0.029* (0.015)				0.032** (0.016)	
Teleworkable		0.035*** (0.009)	0.056*** (0.013)	-0.002 (0.014)	-0.008 (0.014)	
WFH (Predicted)						0.064*** (0.014)
N	2,090	5,134	3,044	2,090	2,090	5,134
Y Mean	0.81	0.79	0.77	0.81	0.81	0.79

Notes: Estimates use the 2021 wave of the NLSY97. The NLSY97 universe for the teleworkable measure includes all respondents who were at least 14 years old and had a valid employer. The NLSY97 universe for the WFH measure includes respondents who were at least 14 years old, had a valid employer from date of last interview, were not in the military, were in an ongoing job for 26 or more weeks, were not paid on an hourly basis, and did not receive overtime pay. The predicted WFH measure uses the self-reported WFH value for the non-missing WFH observations and uses the predicted WFH value (based on the regression coefficients of Column 2 of Table D1) for the missing WFH observations. All specifications include measures of personal attributes that include age and its square, gender, marital status, and educational attainment, and control for industry. All estimates apply NLSY97 sample weights and robust standard errors.

Table D3. Relation Between WFH Status and Teleworkable Classification: 2021 NLSY97

	Self-Reported WFH Status		Total
	Not WFH (Zero Hour)	WFH (Positive Hours)	
Teleworkable Status			
0 (Not Teleworkable)	63%	37%	100%
Between 0 and 1	32%	68%	100%
1 (Teleworkable)	28%	72%	100%

Notes: Authors' calculations using NLSY97 sample weights. The table presents the distribution of self-reported weekly WFH hours by teleworkable value, based on the 2021 wave of the NLSY97. Teleworkable values are assigned according to Dingel and Neiman's (2020) occupation-based teleworkability classification. Weekly WFH hours are based on respondents' self-reported information.

Tabel D4. Statistics of Teleworkable for Missing and Non-Missing WFH: 2021 NLSY97

	Non-Missing WFH Sample	Missing WFH Sample
Median of Teleworkable		
Weighted	1	0
Unweighted	0.86	0
Mean of Teleworkable		
Weighted	0.60	0.33
Unweighted	0.58	0.32

Notes: Authors' calculations using the 2021 wave of the NLSY97. The table compares the teleworkability for respondents with non-missing and missing WFH data in the 2021 wave of the NLSY97. Statistics are presented using both weighted and unweighted estimates.