

The Relationship Between Economic Sector of Occupation and Job Satisfaction

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The most common definition of job satisfaction comes from psychologist Edwin Locke (1976), “A pleasurable or positive emotional state resulting from the appraisal of one’s job or job experiences.” Job satisfaction is a multidimensional state resulting from one’s job and their responses to it (Judge et al., 2020). Historically, it was believed that job satisfaction is made of five separate facets: pay, promotions, coworkers, supervision, and the job itself (Smith, 1969). More recently, three other facets have been added: recognition, working conditions, and management (Locke, 1976).

A considerable amount of research has been conducted on job satisfaction, both at the academic level and within individual companies. When soliciting job satisfaction scores, it is necessary to rely on self-assessment, meaning measures may not be very accurate if the participant is not accurately self-evaluating. Available studies on job satisfaction often measure satisfaction using one of the eight facets or by asking participants to rate their overall satisfaction with their job on a scale (Judge et al., 2020). This has prevented specific reasons for job satisfaction/dissatisfaction from being discovered. This leaves the need to turn to other variables of one’s work life to determine the causes and relationships resulting in job satisfaction. This study uses the economic sector within which participant occupation lies to establish a relationship with overall job satisfaction.

The concept of economic sectors was first introduced in 1940 by Colin Clark in his book *The Conditions of Economic Progress* (Rothbarth, 1941). He suggested industries could be separated into categories. These categories would be determined based on significantly different characteristics of industries. The sectors were originally created to illustrate differences in productivity rates and demand structure for products found within each sector (Wolfe, 1955).

Today, economic sectors are often used to determine how different types of occupations contribute to gross domestic product (Saviotti, 2004).

There were originally three economic sectors: primary, secondary, and tertiary (Wolfe, 1955). The tertiary sector was later extended into the quaternary and quinary sectors based on the work of economist Simon Kuznet (Fogel et al., 2013). Today, there is still some debate about what industries are in which sector. For the purposes of this study, the primary sector will consist of raw material extraction (agriculture, mining, etc.). The secondary sector will consist of manufacturing services (food, automotives, construction, etc.). The tertiary sector will be the service industries (retail, hospitality, real estate, etc.). The quaternary sector will be intelligence and information (research, finance, education, etc.). The quinary sector will consist of public service industries (police, healthcare, childcare, etc.).

Only a small amount of research has been conducted on job satisfaction and economic sector. Few studies have been conducted on job satisfaction and occupation because of how difficult is to account for all occupations. In Greece, a study was conducted on employment behaviors across economic sectors. It was found that employment, unemployment, pay rates are not equal across sectors. The percentage of employment in the primary sector is higher than any other sector, while its societal contribution is less than any other sector. It is suspected that this is due to manufacturing (secondary sector) productivity (Karamanis & Kolias, 2022).

A study analyzed a 30-item questionnaire assessing job satisfaction of employees in each economic sector. The survey asked questions to gain information on each of the facets of job satisfaction. The results showed that job satisfaction varies according to the needs of the employee. It also showed that as the basic needs of employees were met, the employees desired more comforts to be satisfied with their employment. Job satisfaction also varied according to

the living standards of employees. Both findings can be explained by Maslow's hierarchy of needs. When low-level needs are met, individuals are motivated to attain higher-level needs (Maslow, 1954). It was found that 83% of the variance in job satisfaction was due to changes in the eight facets of job satisfaction (Nanjundeswaraswamy, 2019).

It is possible that there is a factor outside of the eight facets of job satisfaction that accounts for changes in job satisfaction: personal characteristics. A study hypothesized that job satisfaction would vary within each sector due to the objective characteristics of the sector. The jobs with the most rewards and benefits in each sector should result in the highest job satisfaction. It was found that what creates the most job satisfaction is the occupation being the right "fit" for the individual. If the occupation is what the individual wants to be doing, then they will be satisfied with their occupation given that their basic needs are met (Hanson et al., 1987).

Job satisfaction has emotional, evaluative, and behavioral factors composing it (Hulin, 2003). Job satisfaction is an example of a social attitude. Social attitudes are capricious and rarely can predict actual social behaviors, meaning that behavioral factors do not hold any weight in the attitude. Job satisfaction is different from most social attitudes in that it accurately predicts job behaviors. It is theorized that this is due to the salience jobs have for the people working them and the amount of time spent at work (Judge et al., 2020). This demonstrates that job satisfaction often affects actions in one's occupation.

It has been found that job satisfaction and job performance are related, but the relationship is not linear. This tells us that job satisfaction has something to do with job performance, but it is not certain as to how exactly they are related. This is likely due to job satisfaction being a multi-faceted state (Judge et al., 2001). This study will be able to account for several facets of job satisfaction and determine the relationship between occupation and job

satisfaction. This could warrant further research into the seven other facets of job satisfaction. If thorough research is conducted on the components of job satisfaction, these components could be used in studies on job performance. Findings from these studies could be used to create more productive and satisfactory workplaces.

The dependent variable in this study will be job satisfaction. The independent variable will be the economic sector within which the individual's occupation is. The General Social Survey has data concerning public attitudes, opinions, and behaviors in the United States. This contains variables on job satisfaction and occupation. It also contains several other variables that could result in changes in job satisfaction. This allows us to account for the effect of several of the facets of job satisfaction. The General Social Survey does not have a variable for economic sector, so occupations will have to be coded into economic sectors. General Social Survey data will be attained from the National Opinion Research Center at the University of Chicago.

The lower the tier, the more physical exertion is required for the job. Because of this, it is expected that the higher the level of economic sector one's occupation is in, the higher overall job satisfaction is. It should be noted that individuals working within the quinary sector often must exert a significant amount of physical effort at work, but those jobs have the opportunity to provide intrinsic satisfaction from good works for the public. This is something that the other sectors do not offer, at least to the same extent.

Data

The data in this study is taken from the General Social Survey (GSS). General Social Survey data is sourced from the National Opinion Research Center at the University of Chicago. The GSS is a survey of the attitudes and behaviors of adults in the United States. The United

States population is divided into clusters by geographic location and participants are randomly selected by cluster. There are approximately 1,500 participants in the General Social Survey each year. The GSS includes data from 1988 to 2022. Data from 2002, 2006, 2010, 2014, 2018, and 2022 is included in this study.

The outcome variable of interest, job satisfaction, is measured on a Likert scale ranging from very satisfied to very dissatisfied. This variable measures how overall satisfied participants are with their job. This variable is limited in that it measures overall satisfaction without being able to break down the reasons for satisfaction or dissatisfaction. This introduces the need for control variables to account for aspects of job satisfaction.

The independent variable, occupation, is measured by asking participants to report what their occupation is. Occupation is a randomly assigned variable within the sampling clusters of the GSS. The response is recorded under one of the generated occupational codes. This study uses the occupational codes from the 2010 GSS. Most of the GSS surveys have been recoded to use the occupation codes from 2010. Each occupation is recoded according to the economic sector it lies within.

Gender, education, and age may be correlated with occupation and job satisfaction, so they are included as control variables. It is important to control for factors besides occupation that contribute to job satisfaction. There are eight factors that compose job satisfaction: occupation, pay, promotion, recognition, coworkers, working conditions, supervision, and management. For the purposes of this study, promotions and recognition are considered to be the same. Management and supervision are also considered to be the same. *Pay* is included as participant's yearly income. *Promotions and recognition* are included as the belief that promotions are distributed fairly (measured on a 4-point Likert scale). *Coworkers* are included as

trust in coworkers (measured on a 4-point Likert scale). *Working conditions* are included as the belief that the participant's work team creates the safest possible working conditions (measured on a 4-point Likert scale). *Supervision and management* are included as the description of the relationship between employees and management (measured on a 5-point Likert scale).

Table 1

Summary Statistics of Relevant Variables

Variable	Observations	Mean	Std. dev.	Min	Max
Job Satisfaction	6,833	1.672472	0.7302224	1	4
Industry	6,833	6314.012	2675.235	170	9870
Occupation	6,833	4182.763	2599.417	10	9830
Age	6,833	41.55393	11.9847	18	65
Sex	6,833	1.511049	0.4999145	1	2
Education	6,833	14.15206	2.747231	1	20
Income	6,833	10.76818	2.49199	1	12
Working Conditions	6,833	1.756037	0.6745101	1	4
Promotions	6,833	2.099517	0.96547	1	4
Coworkers	6,833	1.626957	0.7475677	1	4
Management	6,833	2.103908	0.9736146	1	5

Using codes from the variables *occupation* and *industry*, the variable for economic sector was created.

Table 2

Tabulation of Economic Sectors

Sector	Frequency	Percent
Primary	115	1.68
Secondary	1,315	19.24
Tertiary	2,407	35.23
Quaternary	1,569	22.96
Quinary	1,427	20.88
Total	6,833	100

Method

To start, data from 2002, 2006, 2010, 2014, 2018, and 2022 are merged. After combining data, the following OLS model is estimated:

$$Y_{it} = \beta_0 + \beta_1 E_{it} + \beta_2' X_{it} + \beta_3' Z_{it} + \alpha_t + \varepsilon_{it}$$

where Y_{it} is a categorical variable for job satisfaction of individual i in year t ; E_{it} is a categorical variable for economic sector of occupation for individual i in year t ; X_{it} is a vector of demographic controls including gender, age, and education; Z_{it} is a vector of the controls for other factors of job satisfaction, including pay, possibility for promotions, trust in coworkers, working conditions, and relationship with management; α_t is the time effect; and ε_{it} is the error term.

The regression attempts to explain the relationship between economic sector of occupation and overall job satisfaction. The vector Z_{it} is included to control for variables that could be correlated with occupation and overall job satisfaction in an effort to avoid omitted variable bias. Each variable in the model is linear in parameters. The participants are randomly selected by area. The variable for year, α_t , is included because job satisfaction and explanatory variables may vary across time due to current events.

To check for robustness, the regression is first completed with just the explanatory variable of economic sector. In the next regression, the vector of demographic controls (age, education, gender) is added. In the final model, the vector of other factors of job satisfaction (pay, promotions, coworkers, working conditions, management) is added.

Results

The regression was first conducted using only the explained variable, *job satisfaction*, and the explanatory variable, *economic sector*. The second regression included a quadratic variable for sector to see if the relationship between economic sector and job satisfaction resembles a quadratic relationship. The third regression included the other facets of job satisfaction: *income*, *working conditions*, *coworker satisfaction*, and *management satisfaction*. The fourth regression was the base regression with demographic controls (age, gender, education) included. The final regression included the explained variable, primary explanatory variable, facets of job satisfaction, and demographic factors.

Table 3

OLS Estimates of Job Satisfaction Regressed on Economic Sector of Occupation

Variables	Job Satisfaction	Job Satisfaction	Job Satisfaction	Job Satisfaction	Job Satisfaction
Economic Sector	-0.0355*** [0.00824]	0.150*** [0.0523]	-0.0309*** [0.00696]	-0.0344*** [0.00865]	-0.0258*** [0.00734]
Income			-0.0243*** [0.00300]		-0.0181*** [0.00308]
Working Conditions			0.129*** [0.0125]		0.124*** [0.0124]
Promotions			0.132*** [0.00911]		0.138*** [0.00906]
Coworkers			0.141*** [0.0112]		0.134*** [0.0111]
Management			0.204*** [0.00951]		0.202*** [0.00942]
Sector2		-0.0269*** [0.00751]			
Controls	No	No	No	Yes	Yes
Constant	1.794*** [0.0295]	1.506*** [0.0856]	0.876*** [0.0464]	-1.543 [2.407]	-1.201 [2.034]
Observations	6,833	6,833	6,833	6,833	6,833
R-squared	0.003	0.005	0.295	0.026	0.310

Note: ***Significant at 1 % level, **at 5 % level, *at 10 % level

In each of the regressions, the coefficient of economic sector of occupation is significant at the 1% significance level. The coefficient of economic sector was -0.026, meaning for an increase in the tier of economic sector (primary to secondary, secondary to tertiary, etc.), there is a 0.026 decrease in job satisfaction. This suggests that as you move up the sectors of occupation,

job satisfaction decreases, which was not an expected result. However, the effect of economic sector does not appear to be economically significant. There are five economic sectors, meaning the difference between the primary and quinary sectors is a 0.125 decrease in job satisfaction. This is not an applicably significant difference.

The second regression was conducted to see if the relationship between job satisfaction and economic sector is quadratic. The results from the second regression suggest this could be an accurate depiction of the relationship, which would mean that job satisfaction peaks around the tertiary sector.

The facets of job satisfaction besides economic sector are each significant at the 1% level in the final regression. This suggests that each aspect of job satisfaction: economic sector/occupation, income, working conditions, opportunity for promotions, pay, relationships with management, and relationship with coworkers are important in determining an individual's job satisfaction.

The data above does not account for personal characteristics, such as geographic location, living conditions, family size, etc. The exclusion of these variables could result in a positive bias, introducing a positive bias which overestimates the effect of the explanatory variables above. The R-squared value in the final regression above is 0.31, or 31%, suggesting there are other variables that account for variation in job satisfaction.

This analysis does not account for occupation itself. It only accounts for the economic sector that an individual's occupation falls within. Having a regression with occupation as the primary explanatory variable could change the results of the regression. This is difficult to do because there are over 1,000 variable codes in the General Social Survey, with an increase in

occupation code not having any sort of meaningful difference. Even if it was possible to meaningfully include occupation as an explanatory variable, the sample size in this study is 6,833 participants. This would mean there would be an average of less than 10 participants per level of occupation, making results unreliable.

Conclusion

From the data above, it is apparent that the economic sector an individual works in does not have the strongest impact on that person's job satisfaction. While its effect is statistically significant, other factors of job satisfaction determine more of how satisfied an individual is with their profession. The regression shows that every facet of job satisfaction is statistically significant at the 99% significance level, with management having the strongest positive effect. These findings suggest that a healthy work environment has the strongest effect on an individual's job satisfaction. The opportunity for promotions, good working conditions, reliable coworkers, and a good relationship with management produce more satisfaction for an individual than the actual work they do does. Income had a negative coefficient, suggesting that job satisfaction decreases as salary increases.

These findings provide implications that companies can use to keep employees satisfied with their jobs. This could decrease turnover costs, increase employee performance, and increase customer satisfaction. Salary and the job someone works are not entirely in a given company's control. The aspects of the workplace environment are within a company's control. If companies can provide healthier work environments for their employees, the company will profit in turn.

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