

Analysis of Working from Home vs Working at the Office, as a Construction Company in the Bay Area

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In 2020, working from home has become an increasingly popular trend amongst construction offices across the Bay Area to combat the spread of COVID-19. This meant that employees who used to commute were now able to work from home. This paper analyzes the impacts working from home has on the productivity, work-life-balance, and overall well-being of a Bay Area construction office employees . A survey was issued to the estimating department of a large general contractor in the Bay Area, with the intent of finding the impact working from home had on the three aspects of working life, as previous listed. The survey was broken-out into three sections with the purpose of collecting quantitative and qualitative data, from a variety of questions, for each of the three aspects of working life. An analysis of the data collected in the survey reveals working from home has a positive effect on the working life of former commuters in the Bay Area construction industry. This paper brings new understanding and offers future research to the potential benefits and downfalls to working from home when compared to commuting to work every day.

Key Words: Work-From-Home, Commute-to-Work, Work-Place-Productivity, Work-Life-Balance, Overall-Well-Being

Introduction

A 2017 Study conducted by the Metropolitan Transportation Commission highlights an increase in the average traffic congestion in the San Francisco Bay Area, since 2000 with a peak in 2017 with an average of 3.5 minutes of congested highway delay per worker. (Vital Signs, 2017). For the average Bay Area construction worker commuting into this area for work, this means an exponential increase in the traffic congestion incurred every day going to and from work, since the year 2000. Traffic congestion leads to lower worker productivity, lost time, wasted fuel, reduced quality of life, and lower overall well-being. (Metropolitan Council, 2020). Most office employees can do their work online, in one way or another as has recently been relied on during the pandemic. Also, with the introduction of Zoom and other video conferencing software, it is possible for an employee to complete all of their work and attend all meetings without having to deal with the daily struggles of a commute.

Prior to the year 2020, the construction industry in the Bay Area was greatly impacted by the daily commute and extreme traffic congestion. That changed on March 19, 2020 when a shelter in place order was put on in order to slow the spread of COVID-19 (Forrester, 2020). For the office employees, this meant they did not need to commute into work every day. The companies of these employees had to find a way for their employees to continue to work, without violating the shelter-in-place ordinance, or putting anyone's health at risk. This led to the need for office employees to work

from home full time. Seven months later, these employees are working the same jobs as they once were, with no daily commute

The majority of office employees in the construction industry are working remotely. Prior to COVID-19, the idea of these same employees working from home was never an option. Furthermore, these employees are gaining back a number of hours a day, that they were once spending on the daily commute. These are hours that an individual could put back into their work, spend with family, or use to promote healthier lifestyles rather than sitting in traffic. Working from home is starting to become the new norm for many construction office workers around the bay area (Dey, 2020). The goal of this research was to answer the following questions: does working from home allow for the same amount of efficiency and productivity of work does the elimination of a daily commute for a stay at home job allow for a better work-life balance, and how has the employee's overall well-being been affected? Every employer and employee will be asking these questions as the progression from commuting into work, to working from home continues to become the norm for so many people in the area.

This paper is a case study of a large construction company in the Bay Area, with over \$1 billion in revenue, with the purpose of answering the questions laid out above. Since the change from commuting to work, to working from home, how has the productivity, work life balance, and overall well-being been affected? This paper finds the overall impact working from home has on an employee, who once commuted to and from work every day in Bay Area traffic congestion. The paper will also define the three main aspects of work-life-satisfaction to clearly understand the impact of this case study. Those three aspects are work-place productivity, work-life-balance, and overall well-being.

Work-Place Productivity

Employee productivity is a measure of employee efficiency in the work place. Productivity is a metric that is calculated by measuring the amount of output, which are good and services that are produced versus the amount of time it takes to produce it. A 2019 study of workplace productivity concluded there is a strong negative correlation between commuting time/ distance and workplace productivity. This study reveals a longer commute leads to an increase in work absences and overall tardiness, meaning a decrease in productivity. (Liang Ma, 2019). A study, developed by VitalHealth, University of Cambridge, RAND Europe and Mercer, on the impacts of commuting on productivity concluded that those who commute over a half an hour to work every day end up losing seven days of productive time each year due to time lost in traffic, compared to those who commute under a half hour a day (Smith, 2017). In the schedule driven construction industry, where quality and efficiency of a project are critical, having employees that are seven days less productive due to their geographic location is harmful to the overall success of the company.

An increasingly popular alternate to commuting to work every day, is working from home. Working from home allows an employee the ability to work as they would from the office, but eliminates the need for lengthy, taxing commutes. A 2004 study on the productivity effects of telecommuting suggests that the switch to working from home has a positive effect on work intensity and efficiency of work due to increased employee energy levels that were once used towards their commute to work. (Westfall, 2004). Westfall goes on to explain that the average commuter spends roughly 10% of their day on their commute. Further research shows, there is not a direct 1:1 correlation between a shorter commute and an increase productivity. If this were the case, every organization would encourage 100% of their employees who commute to work from home. This is a telling factor that working from

home does not always lead to an increase in productivity. Furthermore, collaboration between multiple parties is necessary in the construction industry to achieve the highest level of productivity. When collaborating parties work from home and have to rely on modern technology to simulate face-to-face interaction, productivity diminishes due to the increase in technological problems and other delays that can occur with the inability for face to face interaction (Gorlick, 2020).

Work-Life Balance

Work-Life Balance can be defined as the amount of time you spend doing your job compared with the amount of time you spend with your family and doing things you enjoy outside of work. (Cambridge, 2020). Working men and women who dedicate hours a day to their commute tend to suffer from a poor work-life balance, because they do not spend an appropriate amount of time on things outside of work. Even when an employee is working a 40-hour week, their home life can suffer because they are dedicating time to their commute that they could have spent on outside interests. According to the US Bureau of Labor Statistics, the average construction manager works over 40 hours a week, or over 8 hours a day for 5 working days. (US BLS, 2019). Working over 8 hours a day, with an additional hour added at the end of the day for the commute, leaves minimal time or energy at the end of the day. This trend over a period of time can start to have negative effects on an employee's home life. Prolonged periods of this leads to an imbalance of work and home life, leading to a decline in employee satisfaction and overall productivity (US BLS, 2019).

Working from home, at first glance, seems to be the best way for an employee to continue to work full time while maintaining a strong work-life balance. A 2004 study illustrates how working from home offers new schedule flexibility that is otherwise unattainable if you commute into work. This flexibility allows an employee to balance their work responsibilities with their personal responsibilities. Further research also suggests several negative effects that can come from working wear you sleep. Working from home allows for no psychological separation between home and work life. It hinders people's ability to be able to relax when they come home after work. Working in an isolated environment also hinders motivation and increases stress due to the lack of a traditional work environment. (Crosbie & Moore, 2004). In addition, having your home and work life share the same spatial resources causes increased tension in the household due to the lack of separation between different responsibilities. (Bulos & Chaker, 1991 & 1995; Ahrentzen, 1990; Gurstein, 1991). Overall, the effects that working from home has on a person's work-life balance have been ill studied with evidence supporting both for and against working from home. (Crosbie & Moore, 2004).

Overall Well-Being

The New Economics Foundation describes the well-being of an individual as the way people feel, how they function, and how they evaluate their lives as a whole on both a personal and social level. (New Economics Foundation, 2012). Studies of the relationship between commuting and a subjective assessment of mental health and overall well-being have found that longer commutes are associated with lower health satisfaction. These studies show that long commutes tend to lead to a lower overall satisfaction with their health, but show no objective health concerns like sicknesses or absences from work. (Kuun-Nelen, 2016). An analysis of personal mood ratings during varying daily activities reports that the lowest mood rating was given during the daily commute for all individuals in the study. (Kahneman et al, 2004). For individuals to endure the activity that leads to their worst mood twice a day, every day during the week, one can begin to understand why daily commuters report lower overall health satisfaction and well-being. The negative effects associated with a daily commute

on an individual's well-being vary on a situational, and personal basis, however. Due to the vast variety of outside factors affecting the overall well-being of an individual, one cannot make the conclusion that a commute to and from work leads directly to a poorer overall well-being.

The alternative to commuting to work, working from home, has conflicting views and contradicting evidence on the effect of overall well-being. Working from home eliminates the root cause for employee's worst mood of the day, commuting to work. This, alone, leads to an improvement in overall well-being because the activity that lowers well-being the most is eliminated. The idea of working from home is well intentioned with the aim of increased flexibility and lowered stress due to the elimination of driving to work. However, Song and Gao's study found that working from home decreased overall well-being for the same reasons that others thought benefited it. (Song & Gao, 2019). Not having the ability to separate work and home life increases conflict that comes from the demands of each. The study found that crossing over work and home life does increase the flexibility in which an individual can fulfill responsibilities, but it also limits the ability to separate different responsibilities in an appropriate manner. When work and home responsibilities blend together as a result of working from home, it increases the stress levels of an individual due to the perceived increase in responsibilities. Increased stress levels lead to an overall poorer well-being, due to worsening mood and other subjective health factors. Working from home is an attractive opportunity on paper, due to the perceived benefit to overall well-being, but further research suggests working from home increases stress levels and an overall decreases well-being.

Research Design and Methodology

Level 10 Construction is a commercial General Contractor headquartered in Sunnyvale, CA. Though headquartered in Sunnyvale, the South Bay, Level 10 employees live all across the Bay Area, most of the time taking over an hour to commute to and from work. Until March of 2020, this was required of these employees. In March 2020, COVID-19 caused a statewide shut down, meaning the employees of Level 10 were forced to work from home, rather than commuting to the main office. This shutdown went from being a temporary change, to the new normal for many of the employees tasked with working from home. If it is true that long duration commuting is detrimental to employee productivity, work-life balance, and overall well-being, then the switch to working from home will benefit the employees by improving those three aspects of working life.

The methodology used for the case study was an analysis of quantitative and qualitative data collected from a survey given to Level 10 Construction's Estimating Department. The survey was distributed via email link to the head of the department, and then it was sent to his team of 25 individuals, complete survey reference in Appendix A. This group was chosen because of their availability, as well as they met the criteria of the study. The survey focused to analyze the three aspects of working life as previously discussed that are most relevant to the question at hand; how has the switch to working from home affected the lives of Bay Area construction office workers who once commuted to work every day? The three aspects of work include productivity, work-life balance, and overall well-being. The information will be relevant for any individual or company in the construction industry who is researching the affects and differences between working from home and commuting to work every day.

The objectives of this case study are as follows:

- To report how working from home affected employee productivity of former daily commuters
- To outline the affects working from home has on the Work-Life Balance of former daily commuters
- To detail the overall well-being of construction employees who work from home, who formerly commuted to work every day
- To bring an understanding to the affects working from home has on construction office workers in the Bay Area

Data Analysis and Results

In total, the survey was distributed to 25 individuals working in Level 10 Construction’s Estimating Department. Of those 25 people on the distribution list, eight individuals were able to respond to the survey, making the response rate for the survey was 32%. The respondents commuted between 30 and 60 minutes every day prior to working from home full time. The respondents commuted those durations for anywhere between six months and five years, but none over the five-year mark. The respondents answered a series of questions for the three aspects of working life relevant to the study: productivity, work-life balance, and overall well-being.

Productivity

The first aspect of productivity that the survey intends to find is the number of hours spend on work and the number of breaks taken per day both before and after the change to working from home. This gives hard data on the physical hours spent doing work, which can be used to analyze employee productivity.

Question	Respondents							
	1	2	3	4	5	6	7	8
When COMMUTING TO WORK, on average, how many hours a day would you spend on the clock?	Over 10	Over 10	9-10	8-9	8-9	Over 10	8-9	8-9
When WORKING FROM HOME, on average, how many hours a day would you spend on the clock?	Over 10	Over 10	8-9	9-10	9-10	Over 10	8-9	9-10
When COMMUTING TO WORK, on average, how many breaks would you take during the work day?	1-2	Over 4	3-4	1-2	1-2	1-2	1-2	1-2
When WORKING FROM HOME, on average, how many breaks would you take during the work day?	1-2	Over 4	3-4	1-2	1-2	1-2	1-2	1-2

Figure 1. Productivity Table

An analysis of the quantitative data shows that there is little-to-no change in the amount of time spent on work during the day when switching to working from home. The survey further reports that there was no change the roles of the respondent's jobs as a result of working from home. All of the respondent's in the survey reported equal or greater productivity levels as a result of working from home, due to the elimination of their daily commute.

One problem that arose for some of the respondents that had a potential to hinder their productivity was their young children being home. Having young kids that had to be home schooled caused an increase in distractions for those respondents, but did not affect their day-to-day productivity. Another problem that came about during the early stages of work-from-home, was technical difficulties with their at-home equipment. Those problems were able to be worked out as the work-from-home program continued

Overall, the same daily output was reported by all the respondents. The employees are able to complete all of their daily tasks without feeling restricted to a hard 8pm-5pm work time. Without this hard restriction, employees are able to complete their work at their own leisure, which has been reported to be beneficial to productivity.

Work-Life Balance

The Work-Life Balance section of the survey intends to discover how the respondent's home life has been affected as a result of working from home. 75% of the respondent's reported that they were able to spend more time on personal interests outside of work as a result of working from home. The respondents were asked to rate the following statements on a scale from 1-5 (Strongly Disagree, to Strongly Agree) based on their lives when they commuted to work and when they changed to working from home.

Question	Respondents								
	1	2	3	4	5	6	7	8	
Please rate these on a scale from 1-5 (Strongly Disagree, to Strongly agree) with your agreement to the following statements, Based on your life WHILE COMMUTING TO WORK.	I prioritize my job over my personal life	2	5	4	4	5	5	4	4
	I prioritize my family over my work	5	1	4	2	2	3	3	2
	I sacrifice sleep to spend time with my family, because of work	5	5	3	4	4	4	3	3
	I sacrifice personal interests due to work and commute	5	5	3	4	4	4	5	3

Figure 2a. Work-Life-Balance Table part 1

Question	Respondents								
	1	2	3	4	5	6	7	8	
Please rate these on a scale from 1-5 (Strongly Disagree, to Strongly agree) with your agreement to the following statements, Based on your life WHILE WORKING FROM HOME.	I prioritize my job over my personal life	2	3	4	4	3	4	3	4
	I prioritize my family over my work	5	3	4	2	3	4	4	3
	I sacrifice sleep to spend time with my family, because of work	2	3	3	3	1	3	2	3
	I sacrifice personal interests due to work and commute	2	3	3	4	2	3	2	3

Figure 2b. Work-Life-Balance Table part 2

Figures 2a & 2b show that the respondents tend to have a better work-life-balance while they are working from home, compared to their balance when they commuted to work. Their work is relatively unaffected during the switch, but the way they can balance their work and home life is positively affected during the switch.

The respondents reported more flexibility and an ability to spend more time with their family while maintaining the same work levels throughout the day. All of the respondents attributed this to the elimination of their commute. The respondents who reported no change in the amount of time they spend on personal interests credited the fact that the COVID-19 shutdown limited their ability to work on those outside interests. Those respondents stated that if the shutdown wasn't in place, they would be able to spend more time on their other interests, helping balance their work and home life better.

Overall Well-Being

The Overall Well-Being section of the survey is intended to discover the overall subjective health changes of the employees as a result of working from home. The overall subjective health of the employees was measured by asking the respondents to rank their feelings of well-being on a scale of 1-5 (strongly disagree, to strongly agree) based on their lives before and after the change to working from home.

Question	Respondents								
	1	2	3	4	5	6	7	8	
Please rate these on a scale from 1-5 (Strongly Disagree, to Strongly agree) with your agreement to the following statements, based on your life WHILE WORKING FROM HOME.	Working from home has increased my overall Well-Being	4	5	3	3	5	4	4	2
	Working from home has eliminated the stresses that come from long hours of commuting (waking up earlier, long hours behind the wheel etc.)	5	5	4	4	5	4	4	3
	Working from home has had a positive effect on my mental and physical health	5	5	3	3	5	4	4	3

Figure 3: Overall Well-Being Table

75% of the respondents reported in either agreement, or strong agreement to the statement that said commuting to work added stress to their lives that carried over to their home life and 63% reported that commuting had a negative effect on their physical health. These 2 statements contribute to a negative overall well-being.

The responses from the statements about working from home resulted in a different overall well-being. The respondents, overall, reported that working from home eliminated the stresses that came from a daily commute. 88% of respondents reported that their stress was eliminated, and the remaining 12% had no change in stress level. This also resulted in an overall positive effect on mental and physical health, which caused an increase in overall well-being. 88% of respondents reported an increase in overall well-being, whereas the remaining 12% did not agree that working from home increased well-being.

Employees reported an increase in physical exercise, sleep, time devoted to family, and available work hours as a result of eliminating their commute to work, and working from home. These affects saw an increase in the overall well-being of the employees who reported in the survey.

Conclusion

The COVID-19 shutdown in the Bay Area caused the need for the Office employees of Level 10 Construction to work from home full-time, when they would once commute between 30-60 minutes to and from work every day. This paper sought out to find out how the productivity, work-life balance, and overall well-being of the employees involved in this change were affected.

The productivity of the employees was relatively unaffected during the work from home change. Employees were able to produce the same weekly output as they had when they commuted to work. The time saved from the commute was put towards other interests outside of work. This additional time spent on outside activities had a positive effect on their work-life balance because it increased their flexibility of their daily routine. No matter the working situation, the employees need to have work flexibility in order to fulfill both job and personal responsibilities, and maintain a strong work-life balance. Employees felt that the elimination of their daily commute also had a positive effect on their subjective mental and physical health. The elimination of their daily commute increased well-being and improved overall satisfaction because the stress that came with their daily commute was removed.

The results of this study disprove the first part of my hypothesis that states an elimination of a daily commute will improve productivity. This is because the additional time gained was put towards other outside interests, besides work. This further proves the other half of my hypothesis that states the elimination of their daily commute will improve their work-life balance and increase their overall well-being. This is due to an increase in work flexibility and a shift in priorities of the employee.

In order to continue to measure the affects working from home has on former daily commuters, researchers should follow the basic model of the three aspects of working life discussed in this study. This will help track the progression of employees involved in this situation. The limitations of this research come from the sample size of this study. Because I was only able to distribute the survey to a small, fixed number of people, I did not receive an adequate amount of responses to help solidify my research and findings. Future researchers should consider their sample size for their survey and attempt to get the survey in as many hands that apply to the survey as possible. To further research productivity, researchers should look towards surveying the superiors of the employees involved. This

will help the research change from being subjective, coming from the employee themselves, to objective, coming from the boss who measures overall output and productivity.

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