

The relationship between pay and job satisfaction: A meta-analysis of the literature

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ABSTRACT

Whereas the motivational aspects of pay are well-documented, the notion that high pay leads to high levels of satisfaction is not without debate. The current study used meta-analysis to estimate the population correlation between pay level and measures of pay and job satisfaction. Cumulating across 115 correlations from 92 independent samples, results suggested that pay level was correlated .15 with job satisfaction and .23 with pay satisfaction. Various moderators of the relationship were investigated. Despite the popular theorizing, results suggest that pay level is only marginally related to satisfaction. Theoretical and practical implications of the results are discussed.

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Most individuals choose to spend the majority of their adult lives in paid employment. The reasons individuals so devote themselves to work are varied, and for many, self-concept factors are cited (i.e., one's job is a source of one's identity; Hulin, 2002). When individuals are asked *why* they work, however, money is one of the most commonly-cited reasons (Jurgensen, 1978). Locke, Feren, McCaleb, Shaw, and Denny (1980) went so far as to argue, "No other incentive or motivational technique comes even close to money with respect to its instrumental value" (p. 379). For most, the choice to work may not be seen as much of a choice at all, since money provides sustenance, security, and privilege. To no small extent, people work to live, and the pecuniary aspect of the work is what sustains the living.

In the area of money as a means to live, comparatively speaking, Americans are well off. Of the roughly 192 sovereign nations, the United States is arguably the wealthiest (its Gross Domestic Product [GDP] is highest in the world). Thus, for many Americans and the citizens of other wealthy nations, the question generally is not between working and starving (in America, of those who work, "only" 13.2% are below the poverty line [U.S. Census Bureau, 2009]), but rather of working for how much money. People *do* differ widely in the pay they receive from their work; income dispersion is relatively high in the United States and has grown over time (Lee, 1999). Thus, it becomes interesting to ask whether this extrinsic motive "pays off" in terms of happiness. How does the pay we receive from our work contribute to our feelings about our jobs and lives?

Indeed, there is a substantial literature on the relationship between income and subjective well-being. Although U. S. Gross National Product (GNP) has increased threefold over the past 50 years, levels of life satisfaction have remained constant since the 1940's (Diener & Oishi, 2000), a finding which has been replicated in Japan (Diener & Biswas-Diener, 2002). Moreover, after a relatively short period of time (i.e., 1 year), lottery winners are no happier than before they won the lottery (Brickman, Coates, & Janoff-Bulman, 1978). These findings suggest that income is unimportant to happiness. On the other hand, the richest Americans

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are happier than the average American (Diener, Horwitz, & Emmons, 1985), and the average individual is happier than the very poor (Cummins, 2000). Moreover, across nations, the correlation between average well-being and average per capita income ranges from $\hat{r} = .50$ to $\hat{r} = .70$ (Diener & Biswas-Diener, 2002). However, the relationship appears to diminish substantially when the analysis is confined to wealthy nations (Helliwell, 2003). Thus, at the macro level, results suggest contradictory conclusions regarding the importance of income to life satisfaction.

Studies at the individual level reveal similarly indeterminate findings. Diener and Seligman (2004) concluded, “Dozens of cross-sectional studies reveal that there is a positive correlation between individuals’ incomes and their reports of well-being” (p. 7). On the other hand, in the U. S., Diener, Sandvik, Seidlitz, and Diener (1993) reported the average correlation between income and well-being to be quite modest ($\bar{r} = .13$). In an international study, Suh, Diener, Oishi, and Triandis (1998) found the same result ($\hat{r} = .13$). On the other hand, Cummins (2000) concluded, “There are numerous empirical reports indicating that people who are rich have a level of subjective well-being that is substantially higher than people who are poor” (p. 133). Thus, though the data tend to indicate a small, positive correlation between income and subjective well-being, this conclusion cannot be proffered with much confidence.

Despite the considerable focus that the income–happiness relationship has garnered in psychology (see Diener & Seligman, 2004 and Diener, Suh, Lucas, & Smith, 1999 for reviews), in organizational psychology, little attention has been focused specifically on the relationship between pay level and job satisfaction. Some studies have found positive, significant relationships between pay level and job satisfaction ($\hat{r} = .27, p < .01$ (Beutell & Wittig-Berman, 1999); $\hat{r} = .27, p < .01$ (Sanchez & Brock, 1996)). Other research has revealed a weak relationship between the variables ($\hat{r} = .01, ns$ (Dunham & Hawk, 1977); $\hat{r} = .07, ns$ (Adams & Beehr, 1998)). Still other research has suggested moderators of the relationship. Malka and Chatman (2003) found that income and job satisfaction were positively correlated ($\hat{r} = .17, p = .06$), and the relationship was stronger for individuals with extrinsic value orientations. Overall, though, there is a dearth of research specifically focused on the relationship between pay level and job satisfaction. Gerhart and Rynes (2003) concluded, “One curious feature of the pay level–pay satisfaction literature is that there are virtually no studies that correlate pay level with general job satisfaction” (p. 63).

Theoretically, there are reasons to expect a positive or a negative relationship between pay level and job satisfaction. Most models of pay satisfaction stipulate a positive relationship between pay level and pay satisfaction, and pay satisfaction is one of the core components of overall job satisfaction (Smith, Kendall, & Hulin, 1969). Heneman and Judge (2000) noted, “Models of pay satisfaction all suggest that the amount of pay itself should have a direct impact on pay satisfaction” (p. 71). For example, Hulin’s (1991) integrative model predicts that all else equal, role outcomes—such as pay—will result in higher levels of job satisfaction. Similarly, Lawler’s discrepancy model—where pay satisfaction is a function of what one receives relative to what one thinks one should receive—hypothesizes that pay level should be satisfying to individuals (see Heneman [1985], Fig. 8).

On the other hand, self-determination theory (Deci & Ryan, 1985) suggests that extrinsic rewards are ultimately demotivating and dissatisfying to individuals. Because they have a negative effect on intrinsic interest in a task or job, extrinsic motivations tend to undermine perceived autonomy (Deci & Ryan, 2000). Moreover, goals for financial success have been argued to undermine well-being, because these goals represent a controlled orientation that interferes with the fulfillment of more enduring needs such as self-acceptance or affiliation (Kasser & Ryan, 1993), a view that has not gone unchallenged (Srivivasta, Locke, & Bartol, 2001). Thus, relevant theories are at odds with respect to whether or not pay level and other forms of extrinsic rewards should be positively related to job satisfaction.

Beyond the empirical results and theoretical support, a final source of confusion with respect to the pay level–job satisfaction relationship comes from reviews of the literature. Heneman (1985) concluded, “The consistency of the pay level–pay satisfaction relationship is probably the most robust (though hardly surprising) finding regarding the causes of pay satisfaction” (p. 131). Gerhart and Milkovich (1992) noted, “Pay level is a key attribute of compensation design and strategy because of its consequences for...attitudinal objectives” (p. 495). Spector (1997), conversely, concluded, “Pay itself is not a very strong factor in job satisfaction” (p. 42). Pfeffer (1998) lamented, “Literally hundreds of studies and scores of systematic reviews of incentive studies consistently document the ineffectiveness of external rewards” (p. 216).

The purpose of the present study is to perform a meta-analysis of the relationship between pay level and job satisfaction. Heneman and Judge (2000) called for more research on the relationship between pay level and job and pay satisfaction. One way to further investigate this relationship is through meta-analysis. Qualitative or narrative reviews have many limitations (potentially misleading conclusions, over- or under-weighting of particular studies, failure to take into account study artifacts and measurement error; Hunter & Schmidt, 1990). As Judge, Piccolo, and Ilies (2004) noted, “Although there is nothing wrong with qualitative reviews per se, they are subject to various errors, including the fact that subjective accounting of study results often leads to inaccurate conclusions” (p. 44). Thus, it is worthwhile to consider the actual size of the relationship of pay level to job and pay satisfaction once sampling and measurement error have been taken into account. Given the conflicting theoretical arguments and empirical data, we do not offer formal hypotheses. However, we do address the following research questions:

Q-1: At the individual level, is pay level related to: (a) pay satisfaction or (b) overall job satisfaction?

Q-2: At the organization/sample level, are average levels of pay level related to: (a) pay satisfaction or (b) overall job satisfaction?

Because at the sample level various factors may affect the relationship between pay level and job and pay satisfaction, we also investigate several moderators of the relationship. It has been speculated that the relationship between pay level and job satisfaction is lower in the U. S. given that it is the wealthiest nation (Diener & Biswas-Diener, 2002). Thus, we compare the relationships of pay level with job and pay satisfaction for U. S. vs. international samples. We also investigate whether the

relationships vary according to publication source (“top-tier” journal article vs. other published source or unpublished manuscript). Some have argued that measures of job satisfaction differ in the degree to which they adequately capture extrinsic aspects of the job. Brief (1998) argued that the Minnesota Satisfaction Questionnaire (MSQ) better assesses extrinsic attributes than other measures. Thus, we compare the pay level–job satisfaction relationships according to the measure of job and pay satisfaction used in the studies. Common source variance is often labeled as a biasing factor in organizational behavior research (see Podsakoff, MacKenzie, Lee, & Podsakoff, 2003, for a review), yet some argue that common method or source effects are less severe with relatively objective variables such as pay or benefits (Crampton & Wagner, 1994). Therefore, we compare the relationships of pay level with job and pay satisfaction when both variables were reported by the same source when pay and satisfaction were independently reported.

Another possible moderator of the pay level–satisfaction relationship is the measure of pay. In a “pure” sense, pay or income is a ratio variable in that the measure is separated by equal intervals and it has a defined zero. However, in many cases, pay level is measured as an interval or ordinal variable where pay is reported in intervals or increments. On the one hand, because such measures lose information, all else equal, ordinal or interval scale measures can be expected to have inferior psychometric properties compared to ratio measures, and therefore lower validity (see Pedhazur & Schmelkin, 1991). On the other hand, because asking individuals to report precise figures for sensitive information such as pay may promote socially desirable responding (Wentland & Smith, 1993), interval or ordinal measures may have higher validity. Thus, we compare validities according to the measure of pay level.

Q-3: Do the following factors moderate the relationship between pay level and job satisfaction or pay level and pay satisfaction: (a) U. S. vs. international samples; (b) publication source (published vs. unpublished, and quality of publication outlet); (c) measure of job or pay satisfaction; (d) common vs. independent sources of data; and (e) measure of pay?

Method

Literature search

We searched the *PsycINFO* database (1887–2007) for studies (articles and book chapters) that included the keyword “satisfaction,” and keywords such as “pay,” “compensation,” “salary,” “money,” and “earnings.” To identify articles that may have been missed in the original search, we conducted additional searches using the following keywords: “pay satisfaction,” “work satisfaction,” “pay and job satisfaction,” and “money and happiness.” Finally, we conducted electronic searches of four top-tier management journals (*Academy of Management*, *Journal of Applied Psychology*, *Organizational Behavior and Human Decision Processes*, and *Personnel Psychology*) from 1990 to 2007, looking for the words “satisfaction,” “pay,” or “income” in the title. This last search identified 105 new journal articles for consideration. The three separate searches of the literature on pay and satisfaction resulted in the identification of 1156 abstracts including both journal articles and book chapters.

Rules for inclusion in the meta-analysis

In reviewing the abstracts, we eliminated studies that clearly did not include primary data (such as qualitative studies or reviews) and studies that did not appear to measure the relationship between satisfaction and pay level. For the remaining 458 articles, we examined each study to determine whether it contained the information needed to calculate validities. Studies that did not measure pay level were excluded, as were studies that were clearly unrelated to employee attitudes in the workplace. For example, we eliminated articles that attempted to validate existing satisfaction scales, and studies that measured customer or patient satisfaction. In addition, several studies were excluded because authors reported proportions of means without standard deviations or other measures of association that could not be converted to correlations. In total, 86 studies (119 correlations from 92 independent samples) met the criteria for inclusion in the database and subsequent analyses.

Meta-analytic procedures

Using the methods of Hunter and Schmidt (1990), we conducted a meta-analysis to estimate the correlations between satisfaction and pay level. We corrected each primary correlation for attenuation due to unreliability in the criterion variable, and then computed the sample-weighted mean of these corrected correlations. To estimate parameters describing the variability of and confidence in these meta-analytic estimates, the variance of the observed individual estimates was corrected for the effects of both sampling and measurement error. When authors of the original studies reported the internal consistency reliability for satisfaction measures, we used this value to correct the observed correlation for attenuation. Of note, reliability estimates for measures of income, pay, or salary were not provided in any of the studies, so we assumed the reliabilities were equal to 1.00.

For the 92 primary correlations between satisfaction and pay level, the reliability of satisfaction was available for 60 correlations (65%). When reliabilities for criterion measures were not reported in the original studies, we averaged the reported reliability estimates for similar measures (i.e. job or pay satisfaction), and used these mean reliability values to correct the primary correlations.

In addition to reporting point estimates for corrected correlations, we also report 80% credibility intervals and 90% confidence intervals around the estimated population correlations. We believe it is important to report both confidence and credibility

intervals because each provides different information about the nature of the true estimates. *Confidence intervals* provide an estimate of the variability around the estimated mean corrected correlation that is due to sampling error. For example, a 90% confidence interval around a positive point estimate that excludes zero indicates that if the estimation procedures were repeated a large number of times, the point estimate would be larger than zero in 95% of the cases (the other 5% would be zero or negative). *Credibility intervals* provide an estimate of the variability of individual correlations across studies. For example, an 80% credibility interval excluding zero indicates that 90% of the individual correlations in the meta-analysis excluded zero (for positive correlations, less than 10% are zero or negative and 10% lie at or beyond the upper bound of the interval). Thus, confidence intervals estimate variability in the *mean* correlation, while credibility intervals estimate variability in the *individual* correlations across the studies.

Moderator analyses

We divided the studies into categories according to the moderator variables and conducted separate meta-analyses in order to estimate the true correlations delimited by moderator variables. Meta-analytical evidence for the presence of moderators requires that (1) true estimates are different in the categories formed by the potential moderator variable, and (2) the mean corrected standard deviation within categories is smaller than the corrected standard deviation computed for combined categories. To test for the presence of moderator effects, as recommended by [Sagie and Koslowsky \(1993\)](#), we report the Q-statistic ([Hunter & Schmidt, 1990](#), p. 151), which tests for homogeneity in the true correlations across studies. A significant Q-statistic (which is approximately distributed as a chi-square [χ^2]), indicates the likelihood that moderators explain variability in the correlations across studies. If a significant Q-statistic across moderator categories becomes non-significant within a moderator category, it suggests that the moderator explains a significant amount of the variability in the correlations across the moderator categories.

Results

Results of the overall meta-analysis are presented in [Table 1](#), which indicate that pay level is positively correlated with both overall job satisfaction ($\hat{\rho} = .15, p < .05$) and with pay satisfaction ($\hat{\rho} = .24, p < .05$). For both job (.02, .28) and pay satisfaction (.07, .39), the average correlations with pay level are distinguishable from zero in that the 90% confidence intervals excludes zero. Thus we can be confident that the mean correlations between pay level and job and pay satisfaction are distinguishable from zero. The population correlation between pay level and satisfaction is significantly higher than the correlation between pay level and job satisfaction ($Z = -4.01, p < .05$), suggesting that pay level is more strongly associated with satisfaction with pay than the job overall.

The overall validities reported in [Table 1](#) are interpretable across moderator categories. As such, we were interested in whether or not estimated correlations among the variables were influenced by characteristics of the research design. We therefore separated studies into their respective moderator categories, and estimated the true score correlations within each category. [Table 2](#) provides the meta-analytic results for job satisfaction and pay satisfaction, broken down by six moderator criteria: measure of pay (exact or interval), independence of data source (same or different source), measure of satisfaction (MSQ, JDI, PSQ, and Other), sample nationality (United States or international), publication status (published or non-published), and ranking of journal source (top-tier, other ranked, unpublished).

The Q-statistics for both job satisfaction ($Q = 221.54, p < .05$) and pay satisfaction ($Q = 280.36, p < .05$) are significant, meaning there is significant variability in the correlations even after taking measurement and sampling error into account. A significant Q-statistic indicates the likelihood that moderators explain variability in the correlations across studies. Accordingly, we conducted separate meta-analyses within each moderator category and used the technique proposed by [Quiñones, Ford, and Teachout \(1995\)](#) to determine if observed differences within each category were significant. A Z-score greater than +1.96 or less than -1.96 would indicate that observed differences were significant at $\alpha = .05$.

The correlations between pay level and job satisfaction, and between pay level and pay satisfaction appear to generalize across moderator variable categories. The pay level–job satisfaction correlation in the United States ($\hat{\rho} = .15$), although lower for employees in other countries ($\hat{\rho} = .21$) such as Great Britain, India, Australia, and Taiwan, was not significantly different ($Z = -1.42, ns$). The same was true for pay satisfaction, where the estimated correlation between pay level and pay satisfaction in the U. S. ($\hat{\rho} = .23$) was not significantly different from that of international samples ($\hat{\rho} = .19; Z = -1.82, ns$).

Table 1
Correlations of pay level with job satisfaction and pay satisfaction.

	<i>k</i>	<i>N</i>	\bar{r}	$\hat{\rho}$	<i>Q</i>	80% CV lower	80% CV upper	90% CI lower	90%CI upper
Job satisfaction	61	18,460	.14	.15*	221.54*	.02	.28	.12	.18
Pay satisfaction	48	15,576	.22	.23*	280.36*	.07	.39	.18	.25

Notes: *k* = number of correlations. *N* = combined sample size. \bar{r} = mean observed correlation. $\hat{\rho}$ = estimated true score correlation. CV = Credibility interval. CI = Confidence interval.

* $p < .05$.

Table 2
Moderator analysis.

Moderator	Job satisfaction			Pay satisfaction		
	<i>k</i>	\bar{r}	$\hat{\rho}$	<i>k</i>	\bar{r}	$\hat{\rho}$
Measure of pay level						
Exact	23	.12	.13*†	24	.22	.23*†
Interval	28	.15	.17*†	19	.22	.24*†
Independence of sources						
Same source	48	.14	.15*†	39	.22	.23*†
Different source	10	.15	.16*†	8	.22	.23*†
Measure of satisfaction						
MSQ	10	.23	.24*†	4	.22	.23*†
JDI (not including JDS)	5	.22	.24*†	10	.19	.20*†
Other	40	.12	.13*†	18	.25	.27*†
PSQ				14	.16	.16*†
Sample						
United States	52	.14	.15*†	36	.22	.23*†
International	10	.18	.21*†	11	.18	.19*†
Publication status						
Published	43	.13	.14*†	36	.17	.18*
Unpublished	4	.13	.14*†	1	.23	
Rank of journal source ¹						
Top-tier published (21)	23	.12	.13*†	24	.14	.14*
Other published	20	.15	.16*	12	.21	.22*†
Unpublished	4	.13	.14*†	1	.23	
Rank of journal source ²						
Top-tier published (6)	17	.12	.13*†	18	.10	.11*
Other published	26	.15	.16*	18	.23	.24*†
Unpublished	4	.13	.14*†	1	.23	

Notes: *k* = number of correlations. *N* = combined sample size. \bar{r} = mean observed correlation. $\hat{\rho}$ = estimated true score correlation. ¹Gomez = Meija and Balkin (1992). ²Zickar and Highhouse (2001). *90% confidence interval excluded zero. †80% credibility interval excluded zero. Correlations reported for relationships where *k* = 1 are not population estimates. Credibility and confidence intervals were not calculated for relationships where *k* = 1.

The pay level–job satisfaction relationship was only partially moderated by the *measure of satisfaction* used in the study. The estimated population correlation between pay level and job satisfaction ($\hat{\rho} = .24$) in studies that used the MSQ (Weiss, Dawis, England, & Lofquist, 1964) was not significantly higher than the correlation ($\hat{\rho} = .24$; $Z = -0.34$, *ns*) in studies that used the JDI (Smith et al., 1969). However, studies that used the MSQ yielded a higher correlation between pay level and job satisfaction than studies used other measures of satisfaction ($\hat{\rho} = .13$; $Z = 5.11$, $p < .01$). For pay satisfaction, the estimated average correlation is unaffected by the measure of satisfaction used in the study, as differences within this moderator category were found to be non-significant.

As indicated in Table 2, relationships between pay level and both job and pay satisfaction were unaffected by the type of pay measure assessed (exact or interval), independence of data source, publication status, or rank of journal source. Although we observed a small difference in the pay level and pay satisfaction relationship in published ($\hat{\rho} = .18$) and unpublished studies ($\hat{\rho} = .23$), this difference was non-significant ($Z = -1.62$, *ns*). We conducted an additional moderator analysis of pay level–satisfaction based on the rank of publication source as defined by Gomez-Meija and Balkin (1992). With one exception (pay level–pay satisfaction in top-tier publications vs. unpublished studies), no significant differences were found among the estimated true correlations reported in top-tier published journals, non-top tier published journals, and unpublished studies.

Between-study evaluation of correlations

Estimating the population correlation provides information about the average within-study relationship between pay level and satisfaction. To determine if pay level–satisfaction relationships differ *between* studies as a function of the average level of pay and satisfaction in the sample, we conducted a separate analysis of the mean level meta-analytic data. We created a database of studies that reported pay level and satisfaction means. For each of the 50 independent samples that reported the necessary information, we recorded the mean pay level of the sample, as well as the job and/or pay satisfaction scale means and standard deviations. We derived a satisfaction “scale maximum” score based on the mean satisfaction reported by the study’s authors and on the scale range used by the authors in a particular study. For example, when a single item measure of job satisfaction was used with a scale ranging from 1 to 7 (e.g., Martins, Eddelston, & Veiga, 2002), the scale maximum recorded in our database was 7. When three items were used in a study with a scale ranging from 1 to 5 (e.g., Dreher & Ash, 1990), the scale maximum recorded in the database depended on how authors reported the job satisfaction score. In one such study, the satisfaction score was reported as 3.30 (Rice, Philips, & McFarlin, 1990), or the mean of three responses on a 1 to 5 Likert-scale. In this case, the scale maximum was recorded as 5. In another study using three items and a 1 to 5 Likert-scale, the satisfaction score was reported as 10.28 (Lee & Martin, 1991), or the average in the sample of the sum of three responses. For this study, the scale maximum is recorded as 15 (three items times 5

scale points). Finally, we calculated a “percent of scale maximum” score for each study by dividing the reported satisfaction score (mean or cumulative) by the calculated scale maximum.

To standardize the reported salaries, we converted the salary figures reported in each study to 2009 U. S. dollars using an online conversion calculator provided by the U.S. Bureau of Labor Statistics (http://www.bls.gov/data/inflation_calculator.htm). For studies that did not report the year in which the pay data were collected, we recorded the pay year as 2 years prior to study publication date. For example, when an author of a study published in 1992 did not report the year in which pay data were collected, we entered 1990 as the baseline conversion year in our database. It was assumed by the authors that the average time between data collection and publication, including revision and print, was approximately two years.

The mean pay level (in 2009 \$U. S.) for all 61 studies included in the between-study analysis was \$64,119. The average percent of job satisfaction scale maximum was 76%. The average percent of pay satisfaction scale maximum was 65%. Fig. 1 is a scatter-plot of the study reported mean pay level and percent of *job satisfaction* scale maximum. As the figure indicates, the average level of job satisfaction remains relatively stable across studies, regardless of the change in mean pay level. In other words, the reported level of job satisfaction is independent of pay level across studies and across pay levels. Employees earning salaries in the top half of our data range (>\$64,000) reported similar levels of job satisfaction to those employees earning salaries in the bottom-half of our data range (\leq \$64,000). Fig. 2 is a scatter-plot of mean pay level and percent of *pay satisfaction* scale maximum. The results for pay satisfaction are similar to those for job satisfaction.

Discussion

There are few more visible hallmarks of success in society than those owing to the income of individuals. Comparatively wealthy people are able to afford a whole host of goods and services—homes, schooling, health care, luxuries—that presumably greatly enhance quality of life. That the jobs which provide these things are little satisfying to individuals is, at first blush, surprising. Both within- and between-studies, level of pay had little relation to either job or pay satisfaction. This indicates that within an organization, those who make more money are little more satisfied than those who make considerably less. Moreover, relatively well paid samples of individuals are only trivially more satisfied than relatively poorly paid samples. For example, in 2009 dollars, a sample of lawyers earning an average of \$148,000 per year was less job satisfied (68% of scale maximum; Wallace, 2001) than a sample of child care workers earning \$23,500 per year (79% of scale maximum; Kontos & Stremmel, 1988). Of course, there were counter examples where higher pay was associated with higher job satisfaction, but in general the findings suggested little relationship between level of pay and satisfaction with one's job or one's pay.

The result for pay satisfaction is particularly surprising. One might argue that pay level is weakly related to overall job satisfaction because, of the facets of job satisfaction, pay is not as important as other facets such as work satisfaction (Judge & Church, 2000). However, when pay level bears only a slightly stronger relationship with pay satisfaction than with overall job satisfaction, such an argument is not plausible. Past qualitative reviews have suggested that pay level is a strong predictor of pay satisfaction (Heneman, 1985). The results of this review—the first quantitative review to appear in the literature—suggests that earnings are only weakly satisfying to individuals even when they confine their satisfaction to an evaluation to their pay.

One explanation for these findings can be found in adaptation level theory (Helson, 1947). Adaptation level theory posits that judgments of experience are relative to a reference point that shifts with past experience and current background stimuli. Although originally formulated in the area of visual studies (e.g., how perception of a color is affected by contrasts with

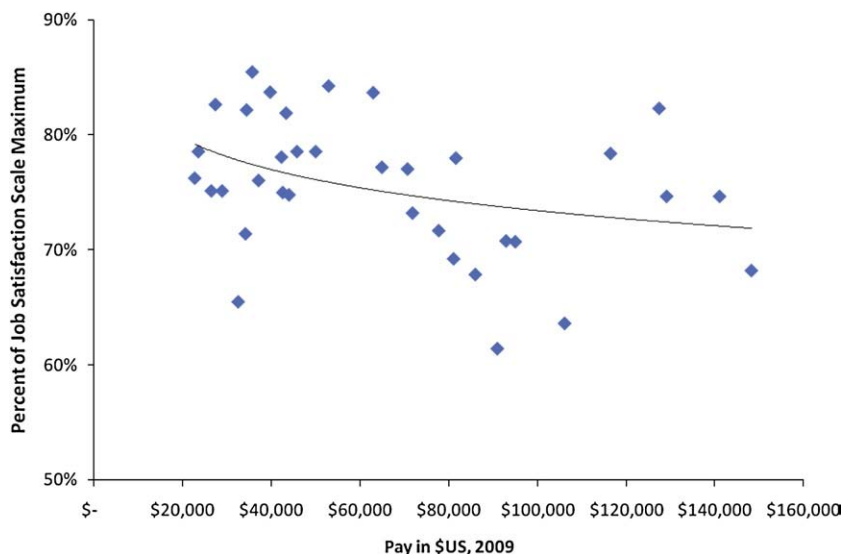


Fig. 1. Between-study relationship between average pay level and average level of job satisfaction.

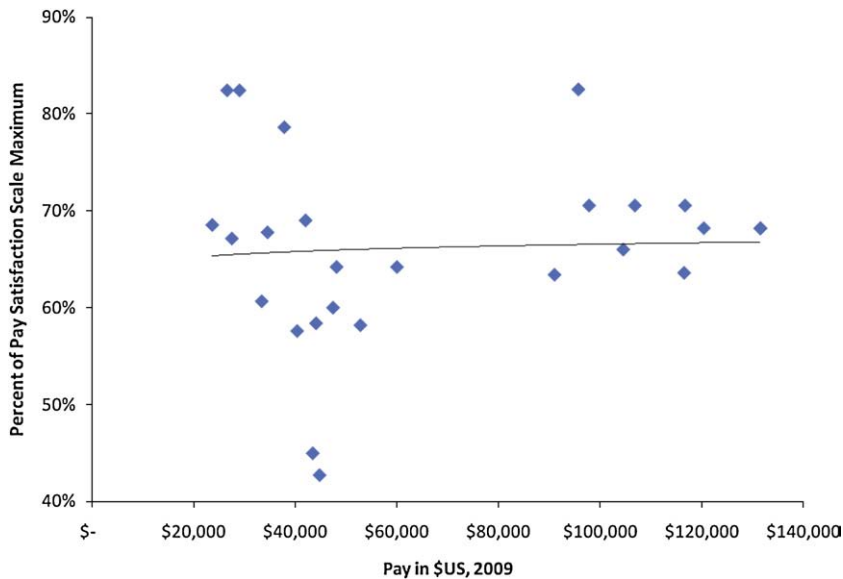


Fig. 2. Between-study relationship between average pay level and average level of pay satisfaction.

background colors), adaptation level theory has been applied in many areas of psychology, including consumer behavior (e.g., Niedrich, Sharma, & Wedell, 2001), personality (e.g., Goldstone & Goldfarb, 1964), and social psychology (Marshall & Kidd, 1981). Lucas, Clark, Georgellis, and Diener (2003) found that individuals adapted very quickly to social events. Individuals' life satisfaction increased after getting married, but this apparent boost was mostly due to initial reactions, and individuals quickly returned to their pre-marriage set-point. Thus, in the context of the present study, as soon as an individual receives an increase in pay, it may be quickly psychologically "spent" and thereby loses its satisfying value. Indeed, rising aspirations in response to rising incomes have been documented in the subjective well-being literature (Frey & Stutzer, 2002). It would be interesting to test this process in future job satisfaction research.

Implications

This study has implications for employees and employers. For the employee, if the ultimate goal in a job is to find one that is satisfying, given a choice, individuals would be better off weighing other job attributes more heavily than pay. For example, intrinsic job characteristics—even when objectively measured (via job complexity)—better predict job satisfaction than, apparently, does pay (Judge & Church, 2000). Moreover, although individuals often cannot choose their leaders, leadership behaviors such as consideration (Judge et al., 2004) display non-trivial correlations with job satisfaction. Further, when individuals are asked what would most improve the quality of their lives, the most common response is a higher income (Campbell, 1981). Yet if job satisfaction can be equated with the perceived quality of one's job, then our results suggest that many employees are mistaken about what would improve the perceived quality of their work life.

For employers, several aspects of the results are salient. First, it is important to be mindful of the fact that even though level of pay may have a limited ability to satisfy, that does not mean that pay is not motivating. Although scholars differ on the motivating effects of incentives (see Gerhart & Rynes, 2003; Pfeffer, 1998), it is clear that to many individuals, pay is motivating. Second, employers should realize that being a pay leader is not likely, by itself, to result in a satisfied workforce. Given that job satisfaction is related to employee withdrawal (Hulin, 1991), and the financial effects of positive job attitudes are well-documented (Harter, Schmidt, & Hayes, 2002), employers interested in having a satisfied workforce may need to turn elsewhere to raise job satisfaction levels.

Interestingly, research in the subjective well-being literature suggests that income is satisfying only so far as one's income is higher than others. So, for example, if incomes generally rise within a nation, individuals are no more satisfied with their lives because, while their income has risen, so have those of others generally. From an organizational standpoint, this suggests that being a pay leader may have little effect on job satisfaction because the people to whom individuals would naturally compare themselves—their fellow co-workers—also are paid at above-market levels. Following this logic, high pay would satisfy the employee only to the extent that there was high pay dispersion in the organization, which creates an interesting pay policy dilemma for employers. To the extent one is able to distinguish pay levels, and those most highly paid are the ones the organization wishes to keep, a policy of high pay dispersion may make sense. Indeed, Trevor, Gerhart, and Boudreau (1997) found that rewards were particularly effective in retaining high performers. It would be interesting to see how this framework would translate into pay/job satisfaction.

Limitations and future research

One limitation inherent in all meta-analyses, including this one, is that we were not able to investigate several relevant moderators of the relationship between pay level and job satisfaction. Possible moderators of the relationship include the degree to which pay is valued by employees (Locke, 1969), frames of reference (Hulin, 1991), and expectations (Lawler, 1971). Unfortunately, we were not able to code these moderators at the study level. Given the overall weak effects, however, beyond the moderators studied herein, it would be worthwhile to discover for whom pay is satisfying, and under what conditions. Initial efforts to study moderators of the relationship are underway (Malka & Chatman, 2003), and should continue.

Another interesting area for future research lies in the goals that individuals have with respect to their income. Kasser and Ryan (1993) concluded that those who have financial goals (i.e., the importance placed on financial success relative to other aspirations such as self-acceptance and affiliation with others) are less happy. Srivastava et al. (2001) argued that the motives behind the goal are what matters. Specifically, Srivastava et al. found that once the reasons underlying the pursuit of money were controlled, the importance placed on money was unrelated to subjective well-being. In the realm of job satisfaction, perhaps it is not the money *per se* one makes but more the reason why one makes it that matters. Paradoxically, it may be that earning relatively large amounts of money is more satisfying when the individual does *not* have earning money as an explicit goal. Alternatively, it may be that having a goal to earn money is satisfying, if it is the *right* motive. Locke, McClellan, and Knight (1996) suggest that financial goals differ in their ability to contribute to well-being or self-concept, and Srivastava et al. (2001) found that income goals which are based on seeking power, showing off, and overcoming self-doubt are less satisfying than income goals based on security, familial support, and leisure time. These are all issues for future research to consider in detail.

Finally, it would be interesting for future research to investigate another psychological process that may explain our results. Lucas et al. (2003) argued that a process of *hedonic leveling* occurs which tends to equalize individuals' well-being. For individuals whose lives are going well, for example, positive events are less likely to affect them because they have less to gain (and, by the same token, more to lose from negative events). Conversely, those whose lives are going poorly have more to gain from positive events, and thus may be more affected by these events (and less affected by negative events). Applied to this study, the hedonic leveling process suggests that high pay levels may be more satisfying to relatively deprived individuals (where relative deprivation is based on their past experience; Crosby, 1976). Indeed, there is some initial cross-sectional support for this proposition (Sweeney, McFarlin, & Inderrieden, 1990). For the same reason, increases in pay may be more satisfying to those at the low end of the pay scale. These would be interesting avenues for future research to explore.

Conclusion

In sum, this study provided the first meta-analytic evidence on the relationship of pay to job and pay satisfaction. The results suggest that, within-studies, level of pay bears a positive, but quite modest, relationship to job and pay satisfaction. Between studies, there also is little relationship between average pay in a sample and the average level of job or pay satisfaction. Future research could build on these results by testing theoretical mechanisms that may explain why that which so motivates us has such little potential to satisfy.

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¹ The asterisk (*) indicates studies that were included in the meta-analysis.

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