ABSTRACT

MYLAVARAPU, KUMAR ANIRUDH. Probing Factors that Influence Job Satisfaction & Health. (Under the direction of Dr. Robert Clark).

The goal of this paper is to study the impacts of rewards such as compensation and benefits as well as other factors such as flexible work schedules and hours worked at a job on job satisfaction, general health and mental health. Using the 2015 data from the National Longitudinal Survey Cohort of 1997, several logistic models were estimated to probe the impacts of seventeen different predictors on the dependent variables of job satisfaction, mental health and general health. The results show that income and flexibility are significant predictors of job satisfaction and have a negative relationship for this particular sample. Additionally, number of employer locations is the only variable that impacts mental health in a negative way. This could be attributed to the fact that Americans have to commute to multiple locations which could add to the mental stress. Lastly, factors such as flexibility, life insurance, income and age are significant and positive predictors of general health while the regressor of weeks worked at a job is found to have a negative impact on the general health. Older workers tend to have better general health than those in the prime of the workforce. The results of this paper aim at providing companies with information that will aid policy implementation and help improve employee retention, attract new talent and reduce turnover. The purpose of this paper is to also identify the significance of the timing of the incentivization and to briefly examine how individuals value company rewards at the entry point (deciding whether or not to work for a company) compared to while they are in the job.
BIOGRAPHY

Kumar Anirudh Mylavarapu has been passionate about labor economics since he first started reading the Economist during high school. Following his passion, he attended the prestigious Schreyer Honors College at The Pennsylvania State University and graduated with a double major in Economics with Honors and Corporate Innovation & Entrepreneurship. Wanting to explore a new city and university research culture, Kumar Anirudh then moved to North Carolina to pursue his Master’s in Economics at North Carolina State University. While at North Carolina State University, he had the opportunity to work for Lowe’s Companies Inc., a Fortune 40 company, where he was able to research and examine various workforce-related policies pertaining to labor decision-making at a firm level and take data-driven decisions to help the company secure the best outcomes. Kumar Anirudh is an avid pianist and drummer and composes music when he is not focused on solving labor economic problems.
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# TABLE OF CONTENTS

| LIST OF TABLES | .................................................................................................................. v |
| LIST OF FIGURES | .................................................................................................................. vi |
| Chapter 1: Introduction | ................................................................................................................. 1 |
| Chapter 2: Dissecting Total Rewards & Other Factors | ............................................................................................................. 4 |
| 2.1: Compensation | ........................................................................................................ 4 |
| 2.2: Benefits | ........................................................................................................ 4 |
| 2.3: Other Factors: Work Hours and Number of Employer Locations | .......................................................................................... 5 |
| Chapter 3: What Are Employees Seeking? | .............................................................................................................. 7 |
| 3.1: Financial Benefits | ........................................................................................................ 7 |
| 3.2: Stress Management Benefits | ......................................................................................................... 7 |
| Chapter 4: An Investigation of the Economic Literature | ........................................................................................................ 10 |
| Chapter 5: The Effect of Providing the Appropriate Incentives | ........................................................................................................... 17 |
| Chapter 6: Examination of the Data & Key Variables | ........................................................................................................... 20 |
| 6.1: Dependent Variables | ........................................................................................................ 20 |
| 6.2: Independent Variables | ........................................................................................................ 22 |
| Chapter 7: Econometric Analysis of Data | ............................................................................................................... 26 |
| 7.1: Logistic Regression Framework | .............................................................................................. 26 |
| 7.2: Discussion of the Multiple Logistic Model Results | ........................................................................................... 28 |
| Chapter 8: Policy Implications and Conclusions | ........................................................................................................... 33 |
| Bibliography | .................................................................................................................. 37 |
LIST OF TABLES

Table 1: Summary of the Multiple Logistic Model Results ........................................... 49
Table 2: Partial Effects at the Mean.............................................................................. 50
Table 3: Sandwich Estimator Standard Errors............................................................... 51
LIST OF FIGURES

Figure 1: Job Satisfaction .............................................................................................................. 43
Figure 2: General Health .................................................................................................................. 43
Figure 3: State of Mental Well-Being .............................................................................................. 44
Figure 4: Total Leave Granted ........................................................................................................ 44
Figure 5: Sick/Personal & Vacation Days ....................................................................................... 45
Figure 6: Maternity or Paternity Leave ........................................................................................... 45
Figure 7: Access to Each of the Benefits ......................................................................................... 46
Figure 8: Income Distribution ........................................................................................................ 46
Figure 9: Shifts & Employer Locations ........................................................................................... 46
Figure 10: Age Distribution ............................................................................................................ 47
Figure 11: Race Distribution .......................................................................................................... 48
Chapter 1: Introduction

Various factors play a role in influencing labor decisions at a firm level. Oftentimes, these factors can be modified by companies to attract new talent and retain existing top talent. Society for Human Resource Management (SHRM) identifies 43 aspects of employee job satisfaction, of which, I will focus primarily on benefits and compensation. Benefits and compensation at firms are not only a tool for organizations to reward their employees but they are also aspects through which a new or a potential employee determines the attractiveness or how appealing an organization is. Furthermore, benefits and compensation impact the general and mental health of employees as well. Being able to deliver the right benefits and compensation that the employees of a company seek is crucial for the long run success of an organization.

In a 2015 SHRM job satisfaction survey, 88% of the 517 respondents stated that they were either somewhat or very satisfied with the jobs and thus, making it the highest level of satisfaction among employees since 2005. This was also a two percentage points rise compared to the job satisfaction of 86% among 600 of the respondents in 2014. It may seem that many employers have solved the puzzle of providing the ideal rewards to employees but my goal is to take a deep dive into each of the various benefits such as paid maternity and paternity leave, vacation and sick time, medical and life insurance as well as compensation that firms provide and examine how differing access to each of these impacts how satisfied an employee is as well as how the well-being of an employee is affected. I also aim to provide insight that will aid the effective implementation of policies to influence labor decisions in a favorable way. There is also evidence of how crucial financial and non-financial rewards are to achieving job satisfaction which in turn also impacts the productivity of the employees (Tessema, Ready, and Embaye 2013).
Companies still have quite a bit of room for improvement. SHRM found that 45% of employees were likely to look for jobs in other companies (SHRM, 2016) and if companies would like to retain the top talent and reduce costs associated with turnover, they have yet to design policies that will provide the security that employees so seek. Besides benefits and compensation, factors such as hours/weeks worked as well as age, number of locations of the employer and flexible work schedules may also affect job satisfaction and health. My models will incorporate all these elements into determining which policy changes the firms must focus on in order to keep their employees satisfied.

Around 63% of the employees surveyed stated that compensation was a very important factor that influenced job satisfaction while only 23% felt very satisfied with the pay. Claims like these have been further investigated by several authors and there is evidence for the impact of equitable and good pay on job satisfaction (Caligiuri et al. 2010; Weiss, 2002). Similarly, 60% of employees stated that the benefits provided by employers were crucial to job satisfaction while only 27% felt very satisfied with the benefits (SHRM, 2016). It is important to mention that the “size, variety and importance” of benefits have grown over time (DeCenzo & Robbins, 2010; Edgar & Geare, 2005) despite the fact that employees do not feel very satisfied with what they’re being offered. It could be the case that organizations are not focusing on the right benefits or the benefits that employees actually value the most or they may not be timing the incentivization properly in the labor decision making process. 50% of the employees mentioned safety as being very important as well which includes general and mental well-being while 48% of those who valued it actually felt very satisfied with the safety.

Of those that are likely to look for jobs in other companies, inadequate compensation and benefits seemed to be the biggest reasons why employees would leave an organization (SHRM,
2016). Going forward, I will take a closer look at the benefits and compensation and examine the factual and economic literature on how they have impacted job satisfaction and well-being in the past.
Chapter 2: Dissecting Total Rewards & Other Factors

2.1: Compensation

There are several components that make up the compensation package including the base pay, bonuses, commissions, and employee stock purchase plans. The role of each component in leading to job satisfaction was examined by SHRM. 53% of employees indicated that the base pay was very important to job satisfaction while 64% of those individuals were actually satisfied with their base pays (SHRM, 2016). The wages and salaries were 69% of the employer costs for employee compensation (BLS, 2015 and 2016). When it comes to variable pay like bonuses and commissions, 42% of employees stated that it impacted job satisfaction while 53% of those individuals were actually satisfied with their variable pays (SHRM, 2016). Supplemental pay was around 3% of the employer costs for compensation (BLS, 2015 and 2016). Lastly, 18% of employees indicated that stock options were a crucial part of job satisfaction while 39% of employees from organizations with stock plans felt like they were very satisfied with it. For the models in this paper, I will primarily focus on the gross family income component of compensation.

2.2: Benefits

Companies offer several benefits such as paid time off which includes vacation and sick time, paid maternity and paternity leave as well as medical benefits, life insurance and retirement plans. These benefits are a way of providing security to employees as well as perks that employees can take advantage of. Around 63% of employees stated that the paid time off benefit was a significant contributor to job satisfaction while around 75% of those with paid time off benefits claimed that they were very satisfied with the policies (SHRM, 2016). Paid leave was
approximately 7% of the employer cost for total benefits (BLS, 2015 and 2016). Similarly, 62% of employees indicated that the medical benefits were critical to job satisfaction while around 66% with medical benefits were satisfied with the benefits they received at work (SHRM, 2016). The employer cost for health was around 8.4% of the total cost for benefits (BLS, 2015 and 2016).

Around 53% of employees stated that flexible work schedule was a key contributor to their job satisfaction while 66% felt that they were satisfied with the flexibility policies (SHRM, 2016). Lastly, around 48% of employees indicated that a retirement plan such as a 401(k) was an important part of their job satisfaction while around 64% of those with retirement benefits felt satisfied with what was offered by their organization (SHRM, 2016). The retirement benefits were 5.3% of the employer cost for total benefits (BLS, 2015 and 2016).

Clearly, benefits and compensation are crucial to creating an ideal working environment and it would be interesting to investigate how each of the different benefits come into play. Additionally, benefits like the medical and retirement plans may impact general and mental health either directly or indirectly which I will further investigate in this paper. Besides benefits and compensation, there are factors such as hours/weeks worked as well as number of locations of the employer that may influence job satisfaction and health which I will discuss next.

2.3: Other Factors: Work Hours and Number of Employer Locations

Approximately 86% of men and 67% of women in America work over 40 hours a week (Forbes, 2014). Traditionally, longer hours of work have been thought of as a means of achieving greater productivity and job satisfaction but in today’s world, we value quality over quantity and more and more companies are exploring options such as 4-day work weeks. The idea of a 4-day work week was first introduced by Walter Reuther in the 1950s who was the American labor union leader.
Many organizations have also recognized the toll that long workdays as well as long weeks worked in a year take on the mental and general health of employees. There have been several studies conducted by organizations like the NCBI that have found long working hours as a leading cause of depressive symptoms. Most of the individuals that reported low job satisfaction showed increased symptoms of depression as a result of working long hours. Working over 12 hours a day showed a substantial increase in depression and low job satisfaction compared to the reference group who worked 6-8 hours a day with high satisfaction (National Center for Biotechnology Information: NCBI, 2017).

Another factor that could potentially impact job satisfaction and health is the number of locations of the employer. A company with several locations may require at least some of its employees to travel back and forth among the various locations. Around 50% of employees surveyed by Forbes stated that the commute to work, which is based on the number of company locations, significantly impacts how they feel about their work (Forbes, 2016). Most Americans commute around 25 minutes to and from work but employers that add multiple locations may require added travel. I will further examine the impact of employers having multiple locations on health and job satisfaction a little later in this paper.

Most companies are trying to leverage these various benefits, compensation and factors like hours worked to improve and enhance employee satisfaction and health. Among the benefits, healthcare in the form of medical benefits and life insurance as well as retirement benefits and paid leave have been the top-most leveraged elements among companies when trying to retain the existing top talent and reducing turnover. With the American labor market being much more fluid than in countries in Europe, American companies find themselves constantly tweaking all the above-mentioned factors in an endeavor to influence labor decisions in their favor.
Chapter 3: What Are Employees Seeking?

In order to maximize the value of the benefits and compensation, companies have to tailor the tools they have at hand to match the needs of their employee population and abandon the “cookie cutter” approach as described by SHRM. Let’s consider each of the following in detail:

3.1: Financial Benefits

In addition to receiving compensation that is fair and competitive in the industry, employees are seeking benefits like 401(k) plans and 401(k) contribution matching. Reportedly, over 50% of Americans spend at least 2-3 hours a week trying to solve financial issues and also worry immensely about personal finances (Quantum Workplace and SHRM, 2011). Approximately 72.5% of employees surveyed claimed that they would work for employers who had 401(k) plans and matching while over 81.9% of organizations provide such plans. Perhaps, there is some sort of over-provision that is occurring in certain industries or among certain companies where employees don’t really value 401(k) plans or relatively don’t value it as much as other benefits. For instance, employees that are younger than 25 years prefer benefits like financial planning services compared to those over 56. Similarly, younger and older employees (millennials and baby boomers) are more interested in companies with good retirement plans and 401(k) matching as opposed to those from Generation X that don’t value it relatively as much (Quantum Workplace and SHRM, 2011).

3.2: Stress Management Benefits

The current workforce is more stressed than ever. Everyone has deadlines to beat and goals to meet. As most employees are engaged in fast paced work environments, their job satisfaction and health have taken a hit. Employees across companies are seeking tools that will help maintain
their emotional and mental well-being. This may include tools in the form of time off to recuperate (different from paid time off and typically offered during burnout), paid time off, flexible work hours or remote work as well as health benefits.

Around 77% of employees surveyed stated that they preferred having time off to recuperate while only 45.3% of organizations offered such a benefit (Quantum Workplace and SHRM, 2011). Meanwhile, 77% of employees preferred having access to some sort of health insurance and 67% preferred having dental insurance in contrast to 93% of organizations that were providing health insurance and around 90% of organizations that were providing dental insurance (Quantum Workplace and SHRM, 2011). Much like with retirement plans, employees closer to 25 years of age and older than 56 preferred having access to health care plans and dental insurance benefits. Once again, there may potentially be an oversupply of benefits in certain occupations or among companies where it may not be sought out as much. Overall, the trend is that one in two employees would like to see more initiatives at their company that focus on health and well-being (Forbes and Global Talent Trends, 2018). Wellness and stress management programs in place show that the employers truly care about the employees well-being but at the same time, simply providing access to these benefits without tailoring them to the needs of the employee population is an easy way out and a sub-optimal way of providing incentives that impact job satisfaction and overall health.

Approximately 74% of employees seek flexible work hours while only 46% of organizations provide such flexible work hours. 74% of millennials, on average, would prefer remote work or more flexible work hours as well (Quantum Workplace and SHRM, 2011). Additionally, working parents value flexibility more than income (Forbes and FlexJobs, 2018). The traditional nine to five jobs are obsolete and the way through which companies achieve top
results and greater productivity is by taking care of employees’ health and ensuring that they have job satisfaction.

Lastly, around 72% of employees prefer having paid time off benefits while 86% of organizations provide such benefits (Quantum Workplace and SHRM, 2011). In organizations that provide health and well-being benefits, Quantum Workplace has found a 11% more engaged workforce than those organizations that do not offer them. The top opportunities for increasing employee retention and engagement are in the time off space, flexibility and medical benefits which employers must leverage to stay competitive.

Job satisfaction, health, employee engagement and access to competitive and valuable benefits and compensation are cyclical in nature. Around 75% of employees that had access to and were satisfied with the financial and well-being benefits at their organizations not only had better health but also greater engagement in the workplace (Quantum Workplace and SHRM, 2011). This increased engagement further led to increased job satisfaction.

It’s not just the provision of benefits that makes a difference but the factors that provide value to employees. Most large organizations with over 10,000 employees provided almost all of the 31 benefits that were being measured by Quantum Workplace, but organizations need to optimize the benefits they provide and customize them appropriately. Around slightly more than 70% of employees are satisfied on average across small and large organizations which would suggest that even smaller companies that may not provide all 31 different kinds of benefits to their employees are able to ensure job satisfaction on an equally high level as large organizations. As we dive into the modeling in this paper, I will further look at how each element that organizations provide makes or does not make a difference.
Chapter 4: An Investigation of the Economic Literature

Now that I’ve given you a glimpse of the facts on job satisfaction and health, I will further elaborate on various findings using economic literature. One of the notable studies is the “Working Conditions in the United States” by Maestas, Powell et al., 2018 where they examined the results of the 2015 American working conditions survey. Maestas, Powell et al. view working conditions as a way of assessing if the American workforce have the necessary tools that lead to job satisfaction. The paper finds that one in three Americans have little to no control over their work schedules. Only around 15% of Americans were found to have complete freedom in deciding their schedule. Companies are miles away from providing the flexibility that employees are seeking and the demand for such flexibility policies far outweighs the existence and implementation of such policies. The paper also identifies a particularly stressed out workforce. People have reported having too little time to do their job and the authors find that white-collar workers are engaged in a much more work intensive environment than blue collar workers. This has got to put a strain on the mental and general health of individuals as well.

The paper further investigates time off policies where women have reported that it is more difficult for them to arrange for time off than men whether it may be for personal or family matters. Another key investigation in the paper looks at the importance of financial incentives at work. Nine out of ten Americans had reported that their “ability to provide financially” was very crucial. This could be in the form of a good income that would ensure job security as well as benefits such as health insurance and paid vacation in particular. The paper also finds evidence of correlation between working conditions and job satisfaction. They found that factors such as long work hours and job intensity, among other factors, reduce job satisfaction. The paper also reports factors that tend to improve job satisfaction such as autonomy, social support in the workplace as well as
meaningful and creative work. There is also evidence of differing job satisfaction among genders. The paper reports that women, more than men, work in part-time jobs that typically tend to have poor working conditions and in turn leading to poor job satisfaction. Among those under 35, 22.2% of women were working in part-time roles compared to 6.7% of men. This would suggest that gender has a key role to play when examining the impact on job satisfaction. Furthermore, we see that men worked an average of 44.3 hours a week while women worked 37.7 hours. This difference in hours worked could also represent a difference in job satisfactions as well as health.

Maestas, Powell et al. also get granular with pay and benefits as they are a key component of working conditions. The income for those under 35 had median annual earnings of $45,000 for full time employees and $40,000 for part-time employees. A lot of the employees had performance-based pays. The problem here is cyclical in nature. In order to earn a good pay, employees have to work diligently and be productive in a fast-paced and stressful environment. At the same time, a good pay or a higher pay is sometimes a motivator to greater productivity but may not be directly impacting satisfaction.

In terms of the availability of benefits, over two-thirds of employees reported having access to such benefits as health and dental insurance, life insurance and company pension plans but the pitfall is that they are unequally distributed in the workforce. Additionally, the authors emphasize that a job is not necessarily good simply based on the access to benefits and hence, the mere access to benefits does not imply good working conditions that would in turn lead to job satisfaction and good health. Among those under the age of 35, 80% reported have access to paid vacation time, 80% of the sample had access to health insurance, 69% had access to paid sick time, 69% reported having access to retirement benefits and 68% and 60% of individuals had access to dental insurance and life insurance.
Shifts are another important working condition that the authors pay attention to. Shift work was common among women without a college degree as well as among non-college graduate men. I have described only a handful of factors from Maestas, Powell et al. (2018) that relate to my study. The paper also discusses a regression analysis with job satisfaction as the dependent variable. For those under the age of 35, autonomy at work, intensity of work, social support at work and meaningful work were all found to be significant predictors that impact job satisfaction. Not all of the factors considered in this paper will be included in my models based on the data that I’ve gathered.

I now turn to another paper by Maestas, Mullen et al. (2019) titled “Unmet Need for Workplace Accommodation”. This paper introduces a concept known as “accommodation-sensitive” individuals who are in the labor decision making process where they decide whether or not to work at a particular company based on the accommodations provided to them in the form of appropriate benefits, pay, working conditions, etc. I will revisit this concept of labor decision making process later on in this paper to expand on what’s been examined by Maestas, Mullen et al. The authors find that around 47% to 58% of all “accommodation-sensitive” individuals do not have the appropriate accommodations that would inform their decision to either start working for a new employer or continue working for an existing employer. When accommodations are unmet, the working conditions aren’t desirable to either existing or future employees as they play a key role in job satisfaction and health. Some industries or occupations even see an over-accommodation of needs which would explain the unequal distribution from the previous paper. The authors also found a 13.2 percentage points increase in the likelihood to work for an employer among those with health problems who were properly accommodated with the appropriate incentives. It is also important to note that in both the above papers, the RAND ALP (American
Life Panel) survey data was used to run the analyses and derive the results. The key takeaway here boils down to the importance of good working conditions or appropriate workplace accommodations that impact job satisfaction, health and the labor decision making process.

One type of benefit that has come to prominence is the access to family leave for the purposes of maternity or paternity. There is a large chunk of empirical evidence pointing to the impacts of paid family leave on labor market outcomes. One such study by Baum and Ruhm (2013) details the impact of the provision of paid leave for maternity or paternity. Such provision is associated with a higher likelihood that a mother would return to employment nine to twelve months after birth. Benefits such as paid family leave for the purposes of paternity or maternity have the ability to create job continuity and are a key part of creating job satisfaction for the future during an uncertain time in a new mother or father’s life. The study by Baum and Ruhm examined the data from the National Longitudinal Survey of Youth and focused, in particular, on California. When leave rights are granted, Baum and Ruhm found that it initially decreases employment and then increases the employment at a substantial pace. This is due the fact that a company that grants such family leave rights to their employees is able to accommodate their needs well. In the context of the study by Maestas, Mullen et al., these ‘accommodation-sensitive’ individuals are better taken care of and in turn leading to job satisfaction. The granting of family leave rights increased the leave taking by an average of 2.4 weeks in California (Baum and Ruhm, 2013) but also increased the likelihood of a mother’s return to work within 1 year. They also saw an increase in the hours worked by the new mother. These benefits tend to create future job satisfaction and are also a critical component for ensuring the good health of a mother and her child. Introducing short and long term paid and unpaid family leave programs has also been found to improve the child’s short- and long-term outcomes (Rossin-Slater, 2017) in addition to allowing the mother enough
time to recuperate. Thus, we can see that paid or unpaid family leave is not only important for the future job satisfaction and good health of the mother and child but to also influence labor market outcomes in the form of early return to work. This is one of the key effects of providing the appropriate incentives which I will discuss further in my next chapter.

Authors like Bender and Jivan from the Center for Retirement Research have also detailed factors that impact well-being and satisfaction. Often, age and well-being or happiness are bound to take a U-shaped pattern such that older and younger individuals tend to be happier while those in the middle do not feel relatively as happy (Bender and Jivan, 2005). Part of the reason why older generations may be happier is due to the fact that they have pension and retirement benefit sources that are able to sustain them through old age without have to work. Financial benefits in the form of retirement plans and pensions are ought to impact well-being or happiness given that they form a major portion of the income during old age (Bender and Jivan, 2005). Simply having access to retirement plans isn’t sufficient enough to determine an individual’s happiness but rather, the risk involved with the defined contribution plans. This is a key concept that one must keep in mind for the latter half of this paper where I conduct my empirical analysis on health and well-being. The authors also find evidence of a positive relationship between retirement planning and benefits during their employment to satisfaction for when they retire. There is also a negative relationship between those that retired involuntarily and their job satisfaction. Oftentimes, individuals that are not financially stable in their old age find it difficult to re-enter the workforce and thus, face a decreased level of satisfaction and this could potentially even take a toll on their health. While my research will mainly focus on those that are far away from retirement, it is important to see how the preretirement status of the individuals impacts their satisfaction and health. Those with also poor health during employment tend to have poor health after retirement (Bender and Jivan, 2005).
One way of taking care of the employees’ health is, once again, through the accommodation of employee specific needs in the form of benefits and compensation.

Another interesting study conducted by Maestas, Mullen, Wenger et al. (2018) details the working conditions in America and examines the employee’s willingness to pay to have each of the additional job characteristics they seek in an experimental model. A key statement the authors make is that job characteristics are valued highly and there is a tradeoff between wages and having other job characteristics (Maestas, Mullen et al., 2018). Flexibility as well as physical demands in the form of hours worked or shift worked are important to workers who are gladly willing to accept lower income for better job characteristics. This is a key indication that there has been a paradigm shift from wages being detrimental to job satisfaction to the benefits and job characteristics (non-monetary attributes) being given more weightage. Such evidence can also be found in the research of Lucas 1977, Brown 1980, and Goldin and Katz, 2011 where the value of working conditions in the form of proper shifts, low stress, flexible work schedules and physical demands have been probed. There is strong evidence of non-wage characteristics influencing job decisions.

While flexibility has been given undivided attention off late, we also see a growing number of studies on other characteristics. Work pressure and stress as a result of long work hours have been found to reduce job satisfaction significantly and also egregiously impact the well-being (Lopes et al., 2014). The stress of work has also been found to predict early retirement as a result of decreased job satisfaction and poor health (Filer and Petri, 1988). Another credible predictor of job satisfaction is the freedom or autonomy at work that individuals have. This is another non-wage characteristic crucial to employees’ overall working conditions. Older workers, relative to younger employees, have been found to value non-monetary job characteristics significantly more than wage or income. The ability to decide one’s own schedule can be equated to an approximately
a 9% increase in wage while flexibility has been valued by older employees at 11.6% of their wages (Maestas, Wenger, Mullen et al., 2018). Employees are willing to accept wages that are 20% lower just in order to avoid having a schedule that is controlled by a superior at work (Mas and Pallais, 2017).

Paid time off, another key characteristic, has been found to be equivalent to a 16.5% of wage raise (for 10 days) and a 23.6% wage raise for 20 days. It has been found to be a strong predictor of labor decision making processes (deciding whether or not to work for an employer) as well as an indication of the level of flexibility and freedom that employees have (Maestas, Mullen, Wenger et al., 2018). There are also differences across race where whites relative to non-whites have been found to value job characteristics including elements such as flexibility in the workplace relatively more.

As we’ve seen there are several studies that have examined the value that is placed on various job characteristics across demographics such as age, gender and race. Working conditions become growingly important as employees go through their life cycle. Job characteristics have been found to be equivalent to approximately 62% of wages (for the 9 job characteristics considered) which leads to the conclusion that they are not only strong predictors of job satisfaction and health but also an integral component to aid the job choice decision making (Maestas, Wenger, Mullen et al., 2018). In the next section of this paper, I will introduce the benefits that employers and employees receive from providing the appropriate incentives.
Chapter 5: The Effect of Providing the Appropriate Incentives

Providing the appropriate rewards, compensation and incentives has several advantages to both the companies providing them as well as to the employees. Financial and non-financial incentives are crucial to ensure job satisfaction and well-being of the employees, but they also help motivate employees to better serve the ultimate customers of the companies. While I worked at Lowe’s Companies Inc. this summer, the CEO, Marvin Ellison, often emphasized the importance of “serving those who serve our customers”. When the employees are taken care of, companies are able to influence employee behaviors to align them with the company mission and values. Not only do appropriate incentives impact the behavior of employees but also their ultimate outcomes or in other words, the productivity which eventually affects the external customers of companies.

In a customer-centric universe, employee productivity is crucial to businesses and more and more companies are investing in the satisfaction and well-being of employees. Happier employees were found to be 12% more productive and unhappy employees were 10% less productive (HR Daily Advisor, 2017: University of Warwick). Absenteeism is another aspect that leads to loss of productivity. Studies have found that, on average, 2% to 3% of all workers are absent from the workplace. This absenteeism is a direct result of job dissatisfaction as discussed by Steers and Rhodes (1978). Furthermore, marginal wages as well as flexibility in work schedules have been found to significantly impact absenteeism (Allen, 1979). For instance, those with paid time off have seen a decrease in absenteeism by 25% to 30% relative to those without it and employees with routine work schedules with little room for flexibility have seen a 50% higher absentee rate (Allen, 1979). Similarly, there is also evidence of a weak positive relationship between pension plans and absenteeism (Allen, 1981). These conclusions are an indication to companies to leverage crucial non-pecuniary elements in a favorable way.
From an employer’s perspective, incentives help lower costs associated with high turnover. It’s also a factor that drastically affects end product and customer service quality. Often, the labor market tightness is a good indicator for whether the turnover would be high or low. Most recently, the tightness of the labor market was studied by Abraham and Haltiwanger (2019) and published on the Chicago Fed’s website. Additionally, the Federal Reserve Economic Data has been tracking the labor market tightness for several decades now given the importance it has been given as well as its influence on labor market outcomes. In March 2018, the labor market tightness surpassed 1.0 indicating that the number of vacancies in the market exceeded the number of people searching for a job. As of May 2019, the labor market tightness was at 1.24 (FRED) indicating that the companies, now more than ever, must be wary of imminent turnover and must tweak their incentives so as to not lose the top talent. A tight labor market also indicates that the probability of finding a job is much higher than the probability of filling an open position. This would further put a strain on the costs associated with turnover and filling the open positions. The costs typically arise from searching for a candidate (job postings, selection, interview process, waiting period) as well as the productivity lost during that time period and during the first few months of hiring when the new employee is undergoing on-the-job training. For companies looking to fill entry-level jobs, the replacement cost is around 30% - 50% of the annual salary while it is a 150% for mid-level roles and up to 400% of annual salary for high level executives (HR Daily Advisor, 2017). Rather than incurring these costs, companies would want to save money on turnover by offering access to the appropriate incentives to employees.

Another benefit to both employers and employees is the reduced healthcare costs. When companies offer benefits that directly and indirectly impact the well-being of employees for the better, they help lower long-run health care costs. Additionally, in companies that have self-funded
health insurance plans, cost of healthcare grows at a much slower rate with the access to incentives that positively impact the health of employees. The annual savings were around $565 per employee (2009 dollars) and the return on investment was between $2 and $4 per dollar spent on the different programs to help improve employee well-being (Office of Disease Prevention and Health Promotion, 2017).

There are clear-cut benefits to both employers and employees from providing the appropriate incentives. The question that companies must ask themselves is: what are those incentives that will give me the best return in the long run? In the next section of this paper, I will examine and explain the key variables in my models to further get an insight on factors that might influence job satisfaction and health.
Chapter 6: Examination of the Data & Key Variables

The variables for this analysis will be a mix of demographic variables as well as variables associated with benefits, compensation and the other factors that I’ve discussed in my previous chapters. The data was gathered from the National Longitudinal Survey Cohort (NLSC) of 1997 with the data being from the year 2015 where individuals reported on various employment related variables. The NLS is a program sponsored by the U.S. Bureau of Labor Statistics and the surveys are intended to be a representative of the national population. A group of individuals belonging to a specific birth cohort were surveyed over a period of time, but I will be considering only the survey data from the year 2015. The survey collects data on aspects such as labor market activity, health, job satisfaction, schooling, fertility programs and several other demographic factors including age, gender, year and month of birth, and race. The data in this paper pertains to those men and women who were born in the years 1980-1984. Each of the various variables contained approximately 3,000 to 4,000 observations of which the refusals, “don’t know”, valid skips and non-interview observations have been dropped after which I have approximately 2381 observations left to conduct my analysis with. In this paper, I assume that these above-mentioned dropped observations are ignorable (i.e. there is no sample selection bias) since I will not be focusing my analysis on a Heckman model. For the sake of this paper, I will only focus my modeling on estimating the factors that impact job satisfaction and health.

6.1: Dependent Variables

Since the goal of this paper is to study job satisfaction and health, my dependent variables will be job satisfaction and health. Furthermore, based on the data gathered from NLS, the job satisfaction can be broken down into 5 categories: “Like it very much”, “Like it fairly well”, “Think it is OK”, “Dislike it somewhat” and “Dislike it very much”. I have gathered 2381 different
observations to conduct my analysis as mentioned earlier. By combining “Like it very much” and “Like it fairly well” as my indicator (1) for satisfaction, I will create one model that will look at the impact of the various independent variables on this aggregated satisfaction indicator variable. The three other job satisfaction levels will be coded as zero. Of the 2381 observations, approximately 41% of the employees (976) stated that they liked their job very much while 31% of the employees (746) indicated that they liked their jobs fairly well and 21% of employees (494) felt that their job was okay. Around 7% of the employees (165) either disliked their job somewhat or very much (Figure 1: Job Satisfaction).

The other dependent variable that I focused on was health. Given the availability of enough data points, the health variable can be split up into general health and mental health. Much like with job satisfaction, individuals were given five categories and asked to rank their general health as: excellent, very good, good, fair or poor. For the sake of this paper, the categories excellent, very good and good were combined and coded as 1 (indicator of good general health) while fair and poor were coded as 0. Around 88% (2092) of the employees stated that their general health was excellent, very good or good while 12% indicated that it was fair or poor (Figure 2: General Health). Once again, we have a binary variable in the model as a dependent variable.

For mental health, the employees were asked to rate on a four category scale consisting of “all of the time”, “most of the time”, “some of the time” or “none of the time” for how much of the time during the previous month did they feel happy. Much like with general health, for simplicity, the top two categories of “all the time” and “most of the time” have been combined and coded as 1 (indicator of happiness or good mental well-being) while the other two categories have been coded as a zero. Around 69% of the employees (1650) indicated that they were either happy all of the time or most of the time while the rest were either happy some of the time or none of the
time (Figure 3: State of Mental Well-Being). Once again, we end up with a binary dependent variable. It seems that this sample of individuals feel more positively about their general health status than their mental health status since fewer people reported having an overall sense of good mental well-being.

6.2: Independent Variables

Now that we have our three dependent variables, we have to consider different predictors that could potentially explain the changes in job satisfaction and health. Leave Benefits: Leave is a way for employees to recuperate and relieve stress and create a healthy work-life harmony. An extra 10 days of paid time off has found to increase the favorable ratings of employees by their managers by 8% (National Business Group on Health, 2017). The first few predictors will be different variables associated with leave. In the NLS survey, individuals were asked to report the total combined number of paid sick days, holidays, vacation or personal days that they received at their organization and it was reported in terms of the number of days. 40% (945) of the 2381 reported having between 10 and 20 days of leave followed by 24% (570) of the individuals that had between 20 and 30 days of leave while around 22% (530) of the people reported having between 0 and 10 days of leave (Figure 4: Total Leave Granted). The average number of days were approximately 22 and the median days of leave were 15.

Rather than including the leave combinations variable, I considered sick and personal leave separately where individuals reported the number of paid sick or personal leave days they received. Around 60% (1417) of the individuals reported having between 0 and 10 paid sick or personal days while around 31% (745) indicated having between 10 and 20 days. The mean and median were around 14 days and 7 days. Those surveyed were also asked the number of paid vacation days offered at their organizations and I included that as my next variable. 77% (1835) reported
having between 0 and 20 days of paid vacation while 12% indicated having between 20 and 40 days of vacation (Figure 5: Sick/Personal & Vacation Days). The median number of paid vacation days was 12. Additionally, over the past decade, maternity and paternity leave have become prominent as a perk or benefit offered by companies. These have been either paid or unpaid. Given it’s growing significance, I included access to paid and unpaid maternity and paternity leave as my independent variables. If employees had access to paid maternity or paternity leave, they were coded as 1 while the others were coded as 0. Around 40% (948) of the employees reported having access to paid maternity or paternity leave. Employees were also asked if they had access to unpaid maternity or paternity leave which would allow them to come back to the same job or a similar job which were coded as 1 for those that had access to it. Around 42% (990) of employees indicated having access to unpaid maternity or paternity leave (Figure 6: Maternity or Paternity Leave). In the next chapter of this paper, I will examine how increasing/decreasing the number of days of paid vacation and paid sick or personal leave as well as access to maternity or paternity leave impacts job satisfaction and health.

Medical Benefits: Another key benefit that companies offer which could potentially impact satisfaction and health is access to medical, surgical or hospitalization insurance which covers major illnesses or injuries outside of the job. Those that had access to such medical insurance were coded as 1 in the data set. 75% of employees (1789) indicated having access to some sort of medical insurance benefit at their company. It would be interesting to examine how increasing or decreasing access to medical insurance might impact satisfaction and health.

Life Insurance: Employees were asked if their employers provided life insurance that would cover their death for reasons not associated with their job and those that had access to it were coded as 1. 61% of the employees (1444) indicated having access to life insurance while 39% did not.
**Dental Benefits:** Another interesting regressor that could potentially show a causal effect on satisfaction and health is access to dental benefits. Employees were asked if they had access to dental benefits and approximately 69% of employees (1648) indicated having access to employer provided dental benefits (Figure 7: Access to Each of the Benefits).

**Income:** For many individuals, the income they receive, or that their family makes might impact their overall satisfaction and have an indirect impact on their health. I’ve included the gross family income as an additional variable. The employees were asked to report their gross family income and the reported mean income was $88,989 while the median was $72,000. The maximum income was $329,331 (Figure 8: Income Distribution). Furthermore, I have performed a transformation and taken the log of the income to change the interpretability of the data in the models.

**Other Variables:** As discussed earlier in the literature review, there are several other factors that could potentially influence the dependent variables in consideration. A flexible work life is very much in demand and employees were asked if their employer provided a flexible work schedule which were coded as 1. 45% of the individuals surveyed indicated having a flexible work schedule. The other variables that go hand-in-hand with flexibility are the hours and weeks worked. The employees reported the number of hours they worked each week as well as the weeks worked in a job. 46% of the individuals (1091) stated working between 39 and 42 hours a week with the mean and median hours being 38 and 40. The next largest group of employees consisted of 9% of the sample and worked between 48 and 51 hours. Individuals were also asked to report the number of weeks they had worked at their job. 22% of the individuals (527) reported working between 0 and 50 weeks on their job followed by 14% (324) who worked between 50 and 100 weeks at their job. The third largest group consisted of 10% of the sample that worked between 100 and 150 weeks. 169 were the median weeks worked at their job for this group of people.
Another interesting variable to consider is the type of shift that individuals work. NLS has reported data on whether people work “regular day shifts”, “regular night shifts”, “regular evening shifts” or other kinds of shifts. I have coded the regular day shifts as 1 in my analysis to see how it compares to all other types of shifts. Around 70% of the individuals (1667) reported working a regular day shift. There may be some causality between the shift type and job satisfaction or health which I will examine in the next chapter.

Often, location is a key component when deciding whether to work for an employer or not. Individuals were asked if their employers have employees working in more than 1 location and the yes responses were coded as 1. 67% of the employees (1599) confirmed that their employers had more than 1 location where employees were working (Figure 9: Shifts & Employer Locations).

Demographics: A few other important variables to consider are age and gender. The mean and median age for this sample were 33 years. Majority of the individuals in this sample were also 33 years which is the mode. The minimum age was 31 and the maximum was 35 (Figure 10: Age Distribution). Approximately 53% of the sample were males. The other variable that I’ve included in the models is race. 62% of the individuals (1478) in this survey were non-black non-Hispanic, 20% were Hispanic (477), 17% were Black (394) and 1% were mixed race (32). (Figure 11: Race Distribution)

In the next chapter of this paper, I will use several models that will try to explain which of the factors discussed above significantly influence satisfaction, mental health and general health. Given that all my dependent variables are binary, I will model several logistic regression analyses. It is also important to note that the survey data excludes all self-employed individuals. I will also try to find any relationships that may be counterintuitive.
Chapter 7: Econometric Analysis of Data

7.1: Logistic Regression Framework

Now that we’ve probed each of the variables, I will examine multiple logistic models. Given that I will be estimating logit models, the beta (coefficients) estimates will be obtained through maximum likelihood estimation (MLE) from the following log likelihood function: \( L(\beta) = \sum \{y_i * \ln(\phi(X_i \beta)) + (1 - y_i) * \ln(1 - \phi(X_i \beta))\} \) where \( \phi \) represents the CDF given by: \( \phi(X_i \beta) = (1/(1 + \exp(-X_i \beta))) \). I will consider three logistic regression models here which will be as follows:

\[
Y_1 = \beta_0 + \beta_1 \text{UnpaidMatPat} + \beta_2 \text{PaidMatPat} + \beta_3 \text{Retirement} + \beta_4 \text{Sick} + \beta_5 \text{Vacation} + \beta_6 \text{Medical} + \beta_7 \text{Dental} + \beta_8 \text{Income} + \beta_9 \text{Age} + \beta_{10} \text{Weeks} + \beta_{11} \text{Location} + \beta_{12} \text{Flexible} + \beta_{13} \text{Life} + \beta_{14} \text{White} + \beta_{15} \text{Black} + \beta_{16} \text{Hours} + \beta_{17} \text{Shift} + \varepsilon
\]

where

- \( Y_1 \): \{Satisfaction or Mental or General\}
- \( X_i \): It is a matrix containing all the predictors for individual \( i \)
- \( \beta \): A vector containing the intercept followed by the coefficients of the 17 variables
- \( \varepsilon \): The error term is assumed to have a logistic distribution
- \( \text{UnpaidMatPat} \): The unpaid maternity or paternity access or lack thereof for employees
- \( \text{PaidMatPat} \): The paid maternity or paternity leave that employees have access to
- \( \text{Retirement} \): A binary that shows if employees have access to retirement benefits such as 401(k)
- \( \text{Sick} \): The number of sick days that employees are granted
- \( \text{Vacation} \): The number of vacation days that employees are granted
- \( \text{Medical} \): A binary variable indicating whether or not individuals have access to medical benefits
- \( \text{Dental} \): A variable indicating if employees have dental benefits or not
Age: The age of the employees in the sample (Individuals are between ages 31 and 35)

Weeks: The number of weeks worked at their job

Location: A binary variable that represents if companies have employees working from more than one location in the United States

Flexible: A binary variable that indicates if an employee has a flexible work schedule

Life: A binary variable representing if an individual has access to life insurance or not

White: 1 indicates white while 0 indicates other races

Black: Indicates 1 if an individual is Black\(^1\)

Hours: It is the number of hours worked in a week as reported by the individuals

Shift: 1 is an indicator for a regular day shift while 0 refers to all other types of shifts

Income: The natural log of the gross family income as indicated by the household in Dollars

I have three dependent variables and 17 independent variables for which I’ve drawn the data from the NLS as stated earlier. The standard errors have been derived from the inverse of the hessian matrix and are reported under the coefficients in parenthesis. The coefficients of the predictors are given in Table 1: Summary of the Multiple Logistic Model Results. In the next section, I will examine the results obtained from these models.

\(^1\) Dummies for Hispanic and mixed race have not been included to avoid any multicollinearity issues.
7.2: Discussion of the Multiple Logistic Model Results

Table 1 (appended) shows the coefficients of the variables along with their standard errors in the parentheses. The *, ** and *** refer to the significance of the coefficients at the 5%, 10% and 15% alpha levels. In order to see the true effect of the coefficients, I will be computing the partial effects at the means. The partial effects will be obtained using the following formula:

\[ \Delta \Pr[Y_i = 1] = \left\{ \frac{\partial \Pr[Y_i = 1 \mid X_i = \bar{X}]}{\partial X_{ji}} \right\} \times \Delta X_{ji} \]

\[ j \in \{1, 2, \ldots 17\} \]

\[ i \in \{1, 2, \ldots 2381\} \]

\( \bar{X} \) = A matrix with the means of all the independent variables

The probability of \( Y_i = 1 \) can be obtained using the CDF formula from earlier evaluated at the means of \( X \):

\[ \phi(X_i; \beta) = \frac{1}{1 + \exp(-X_i; \beta))} \]

Furthermore, let’s assume \( \{\partial \Pr[Y_i = 1 \mid X_i = \bar{X}] / \partial X_{ji}\} = g(\beta) \). Then \( g(\beta) \) can be rewritten as \( \phi(X_i; \beta) \times \{1 - \phi(X_i; \beta)\} \times \beta \). Next, I will derive the distribution of \( g(\hat{\beta}) \) in order to recover the asymptotic variance of \( g(\hat{\beta}) \) which in turn will help us compute the standard errors of the partial effects. Using the Mean Value Theorem, consider the following equation:

\[ g(\hat{\beta}) = g(\beta_0) + \{\partial g(\tilde{\beta})/\partial \beta’\} \times (\hat{\beta} - \beta_0) \]

Then the asymptotic distribution can be obtained using the following after rearranging the above:

\[ \sqrt{N} \times [g(\hat{\beta}) - g(\beta_0)] = \{\partial g(\tilde{\beta})/\partial \beta’\} \times \sqrt{N} \times (\hat{\beta} - \beta_0) \]

The above equation will converge in distribution to a \( N(0, G(\hat{\beta}) \times \hat{H} \times G(\hat{\beta})’) \) where \( G(\hat{\beta}) \) is the \( \{\partial g(\tilde{\beta})/\partial \beta’\} = \{\beta \times \{(-(exp(z) - 1) \times exp(z))/((exp(z) + 1)^3) \} \times \bar{X} \} + \{\phi(X_i; \beta) \times \{1 - \phi(X_i; \beta)\}\} \times I_{18} \) and the \( \hat{H} \) is the asymptotic variance of \( \hat{\beta} \) that I used earlier to compute the standard errors shown in Table 1 in the parentheses. The \( z \) is simply \( \{\bar{X} \times \beta\} \) and \( I \) is an identity matrix. The CDFs are at
the mean: \( \bar{X} \). The partial effects and the standard errors are appended in Table 2: Partial Effects at the Mean. I have also reported the standard errors for the beta coefficients from the Sandwich Estimator for reference in Table 3: Sandwich Estimator Standard Errors.

When it came to job satisfaction, we see that the partial effect at the mean for income is significant at the 15% alpha level. Increasing the income by 100% has been found to decrease the probability that the individual is satisfied on their job by 1.47%. This causality could be due to the fact that the increase in income may take away the company’s ability to provide other benefits which the employees may seek. There is no free lunch to be had and companies have budgets and dedicating resources to raising the income may not be as desirable to some employees. A similar effect of decrease in satisfaction is evident from the multiple logistic model: income coefficient as well. Since I have combined the top two levels of satisfaction, we can only expect the level of satisfaction to go down at the excellent and very good levels.

The job satisfaction variable was also found to be impacted by flexible work schedules. Increasing the access to flexible work schedules to an additional person would lead to a decrease in the probability that the employee is satisfied by 3.75%. There is a reduction in satisfaction at the excellent and very good levels combined. Typically, we would expect an employee that values work flexibility to see a rise in the probability of being satisfied when offered a more flexible work schedule. In the case of this sample, it seems that the employees may not value flexibility as much and hence, we see a decrease in the probability of being satisfied. Quite often, the department of the employee dictates whether or not they care about flexibility. For instance, those who work in the IT sector would like the flexibility to work on their coding or programming assignments whenever their feel comfortable whether it may be at nighttime or early morning or mid-day. Such individuals would appreciate flexible work schedules. The flexible variable was significant at the
10% alpha level. It might be useful for future studies to also incorporate any occupational data they have available to see how flexibility and occupation vary the satisfaction. Additionally, having access to a flexible work schedule may not engender a sense of discipline in the employee which could also be the reason why it leads to poorer job satisfaction.

For the next dependent variable of mental, we find that the location or number of locations of the employer is the only significant variable at the 15% alpha level. Increasing the number of employer locations by 1 decreases the probability that the individual has good mental well-being or happiness by 3.24%. This could be possibly due to the fact that individuals may be required to commute to multiple locations, and this could have a mental strain on the happiness of the individual. In the previous chapters, we’ve seen that Americans spend a significant amount of time commuting and the lowering of the probability of being happy could be a direct result of having to commute more. It can also be due to the added stress of coordinating efforts between multiple locations. An additional 20 employer locations decrease the probability that an individual is happy (good mental well-being) by 64.8%.

The last model where general health was the dependent variable was found to be impacted by income, age, weeks worked at a job, flexible work schedules as well as life insurance. Upon increasing the income by 100%, we see that the probability that the individual has good general health increases by 0.98%. Similarly, a 10% and 20% raise in income would increase the probability that the individual has good general health by 9.8% and 19.6% respectively. This could be due to the fact that having a larger income helps an employee take better care of their health in times of need. Increasing the age by 1 year leads to an increase in the probability that an individual has good general health by 0.93%. An increase in the age by 20 years would increase the probability that an
individual has good general health by 18.6%. Similar to mental health, as people grow older, they not only become happier but also see an improvement in their general health. There could be two reasons for this: a) As an individual gets older, they may be promoted and have access to better pay and benefits which in turn helps them take better care of their general health b) The individual may not work as much or may choose more leisure over work and hence, is able to recuperate and spend more time on themselves and on improving their general health.

We can also see that increasing the number of weeks worked at a job by one, decreases the probability that the employee has either excellent, very good or good general health (an indicator of good general health) by 0.01%. Furthermore, increasing the weeks worked at a job by 52 weeks (1 year) decreases the probability that an individual has good general health by 0.52% and working at the same job for 520 weeks (10 years approximately) decreases the probability that the individual has good general health by 5.2%. The longer an individual works at the same company, the more we see a decline in their ability to maintain good general health. This may be because of the increasing burden of work or perhaps, due to routine and strenuous tasks being performed all year round.

The flexible work schedules variable was also significant. When the access to flexible work schedules is increased to an additional employee, the probability that the employee has good general health goes up by 2.24%. Adding access to flexible work schedules to an additional 20 workers will increase the probability that the employee has good general health by 44.8% which is a significant result that any employer should keep in mind. Lastly, the life insurance variable is a significant predictor of general health as well. We can see that increasing access to life insurance to 1 additional employee will increase the probability that they have good general health by 2.93%.
Clearly, the accessibility to the life insurance benefit is an important aspect to the individuals in this sample and for those that this sample is a representative of. It is also important to note that some of the variables such as paid vacation days and black are close to being significant at the 15% alpha level for the general and mental health dependent variables.

Now that we have seen how each of the independent variables impacts or do not impact the job satisfaction, mental and general health, it is important for companies to know when to leverage this information to influence labor decisions. In the next and final chapter of this paper, I will focus on the policy implications and lessons that can be drawn from my research.
Chapter 8: Policy Implications and Conclusions

Over the last several chapters, I’ve examined the factors that impact job satisfaction and health and now, I will reintroduce the concept of when these factors are important. The ability of a company to provide the appropriate incentives to employees is critical to some extent but the incentives would not be able to impact the employees in the right way unless companies are able identify when these incentives are the most valuable to employees. The population that the sample is representing in this case has the job satisfaction impacted by factors such as income and flexible. Similarly, the mental and general health are influenced by factors such as income, flexible work schedules, age, life insurance, employer locations and weeks worked at a job. Companies can greatly benefit from understanding these different factors that impact their employees’ job satisfaction and health but an investigation into when these factors are valued in the labor decision making process would further help leverage these factors to enable the best outcomes.

With this particular sample, we see that companies wouldn’t really benefit from small increases in income or from providing flexible work schedules since in both of the cases, we see a decrease in the probability that an employee is satisfied. Perhaps, this could be due to the fact that employees value other factors much more and may not be in occupations where flexibility is valued as much. Knowing such information is valuable for companies in reducing turnover and absenteeism and improving productivity. From the economic literature, we’ve seen how employee absenteeism responds to flexible work schedules and hence, given that flexibility is significant in this paper as well, it will be an important tool for companies to leverage. With respect to mental health, we find that only employer location is significant. As additional employer locations are added, the probability that an individual is happy goes down. With respect to the general health, we see that income positively impacts it unlike in the case of job satisfaction. Similarly, variables
of flexible, life and age positively impact the general health while weeks worked impacts the general health negatively. The benefits teams of companies must use this information in an endeavor to impact employees lives in meaningful ways such that they decide to stay with the company for a long time or in other words, implement policies to improve retention. For this particular sample, flexible and life are two factors that companies can tweak to reduce turnover and absenteeism and improve the employee retention. Additionally, healthy employees are more productive and thus, the returns will accrue for the company over time. Economists tend to focus on the elements such as turnover, productivity and absenteeism and while the analysis in this paper is useful for policy making at companies, economists in turn can learn how companies navigate and implement policies in response to influencing labor outcomes in a favorable way.

I have also observed several variables that are not significant factors that impact job satisfaction and health but that doesn’t mean that these factors ought to be ignored completely. They may just be valued at a different stage in the labor decision making process and may be an important characteristic of the population that this sample is representing. When I refer to the concept of the labor decision making process, I am referring to the decision that an individual makes when deciding whether or not to work for a company. Companies need to understand that while only some factors that I’ve discussed above actually impact job satisfaction and health, all the incentives that a company provides act as a signal of what companies can offer to an employee when the employee is in the labor decision making stage. Typically, individuals decide on whether or not to work for an employer depending on what benefits and compensation the employee has to offer. They may also base their decision on such factors as flexible work schedules and number of locations which I’ve discussed in depth early on. The way in which an employer manipulates all these factors sends a signal to those making the decision on which employer to work for and are
critical at the entry point and may not be as critical after they’ve accepted the job and worked for a while. This is why the timing of the provision of the appropriate incentives is critical to obtain the most value when attracting new talent. In this paper, I have not focused on the entry level labor decision making processes or how those are impacted by each of the factors that I’ve discussed but from my analysis, it seems as though that there are only a hand full of factors that tend to affect the job satisfaction and health while an employee is in their job given this particular sample.

This would indicate that the population that this sample is a representative of are greatly influenced by factors other than those discussed in my analysis. This leads me to refer to the importance of the Two-Factor Theory or Dual Factor Theory that was put forth by the psychologist, Frederick Herzberg. This theory breaks down several factors into two main categories of motivators and hygiene factors which Herzberg believed were the key to motivating individuals and creating a sense of satisfaction in the workplace. While the motivators include those factors that encourage and induce a greater sense of productivity in an employee, the hygiene factors encourage employees to work harder than in their absence. Motivators include such elements as work that is challenging, recognition, responsibility, accountability and empowerment, sense of importance and opportunities. Hygiene factors, on the other hand, include elements such as salary, job security, fringe benefits, paid insurance, vacations and working conditions. In my paper, I have primarily focused on elements that are a part of the hygiene factors that help employees get relatively more motivated that in the absence of good hygiene factors. Hence, a large chunk of the factors that I’ve discussed may not impact job satisfaction or health, but they are sure to engender harder working individuals. Once employees are hired, they may value the elements that belong to motivators much more than the hygiene factors. This leads me to believe and conclude that hygiene factors are an important signal that dictate and guide labor decisions at an entry point.
while majority of the job satisfaction and well-being is driven by the motivators. The combination of high hygiene and high motivation leads companies to achieve the best outcomes. This is so because hygiene factors, although important at the entry point into a job, may still have some significance for employees as I’ve shown in my modeling. For instance, in the above analysis, we can observe income as being a significant factor that impacts job satisfaction but at the same time, it is also a factor on which the labor decision making is dependent on at the entry level.

In conclusion, companies need to aim at maintaining high motivation and high hygiene at the appropriate times in the hiring and retention process. The timing is critical to leverage the different factors in the best possible way. Additionally, hygiene factors that a company may or may not offer send a signal to individuals and dictate whether or not an individual chooses to work for a company. These ideologies must be a key component of every company’s policy making processes going forward.
Bibliography


FIGURES

Figure 1: Job Satisfaction.

Figure 2: General Health.
Figure 3: State of Mental Well-Being.

Figure 4: Total Leave Granted.
Figure 5: Sick/Personal & Vacation Days.

Figure 6: Maternity or Paternity Leave.
Figure 7: Access to Each of the Benefits.

Figure 8: Income Distribution.
Figure 9: Shifts & Employer Locations.

Figure 10: Age Distribution.
Figure 11: Race Distribution.
### Table 1: Summary of the Multiple Logistic Model Results.

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Job Satisfaction</th>
<th>Mental</th>
<th>General Health</th>
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<td>Sick</td>
<td>0.0003 (0.0014)</td>
<td>-0.0007 (0.0013)</td>
<td>-0.0005 (0.0018)</td>
</tr>
<tr>
<td>Vacation</td>
<td>0.0006 (0.0004)</td>
<td>0.0002 (0.0004)</td>
<td>0.0006 (0.0006)</td>
</tr>
<tr>
<td>Medical</td>
<td>0.1027 (0.1850)</td>
<td>-0.1214 (0.1795)</td>
<td>-0.2051 (0.2463)</td>
</tr>
<tr>
<td>Dental</td>
<td>0.0251 (0.1826)</td>
<td>-0.0472 (0.1763)</td>
<td>-0.0383 (0.2419)</td>
</tr>
<tr>
<td>Income</td>
<td>-0.0737*** (0.0484)</td>
<td>-0.0060 (0.0455)</td>
<td>0.0935*** (0.0615)</td>
</tr>
<tr>
<td>Age</td>
<td>0.0374 (0.0332)</td>
<td>0.0161 (0.0321)</td>
<td>0.0888** (0.0460)</td>
</tr>
<tr>
<td>Weeks</td>
<td>0.0002 (0.0002)</td>
<td>-0.0001 (0.0002)</td>
<td>-0.0005** (0.0003)</td>
</tr>
<tr>
<td>Location</td>
<td>0.1012 (0.0978)</td>
<td>-0.1526*** (0.0965)</td>
<td>-0.0270 (0.1358)</td>
</tr>
<tr>
<td>Flexible</td>
<td>-0.1879** (0.0964)</td>
<td>-0.0143 (0.0936)</td>
<td>0.2147*** (0.1338)</td>
</tr>
<tr>
<td>Life</td>
<td>-0.1160 (0.1469)</td>
<td>0.0932 (0.1391)</td>
<td>0.2806*** (0.1904)</td>
</tr>
<tr>
<td>White</td>
<td>0.0691 (0.1151)</td>
<td>-0.1276 (0.1139)</td>
<td>-0.0924 (0.1605)</td>
</tr>
<tr>
<td>Black</td>
<td>0.0241 (0.1499)</td>
<td>-0.2092 (0.1460)</td>
<td>0.0489 (0.2128)</td>
</tr>
<tr>
<td>Hours</td>
<td>-0.0004 (0.0035)</td>
<td>0.0009 (0.0034)</td>
<td>0.0012 (0.0047)</td>
</tr>
<tr>
<td>Shift</td>
<td>0.0649 (0.1010)</td>
<td>0.0663 (0.0979)</td>
<td>0.0529 (0.1381)</td>
</tr>
</tbody>
</table>

The ** and *** represent significance at the 10% and 15% alpha levels.
Table 2: Partial Effects at the Mean.

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Job Satisfaction</th>
<th>Mental</th>
<th>General Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.0742 (0.2459)</td>
<td>0.1317 (0.2522)</td>
<td>-0.1972 (0.1749)</td>
</tr>
<tr>
<td>Unpaid Maternity or Paternity</td>
<td>0.0023 (0.0212)</td>
<td>-0.0013 (0.0218)</td>
<td>-0.0199 (0.0152)</td>
</tr>
<tr>
<td>Paid Maternity or Paternity</td>
<td>0.0045 (0.0220)</td>
<td>-0.0005 (0.0225)</td>
<td>0.0051 (0.0158)</td>
</tr>
<tr>
<td>Retirement</td>
<td>0.0018 (0.0279)</td>
<td>-0.0092 (0.0287)</td>
<td>-0.00004 (0.0197)</td>
</tr>
<tr>
<td>Sick</td>
<td>0.0001 (0.0003)</td>
<td>-0.0002 (0.0003)</td>
<td>-0.0001 (0.0002)</td>
</tr>
<tr>
<td>Vacation</td>
<td>0.0001 (0.0001)</td>
<td>0.00004 (0.0001)</td>
<td>0.0001 (0.0001)</td>
</tr>
<tr>
<td>Medical</td>
<td>0.0205 (0.0369)</td>
<td>-0.0258 (0.0381)</td>
<td>-0.0214 (0.0257)</td>
</tr>
<tr>
<td>Dental</td>
<td>0.0050 (0.0365)</td>
<td>-0.0100 (0.0375)</td>
<td>-0.0040 (0.0253)</td>
</tr>
<tr>
<td>Income</td>
<td>-0.0147*** (0.0097)</td>
<td>-0.0013 (0.0097)</td>
<td>0.0098*** (0.0064)</td>
</tr>
<tr>
<td>Age</td>
<td>0.0075 (0.0066)</td>
<td>0.0034 (0.0068)</td>
<td>0.0093** (0.0048)</td>
</tr>
<tr>
<td>Weeks</td>
<td>0.00003 (0.00005)</td>
<td>-0.00002 (0.00005)</td>
<td>-0.0001** (0.0000)</td>
</tr>
<tr>
<td>Location</td>
<td>0.0202 (0.0195)</td>
<td>-0.0324*** (0.0205)</td>
<td>-0.0028 (0.0142)</td>
</tr>
<tr>
<td>Flexible</td>
<td>-0.0375** (0.0192)</td>
<td>-0.0030 (0.0199)</td>
<td>0.0224*** (0.0139)</td>
</tr>
<tr>
<td>Life</td>
<td>-0.0232 (0.0293)</td>
<td>0.0198 (0.0295)</td>
<td>0.0293*** (0.0198)</td>
</tr>
<tr>
<td>White</td>
<td>0.0138 (0.0230)</td>
<td>-0.0271 (0.0242)</td>
<td>-0.0097 (0.0167)</td>
</tr>
<tr>
<td>Black</td>
<td>0.0048 (0.0299)</td>
<td>-0.0445 (0.0310)</td>
<td>0.0051 (0.0222)</td>
</tr>
<tr>
<td>Hours</td>
<td>-0.0001 (0.0007)</td>
<td>0.0002 (0.0007)</td>
<td>0.0001 (0.0005)</td>
</tr>
<tr>
<td>Shift</td>
<td>0.0130 (0.0202)</td>
<td>0.0141 (0.0208)</td>
<td>0.0055 (0.0144)</td>
</tr>
</tbody>
</table>

The ** and *** represent significance at the 10% and 15% alpha levels
Table 3: Sandwich Estimator Standard Errors.

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Job Satisfaction</th>
<th>Mental</th>
<th>General Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1.2498</td>
<td>1.1751</td>
<td>1.7530</td>
</tr>
<tr>
<td>Unpaid Maternity or Paternity</td>
<td>0.1069</td>
<td>0.1009</td>
<td>0.1379</td>
</tr>
<tr>
<td>Paid Maternity or Paternity</td>
<td>0.1108</td>
<td>0.1054</td>
<td>0.1466</td>
</tr>
<tr>
<td>Retirement</td>
<td>0.1407</td>
<td>0.1358</td>
<td>0.1895</td>
</tr>
<tr>
<td>Sick</td>
<td>0.0013</td>
<td>0.0013</td>
<td>0.0019</td>
</tr>
<tr>
<td>Vacation</td>
<td>0.0004</td>
<td>0.0004</td>
<td>0.0006</td>
</tr>
<tr>
<td>Medical</td>
<td>0.1833</td>
<td>0.1780</td>
<td>0.2336</td>
</tr>
<tr>
<td>Dental</td>
<td>0.1813</td>
<td>0.1776</td>
<td>0.2302</td>
</tr>
<tr>
<td>Income</td>
<td>0.0500</td>
<td>0.0438</td>
<td>0.0664</td>
</tr>
<tr>
<td>Age</td>
<td>0.0333</td>
<td>0.0319</td>
<td>0.0466</td>
</tr>
<tr>
<td>Weeks</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0003</td>
</tr>
<tr>
<td>Location</td>
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<td>0.0964</td>
<td>0.1364</td>
</tr>
<tr>
<td>Flexible</td>
<td>0.0959</td>
<td>0.0931</td>
<td>0.1280</td>
</tr>
<tr>
<td>Life</td>
<td>0.1467</td>
<td>0.1379</td>
<td>0.1842</td>
</tr>
<tr>
<td>White</td>
<td>0.1149</td>
<td>0.1138</td>
<td>0.1618</td>
</tr>
<tr>
<td>Black</td>
<td>0.1498</td>
<td>0.1460</td>
<td>0.2127</td>
</tr>
<tr>
<td>Hours</td>
<td>0.0035</td>
<td>0.0033</td>
<td>0.0047</td>
</tr>
<tr>
<td>Shift</td>
<td>0.1006</td>
<td>0.0980</td>
<td>0.1403</td>
</tr>
</tbody>
</table>