Economics Bulletin

Volume 43, Issue 2

Predicting preferences for flexible working arrangements in future employment: A gender analysis

M. Ryan Haley
University of Wisconsin Oshkosh

Laurie Miller
University of Nebraska - Lincoln

Abstract

We use individual-level data from the 2008 National Study of the Changing Workforce to predict respondents' preference for workplace flexibilities in future employment, with a specific focus on how preferences for workplace flexibilities differ by gender. The data are detailed, permitting us to investigate the predictive capability of numerous worker and workplace variables germane to flexibility preferences. Interestingly, the covariates that significantly covary with flexibility preference differ substantially between female and male respondents; a reality that firms and unions may want to be mindful of when designing flexibility policies.

We are grateful to Scott Adams, Chad Cotti, John Heywood, and Kevin McGee for helpful comments and insightful conversations.
Citation: M. Ryan Haley and Laurie Miller, (2023) "Predicting preferences for flexible working arrangements in future employment: A gender analysis", *Economics Bulletin*, Volume 43, Issue 2, pages 882-893
Contact: M. Ryan Haley - haley@uwosh.edu, Laurie Miller - lmiller29@unl.edu.
Submitted: January 05, 2022. **Published:** June 30, 2023.

1. Introduction and Motivation

Over the past decades, demographic changes in the US labor force and global technological advancements have brought the topic of flexible working arrangements (FWAs) to the forefront in many areas of academic inquiry such as Economics, Management, and Psychology. The recent Covid-19 pandemic has further spurred interest in FWAs; e.g., Sulaymonov (2020), Chung et al. (2021). Moreover, recent experimental evidence (He et al., 2021) further supports the attractiveness of FWAs.

FWAs are a broad set of workplace arrangements that offer the worker some latitude in when and from where they accomplish their job tasks. Schedule flexibility assumes many forms, among them the ability to easily take time off for personal or family matters, the option to change start and stop times on short notice, the ability to control work schedule, the ability to work from home, or the option of a compressed work week. Which specific FWA format works best for a given worker in a given occupation depends on many worker and workplace characteristics.

This paper attempts to predict a worker's preference for FWAs based on worker-specific and firm-specific attributes using the 2008 National Study of the Changing Workforce (NSCW). While "causal'' interpretations are presented, the primary focus is on predicting FWAs preferences in future job searches. Methods used to this end include the linear probability model as well as logit and probit, and ordered versions thereof.

We begin by posing a fundamental question: Why would a worker want FWAs? To answer this question, we reviewed FWA research that used similar data sets to answer similar questions. We also explored many popular press articles outlining the push for FWAs in the Covid-19 era; this was done with the hope of uncovering new and hitherto un-studied reasons why workers may have strong preferences for FWAs. After a baseline analysis using the covariates we identified in this discovery process, we split the sample by female/male to perform gender-specific assessments of FWA preference. Having a covariate-based profile of which worker characteristics correlate most highly with a stated preference for FWAs in future employment decisions could enable firms and unions to determine where introducing, expanding, or modifying FWAs may be most efficacious.

We framed the prediction exercise herein around the hypothetical question: "If I have strong preferences for FWAs then I would seek jobs with _____." Using this as a guideline we sidelined the following prototypical workplace covariates:[1]

- paid vacation
- current FWAs
- job control
- high job satisfaction among its workers
- high life satisfaction among its workers
- flexible forms of shift work
- good work-family conflict reputations

[1] These variables are typically used as covariates / controls in the background literature; see, for example, Artz and Kaya (2014); Haley and Miller (2015); Cotti et al. (2017).

- a slower work pace
- a union

The rationale for setting aside these otherwise relevant variables was to minimize endogeneity concerns by avoiding covariates that were themselves the result of wanting workplace flexibility; i.e., the goal was to remove covariates that were potentially being "caused" by the dependent variable (preference for FWAs) and retain the covariates that were more plausibly "causing" a preference for FWAs.[2] This is an imperfect and "art-like" aspect of Econometrics, but hopefully the decisions we made in this regard will facilitate the prediction exercise at the heart of the paper.

2. Related Literature

While FWAs have been researched at some length, several prior studies are particularly germane to this paper. For example, Golden (2001) asks: "Flexible work schedules: Which workers get them?", which he answers by applying probit analysis to data from the 1997 Current Population Survey. He finds that the presence of FWAs are negatively correlated with being female, non-white, and having lower education levels; he also finds the presence of FWAs to be positively correlated with self-employment, part-time work, marital status, overtime, and being enrolled in college. Kim et al. (2020) and Chung et al. (2021), in a vein more similar to our research, note how FWA impact can vary by gender. Drago et al. (2009) estimate a dynamic model to determine how ex ante preferences for FWAs map to actually obtaining flexibilities. Their analysis suggests that labor markets often work efficiently in the sense that workers with preferences for FWAs are able to achieve them, though motherhood, widower status, and job loss incite mismatching to various degrees.

Our research effort parallels these prior studies by attempting to predict workers' preferences for FWAs in future employment using a broad selection of worker and workplace covariates. However, unlike these prior studies, our focus is on gender-specific sub-populations. We form our inquiry around the following survey question from the 2008 National Study of the Changing Workforce (NSCW):

> **flex_import** (QWC48G): Imagine that you were looking for a new job. How important would [each of] the following [things] be in deciding to take that job: Having the flexibility I need to manage my work and personal or family life --- extremely important (1), very important (2), somewhat important (3) or not important (4).

It is responses to this Likert-like question (and a dichotomized version thereof) that serve as the dependent variables in our analyses.

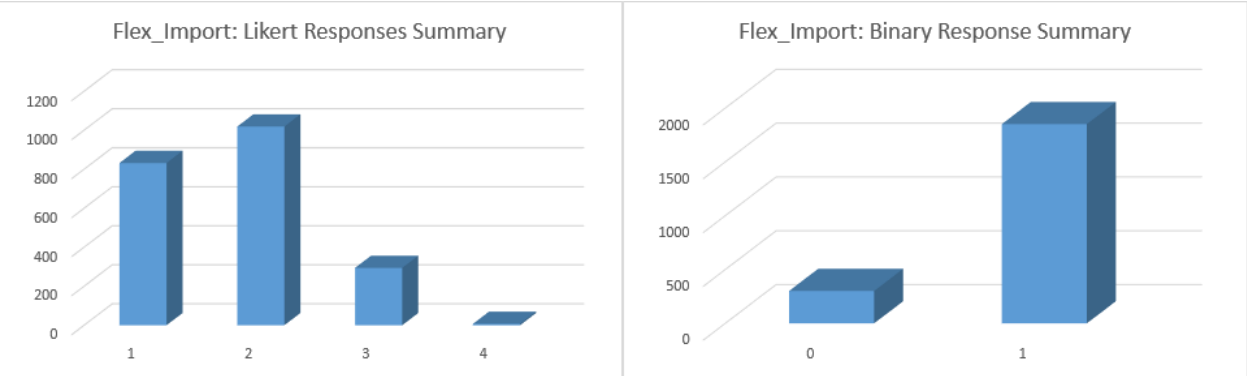
[2] For example, a worker with FWA preference may opt into a union job with lots of job control and vacation; i.e., the worker's FWA preference is plausibly causing the union, job control, and vacation covariates. In contrast, a covariate like the number of kids under age 13 is not necessarily caused by FWA preference, but rather the presence of kids under age 13 may cause a preference for FWAs.

3. Data

The 2008 NSCW survey provides a cross-sectional representation of the US workforce and includes detailed information about employees and employment conditions. Individual workers are the unit of observation and they provide all the responses. Response fields vary by question type, some requiring a fill-in response (e.g., age), while others use indicator, Likert, or Likert-like scales. Some questions include responses such as 'don't know', 'refuse', or 'not applicable', which we treat as missing. We focus on respondents that work more than 20 hours per week and are not self-employed, which leaves us with 2152 complete observations. In several circumstances we convert Likert or Likert-like variables into indicator variables; we discuss each such instance in due course and the Data Appendix contains full details of such conversions as well. We use NSCW sampling weights when presenting estimates, which helps ensure the sample is representative of the US workforce.

Our primary dependent variable is a dichotomized version of the flexibility preference question above. While we explore the four-point scale version of the question as a sensitivity analysis using ordered logit (and probit) and OLS, we prefer the ease of interpretation offered by the binary response version of the dependent variable. Frequencies of the dependent variables appear in Figure 1.

Figure 1: Dependent Variables Frequencies*



*Sample Size = 2152. The charts summarize the Likert and dichotomized version of the flexibility preference variable (**flex_import** and **flex_import_d**, respectively). The binary version, wherein 1 = extremely or very likely to want FWAs in a future job, is the dependent variable in the baseline analyses below. See the Data Appendix for additional details.

To predict workers' preference for FWAs we use covariates spanning workers' physical characteristics, anxiety factors, race, ethnicity, marital status, education, industry, occupation, and region. These variables together form the extensive bank of information frequently used in labor economic studies such as ours. The potentially endogenous covariates discussed above were withheld from the analysis.

4. Estimation

Our primary estimation strategy is a standard logit specification using **flex_import_d** (dummy) from Figure 1 as the dependent variable. A preliminary analysis using all 2152 respondents indicated that being female correlated with a statistically significant increase in preference for FWAs; see Table 1 (All Respondents column). To explore this apparent relationship more carefully, we split the data set by female/male gender and then analyzed each subset separately; the results appear in Table 1 (Females and Males columns, respectively). The split analysis illuminated how different covariates impacted FWA preference across gender.

Table 1: Baseline and Gender-Specific Analyses

	All Respondents:			**Females:**			**Males:**	
	Estimate	Pr(>|z|)		Estimate	Pr(>|z|)		Estimate	Pr(>|z|)
(Intercept)	1.779	0.148		2.563	0.170		1.255	0.452
age	0.001	0.855		0.009	0.369		-0.004	0.581
female	0.489	**0.000**		na	na		na	na
hispanic	0.396	0.347		0.155	0.772		1.093	0.162
physical_job	0.239	**0.080**		0.501	**0.020**		0.094	0.604
ln_earn	-0.215	0.478		-0.488	0.308		0.065	0.872
depress1	0.153	0.403		0.051	0.855		0.179	0.468
kids	0.745	**0.000**		0.924	**0.002**		0.590	**0.011**
eldercare	0.369	**0.006**		0.181	0.393		0.449	**0.010**
health	0.279	**0.084**		0.206	0.434		0.422	**0.045**
race_white	-0.522	**0.089**		0.188	0.658		-1.106	**0.021**
race_black	0.044	0.909		1.208	**0.045**		-0.898	0.111
married_part	0.499	**0.001**		0.251	0.276		0.673	**0.001**
widow	0.668	0.182		0.325	0.586		1.100	0.254
high_school	-0.045	0.762		-0.047	0.838		-0.037	0.850
public_emp	-0.268	**0.078**		-0.478	**0.040**		-0.138	0.505
stress_index_d	0.162	0.379		0.139	0.618		0.215	0.391
sleep_index_d	0.135	0.407		-0.046	0.850		0.292	0.199

*The dependent variable for the baseline analysis was **flex_import_d** (dummy version); the estimation method was logit. The "All Respondents" column used the full sample = 2152; the "Females" column contains the results of a female-only analysis with sample size = 1157; the "Males" column contains the results of a male-only analysis with sample size = 995. See the Data Appendix for additional covariate information. All shaded / bold p-values indicate significance at the 10% level or smaller. All estimates reflect NSCW sampling weights.

The baseline results in Table 1 indicate several covariates may impact the preference for FWAs in future employment decisions. Also intriguing is how covariate significance differs markedly between females and males. In fact, the only covariate that (unsurprisingly) appears to drive future FWA preference in both genders is the presence of kids under age 13 living with the respondent 50% of the year or more (the **kids** covariate). The other significant covariates are noted below:

- **physical_job:** Females with physical jobs appear more eager for FWAs in future employment than their male counterparts.
- **eldercare:** Males appear to connect eldercare tasks with a need for future FWAs more acutely than do females.
- **health:** Much like eldercare, males seem to connect health status with a need for future FWAs more than females do.
- **race_white:** White males have a lower preference for future FWAs than non-white males.
- **race_black:** Black females appear to have a stronger preference for future FWAs than non-black females.
- **married_part:** Males appear to have a strong preference for future FWAs if they have a spouse or partner.
- **public_emp:** Females with public sector jobs appear to have a weaker preference for future FWAs that female workers in other job sectors.

To assess the fragility of the baseline results in Table 1, we explored an array of alternative specifications and estimation strategies, which included the following:

- We used the Likert-scaled version of the dependent variable in ordered logit and ordered probit.
- We performed a sensitivity analysis using a de-meaned version of the Likert-scaled FWA dependent variable.[3]
- We ran standard OLS on both the Likert and dummy versions of the dependent variable using the R language's leaps library, which performs an exhaustive specification search using the covariates provide and summarizes the results with a BIC chart.[4]
- We explored versions of the baseline estimations (Table 1) that included a variety of additional covariates, such as industry, occupation, and regional dummies. The results reported in Table 1 persisted in the presence of these additional controls.
- We also explored a wide array of variables similar to but distinct from those in Table 1; e.g., we considered a variety of different NSCW questions that measure stress, depression, work-family conflict, family size, among others; the additional variables we experimented with are outlined in the Data Appendix.

Our baseline results (Table 1) were robust to these alternative specifications; i.e., the same covariates emerged as statistically significant in nearly every case, though the level of significance varied somewhat across the assessments. The two most notable exceptions to this were as follows:[5]

[3] We thank an anonymous referee for suggesting this particular approach.
[4] The motivation for using OLS (i.e., linear probability model) in this manner comes from Angrist and Pischke (2009).
[5] These findings parallel the work of Haley and Miller (2015).

- **sleep_index_d** was not significant in the baseline analysis (Table 1), but was significant in the ordered logit results (for all respondents). Relatedly, the leaps analysis suggested that **sleep_index_d** was important for females; i.e., for females the presence of sleep troubles correlated with an increased preference for FWAs.
- **stress_index_d** was not significant in the baseline analysis (Table 1), but did emerge as an important covariate for males in the leaps analysis; i.e., for males the presence of stress issues correlated with an increased preference for FWAs.

5. Summary and Conclusions

This short paper attempts to predict the preference for FWAs in future employment settings by regressing, in various ways, the flexibility preference dependent variable (two forms thereof, specifically) on an array of worker and workplace characteristics thought to be germane to FWA demand. These findings may help firms and unions develop and implement FWAs in a more gender-specific manner (when legally feasible), thereby increasing the efficacy of said policies; Foley and Cooper (2021) make similar gender-centric suggestions for union policy. Prior research has demonstrated that FWAs are not a "one-size-fits-all" paradigm (e.g., Haley and Miller, 2015; Cotti et al., 2014, 2017; Chung et al., 2020); the results herein emphasize this nuanced fact by demonstrating that the preference for FWAs in future employment appears to vary considerably by gender. Moreover, the results do not necessarily conform with traditional gender-role perceptions; e.g., eldercare, health, and stress issues appear to be stronger FWA preference motivations for males than females.

The prospects for future work are many. First, it would be of interest to explore other NSCW releases to ascertain the persistence (or not) of these findings; similarly, this inquiry could be replicated in additional data sets, assuming they have an FWA preference question. Another extension would be to explore a richer set of interaction terms, which may be able to more precisely identify covariate mixtures that drive especially strong (or weak) preferences for FWAs.

References

Angrist, J and J. Pischke (2009) *Mostly harmless econometrics: An empiricist's companion*. Princeton university press.

Artz, B. and I. Kaya (2014) "The impact of job security on job satisfaction in economic contractions versus expansions" *Applied Economics* **46**, 2873-2890.

Chung, H and T. Van der Lippe (2020) "Flexible working, work–life balance, and gender equality: Introduction" *Social Indicators Research* **151**, 365-381.

Chung, H, Birkett, H, Forbes, S, and H. Seo (2021) "Covid-19, Flexible Working, and Implications for Gender Equality in the United Kingdom" *Gender & Society* **35**, 218-232.

Cotti, C, Haley, M, and L. Miller (2014) "Workplace flexibilities, job satisfaction and union membership in the US workforce" *British Journal of Industrial Relations* **52**, 403-425.

Cotti, C, Haley, M, and L. Miller (2017) "Assessing the impact of different workplace flexibilities on workplace stress in the presence of varying degrees of job control" *Applied Economics Letters* **24**, 198-201.

Drago, R, Wooden, M, and D. Black (2009) "Who wants and gets flexibility? Changing work hours preferences and life events" *Industrial & Labor Relations Review* **62**, 394-414.

Foley, M, and R. Cooper (2021) "Workplace gender equality in the post-pandemic era: Where to next?" *Journal of Industrial Relations* **63**, 463-476.

Golden, L. (2001) "Flexible work schedules: Which workers get them?" *The American Behavioral Scientist* **44**: 1157-1169.

Haley, M and L. Miller (2015) "Correlates of flexible working arrangements, stress, and sleep difficulties in the US workforce: does the flexibility of the flexibility matter?" *Empirical Economics* **48**, 1395-1418.

He, H, Neumark, D, and Q. Weng (2021) Do workers value flexible jobs? A field experiment. *Journal of Labor Economics* **39**, 709-738.

Kim, J, Henly, J, Golden, L, and S. Lambert (2020) "Workplace flexibility and worker well-being by gender" *Journal of Marriage and Family* **82**, 892-910.

Sulaymonov, A. (2020) "Flexible working practices: urgency or future?" *Modern Economy* **11**, 1342.

Data Appendix

This appendix contains details about the variables used in paper.

- **flex_import:** =1-4.
    - QWC48G: Imagine that you were looking for a new job. How important would [each of] the following [things] be in deciding to take that job: Having the flexibility I need to manage my work and personal or family life ---
        - 1: extremely important
        - 2: very important
        - 3: somewhat important
        - 4: not important.
- **flex_import_d** = 1 if flex_import <=2; 0 otherwise.
- **female:** =1 if respondent is female; 0 if not.
    - QSC8 (1=Male; 2=Female)
- **age:** Age of respondent in years.
    - QPD1: First, may I ask how old you are? (range = 18-100)
- **health:** =1 if reported health is good or excellent; 0 otherwise.
    - QPW16C: How would you rate your current state of health – excellent (1), good (2), fair (3), or poor (4)?
- **sleep_index:** Is an index constructed by averaging three question on sleep issues, all of which are measured on the same five point Likert scale (1: never - 5: very often).
    QPW2: How often have you had trouble sleeping to the point that it affected your performance on and off the job?
    - QPW7A: How often have you had trouble falling asleep when you go to bed?
    - QPW7B: How often have you awakened before you wanted to and had trouble falling back asleep?
- **sleep_index_d**: = 1 for response to sleep_index >=3; 0 otherwise.
- **kids** (kidles13): =1 if any child < 13 in household for more than 1/2 the year; 0 otherwise
- **eldercare:** =1 if respondent has provided eldercare with past five years; 0 otherwise
    - QEC7: Within the past 5 years have you provided special attention or care for a relative or in-law 65 years old or older -- helping with things that were difficult or impossible for them to do themselves? (1:yes, 2:no)
- **race:** QPD4: What is your race? Dummy variable for each of the following:
        - 1: White
        - 2: Black
        - 3: Native American or Alaskan Native
        - 4: Asian, Pacific Islander, or Indian (from India)
        - 5: Other, including mixed
- **race_white:** = 1 if white; 0 otherwise.
- **race_black:** = 1 if black; 0 otherwise.
- **hispanic:** =1 if respondent is Hispanic; 0 if not.
    - QPD3: Do you identify yourself as Hispanic? (1:yes, 2:no)
- **marital_status:** Equals one if respondent is married, remarried, or living with someone as a couple.

    - QEN8: Are you presently married for the first time, remarried following a divorce, living with someone as a couple, single and never married, divorced, widowed or separated?
        - 1: Married for the first time
        - 2: Remarried
        - 3: Living with someone as a couple
        - 4: Single and never married and not living with someone as a couple
        - 5: Divorced and not living with someone as a couple
        - 6: Widowed and not living with someone as a couple
        - 7: Separated and not living with someone as a couple
- **married_part**: =1 if marital_status <=3; 0 otherwise.
- **education** (QPD2): What is the highest level of schooling you have completed? A dummy for each of the following:
    - 1: Less than high school
    - 2: High school or GED
    - 3: Trade or technical school beyond high school
    - 4: Some college
    - 5: Two-year Associate's Degree
    - 6: Four/five-year Bachelor's Degree
    - 7: Some college after BA or BS but without degree
    - 8: Professional degree in medicine, law, dentistry
    - 9: Master's Degree or Doctorate
- **high_school:** =1 if education <=5; 0 otherwise.
- **life_sat:** =1 if very satisfied or somewhat satisfied.
    - QPW10: All things considered, how do you feel about your life these days? (1: very satisfied- 4: very dissatisfied).
- **stress_index:** =1if stress index is greater than or equal to three. The stress index is constructed by taking the average response to the following four questions all of which are measured on the same five point Likert scale (1: never - 5: very often):
    - QPW3: How often have you felt nervous and stressed?
    - QPW4: How often have you felt that you were unable to control the important things in your life?
    - QPW6: How often have you felt that things were going your way?
    - QPW7: How often have you felt that difficulties were piling up so high that you could not overcome them?
- **stress_index_d**: =1 if response to stress_index >= 3; 0 otherwise.
- **home_stress:** =1 if extremely (1), very (2), or somewhat (3) stressful.
    - QPW17: Not thinking about work, how stressful has your personal and family life been in recent months? (1:extremely stressful – 5:not stressful at all)
- **depress1:** =1 if yes; 0 if not
    - QPW8: During the past month, have you been bothered by feeling down, depressed, or hopeless? (1:yes, 2:no)
- **earnings:** = ln[min(earnings) + earnings], to ensure a real number.
    - QSS1: How much did you personally earn in all of LAST YEAR , including bonuses, from all paid employment before taxes? (range = 0 – infty)

- **fast_job** (QWC2): My job requires that I work very fast.
    - (1:strongly agree – 4:strongly disagree)
- **physical_job** (QWC13A): My job requires a lot of physical effort.
    - (1:strongly agree – 4:strongly disagree)
- **perf_pay**: =1 if yes; 0 otherwise.
    - QSS3: At your main job are pay increases, bonuses, and promotions directly and clearly related to your performance? (1:Yes, 2:No)
- **job_sat** (QWC38): All in all, how satisfied are you with your job? (1: very satisfied - 4: not at all satisfied)
- **vacation:** =1 if yes; 0 otherwise.
    - QBP14: Do you receive any PAID vacation days at your main job? (1:yes, 2:no)
- **firm_size** (QEB42B): Approximately how many people are employed by your company or organization at <u>YOUR</u> work location? Include yourself. (range = 1-infty)
- **shift_work** (QEB31): Which of the following best describes your usual work schedule or shift at your main job). Dummy for each of the following:
    - 1: A regular daytime schedule
    - 2: A regular evening shift
    - 3: A regular night shift
    - 4: A rotating shift -- one that changes by time of day or day of week
    - 5: A split shift consisting of two distinct periods in each workday
    - 6: A flexible or variable schedule with no set hours, <u>on call</u>
    - 7: Some other schedule (V)
- **union:** =1 if yes; 0 otherwise
    - QEB44: Are you a member of a union <u>OR</u> collective bargaining unit? (1:yes, 2:no)
- **public_job:** =1 if public employee; 0 if not
    - QEB2: Are you employed by government, a private company, a non-profit organization, a single private household – <u>OR</u> are you self-employed or a business owner? (
        - 1: Government
        - 2: A private for-profit business
        - 3: A non-profit organization
        - 4: A single private household
        - 5: Self-employed or business owner

- **wfc_index:** Is an index constructed by taking the average response to five questions on work-family conflict, all of which are measured on the same five point Likert scale (1: very often - 5: never). The questions in the work-family conflict index are in the past three months:
    - QWF9: How often have you NOT had enough time for your family or other important people in your life because of your job?
    - QWF10: How often have you NOT had the energy to do things with your family or other important people in your life because of your job?
    - QWF11: How often has work kept you from doing as good a job at home as you could?
    - QWF12: How often have you not been in as good a mood as you would like to be at home because of your job?
    - QWF13: How often has your job kept you from concentrating on important things in your family or personal life?
- **flex1** (QBP21): How hard is it for you to take time off during your work day to take care of personal or family matters -- very hard(1), somewhat hard(2), not too hard(3), or not at all hard(4)?
- **flex2** (QBP22B): Are you able to temporarily change your starting and quitting times on short notice when special needs arise if you check with your supervisor or manager)? "Special needs" might include having to take a car into the shop for repairs, having to take a sick child or relative to the doctor, having to meet with a teacher after school, having to stay home for a delivery, and so forth. – yes(1), no(2)
- **flex3** (QEB31B): Overall, how much control would you say you have in scheduling your work hours –- complete control(1), a lot(2), some(3), very little(4), or none(6)?
- **flex4** (QBP22A1): Do you actually choose starting and quitting times to meet your personal needs? -- yes(1), no(2)
- **flex5** (QBP35A): Are employees in your organization allowed to work a compressed workweek for part or all of the year? For example, can they work 10-hour days for 4 days per week instead of 8-hour days for 5 days per week OR another similar arrangement? Some employers allow compressed workweeks during the summer months, calling them "summer hours." – yes(1), no(2)