# How much would workers pay for better social working conditions?

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This paper attempts to understand the relationship between commitment to an employer and paid compensation by linking social variables in the work environment to a worker's demand for wages to switch jobs. The tradeoff outcome asked in the survey aligns with a work incentive framework outlined by sociologists Tilly & Tilly (1998). This research finds that workers in high social-satisfaction work environments require offers of higher paid compensation to switch employers. Employees who like their social work environments are reluctant to leave for more pay.

# Introduction

This paper takes the work of three fields and links them together to explain the pay / compensation tradeoff employees will make in high-satisfaction work environments. The general strategy of this paper is to apply tools established in schools of economic thought and organizational behavior to the sociological framework outlined by Tilly & Tilly (1998). As economists have developed powerful tools for understanding compensation and organizational behaviorists for commitment, the linkage between the two is best studied at a greater level of abstraction, from a sociological perspective. A diagram outlining this strategy is provided in Figure 1.

A modern formulation of the inducement to work comes from sociologists Chris Tilly and Charles Tilly in the book *Work Under Capitalism* (1998). Tilly & Tilly (1998, p.74) classify three kinds of incentives that motivate a transaction to induce labor: compensation, coercion, and commitment. Any financial incentives or remuneration with other goods & services would be classified as compensation; any threat of physical force or violence used to induce labor would be a called coercion; and any social incentives or punishments are classified under commitment. Commitment can take the form of invocations of solidarity or expressions of guilt. As coercion is rarely encountered as an inducement to labor in the United States, it is generally ignored in studies about job satisfaction. Under the Tilly & Tilly framework, this study can best be understood as measuring the level to which commitment can replace compensation for work. As commitment was left undefined by Tilly & Tilly, the Herzberg Two-Factor model of job satisfaction is used as a model for commitment.

The definition of a satisfying work environment was the principal outcome of the first significant mixed methods study of job satisfaction, the Herzberg Two-Factor model. Published in 1968, Herzberg's theory could be considered the grandfather of subsequent studies about job attitudes. By demonstrating the statistical relationship between pay and work environment using the tools of this mature theory, work can progress in applying the concept of switching jobs for more pay to newer approaches of job satisfaction and employee commitment.

This study uses the economic concept of hedonic pricing as its principal analytical tool under an interval regression statistical model. That is, the heterogeneous social experience in the work environment can be understood as different components that contribute to the overall demand for (or price of) a wage differential. In economics, a hedonic pricing model decomposes the various elements of a complex product into component factors affecting price. In this case, the outcome is a willingness to switch to a job with identical work duties for a percentage increase in pay. Here, the elements affecting the demand for wages to switch are: the nature of work itself, the social environment at work, relative perceptions of pay and benefits and other socio-demographic variables.

In this paper I hope to motivate the reader that the Herzberg Two-Factor model is an appropriate definition for commitment. Furthermore, that in the absence of a formal operationalization strategy from Herzberg, the survey instrument is agreeable to the spirit of the Two-Factor Model. The Two-Factor Model consists of motivation, an individual's psychological job investment, and hygiene, the social work environment. Using the first statistical model, the two factors are shown to be good predictors of self-reported job satisfaction. In the final statistical models (interval regression), I show that the Herzberg

hygiene (work environment) factor plays an important role in worker's reluctance to switch jobs for more pay.

## Sociological Background

The notion of a rugged individualist working in absence of any dependencies on other people is at best an extraordinarily rare occurrence.  Present day individuals rely heavily on others in society for goods and services negotiated through exchange. Tilly & Tilly (1998) label exchanges between a producer and consumer of value, a transaction. Transactions that induce work take place in a historical and cultural context but always include three components of the inducement: compensation, commitment and/or coercion. In other words, work effort comes from three broad abstractions which generate its motivation. A review of job satisfaction passages from founding thought leaders of sociology is offered in Appendix A.

Coercion to induce work, the threat of harm, is rarely seen as an inducement for employed work in the United States (but still exists nonetheless, Martinez, 2001). However, coercion is not addressed in the rest of this paper.

Compensation – functional resources such as wages, fringe benefits, and other entitlements – are widely recognized as the primary motivation to work in a capitalist society. Some Economists wrap their whole careers around the understanding of wages and compensation as an inducement for higher productivity. For survey takers in this study, it is assumed that compensation takes a tangible form in dollars.  And furthermore, that an increase or decrease of a fixed level of compensation is a salient concept.

Commitment is a more complex concept than compensation.  Tilly & Tilly (1998, p.74) assert, "it takes much more than a job definition and a wage to induce workers to perform as

desired." Commitment is the result of symbolic social interactions rather than the transfer of functional resources. As Marx used the concept of alienation to explain the disharmony of a human element in the workplace, Tilly's commitment refers to the opposite of alienation. That is, commitment arises from the tit-for-tat harmony of long-run promises between worker and employer. A Durkheimian perspective would see commitment as arising from organic solidarity of industrialized society, an understanding of interdependence. Business schools dedicate a tremendous amount of resources to the account of non-financial incentives of transforming labor power into labor. To inform the details of commitment, I turn to employee commitment and job satisfaction research from the disciplines of organizational behavior and psychology.

Tilly & Tilly (1998, p.74) explain commitment as a form of solidarity which includes, "not only recognized membership in a valued category but also a wide variety of long-run rewards and punishments, many of them quite diffuse and/or unspecifiable in advance." The diffuse and unspecifiable rewards and punishments alluded to by Tilly & Tilly were studied by Frederick Herzberg. In his 1993 effort, *The Motivation to Work*, Herzberg dedicates the entire first section of his book to report data "relating to the factors that lead to positive and negative attitudes toward the job" (p.57). Herzberg identifies a system of long-run rewards and punishments as Motivation and Hygiene factors. Detailed below, Herzberg's effort to understand what compels employees to work will be used to explain Tilly & Tilly's notion of commitment.

## Commitment / Job Satisfaction Background

As one researcher suggests (Metle, 2001), job satisfaction has been a popular topic of contemporary investigation with some 3,000+ publications to date.  For a review of other perspectives in non-sociological job satisfaction / employee commitment research, see Appendix B. The body of research has yet to settle on a central theoretical perspective.  Studies come from disciplines as varied as psychology, management, communication, sociology, and organizational behavior. The disciplines studying job satisfaction use incompatible theoretical models.  In general empirical research studies, except for meta-analysis (Judge, 2001), in the field of job satisfaction are localized, focusing on the experience of one class of workers or one firm. The broad-based survey approach of this project demonstrates a finding across a variety of industries and job roles in the United States.

**Modern theories of worker commitment**

Worker commitment and job satisfaction are studied extensively by Organizational Behavior researchers and they have yet to settle on a general form. Spector (1997) identifies six different standardized instruments measuring different aspects of job satisfaction. His book lists many antecedents and consequences of job satisfaction. However, increased demand for wages is not listed among them. In a study of the effects of increased pay on job satisfaction in the Chinese military, researchers used a six-faceted scale to measure a significant improvement in job satisfaction after an 80% pay increase (Yang, et. al., 2008).

In the monograph by Paula C. Morrow (1993), the work commitment taxonomy is classified into four distinct forms. First, Organizational Commitment is arranged as calculative, affective and normative involvement towards organizational goals (Morrow, p. 71). Second, Work Ethic Endorsement harkens from the famous *Protestant Work Ethic* of Max Weber, the

extent to which one values a personal work effort as important by itself. Third, Job Involvement

is the extent to which an employee is mentally absorbed in their primary work activities. One

Job Involvement survey question asks agreement with the statement "I live, eat, and breathe

my job." And finally, Career/Professional Commitment is recognized as the degree to which one

is dedicated to a salient notion of one's occupation. The work is exhaustive in referencing

hundreds of quantitative studies under each class, which infrequently address employee

remuneration as a correlate of employee commitment.

Morrow succeeds in carefully sorting out the intricate details of the work commitment

concept but fails to announce greater social meaning in the taxonomy, account for socio-

demographic and cultural effects or explain variability across cultures. Tilly & Tilly are vague in

detail regarding employee commitment but outline a useful foundation for the social

mechanisms of work. This paper strives for a middle ground with non-exhaustive but useful

sociological detail using an older but still relevant conception of commitment – the Herzberg

Two-Factor model.

**The Herzberg Two-Factor Model**

Frederick Herzberg's original research set out to identify what makes a job inherently

satisfying.  Herzberg (1959, p.17) introduces his study with this approach, "We decided to ask

people to tell us stories about times when they felt exceptionally good or bad about their jobs

… [to] discover the effects of these attitudes." Inductive in nature, Herzberg resolved the

similarities of these experiences into two factors, Motivation factors and Hygiene factors, with

specific underlying components. Motivators support an individual's personal job outcomes and

Hygiene factors, a metaphor from medicine, create a healthy work environment. In his model,

the presence of Motivation factors provide a positive effect on job satisfaction and the absence of Hygiene factors create dissatisfaction.

"It is only from the performance of a task that an individual can get the rewards that will reinforce his aspirations" (Herzberg 1959, p.114).  Listed in Table 1 are the five contributing factors that Herzberg designated as *motivators.* These five factors are similar in that they reinforce an individual's sense of positive movement towards their own aspirations.  According to Herzberg, motivation factors offer similar responses to the question, "What do you want from your job?"

In the list of Hygiene factors from Table 1, one observes that none of the concepts are related to the performance of a work task or duty.  Instead, items like "job security," "relationship w/ boss" and "company policy" are social conditions of the work environment. Herzberg (1959, p.113) defines the term as "…factors of *hygiene*, for they act in a manner analogous to the principles of medical hygiene. Hygiene operates to remove health hazards from the environment of man." In other words Herzberg's metaphor is that a sanitary social working environment is one that supplies all seven of the Hygiene factors.

Herzberg's original empirical research arises from his belief that people deserve a happy work environment.  Herzberg's *Work and the Nature of Man* (1966) is filled with overtones prescribing industry to organize itself around the needs of man.  Herzberg's vision foresees improved productivity outcomes for business and improved life experience for mankind.

Research concerning job satisfaction has connected physical, emotional and social factors of the workplace with workplace behaviors such as increased creativity (Amabile, 2005; Zhou 2001), reduced absenteeism, reduced turnover, firm's market performance (Schneider,

2003), and increased organizational participation. Localized primary research of the connection between job satisfaction and pay are limited by the inability to confront the pay question comfortably. The survey used in this research carried the weight of an outside third party, disconnected from perceived reprisals of answering questions about pay and switching jobs.

## Economic Background

Related compensation research from economists comes from three schools: neo-classical, skill-match and information theory. Neo-classical economists focus on wage maximization, skill-match economists focus on productivity maximization, and information theorists focus on the costs of search and computation. Hedonic pricing is a technique used by many economic disciplines to understand complex effects.

Neo-classical economists specializing in job search have historically used wage maximization (Stigler, 1962) as the sole representation for modeling worker's quest for utility maximization (Hall, Lipmann, McCall, 1979). If workers accept high-quality environments as a substitute for wages, then neo-classical economists' wage maximization assumption is in error.

Other job search economists adopt a *skill-match* approach whereby worker skills are matched with employer needs. Under matching function models, an employed worker will choose to switch jobs when the opportunity for higher on-the-job skill productivity (a long-run wage equivalent) becomes available (Pissardes, 2000, p.103). The ability to account for specific frictions in labor market matching is a significant scientific advance developed under the skill-matching model (Petrongolo, 2000). The capacity to measure labor market friction due to job satisfaction exists in the skill-match model. However, research in the skill-match approach has

not yet meaningfully incorporated the concept into their models choosing instead to focus on unemployment, worker mobility, and coordination (job advertising). Again, a matching function model misses the significance of work environment on a workers choice to switch jobs by limiting on-the-job search to a pay/productivity maximizing outcome. As seen below, social factors correlate with increased demand for wages in on-the-job scenarios.

Job satisfaction research dovetails nicely with more recent formulations of economic information theory that incorporate the idea of *bounded rationality*. Sociologist Oliver Williamson characterized the essence as "boundedly rational agents experience limits in formulating and solving complex problems" (Williamson, 1981, p. 553). In other words, even under an assumption of perfect information, economic agents (people) lack complete knowledge of the problem, clear preferences, and the ability to compute an optimal course of action (Rubinstein, 1998, p. 8). A high-quality work environment raises the complexity of determining a better course of action. The degree to which humans are able to compute solutions is their effective level of rationality (Tsang, 2008). In other words an economist of the boundedly-rational school would argue that high-quality work environments create conditions such that greater compensation differentials are required to sufficiently simplify the choice to switch. Though results below are consistent with job-switch problem complexity as a correlate of Hygiene factor conditions, this was not measured in the survey instrument.

Hedonic models are a common tool of economic analysis. The concept of hedonic pricing is used by government property assessors to set the taxable valuation estimates of homes based on variables such as location, bedrooms, bathrooms, square footage and the like (Gao, Asami, and Chung, 2002). Researchers have also used the tool to explain a wide variety of

economic phenomena such as: the premium charged by sex workers to engage in unsafe sex (World Bank, 2001); the value workers place on  employer-provided health care (Miller, 2004), and the value workers place on their own lives in high-risk occupations (Thaler, Richard, and Rosen, 1975).  The basic goal is to disentangle the value of heterogeneous properties of an economic good whose components may not be available or manageable in isolation. To repeat, the hedonic models below will incorporate the nature of work itself, the social environment at work, relative perceptions of pay and benefits and other socio-demographic variables.

The outcome variable in the survey was measured as percent change in wages needed to switch jobs. Economists often model wage outcomes in terms of their rate of change.  The wage models presume that wages change in proportion to the amount being paid.  People's remuneration is measured relative to their current salary.  Often an outcome wage variable (or price variable) will be transformed with a log function (log(wages)) to better account for the percentage change in wages rather than a change in wages by a nominal (fixed dollar) amount. The outcome variable for this research follows along the same lines.  Rather than asking a respondent to specify a dollar amount increase needed to switch jobs, the question asks the respondent to evaluate a percentage increase.  No transformation of the outcome variable is necessary to account for 'log(wages)' as the answer set is already in terms of percentage change.

In the United States, the portion of overall expenses due to labor expense varies between industries & firms yet labor is anecdotally known as a typical firm's biggest controllable expense.  Employer costs for employee compensation for private industry workers averaged $19.39 per hour worked in June 2009 (Bureau of Labor Statistics, 2009). With United

States service sector payroll expenses estimated at $2.6 trillion dollars (U.S. Census Bureau, "Economic Census", 2007), a hedonic effect size of even one percent of payroll is an important difference to recognize. The effect size measured here is large enough that the economic implications of increasing job satisfaction could cause policies and firms to change behavior in order to construct high-quality work environments.

Herzberg identifies Motivation and Hygiene factors as the components of job satisfaction. As the goal of this research is to isolate variables of the work environment (as opposed to the work itself) as a cause of demand for wages, the motivation and hygiene constructs are used in different ways. The Motivation construct is used to control for factors that the respondent might have imagined as work of a different nature. In an attempt to control for 'the nature of the work itself' (motivation factors) the outcome question contained a phrase to minimize variability due to its motivation factors, "Suppose a job in your local area is available with the same responsibilities, benefits, and commuting time as your current job."

Furthermore, another control variable was introduced to account for perceptions about one's own pay and benefits in the marketplace. If one perceives their pay to be higher or lower than market wages, it could affect the amount of pay one needs to switch jobs. Perceptions of relative pay and pay policies as a determinant of job performance are detailed in research by Williams, McDaniel and Nguyen (2006). To control for individual pay and benefit perceptions, pay and benefit items have been removed from the hygiene construct (as Herzberg placed them) and given their own construct as a control variable.

The Hygiene construct is our phenomena of concern and can be interpreted as 'a one point increase in Hygiene factor is related to a $\beta$ percent increase in the minimum wage (to switch jobs for a pay increase).'

# Methods and Data

## Operationalization of the Two-Factor Model

The data collection for this paper was conducted using an online survey from registered panelists across jobs and industries which is different from Herzberg's original research. Herzberg's original research used semi-structured interviews, diaries, open-ended surveys, and content analysis (Herzberg, 1959, p.14) to elicit qualitative impressions of the work experience. In some psychological literature the method is referred to as the "critical incident" technique. Though Herzberg provided an extensive appendix detailing the particular coding and mapping of particular experiences to identified concepts, the original coding lacks the rigor required by survey research.   As an example of why questions could not follow precisely from interview scripts, answer coding keys listed in Herzberg's appendix are occasionally non-exhaustive and not mutually exclusive.  For example in the Table 2 below, content coding is missing a category for a supportive supervisor.

The opportunity to do survey research is only made possible by predecessors who conduct some kind of qualitative study.  Without proper qualitative underpinnings the scope of a survey undertaking would be far too wide. Ideally, a survey would have been created to faithfully encompass the Herzberg concepts. But, this research was constrained in its ability to completely use Herzberg as a foundation. Fortunately, the survey instrument selected for the research was well-suited to use the Herzberg Two-Factor Model.

My study was constrained by the proprietary nature of the survey instrument.

Questions could not be substantively modified from the commercial instrument. Only the

outcome variable was permitted as an add-on to the question set. Reluctantly, some Herzberg

concepts could not be measured by the existing instrument and therefore represent a nearly-

complete representation of the Herzberg factors. Tables 3 & 4 below contain a mapping of the

first-level concepts of Herzberg's model followed by the survey question(s) that create the

operational construct. All questions were answered on a Likert scale of "Strongly Disagree,"

"Somewhat Disagree," "Undecided," "Somewhat Agree," "Strongly Agree." Statistical outcomes

for Motivation and Hygiene factors use a mapping of 1-5 onto nominal answers and averaged

on an interval scale. Incomplete surveys were excluded from the data set by listwise

elimination. There were 1,086 fully completed surveys in the final set of data from an initial set

of 1,220 observations.

**Data gathering method – online panel**

The survey was conducted online using web-based technology through a relatively common

commercial process. A commercial panel provider uses marketing and incentives to recruit

panelists – people who are willing to take surveys in exchange for compensation. Using a

variety of strategies and partnerships, commercial panel providers strive to retain a thorough

demographic mix of survey respondents. Commercial panel providers maintain the standards

of masked experimental design with the added caveat that researchers can never know who

the respondents are. Through the sign-up process, panelists acknowledge research and privacy

waivers consistent with IRB standards. A common product supplied by an online commercial

panel provider is the so-called 'census-balanced sample.' The census-balanced sample is a

panel of invitees intended to represent the general demographic mix of the United States as measured by the census bureau.  In general, even with incentives, response rates to commercial panels hover around the 10% level.  Response rates are lowest among young males.  To obtain a census-balanced sample, a commercial panel provider will oversample low-response-rate groups to ultimately return a sample with representative frequencies.

The process of gathering data through an online survey is a relatively common procedure.  Survey invitees receive an email invitation to participate in survey research.  Respondents follow a URL (or web address) to a web page (landing page).  The landing page of an online survey contains various disclosures and additional information about the research.  Using standard visual elements seen on a web form, respondents use their mouse and keyboard to navigate the survey and answer survey questions.  Early questions in the survey are 'screener questions' used to reject participants whose response is not relevant to the research.  In this case, only those persons who were employed full-time, part-time or with two or more jobs were eligible to participate.  The survey process consists of responding to question prompts by clicking and typing using screen elements such as buttons, selection boxes and open-ended text response areas. At the end of the survey, respondents are directed to an incentive fulfillment site where credits for survey completion can be accumulated and managed.  Upon completion survey answers are transmitted directly to a research database.  Panel providers rely on survey researchers to help improve the quality of their online panels.  Upon the completion of a survey project, research assistants review the data for consistency and accuracy.  Survey responses that fail to meet certain data quality standards are rejected and panelists are subsequently removed from future research.  Data quality standards include

algorithms to detect survey responses that may be untruthful or unreliable. See Galesic (2009)

for a limited review of data quality indicators. Colloquial categories for such responses include:

     o Speeders – survey completed in less than 10% of the median survey time

     o Gibbers –gibberish typed in open-ended question responses

     o Switchers –the same question asked twice is answered differently

     o Bots –an obvious question is answered wrong (i.e. "Check the third box below")

     o Flat-liners – all scale-based questions are answered the same

In this study, various techniques were used to identify data quality problems and reject

approximately 5% of completed surveys.

**Sources of bias using online survey panels**

Alvarez and VanBeselaere (2004) identify three primary sources of bias coming from

online survey research: coverage error, sampling error and non-response bias.  As with any self-

administered survey, non-literacy is an automatic disqualifier for respondents and thus a source

of bias.  The survey was administered only in American English.

Coverage error is the extent to which the sample frame (the group eligible for selection)

does not actually represent the population being studied. Coverage error limits the degree to

which results can be generalized.  In the case of this research, the panel provider has the best

intentions of gathering a panel that represents people from a breadth of geography,

background and ethnic heritage.  The panel company claims that they have enrolled over 5

million panelists.  Data from the Pew Internet & American Life Project (Pew Internet, 2008)

suggest that Americans most likely to not have access to the internet are those people over age

70, have less than a high-school education, or do not speak English.  This survey was conducted in English only.  Appendix C displays the frequency statistics from the demographic questions.

Sampling error and coverage error are deeply intertwined in online panel research.  For large panelist databases, a supplier can find respondents from the most obscure segments imaginable.  However, uneven and low response rates challenge researchers to construct a representative sample.  The most common techniques used to construct a sample rely on the principles of stratified sampling.  Stratified sampling is well suited to handle circumstances where response rates differ between mutually exclusive groups.  In a stratified sample, one invites random respondents from groups (strata) in such a way as to end up with a balance of responses that represent the population distribution across strata.  In stratified sampling some groups get more invitations than others.  Often, researchers will continue to invite new respondents until an established quota for that group is met.  Again, the particular strategies for determining a census-balanced sample are proprietary to the sample provider and not available for researchers.

Because this study is about changing employers, survey responses were further limited by screening out participants who did not answer among the first three choices (see Figure 2).  That is, a person must describe their employment status as full-time, part-time, or holding two or more jobs, to qualify.  Only those persons who are currently employed can faithfully answer questions about switching jobs.  As hygiene factors only make sense as a construct imposed on an employee by others, self-employed persons were excluded from the survey.  Retired, unemployed, student, stay-at-home and 'None of the above' were excluded due to the inherent cognitive dissonance in answering a question about changing jobs for a difference in pay.

Ideally, the final frequency statistics would be representative of the demographic composition of people living in the United States who are employed (but not self-employed).

Because income and demand for wages are a critical part of the outcome variable of switching jobs for pay, the importance of representation from a breadth of income levels cannot be understated. Critics of online survey panels claim that survey incentives are too small to induce high-income people to participate. The frequency statistics from Table 5 compare survey results from different income categories across census bureau estimates for total households in a particular income group as well as households with at least one member who works. Comparing the survey response with households who work is more appropriate due to the irrelevance of the questions for households that do not work. As such, in comparing the frequencies of survey response with working households there are some imbalances. As seen in Table 5, for the lowest income category, 18% of respondents self-identified, matching 18% in the census population. For higher income categories, there was a slight overrepresentation in survey response in the 30-50K and 50-75K groups with 27% and 25% respectively compared to a census expected value of 20% and 21%. For the highest income group, the survey was underrepresented with 30% of survey responses where the census count with householders working would have expected 41%. In other words, as critics would expect, the lower income groups were overrepresented at the expense of the highest income group.

The underrepresentation of high-income groups may introduce a bias into the statistical results. One might assume that high-income people are mostly professionals who already have high-quality work environments and perhaps require larger percentage wage increases to switch jobs. Under that assumption, a lack of representation from high-income survey

respondents would result in an under-estimate of the effect of the relationship between the overall Hygiene factor and demand for wages in the statistical models.

This and online survey panels like it are at worst samples of convenience but should not be dismissed on whole. Due to the proprietary nature of the panel itself, the sources of bias can never be fully understood. It is assumed here that the problems with coverage error, sample error and non-response do not create an effect that would spuriously force the statistical relationship found in the results.

**Ownership of survey data**

The survey data are owned and used with the permission of a privately owned company. Focused in the business of measuring and building employee satisfaction, loyalty and engagement, the company conducts national surveys for the express purpose of understanding how people in the United States feel about work. With their permission, several questions were added to the company's national survey of employees. A single outcome question was added to the standard benchmarking instrument to create the complete instrument for this line of research. The survey data are proprietary and available for conditional use by contacting the author.

# Results

**Statistical models**

Using models of increasing complexity, I build confidence in the degree to which the Hygiene factor plays a role in determining workers' reluctance to switch jobs for pay. As models include more controlling factors, the Hygiene factor stays significant and consistently stable.

The strategy is to test the Herzberg Two-Factor model against job satisfaction to confirm its relevance, then to apply the Two-Factor model to the job-switching outcome question and validate the hypothesis.

All statistics were calculated using the open-source software package *R*.  R is freely available for download from http://www.r-project.org for a variety of personal computing platforms.  The open-source nature of R allows open inspection of code modules for criticism. The R platform for modeling was run on version 2.9.0 and the interval regression package containing interval regression was run using *econMisc* version 0.1-1.

First, using simple OLS regression, I test the relevance and extent to which Herzberg's Hygiene and Motivation factors are predictive of the survey's job satisfaction question, "Overall, I am satisfied with my job (Strongly Agree … Strongly Disagree)".  Herzberg's original study included only accountants and engineers. If occupations other than accountants and engineers show a significant deviation from zero then Herzberg's characterization of satisfaction may not be complete.  Likewise, significant deviations from zero in an industry or any demographic group would be evidence that the Herzberg characterization was not robust. The purpose of the test of the Two-Factor model on Satisfaction is a side-issue to the important finding of Hygiene as a factor in the increased wage required to switch employers.

Full statistical models used a variety of common socio-demographic variables (described in Table 6) to control for potentially spurious relationships with the dependent variable. The survey was presented over the period from August, 2008 through December, 2008 this variable accounts for seasonality and for the economic shock that occurred during the survey period. Full-time work is often considered to be more permanent than part-time. Employment status

was included to detect whether the permanence of work status would have an effect on the propensity to switch. Supervisors are popularly considered to be more committed to the corporation than front-line employees and were included to control for such commitment. Gender, age, education, race and income were included as common socio-demographic variables that produce effects in many different contexts. And finally, the income portion variable was included to control for possible effects due to external factors that may inhibit the risk-taking involved with switching jobs.  If someone is accountable for a large portion of a household's total income, they may be reluctant to switch jobs.

**Herzberg's formulation appears robust**

Model: Satisfaction = $\beta_0 + \Sigma\beta_i x_i + \epsilon$

Where Satisfaction is scored on a 5 point scale where 1=Strongly Disagree and 5=Strongly Agree; *i: Motivation, Hygiene, Pay & Benefits, and indicator variables for month, work hours, supervisor, duration at company, duration in position, occupation, primary business activity, gender, age, education, race, household income, and respondent's share of household income.*

The data from the questionnaire used in this analysis contained many interesting psychosocial variables that researchers have included in prior research about job satisfaction. Table 7 lists the outcome of an OLS regression with a Likert scale Satisfaction measure as the dependent variable and sixteen independent variables.  If Herzberg's definition of job satisfaction were highly predictive then there would be no statistical significance in any variable except motivation, hygiene, and pay & benefit perceptions.

Several variables from Table 7 stand out as having statistically significant deviations from zero, others are surprisingly absent. The critical variables for motivation and hygiene have the largest coefficients (0.529 and 0.447 respectively) and smallest standard errors (0.041 and 0.041), signifying the clear connection between Herzberg's two-factor model and self-reported job satisfaction.  The pay & benefits perceptions variable shows a smaller coefficient estimate, 0.120, and a smaller standard error, 0.025.  All are significant with p-values smaller than 0.01.

The survey was administered over the course of five months, starting in August of 2008. During that time, the United States suffered from a macroeconomic shock in the banking sector that resulted in job losses across all industry sectors.  One might expect significant variation due to the macroeconomic context, with people "just happy to have a job." Instead, very little variation is observed, only December shows a slight uptick in its coefficient of 0.116 with a p-value under 10%.

The coefficient corresponding to people with two or more jobs created a negative effect (-0.298, s.e. 0.118, p-value<5%) with job satisfaction.  This question was qualified by asking people to treat the remaining questions on the survey in terms of their 'primary occupation,' i.e., the one that brought in the most dollars towards their household income.

Being a supervisor, the duration at a company and the duration in a job had no effect on job satisfaction.

Using a list taken from the Bureau of Labor Statistics' high-level occupational categories, respondents were asked to self-report their occupational category and industry. Surprisingly, one's occupation, as classified under the standard BLS occupation categories, showed no significant effect on job satisfaction. Herzberg's formulation appears robust across occupations

besides Architecture and Engineering. A preponderance of the context of the survey suggests that the question itself is difficult to answer due to the long list and the fact that familiar job titles are not mentioned in the list (i.e. secretary, cashier, driver, technician, etc.). Their employer's line of business showed substantial deviations from the omitted category, Construction.  Significant positive deviations were measured in Education & Healthcare, Financial Activities, Information/Technology, Leisure & Hospitality, Professional and Business Services, Public Administration and Trade/Transportation.  In fact all of the coefficients were positive (though not all significant) suggesting that the construction industry alone may suffer from a culture of negative job satisfaction. At worst, Herzberg's lack of representation among manual labor professions in his primary research may have left out important contributing concepts to a complete view of job satisfaction.

Other variables had weak associations or none at all. The archetypal sociological variables of gender, age, and education showed no significant effect on job satisfaction except for age 65-74 relative to the omitted category of age under 25.  These working individuals beyond retirement age had a positive effect of 0.205 (st.err. 0.091), with a p-value less than 5%. The race demographic, collapsed to White, Latino/a, Black and Other showed only Latino had a significant negative deviation from White, -0.178, st.err. 0.076 (p-value less than 5%). Household income and income portion, the so-called breadwinner variable, did not significantly contribute effects to job satisfaction.

The overall model was an astonishingly good predictor of job satisfaction with an r-squared value of 0.6657 with 1,013 degrees of freedom.  The overall goal of assessing the Herzberg Two-Factor model's ability to predict job satisfaction gave a result supportive of the

research herein.  Herzberg's Two-Factor model is a strong correlate of job satisfaction.  The

validity of the Herzberg characterization of job satisfaction is verified.

**Final statistical models**

For the final models, I use interval regression (Stewart, 1983).  As opposed to OLS

regression, which depends on a continuous-valued outcome variable, interval regression is best

suited for circumstances where the outcome variable is categorical, and where end points of

the categories can be clearly defined. For reference, Table 8 is a list of end points used in the

general model.  I used one set of end points generally and a second set for a sensitivity analysis.

Discussed later, the sensitivity analysis endpoints are used to determine whether extreme

assumptions about the nominal endpoint values influence the strength of relationship in the

Hygiene coefficient.

In demonstrating a connection between the Herzberg Hygiene factor and an economic

outcome, I built four statistical models that gradually become more complex.  Each model adds

additional control variables that potentially diminish the effect of Hygiene alone. Model 1 is the

simplest, a model using only the outcome variable and the Hygiene factor.  Model 2 adds the

Herzberg Motivation factor and a control variable for pay & benefit perceptions.  Model 3

attempts to account for potential ambiguity in the outcome variable by using features of

Interval Regression to restrict the interval end points.  And the final model, Model 4 includes

the same common social/demographic variables as above to account for potentially many more

confounding variables.

*The Economic Outcome – Demand for Wages*

To connect economic value to a worker's social environment I employ a multiple-choice survey question. I ask the respondent to undertake a thought experiment – to imagine a job doing identical work in another work environment and to respond with what increase in wages would be necessary to make the change. The question begins, "Suppose a job in your local area is available with the same responsibilities, benefits, and commuting time as your current job." The difference between the imagined job and a worker's current job is the social environment: policies, working conditions, quality of supervision, and people. The question then makes an economic connection with its second half, "What would be the **lowest increase** in pay for you to consider switching from your current job to the new job?" The question makes a connection in the difference between the qualities of a typical work environment (imagined by the respondent) and a respondent's current work environment.

Answers to this question are measured in percent change. Ideally, a response would precisely indicate the minimum amount of pay required to switch. However, a survey question requesting a precise level of pay change to switch betrays the salience of such a question. In the author's opinion, people cannot easily specify whether a 12% pay increase is the clear threshold or whether 11% would be enough. A categorical outcome is less mentally taxing on the respondent and more in accord with people's notion of the concept. An interval outcome would permit the use of standard OLS regression. Instead, I use interval regression.

This is consistent with other academic approaches that use wages as an outcome, which nearly universally use log (wages). Taking a logarithm is effectively measuring a percentage change in circumstances involving linear regression. An alternative would be to use nominal amounts in wage differences and calculate a percentage change. However, limitations in the

accuracy of these ratios would stymie the opportunities to find a statistical relationship.

Furthermore, people seem to be easily familiar with what it means to get a raise in 10%

increments. Respondents are given six choices as outcomes to the question. Starting with a

10% decrease in wages and working up to a 30% increase in 10% increments, finally a maximal

"I would not switch, no matter what the increase." A screen-shot view of the question can be

found in Appendix D.

*Model 1: Hygiene Only*

To begin, I run a simple model containing only the Herzberg Hygiene factor and

outcome variable of increased wage demand to switch jobs. This model sets a baseline for

forthcoming coefficient estimates. If there were no explanatory overlap with other variables

then this coefficient should remain stable.

The basic interpretation is that work environment is associated with an increasing

reluctance to switch jobs for more pay. Table 9 shows that the variable coefficient in particular

is interpreted as a one-point increase in Hygiene factor corresponds to a 5.1% (st.err. 0.005, p-

value under 0.1%) increase in the demand for wages for a typical employee to switch jobs. It

would appear that Hygiene makes a qualitative difference to a typical wage earner without

accounting for other factors.

*Model 2: Hygiene controlled by Motivation & perceptions of relative pay/benefits*

By adding the Herzberg Motivation factor as well as self-reported perceptions of relative

pay and benefits, the explanatory power of the Hygiene factor diminishes. The explanatory

power of additional variables reduces the magnitude of the Hygiene coefficient. Seen in Table

9, the magnitude of Herzberg's Hygiene factor reduces to a 3.0% (st. err. 0.005, p-value less than 0.1%) increase in demand for wages to switch jobs.

Furthermore, I added a control variable for perceptions of pay & benefits. If people are otherwise working in a high-hygiene factor environment, perceptions about the level of pay and benefits might influence their reluctance to switch jobs. Therefore questions concerning perceptions of pay and benefits were released from being included in a traditional Hygiene factor concept and given their own control variable. The pay and benefits index is taken from a combination of the two questions mentioned in the Salary construct.

The Motivation factor variable indicated 1.5% (st. err. 0.005, p-value less than 1%), meaning that a 1 unit change in motivation factor translates into a 1.5% increase in the demand for wages to switch. The Pay & Benefit variable indicated 1.7% (st. err. 0.003, p-value less than 1%). The low standard error estimates for the Hygiene factor, Motivation factor and perceptions of pay/benefits yield a high degree of confidence in the variable estimates. The low standard error of all three variables and the reduction of magnitude in Hygiene factor suggests that there is some degree of overlap between the concepts. The result suggests that Hygiene, Motivation and Pay & Benefits are not entirely independent.

*Model 3: Hygiene interval scale sensitivity analysis*

Existing assumptions about categorical outcome breakpoints may be considered too liberal. The comparison between sensitivity analysis endpoints assumed with model 3 and general endpoints assumed with all other models. In plain terms, under the general model when someone answers "10% increase" they could mean anywhere between 5% and 15%; under more conservative assumptions, someone answering "10% increase" would mean

between 9% and 11% is acceptable. With a more conservative assumption about break points,

we should see a reduction in explanatory power and increased standard error in the Hygiene

variable.  Indeed this is what we see in the results (Table 9): the log likelihood ratio is much

smaller between null models and models with variables; also, the standard error in Hygiene

factor increased (Model 2: 0.005, Model 3:0.012) but is still significant with a p-value of less

than 0.1%.

The sensitivity analysis worked as expected and yields confidence that the relaxed

assumptions under wider interval ranges are acceptable.  The differences between narrow and

wide ranges are not substantial enough to question the more liberal interpretation of the

Hygiene variable break points.

*Model 4: Full model with common social & demographic variables*

The full model is designed to test whether the Hygiene factor still holds statistical

significance controlling for Motivation, pay & benefits perceptions and a variety of available

socio/demographic information.  Given the availability of other common social and

demographic variables in the data set I ask the model to clarify whether social forces are at

work that predispose certain demographic groups to be more reluctant to switch jobs for more

pay. Table 6 lists and describes the social/demographic variables that were selected for this

model. Table 11 details the results of Model 4.

In light of fifteen variables available to control for alternative explanations, Hygiene still

retains a significant impact on the demand for increased wages when offered a switch.  The

Hygiene coefficient was 0.035 with a standard error of 0.005 (p-value less than 0.1%).  This can

be directly interpreted as a worker with a 1-point higher Hygiene environment would demand 3.5% higher wages to switch, ceteris paribus.

Surprisingly, no social/demographic variables demonstrate a statistical relationship with the outcome, except age. Age groups 55-64 and 65-74 report a significantly increased demand for wages to switch. Age group 55-64 yields a 0.037 coefficient (0.013 st. err.) and age group 65-74 yields a 0.043 coefficient (0.013 st. err.). Speculation the on the interpretation of the age effect could connect with either a resignation to be happy with one's position or the end of a long fruitful search for a good employer but the relationship deserves more careful scrutiny and further research.

Occupation again fails to demonstrate a statistical relationship with the outcome. And, Business Activity shows only minor deviations from the omitted category (Construction). Information Technology, Leisure & Hospitality, Professional Services, and Public Administration showed deviations at the 10% p-value level. Trade/Transportation was the one standout as significantly different from Construction with a -0.051 coefficient, 0.017 standard error (p-value less than 1%). This reveals weak evidence that unobserved effects unique to different industries effects may affect an individual's preponderance to switch jobs for increased pay.

In all, the additional variables do not diminish the magnitude of Hygiene, Motivation, or relative pay & benefit coefficients compared with Model 2. This finding is strong evidence that Hygiene factors exist independently of measured socio-demographic effects, that socio-demographic variables enhance the analytical power but do not correlate strongly with workplace Hygiene.

**Statistical models in summary**

In Model 1 we see that in the absence of controlling variables, the Hygiene factor returns a statistically significant result at 5.1% increased demand for wages for a 1 point increase in Hygiene factor. In other words, high Hygiene environments contain workers who demand more to switch.  Model 2 adds the Motivation factor and perceptions of existing pay and benefit levels to control for alternative explanations of wage demands.  As such, the effect size of Hygiene in Model 2 diminished at 3.0% increased demand but still remained statistically significant. Model 3 measures for possible bias in the width of the categorical outcomes by narrowing the intervals of the outcome variable. Model 3 shows that narrower intervals create stronger effects.  Model 4 uses the wider outcome intervals but adds many demographic variables which could explain demand for wages as other social factors.  Model 4 shows that in light of many possible demographic correlates of demand for wages, Hygiene accounts for one of the largest coefficients in the model with a 3.4% increased demand for wages for each 1 point increase in Hygiene factor.

**Opportunities to improve this model**

Many opportunities exist to improve the data gathering, scales, and analytical rigor of the current study.  Specifically, survey sampling, outcome variable scaling, more control variables, and a longitudinal analysis to account for the extrinsic satisfaction problem (explained below).

Though online panels are inexpensive and easily available, a more rigorous approach would use a more sophisticated sample with a balance of occupations and industries that better match Bureau of Labor Statistics distributions.

Respondents were not provided with an exhaustive list of options when asked to answer the outcome variable.  A clear opportunity for improvement in measurement would be to change the final two choices in the outcome question.  Because of bunching in the 20% category (see Appendix D), a more accurate measurement would break up the top categories into more choices.  Future researchers should add a new penultimate category of '30% increase to switch' Also, future researchers should adjust the wording of the top category to something more inclusive and exhaustive of the answer set: 'It would take much more than 30% to change jobs.'

The stability intrinsic to staying put can overwhelm the willingness to switch for pay under social circumstances extrinsic to the work environment.  Examples of these variables include marital status, adult/child dependents, debt load, or health insurance policies. So adding new data to the survey to account for these complicating circumstances might add power.

Even as far back as 1952, researchers recognized that workers who reported general dissatisfaction with many non-work concepts also reported dissatisfaction at work (Weitz, 1952). Weitz correlated his "gripe index" with a specific job satisfaction index and set the stage for the causality problem that stands to this day. Nord (1977) identified extrinsic factors of life satisfaction on job satisfaction as a continuing problem plaguing job satisfaction research. That is, people who are dissatisfied in life carry that with them to work. Additionally, Nord raises the deeper sociological issues of alienation and powerlessness (as distinct from job dissatisfaction) in the workplace as core concepts neglected by job satisfaction research.

# Conclusion

People are more reluctant to change jobs for a pay increase in high-quality work environments. Even after controlling the work environment, perceptions about relative pay & benefits and other socio-demographic variables, this study has shown that Herzberg's Hygiene factor is a strong correlate of worker's reluctance to switch jobs for pay. The Herzberg Two-Factor model was selected in-part as the granddaddy to other, modern theoretical approaches to job satisfaction. If we can see a statistical relationship in the primitive Hygiene factor then quite possibly stronger relationships can be found within the more exacting theories of today. Furthermore, an economic outcome for job satisfaction may provide a mechanism to weave together several models of research about the work environment.

This line of research opens a door for economists and business researchers alike. Social circumstances of the work environment contribute to the wage equation. Along with the wave of job satisfaction research over the past 30 years we have seen the rise of an entire consulting cottage industry dedicated to improving the quality of work environments. One possible end-game for these consultants are strategies of work-environment optimization, helping to set the right level of work environment investment rather than the Hygiene-maximizing strategies of today. Perhaps this has already been going on. Have improvements in workplace Hygiene been contributing factors to wage stagnation over the past 30 years?

**Figures**

**Figure 1: Research framework**
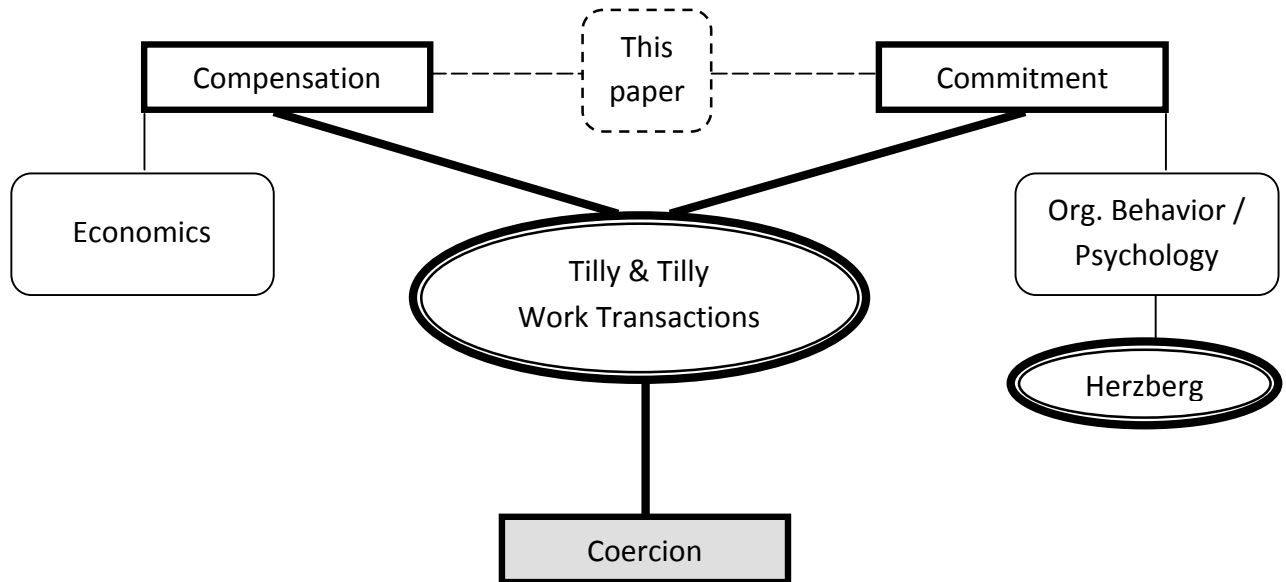


**Figure 2: Screen-capture of employment screener question**

**Tables**

**Table 1: Motivation & Hygiene Factors**

| Motivation | Hygiene |
|---|---|
| Sense of achievement | Company policy |
| Recognition | Level & quality of supervision |
| Nature of work itself | Relationship w/ boss |
| Responsibility | Working conditions |
| Growth & advancement | Salary |
|  | Interpersonal relations |
|  | Job security |

**Table 2: Example Herzberg coding**

| |
|---|
| *9. Supervision – Technical – first level* |
| 0. Not mentioned |
| 1. Supervisor competent |
| 2. Supervisor incompetent |
| 3. Supervisor tried to do everything himself |
| 4. Supervisor delegated work well |
| 5. Supervisor consistently critical |
| 6. Supervisor showed favoritism |
| Herzberg (1959) p. 145 |

**Table 3: Motivation Factors**

| Herzberg Concept | Survey Question(s) |
|---|---|
| Nature of Work | o My job makes good use of my skills and abilities <br> o I deal with products and services in which I am confident |
| Sense of Achievement | o I feel like I am achieving something meaningful in my work |
| Recognition | *Not measured* |
| Responsibility | o Employees are empowered to solve customer problems |
| Personal Growth and Advancement | o This organization provides adequate training to support my career development <br> o I feel that I have opportunities to advance in this job |

**Table 4: Hygiene Factors**

| Herzberg Concept | Survey Question(s) |
|---|---|
| Salary *(Given own factor due to colinearity)* | o I am satisfied with the overall benefits program offered by this company<br>o I am likely to be paid more by doing the same job at a similar institution |
| Job Security | o I am very excited about this organization and in the direction we are moving |
| Working Conditions | o Employees share a common bond of beliefs and purpose about this organization<br>o Different departments work well together in this organization |
| Environmental Conditions | *Not measured* |
| Level and Quality of Supervision | o My manager has realistic expectations about what I can achieve<br>o My manager deals effectively with poor performance |
| Company Policy and Administration | o My company regards employees as the most important asset of the firm |
| Interpersonal Relations | o I am a member of a team that works well together<br>o This organization attracts and retains outstanding employees and partners |

**Table 5: Survey response compared with census data**

| What is your combined household income? | | | | | | |
|---|---|---|---|---|---|---|
| Income Range | Survey Response | | Census Estimate | | Census: Householder Reported Working | |
| Less than $30,000 | 196 | 18% | 35,348,000 | 30% | 14,822,000 | 18% |
| $30,000 - $50,000 | 293 | 27% | 22,739,000 | 19% | 16,052,000 | 20% |
| $50,000 - $75,000 | 271 | 25% | 21,268,000 | 18% | 17,278,000 | 21% |
| More than $75,000 | 326 | 29% | 37,427,000 | 32% | 32,896,000 | 41% |
| Grand Total | 1,086 | | 116,782,000 | | 81,048,000 | |

Summarized from Census Bureau data (U.S. Census Bureau, "Households," 2008)

**Table 6: Demographic question detail**

| Variable | Outcomes | Variable Type | Discussion |
|---|---|---|---|
| | | | |

| Employment Status | Full-time Part-time 2 or More Jobs | Dummy, default category: Full-time | |
|---|---|---|---|
| Is Supervisor | Yes / No | Dummy, default category: No | Controls for whether being a supervisor of others has an influence on the increased pay required to switch jobs |
| Is Male | Female / Male | Dummy, default category: Female | Controls for whether gender has an influence on increased pay required to switch jobs |
| Age | Under 25 25-34 35-44 45-54 55-64 65-74 75-84 | Dummy, default category: Under 25 | Transformed into 10 year blocks (i.e. Under 25 = 1, 25-34 = 2, 35-44 = 3) |
| Education | Did not complete high school High school diploma, GED or equivalent Associates degree or apprenticeship Bachelor's degree Masters degree Doctorate or professional degree | Dummy, default category: Did not complete high school | |

| Race | White<br>Black<br>Latin<br>Other | Dummy, default category: White | The following groups were aggregated into the 'Other' category: "Asian American Indian or Alaska Native," "Native Hawaiian or Pacific Islander," "A race/ethnicity not mentioned above," "Prefer not to say" |
|---|---|---|---|
| Household Income | Less than 30,000<br>30-50,000<br>50-75,000<br>75-150,000<br>More than 150,000 | Dummy: Default category: 30-50K | Categorical variable |
| Income Portion | Less than half<br>About half<br>More than half<br>…only source… | Dummy, default category: About Half | Used to control for household environments where income stability might affect a worker's reluctance to switch for pay. |

**Table 7: Satisfaction as Motivation & Hygiene factor - full statistical model**

| Coefficients: | Estimate | Std. Error | sig |
|---|---|---|---|
| (Intercept) | 0.034 | 0.328 | |
| Motivation factor: | 0.529 | 0.041 | *** |
| Hygiene factor: | 0.447 | 0.041 | *** |
| Pay & Benefit perceptions: | 0.120 | 0.025 | *** |
| *Month: Aug (Omitted)* | | | |
| Month: September | 0.090 | 0.060 | |
| Month: October | 0.071 | 0.066 | |
| Month: November | 0.087 | 0.066 | |
| Month: December | 0.116 | 0.064 | . |
| *Employment Status: Full Time (Omitted)* | | | |
| Employment Status: Part-time | −0.043 | 0.071 | |
| Employment Status: Two or more jobs | −0.298 | 0.118 | * |
| *Supervisor: No (Omitted)* | | | |
| Supervisor: Yes | −0.049 | 0.046 | |
| *Duration at Company: Less than 6 months (Omitted)* | | | |
| Duration at Company: 6mos to 1yr | 0.087 | 0.153 | |
| Duration at Company: 1 to 3yrs | 0.091 | 0.134 | |
| Duration at Company: 3 to 5yrs | 0.182 | 0.150 | |
| Duration at Company: 5 to 10yrs | 0.070 | 0.144 | |
| Duration at Company: More than 10yrs | 0.036 | 0.145 | |
| *Duration in Position: Less than 6 months (Omitted)* | | | |

| | | | |
|---|---|---|---|
| Duration in Position: 6mos to 1yr | −0.089 | 0.126 | |
| Duration in Position: 1 to 3yrs | −0.064 | 0.112 | |
| Duration in Position: 3 to 5yrs | −0.014 | 0.128 | |
| Duration in Position: 5 to 10yrs | 0.126 | 0.125 | |
| Duration in Position: More than 10yrs | 0.048 | 0.131 | |
| *Occupation: Architecture and Engineering (Omitted)* | | | |
| Occupation: Arts, Design, Entertainment, Sports, and Media | 0.041 | 0.160 | |
| Occupation: Building and Grounds Cleaning and Maintenance | 0.071 | 0.254 | |
| Occupation: Business and Financial Operations | −0.184 | 0.127 | |
| Occupation: Community and Social Services | −0.252 | 0.170 | |
| Occupation: Computer and Mathematical Science | −0.134 | 0.153 | |
| Occupation: Construction and Extraction | 0.164 | 0.235 | |
| Occupation: Education, Training, and Library | −0.058 | 0.144 | |
| Occupation: Farming, Fishing, and Forestry | −0.566 | 0.301 | . |
| Occupation: Food Preparation and Serving Related | −0.077 | 0.173 | |
| Occupation: Healthcare Practitioner and Technical | −0.085 | 0.177 | |
| Occupation: Healthcare Support | −0.246 | 0.180 | |
| Occupation: Installation, Maintenance, and Repair | 0.157 | 0.172 | |
| Occupation: Legal | −0.162 | 0.168 | |
| Occupation: Life, Physical, and Social Science | 0.006 | 0.209 | |
| Occupation: Management | −0.152 | 0.127 | |
| Occupation: Office and Administrative Support | −0.147 | 0.125 | |
| Occupation: Personal Care and Service | −0.132 | 0.216 | |
| Occupation: Production | 0.108 | 0.155 | |
| Occupation: Protective Service | −0.156 | 0.209 | |
| Occupation: Sales and Related | −0.194 | 0.125 | |
| Occupation: Transportation and Material Moving | −0.072 | 0.158 | |
| *Business Activity:Construction (Omitted)* | | | |
| Business Activity: Education and Healthcare | 0.341 | 0.148 | * |
| Business Activity: Financial Activities | 0.253 | 0.147 | . |
| Business Activity: Information / Technology | 0.392 | 0.146 | ** |
| Business Activity: Leisure and Hospitality | 0.451 | 0.146 | ** |
| Business Activity: Manufacturing | 0.197 | 0.147 | |
| Business Activity: Natural Resources and Mining | 0.006 | 0.245 | |
| Business Activity: Professional and business services | 0.260 | 0.139 | . |
| Business Activity: Public Administration | 0.324 | 0.151 | * |
| Business Activity: Trade/Transportation | 0.262 | 0.138 | . |
| *Gender: Female (Omitted)* | | | |
| Gender: Male | −0.044 | 0.047 | |
| *Age: Under 25 (Omitted)* | | | |
| Age: 25 − 34 | −0.041 | 0.075 | |
| Age: 35 − 44 | 0.087 | 0.078 | |
| Age: 45 − 54 | 0.076 | 0.085 | |
| Age: 55 − 64 | −0.001 | 0.093 | |
| Age: 65 − 74 | 0.205 | 0.091 | * |
| Age: 75 − 84 | −0.151 | 0.212 | |
| *Education: Less than High School (Omitted)* | | | |

| | | |
|---|---|---|
| Education: High School or higher | −0.104 | 0.265 |
| Education: Associates degree or equivalent | −0.168 | 0.266 |
| Education: Bachelors degree | −0.147 | 0.266 |
| Education: Masters degree or professional | −0.124 | 0.273 |
| Education: Doctoral degree | −0.114 | 0.297 |
| *Race: White (Omitted)* | | |
| Race: Latin | −0.178 | 0.076   * |
| Race: Black | −0.124 | 0.080 |
| Race: Other | −0.029 | 0.118 |
| *Household Income: 30,000-50,000 (Omitted)* | | |
| Household Income: 50,000 – 75,000 | −0.025 | 0.059 |
| Household Income: 75,000 – 150,000 | 0.021 | 0.067 |
| Household Income: Less than 30,000 | −0.066 | 0.064 |
| Household Income: More than 150,000 | −0.171 | 0.094   . |
| *Income Portion: About Half (Omitted)* | | |
| Income Portion: Less than half | 0.021 | 0.073 |
| Income Portion: More than half | −0.029 | 0.067 |
| Income Portion: Only source | −0.012 | 0.065 |
| | | |
| P-value <0.001='***' | <0.01='**' | <0.05='*' | <0.1='.' | | |
| | | |
| Sample Size: 1086 | | |
| Residual standard error: 0.6579 on 1013 degrees of freedom | | |
| Multiple R-squared: 0.6657,    Adjusted R-squared: 0.642 | | |
| F-statistic:  28.02 on 72 and 1013 DF,  p-value: < 2.2e-16 | | |

### Table 8: Outcome variable detail

*Suppose a job in your local area is available with the same responsibilities, benefits, and commuting time as your current job.*

What would be the **lowest increase** in pay for you to consider switching from your current job to the new job?

| Outcome | General endpoints | Sensitivity endpoints |
|---|---|---|
| I would switch even with a 10% reduction | (-15%, -5%) | (-11%, -9%) |
| I would switch even with no increase | (-5%, 5%) | (-1%, 1%) |
| 10% increase to switch | (5%, 15%) | (9%, 11%) |
| 20% Increase to switch | (15%, 25%) | (19%, 21%) |
| I would not switch jobs no matter what they offered | (25%, Inf.*) | (50%, Inf.*) |

*"Inf." means large without bound implying that the survey taker might not switch jobs for pay whatsoever.

**Table 9: Preliminary statistical models: Beta(Std. Err.)*significance**

| Variable | Model 1: Hygiene Only | Model 2: Hygiene + Motivation | Model 3: Hygiene + Motiv. / Sensitivity Analysis |
|---|---|---|---|
| *(Intercept)* | 0.153(0.003)*** | 0.148(0.004)*** | 0.168(0.011)*** |
| Hygiene | 0.051(0.003)*** | 0.030(0.005)*** | 0.050(0.012)*** |
| Motivation | | 0.015(0.005)** | 0.016(0.012) |
| Pay & Benefit | | 0.017(0.003)*** | 0.042(0.007)*** |
| | | | |
| *Sigma* | *0.050(0.003)*** | *0.049(0.002)*** | *0.109(0.004)*** |
| *LogLik – Null model* | *−1683.98* | | *−3406.822* |
| *Log Likelihood* | *−1318.628* | *−1299.048* | *−3306.367* |
| Sample Size: 1086 | | | |
| P-value <0.001='***' \| <0.01='**' \| <0.05='*' \| <0.1='.' | | | |

**Table 10: Model 4: Final interval regression model**

| Variable | Coeff | Std. Err. | Sig. |
|---|---|---|---|
| (Intercept) | 0.193 | 0.046 | *** |
| Motivation factor: | 0.010 | 0.005 | . |
| Hygiene factor: | 0.035 | 0.005 | *** |
| Pay & Benefit perceptions: | 0.014 | 0.003 | *** |
| *Month: Aug (Omitted)* | | | |
| Month: September | 0.004 | 0.008 | |
| Month: October | −0.002 | 0.009 | |
| Month: November | 0.013 | 0.009 | |
| Month: December | 0.000 | 0.009 | |
| *Employment Status: Full Time (Omitted)* | | | |
| Employment Status: Part-time | 0.002 | 0.010 | |
| Employment Status: Two or more jobs | 0.006 | 0.017 | |
| *Supervisor: No (Omitted)* | | | |
| Supervisor: Yes | −0.008 | 0.006 | |
| *Duration at Company: Less than 6 months (Omitted)* | | | |
| Duration at Company: 6mos to 1yr | 0.034 | 0.022 | |
| Duration at Company: 1 to 3yrs | 0.030 | 0.021 | |
| Duration at Company: 3 to 5yrs | 0.033 | 0.022 | |
| Duration at Company: 5 to 10yrs | 0.048 | 0.022 | * |
| Duration at Company: More than 10yrs | 0.056 | 0.021 | ** |
| *Duration in Position: Less than 6 months (Omitted)* | | | |
| Duration in Position: 6mos to 1yr | −0.029 | 0.019 | |
| Duration in Position: 1 to 3yrs | −0.011 | 0.018 | |
| Duration in Position: 3 to 5yrs | −0.006 | 0.019 | |
| Duration in Position: 5 to 10yrs | −0.021 | 0.019 | |
| Duration in Position: More than 10yrs | −0.011 | 0.019 | |
| *Occupation: Architecture and Engineering (Omitted)* | | | |
| Occupation: Arts, Design, Entertainment, Sports, and Media | 0.012 | 0.023 | |

| | | | |
|---|---|---|---|
| Occupation: Building and Grounds Cleaning and Maintenance | −0.012 | 0.031 | |
| Occupation: Business and Financial Operations | −0.024 | 0.019 | |
| Occupation: Community and Social Services | −0.001 | 0.025 | |
| Occupation: Computer and Mathematical Science | 0.016 | 0.023 | |
| Occupation: Construction and Extraction | −0.023 | 0.031 | |
| Occupation: Education, Training, and Library | −0.018 | 0.021 | |
| Occupation: Farming, Fishing, and Forestry | 0.030 | 0.044 | |
| Occupation: Food Preparation and Serving Related | −0.016 | 0.025 | |
| Occupation: Healthcare Practitioner and Technical | −0.037 | 0.027 | |
| Occupation: Healthcare Support | 0.004 | 0.024 | |
| Occupation: Installation, Maintenance, and Repair | −0.002 | 0.023 | |
| Occupation: Legal | −0.007 | 0.027 | |
| Occupation: Life, Physical, and Social Science | −0.013 | 0.031 | |
| Occupation: Management | 0.007 | 0.019 | |
| Occupation: Office and Administrative Support | −0.005 | 0.019 | |
| Occupation: Personal Care and Service | −0.010 | 0.030 | |
| Occupation: Production | −0.012 | 0.022 | |
| Occupation: Protective Service | −0.026 | 0.029 | |
| Occupation: Sales and Related | 0.003 | 0.019 | |
| Occupation: Transportation and Material Moving | 0.015 | 0.023 | |
| *Business Activity: Construction (Omitted)* | | | |
| Business Activity: Education and Healthcare | 0.008 | 0.019 | |
| Business Activity: Financial Activities | −0.017 | 0.019 | |
| Business Activity: Information / Technology | −0.035 | 0.019 | . |
| Business Activity: Leisure and Hospitality | −0.033 | 0.019 | . |
| Business Activity: Manufacturing | −0.021 | 0.019 | |
| Business Activity: Natural Resources and Mining | 0.028 | 0.044 | |
| Business Activity: Professional and business services | −0.032 | 0.018 | . |
| Business Activity: Public Administration | −0.036 | 0.020 | . |
| Business Activity: Trade/Transportation | −0.051 | 0.017 | ** |
| *Gender: Female (Omitted)* | | | |
| Gender: Male | −0.007 | 0.006 | |
| *Age: Under 25 (Omitted)* | | | |
| Age: 25 – 34 | 0.005 | 0.011 | |
| Age: 35 – 44 | 0.016 | 0.011 | |
| Age: 45 – 54 | 0.006 | 0.012 | |
| Age: 55 – 64 | 0.037 | 0.013 | ** |
| Age: 65 – 74 | 0.043 | 0.013 | *** |
| Age: 75 – 84 | 0.076 | 0.032 | * |
| *Education: Less than High School (Omitted)* | | | |
| Education: High School or higher | −0.041 | 0.038 | |
| Education: Associates degree or equivalent | −0.064 | 0.038 | . |
| Education: Bachelors degree | −0.059 | 0.038 | |
| Education: Masters degree or professional | −0.066 | 0.039 | . |
| Education: Doctoral degree | −0.050 | 0.042 | |
| *Race: White (Omitted)* | | | |
| Race: Latin | 0.006 | 0.010 | |
| Race: Black | 0.008 | 0.010 | |
| Race: Other | 0.022 | 0.016 | |
| *Household Income: 30,000-50,000 (Omitted)* | | | |
| Household Income: 50,000 – 75,000 | 0.007 | 0.008 | |
| Household Income: 75,000 – 150,000 | 0.001 | 0.009 | |
| Household Income: Less than 30,000 | 0.006 | 0.008 | |
| Household Income: More than 150,000 | 0.002 | 0.013 | |
| *Income Portion: About Half (Omitted)* | | | |
| Income Portion: Less than half | 0.009 | 0.010 | |

| | | | |
|---|---|---|---|
| Income Portion: More than half | −0.005 | 0.009 | |
| Income Portion: Only source | 0.002 | 0.009 | |
| | | | |
| *sigma* | 0.044 | 0.001 | *** |
| *Log Likelihood -1218.051* | | | |
| Sample Size: 1086 | | | |
| P-value <0.001='***' \| <0.01='**' \| <0.05='*' \| <0.1='.' | | | |

**Appendix A: Sociological perspectives on job satisfaction**

Historical passages from the founding thought leaders of sociology demonstrate a primitive foundation for schools of thinking about a satisfying work environment and its relationship to pay. Smith, Marx, and Durkheim each contribute foundational concepts to the understanding of job satisfaction in passages of their key works.

*Adam Smith* – Adam Smith identifies one component used in later job satisfaction research, a primitive notion of Herzberg's Motivation factor.  In the quote below, Smith names the "agreeableness or disagreeableness" of work as a factor influencing pay.

> "The five following are the principal circumstances which … make up for a small pecuniary gain in some employments, and counter-balance a great one in others: <u>first, the agreeableness or disagreeableness of the employments themselves</u>; secondly, the easiness and cheapness, or the difficulty and expence of learning them; thirdly, the constancy or inconstancy of employment in them; fourthly, the small or great trust which must be reposed in those who exercise them; and fiftly, the probability or improbability of success in them."

> Adam Smith, Wealth of Nations Chapter X, Part 1

*Karl Marx* - Although the psychological outcomes are directed towards the negative, Marx makes a psychological connection missed by others of his day.  Marx laments the struggle of workers against capitalists and the effect of factory labor on the human psyche which he termed Alienation. Furthermore, Marx complains about economic sanctions that are regularly applied to workers for failing to abide by expected behaviors such as fines, suspensions and

demotions to harder jobs.  Marx seems to be concerned with a primitive notion of what could

be aligned with Herzberg's Hygiene factor – the social work environment.

One might attribute the modern concept of job satisfaction to simply being the opposite

of Marx's concept of Alienation. Rather than separating man from his natural social

environment, a satisfying work environment brings workers closer to themselves, others, and

the world they live in.  Marx projected alienation as a feature intrinsic to capitalism.

Considering the passion of his critique of the alienation arising from capitalism, a reduction of

alienation is clearly a benefit to the human condition.  In that light, this study is an analysis of

the cash value of alienation to workers.

"The factory code … is but the capitalistic caricature of that social regulation of the

labour-process which becomes requisite in co-operation on a great scale, and in the

employment in common, of instruments of labour and especially of machinery. The

place of the slave-driver's lash is taken by the overlooker's book of [economic]

penalties." (emphasis added)

-Karl Marx (1867)

*Elton Mayo* - Soon after the publication of Taylor's Principles of Scientific Management (cited

below), Elton Mayo put these principles to the test in The Hawthorne Experiment. This famous

study is cited in nearly all areas of social science.  In general, the Hawthorne case study is

taught as a perilous example of a ruined experiment where the knowledge of being observed

influences the behavior of the subject.  What is often left out of aforementioned case studies is

the full explanation of a major factor of influence.  Where workers had been treated with

contempt prior to the experiment, under experimental conditions, workers were respected –

an element of Herzberg's Hygiene factor. Job satisfaction is not explicitly mentioned in the passage but higher worker productivity was an explicit outcome of the entire Hawthorne project.

> "Undoubtedly there had been a remarkable change of mental attitude in the group. This showed in their recurrent conferences with high executive authorities.  At first, shy and uneasy, silent and perhaps somewhat suspicious of the Company's intention, later their attitude is marked by confidence and candor. Before every change of programme, the group is consulted.  Their comments are listened to and discussed; sometimes their objections are allowed to negative a suggestion. The group unquestionably develops a sense of participation in the critical determinations and becomes something of a social unit."
>
> The Early Sociology of Management and Organizations by Elton Mayo (1933) p.71-2

*Emile Durkheim* - In his departure from the market perspective of Smith, the conflict perspective of Marx, and the mechanized approach of Taylor, Durkheim sees the cooperation between worker and employer as a path to increased productivity.  In Durkheim's view, one would consider the elements of job satisfaction as negotiating points to reach harmonious employer-worker relations, perhaps an exchange of positive working conditions for wages.

> "…whilst still acting in concert with them, each contracting party, whilst having need of the other, seeks to obtain at least cost what he needs, that is, to gain the widest possible rights in exchange for the least possible obligations."
>
> Emile Durkheim, Division of Labor in Society, Chapter VII, Section 2, Page 160

**Appendix B: Non-sociological perspectives on job satisfaction**

Current research regarding job satisfaction and related concepts such as worker commitment, work-related attitudes, company loyalty and employee engagement comes mostly from the academic fields of management, organizational behavior, and organizational psychology.  Below is a review of oft-cited approaches to job satisfaction and employee commitment.

*Taylorism* – Both heralded and vilified as for its claim to "scientific management," the principal outcome of Taylorism is to deconstruct work processes into skill-reducing work units. Both skilled and unskilled labor has felt threatened by its practice. Yet as if to foresee elements of Herzberg's empirical job satisfaction research by fifty years, Frederick Taylor outlines several strategies with which a manager can realize the increased productivity benefits of an inspired workforce.  The passage below stands out from the remainder of his book which primarily identifies methods to optimize ergonomic changes to work processes.  Note that Taylor includes shadows of Herzberg's Hygiene (environmental) factors in his recommendations to increase positive worker sentiments.

> "… the hope of rapid promotion or advancement; higher wages, either in the form of generous piecework prices or of a premium or bonus of some kind for good and rapid work; shorter hours of labor; better surroundings and working conditions than are ordinarily given, etc., and, above all, … personal consideration for, and friendly contact with, his workmen which comes only from a genuine and kindly interest in the welfare of those under him."

-The Principles of Scientific Management (1911) by Frederick Winslow Taylor, M.E., Sc. D.

*Dispositional theory* – A school of job satisfaction research focuses specifically on the psychology of individuals.  That is: people are inherently satisfiable at work because of psychological dispositions such as self-esteem, locus of control, neuroticism, and perspective on personal effectiveness.  Staw (1986) claims that psychological tests of affective disposition can forecast job satisfaction 50 years in advance. Other research (Avery, 1994) uses twins to construct the potential for a genetic influence on job satisfaction.

*Job Characteristics Model* – Richard Hackman and Greg Oldham are credited with constructing a job satisfaction model based on psychological outcomes rather than employer-benefiting outcomes.  Hackman and Oldham identify five job characteristics & situations that lead to three satisfying psychological experiences (Janson & Purdy, 1975).   Specifically, skill variety, task identity, task significance, autonomy and feedback lead to psychological experiences of meaningfulness, responsibility and knowledge.  They extend these psychological experiences to show influence on work behaviors such as productivity, attendance, and attitude.

*Expectancy theory (Range of Affect Theory)*  – Edwin Locke (1976) postulates that increased job satisfaction arises from the harmony or discrepancy of expectations about work and their fulfillment in the workplace.  Furthermore, the variety of individual's expectations could mean that one person could react with increased satisfaction to a changing job attribute and another could react negatively to the same stimulus. For instance, one employee may react positively to increased autonomy while another may be harmed.

Each of these perspectives shares a foundation rooted in the Herzberg Two-Factor model but more importantly, the chance to be woven together under the same economic outcome. Future research can link job satisfaction theoretical perspectives together with an economic outcome related to job search. The result could inform organizational behavior, psychology, sociology, economics, and business. Lamentably, the opportunity to assemble the necessary components for such research is not present with the data available for this study.

**Appendix C: Frequency Statistics**

*Suppose a job in your local area is available with the same responsibilities, benefits, and commuting time as your current job.*
What would be the **lowest increase** in pay for you to consider switching from your current job to the new job?

| Answer Set | Response |
| --- | --- |
| I would switch even with a 10% reduction | 22 |
| I would switch even with no increase | 90 |
| 10% increase to switch | 206 |
| 20% Increase to switch | 508 |
| I would not switch jobs no matter what they offered | 260 |
| **Grand Total** | **1086** |

Which best describes your employment status?

| Answer Set | Response |
| --- | --- |
| Full-time | 890 |
| Part-time | 160 |
| Two or more jobs | 36 |
| **Grand Total** | **1086** |

How many people work at your location?

| Answer Set | Response |
| --- | --- |
| 1-10 employees | 258 |
| 10-100 employees | 408 |
| 100-1,000 employees | 296 |
| 1,000-10,000 employees | 124 |
| **Grand Total** | **1086** |

How many people work for your entire company?

| Answer Set | Response |
|---|---|
| I don't know | 0 |
| 1-10 employees | 124 |
| 10-100 employees | 217 |
| 100-1,000 employees | 228 |
| 1,000-10,000 employees | 234 |
| 10,000-100,000 employees | 170 |
| More than 100,000 employees | 113 |
| **Grand Total** | **1086** |

Does your job require you to supervise other individuals or team(s)?

| Answer Set | Response |
|---|---|
| No | 608 |
| Yes | 478 |
| **Grand Total** | **1086** |

How long have you been employed with your current employer?

| Answer Set | Response |
|---|---|
| Less than six months | 68 |
| 6 months 1 year | 95 |
| 1 – 3 years | 299 |
| 3 – 5 years | 135 |
| 5 – 10 years | 205 |
| More than 10 years | 284 |
| **Grand Total** | **1086** |

How long have you been employed in your current position?

| Answer Set | Response |
|---|---|
| Less than 6 months | 102 |
| 6 months – 1 year | 133 |
| 1 – 3 years | 332 |
| 3 – 5 years | 155 |
| 5 – 10 years | 197 |
| More than 10 years | 167 |
| **Grand Total** | **1086** |

Which category best describes your occupation?

| Answer Set | Response |
|---|---|
| Architecture and Engineering | 42 |
| Arts, Design, Entertainment, Sports, and Media | 38 |
| Building and Grounds Cleaning and Maintenance | 9 |

| | |
|---|---|
| Business and Financial Operations | 129 |
| Community and Social Services | 29 |
| Computer and Mathematical Science | 40 |
| Construction and Extraction | 12 |
| Education, Training, and Library | 72 |
| Farming, Fishing, and Forestry | 6 |
| Food Preparation and Serving Related | 34 |
| Healthcare Practitioner and Technical | 30 |
| Healthcare Support | 24 |
| Installation, Maintenance, and Repair | 26 |
| Legal | 33 |
| Life, Physical, and Social Science | 14 |
| Management | 105 |
| Office and Administrative Support | 162 |
| Personal Care and Service | 14 |
| Production | 42 |
| Protective Service | 14 |
| Sales and Related | 170 |
| Transportation and Material Moving | 41 |
| **Grand Total** | **1086** |

What is the best category for your organization's primary business activity *at the location where you work?*

| Answer Set | Response |
|---|---|
| Construction | 34 |
| Education and Healthcare (Education, Medical, Social Assistance) | 155 |
| Financial Activities (Finance, Insurance, Real Estate, Rental, Leasing) | 113 |
| Information / Technology | 97 |
| Leisure and Hospitality (Arts, Entertainment, Recreation, Accommodation, Food Services) | 136 |
| Manufacturing | 107 |
| Natural Resources and Mining (Mining, agriculture, forestry, fishing) | 11 |
| Professional and business services (Professional, Scientific, Technical Services, Management) | 161 |
| Public Administration (Government, Military) | 77 |
| Trade/Transportation (Wholesale, Retail, Transportation, Warehousing, Utilities) | 195 |
| **Grand Total** | **1086** |

What is your gender?

| Answer Set | Response |
|---|---|
| Female | 548 |
| Male | 538 |

| | | Grand Total | 1086 |
|---|---|---|---|

What is your age group?

| Answer Set | Response |
|---|---|
| Under 25 | 139 |
| 25 – 34 | 217 |
| 35 – 44 | 233 |
| 45 – 54 | 191 |
| 55 – 64 | 130 |
| 65 – 74 | 164 |
| 75 – 84 | 12 |
| **Grand Total** | **1086** |

Which describes your highest level of education?

| Answer Set | Response |
|---|---|
| Did not complete high school | 7 |
| High school diploma, GED or equivalent | 304 |
| Associates degree or apprenticeship | 237 |
| Bachelor's degree | 387 |
| Master's degree | 116 |
| Doctorate or professional degree | 35 |
| **Grand Total** | **1086** |

Which best describes your race/ethnicity?

| Answer Set | Response |
|---|---|
| White | 877 |
| Black *(Black or African American)* | 84 |
| Latin *(Hispanic, Chicano or Latino)* | 90 |
| Other *(Asian + Native Hawaiian or Pacific Islander + Prefer not say + Not mentioned)* | 35 |
| **Grand Total** | **1086** |

What is your combined household income?

| Answer Set | Response |
|---|---|
| Less than 30K | 196 |
| 30 - 50K | 293 |
| 50 - 75K | 271 |
| 75 - 150K | 233 |
| More than 150K | 93 |
| **Grand Total** | **1086** |

How much does the income from your job contribute to the total household income?

| Answer Set | Response |
|---|---|
| About half | 179 |
| Less than half | 213 |
| More than half | 291 |
| My job is the only source of household income | 403 |
| **Grand Total** | **1086** |

**Appendix D: Selected Survey Instrument Screenshots**

**EMPLOYEE** PULSE™
*BY ALLEGIANCE*

5% complete
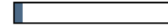
If you answered "Two or more jobs", please answer in terms of the job where you earn the **most income**.

How many people work at your location?
○ 1-10 employees
○ 10-100 employees
○ 100-1,000 employees
○ 1,000-10,000 employees
○ 10,000-100,000 employees
○ More than 100,000 employees
○ I don't know

How many people work for your entire company?
○ 1-10 employees
○ 10-100 employees
○ 100-1,000 employees
○ 1,000-10,000 employees
○ 10,000-100,000 employees
○ More than 100,000 employees
○ I don't know

Does your job require you to supervise other individuals or team(s)?
○ Yes
○ No

[ Back ]  [ Next ]

**EMPLOYEE** PULSE™
*BY ALLEGIANCE*

82% complete

How many customers do you interact with in a typical work day?

– Please Select –

Of those customers, what percentage are delightful to work with?

– Please Select –

How many customers do you know on a first-name basis?

How many fellow employees do you interact with in a typical work day?

– Please Select –

Of those employees, what percentage are delightful to work with?

– Please Select –

*Suppose a job in your local area is available with the same responsibilities, benefits, and commuting time as your current job.*

What would be the **lowest increase** in pay for you to consider switching from your current job to the new job?

○ I would not switch jobs no matter what they offered

○ 20% increase to switch

○ 10% increase to switch

○ I would switch even with no increase

○ I would switch even with a 10% reduction

Back    Next

**EMPLOYEE** PULSE™
BY ALLEGIANCE

94% complete

**Just a few more questions for categorization...**

What is your gender?
- ○ Male
- ○ Female

What is your age group?
- ○ Under 25
- ○ 25 - 34
- ○ 35 - 44
- ○ 45 - 54
- ○ 55 - 64
- ○ 65 - 74
- ○ 75 - 84
- ○ 85+

What state do you mainly work in?
[— Please Select — ▼]

Which describes your highest level of education?
- ○ Did not complete high school
- ○ High school diploma, GED or equivalent
- ○ Associates degree or apprenticeship
- ○ Bachelor's degree
- ○ Masters degree
- ○ Doctorate or professional degree

Which best describes your race/ethnicity?
- ○ White
- ○ Hispanic, Chicano or Latino
- ○ Black or African American
- ○ American Indian or Alaska Native
- ○ Asian
- ○ Native Hawaiian or Pacific Islander
- ○ A race/ethnicity not mentioned above
- ○ Prefer not to say

What is your combined household income?
- ○ Less than 30K
- ○ 30 - 50K
- ○ 50 - 75K
- ○ 75 - 150K
- ○ More than 150K

How much does the income from your job contribute to the total household income?
- ○ Less than half
- ○ About half
- ○ More than half
- ○ My job is the only source of household income

**EmployeePulse is 100% anonymous.  Click for details.**

[ Back ]    [ Done ]

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