

Implications of a four-day work week in US based technology companies



Prepared For:

- HR, Executive Leadership and Hiring Managers at US based technology companies
- Union leaders, workers rights advocates

Prepared By:

Vineeta Kumar, Don Irwin & Russell Ude

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Good evening HR partners and industry leaders,

My name is Vineeta, and along with my colleagues Don and Russell, we're here to talk to you about the implications of the four-day work week strategy for US Tech companies. Our objective is that the learnings from this research will provide you with all the information you need to make an informed decision about implementing four-day work week. So let's get started..

Here are the main post pandemic work related concerns

Employers

- Employee Productivity
- Employee Retention

Employees

- Job Satisfaction
- Job Related Happiness
 - Work/life balance
 - Commute
 - Rigid work schedules etc.

The year 2020 brought on a cultural shift and redefined how we work. However, the implementation of work-from-home has brought new workforce strategies to light as some firms and employees have seen steady productivity with this change.

As companies start to slowly come back into offices after the pandemic, some employees are hesitant to return to their previous commutes while also questioning rigid work schedules.

To avoid employee churn and attract top talent, companies need to come up with flexible but effective workforce strategies such as four-day work-week, 6-hour work days, staggered schedules, hybrid location models etc. Our research will focus on quantifying the benefits of a four-day work week. The goal is to conduct an unbiased evaluation of this workforce strategy both from a management perspective as well as an employee perspective.

Is a four-day work week effective in addressing these concerns?

- Do four-day work weeks have an impact on employee productivity?¹
- Do four-day work weeks reduce employee attrition?
- Do four-day work weeks boost employee job satisfaction and employee happiness?²

Footnotes:

1. Worker productivity is defined as revenue generated per employee hour worked
2. To be quantified through employee survey results. Details ahead

The main questions that come to mind when thinking about shortened work week is whether it will impact employee productivity as measured through revenue generated per hour of work. We also want to understand whether it will help reduce employee attrition. Most importantly we want to consider if a shortened work week helps boost employee job satisfaction and happiness. Our research has been designed to answer these very questions.

Data

- Worker Productivity with and without four day work week:
 - We will gather time series data from companies before and after the implementation of four hour work weeks.
 - We will measure worker productivity before and after the implementation of four day work weeks.
- Worker attrition with and without four day work week:
 - We will gather time series data from companies before and after the implementation of four hour work weeks.
 - We will measure whether attrition is reduced after implementation of four hour work weeks.
- Cause of worker retention (if present) in companies with four day work weeks:
 - The survey will be designed to capture the following before and after the implementation of 4 day work week:
 - Reasons for worker retention and role of four day work week in retention
- Worker sentiment before and after implementation of the 4 day work week through questions designed to understand overall worker sentiment, satisfaction and happiness.

We want to measure all our metrics from a time series perspective. This will help us really understand the impact of the four-day work week.

To that effect, we will identify companies that are planning to switch to four day work week in the next 8 to 12 months.

From these companies, we will gather data on productivity and attrition, before and after the implementation of the four day work week

We also plan to collect survey data through questions designed to capture worker sentiment, satisfaction, happiness and reasons for attrition if any.

Now, I'll hand it over to Don who will discuss the specifics of our study design.

Study Design

We will be using time-series data from our population sample before and after the implementation of a four day work week.

- Measure rate of worker attrition / retention before.
- Measure rate of worker attrition / retention after.
- Measure worker productivity before.
- Measure worker productivity after.
- Measure worker satisfaction before.
- Measure worker satisfaction after.
- If worker retention is enhanced and worker attrition is decreased determine whether the four day work week was the cause of those improvements.
 - This determination will be done with the aid of quantitative surveys, which will list as one of many options the four day work week, to determine whether the four day work week was causal.
- Exclude companies or samples where events not related to four day work week changes could impact any of these measurements. I.E. broad-based economic recession, a merger or acquisition which would skew the productivity numbers. ... etc. ..

Worker attrition is measured by participants moving between companies during the study.

Worker productivity is revenue per hour of worker labor.

Worker satisfaction will be measured by surveys before and after.

Risks include changes to indexes of productivity, or retention due to mergers, recessions, etc. ...

Sample

Population:

- High skill workers in tech companies.

Sampling methods:

- Stratified random probability sampling.

Sampling size:

- Determined by power analysis.

Sampling frame:

- Employees who are working in companies that intend to switch to four day work week within the next eight to twelve months.

Inclusion Criteria:

- Employees not intending to retire or relocate within the next 12 months.
- Employees who are green card holders or U.S. Citizens.

Exclusion Criteria:

- Part time employees, contract employees.
- Non-green card holders, or, non-US Citizens.

Stratified random probability sampling to include appropriate number of minorities, women, special needs workers, etc. ...

We need to be able to measure before and after if we're going to measure satisfaction.

Exclude outliers if possible which could contribute to attrition rates, etc. ...

Variables and / or Intervention

Measurement 1: Is employee attrition less after the implementation of a four day work week?

- Independent Variable: Four day work week.
- Dependent Variable: Employee attrition after implementation of 4 day work week.

Measurement 2: Is employee retention attributable to the four day work week?

- Independent Variable: Four day work week.
- Dependent Variable: Cause of worker retention.

Measurement 3: Cause of worker sentiment in companies with four day work weeks.

- Independent Variable: Four day work week.
- Dependent Variable: Cause of positive sentiment.

Measurement 4: Is worker productivity, measured in USD generated per hour of employee work, increased after the implementation of a four day work week?

- Independent Variable: Four day work week.
- Dependent Variable: Worker productivity.

In all of these measurements the independent variable is the introduction of the four day work week.

Statistical Methods

- We will use power analysis to ensure we have enough sample data to measure change in our observed metrics
- We will use smoothing techniques like moving average and conventional outlier treatments to remove noise in the data
- For time series analyses, we will follow the industry standard approach such as difference in mean and conduct a z test to measure significance of change
- For the quantitative survey analyses, we will use conventional survey research methods

- **Power Analysis:**
 - allows us to determine the sample size required to detect an effect of a given size with a given degree of confidence. Conversely, it allows us to determine the probability of detecting an effect of a given size with a given level of confidence, under sample size constraints. If the probability is unacceptably low, we would be wise to alter or abandon the experiment.
- **Smoothing Techniques:**
 - When data collected over time displays random variation, **smoothing techniques** can be used to reduce or cancel the effect of these variations.
- **Time Series Analysis**
 - Time series analysis is a **statistical technique that deals with time** series data, or trend analysis. Time series data means that data is in a series of particular time periods or intervals
- **Z Test**
 - Z-test is a **statistical test to determine whether two population means are different when the variances are known** and the sample size is large. Z-test is a hypothesis test in which the z-statistic follows a normal distribution. A z-statistic, or z-score, is a number representing the result from the z-test.
- **Sentiment Analysis**
 - the use of natural language processing, text analysis, computational linguistics, and biometrics to systematically identify, extract, quantify, and study affective states and subjective information. Sentiment analysis is widely applied to voice of the customer materials such as reviews and survey responses

Potential Risks

- **Confirmation Bias** - Researchers may have opinions or theories about what is or is not the optimal workforce strategy (e.g. preference on working from home vs. in-office). These preconceptions could cause new evidence to be interpreted incorrectly as confirmation of one's existing theories or beliefs
- **Dunning-Kruger Effect** - In the case that our findings suggest that a four-day work week is beneficial to workforce productivity, some workers with low productivity levels might overestimate their capabilities. This cognitive bias could cause actual productivity levels to be lower than expected
- **Cognitive Dissonance** - The results of sentiment analysis may contradict what we determine to be the optimal workforce strategy. If this is the case, the findings of our study may be leveraged in a myriad of ways, some of which may have detrimental externalities
- **Data Bias** - Unexpected events such as mergers, acquisitions, and layoffs can skew our data. For example, it's quite possible that survey respondents who've been laid off will not disseminate the full story behind their exit. This is a risk because our data behind attrition may not represent the entire context
- **Privacy** - It is critical to ensure the data privacy of participants in our research. Respondents must be protected to confidently provide honest feedback. Otherwise, our data will be muted in terms of actual employee sentiment around job satisfaction and alternate work strategies

- **Confirmation Bias**
 - the tendency to interpret new evidence as confirmation of one's existing beliefs or theories.
- **Dunning-Kruger Effect**
 - a cognitive bias in which people wrongly overestimate their knowledge or ability in a specific area. This tends to occur because a lack of self-awareness prevents them from accurately assessing their own skills.
- **Cognitive Dissonance**
 - the state of having inconsistent thoughts, beliefs, or attitudes, especially as relating to behavioral decisions and attitude change.
 - According to this theory, when two actions or ideas are not psychologically consistent with each other, people do all in their power to change them until they become consistent.
- **Data Bias**
 - The common definition of **data bias** is that the available data is not representative of the population or phenomenon of study.
- **Privacy** -
 - Information privacy is the relationship between the collection and

- dissemination of data, technology, the public expectation of privacy, and the legal and political issues surrounding them

Deliverables

This project will be divided into 5 phases and we will deliver on each section as detailed below:

Phase 1

- Identify companies to be included in the productivity and attrition study based on selection criteria outlined above
- Conduct power analysis to ensure sufficient sample size
- Collect data for productivity and attrition analyses from finalized companies before the four-day work week change
- Duration: 6 months

Phase 2

- Design survey questions to understand drivers of attrition, job satisfaction and employee happiness
- Identify the target audience for the survey and meet with industry experts to ensure a selection of an unbiased sample
- Send out the survey to the target audience before the four-day work week change
- Duration: 1 month; To be run in parallel with Phase 1

Phase 3

- Collect data for productivity and attrition analyses from finalized companies after the four-day work week change
- Send out the survey to the target audience after the four-day work week change
- Duration: 6 months

Phase 4

- Conduct analyses on data collected to answer research questions
- Duration: 1 month

Phase 5

- Prepare and publish the final report
- Duration: 2 weeks

- The goal of our deliverables is to conduct an unbiased evaluation of alternate workforce strategies, most notably the four-day work week. In our research we seek to understand both the management perspective as well as the non-decision-making employee perspective. This research aims to aggregate and synthesize information to help our target audience make data-driven decisions concerning workforce strategies

Thank You!