

IS A HAPPY WORKER A HAPPY PERSON: A META-ANALYTIC INVESTIGATION OF
JOB SATISFACTION AND SUBJECTIVE WELL-BEING

by

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(Under the Direction of Brian J. Hoffman)

ABSTRACT

The interplay between job satisfaction and individuals' well-being has been the subject of research attention for over fifty years. During this time, the nature of work has changed considerably. This dissertation brings together two large-scale studies, a meta-analysis and a multi-year nationally representative primary study, to re-examine the relationship for the modern world of work. First, the strength of this relationship is examined and found to be stronger than prior meta-analyses on this subject ($p=.53$). Next, several moderators, including some which were previously unexamined, of this relationship are explored. It is found that the job satisfaction and SWB relationship is moderated by year but is also robust to other moderators examined. Together, these two large-scale studies provide an unprecedented look at the impact of work in worker's subjective well-being in the modern world of work.

INDEX WORDS: Job satisfaction, Work satisfaction, Subjective well-being, Life satisfaction, Happiness

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CHAPTER 1

INTRODUCTION

Work clearly plays a central role in the life of Americans, and there is some evidence that the centrality of work is increasing (Diefendorff et al., 2003). In 2019, full-time American workers spent an average of 42.5 hours on weekdays working, an increase from 39.5 hours in 2003, and 5.53 hours working on weekends and holidays (Bureau of Labor Statistics, 2003; 2019). In addition to working longer hours, Americans are retiring later, with workers 65 and older representing 6.6% of the workforce, more than double from 3% in 2000 (DeSilver, 2019). Although trends in increasing time spent working are quite clear, the reasons for this increase are less so. On the one hand, Americans may find work increasingly central to their identity, values, or their life in general (Diefendorff et al., 2003). Alternatively, due to increasing cost of living, stagnant wages (Bergeson et al., 2014), and increasing debt (Houle, 2014), Americans' increasing time spent working may be a financial and practical necessity. With a substantial amount of time spent working, it is no wonder that many researchers posit connections between how satisfied one is at work with how satisfied one is in life (e.g., Rice et al., 1980; Judge & Kammeyer-Mueller, 2011, and Erdogan et al., 2012). As Americans spend more time at work, how satisfied they feel with their jobs has greater potential to spill over into their non-work lives, captured in life satisfaction, subjective well-being (SWB), and happiness. Thus, being satisfied with work has important links to how satisfied one is in life or how generally happy they are.

The relationship between subjective well-being and job satisfaction has been increasingly explored over the past 50 years in the organizational literature. Indeed, there have been at least

four meta-analyses of this relationship (i.e., Tait et al., 1989; Bowling et al., 2010; Gonzalez-Mulé et al., 2017; Steel et al., 2019; Table 1 summarizes the existing meta-analyses and their contributions) and at least three reviews (i.e., Rice et al., 1980; Rain et al., 1991; Erdogan et al., 2012). Past meta-analyses have focused on understanding several aspects of this association, including the magnitude of the relationship (Tait et al., 1989), the causal direction of the relationship (Bowling et al., 2010), and the explanatory variables associated with the relationship (Gonzalez-Mulé et al. 2017; Steel et al., 2019). In addition, several meta-analyses have examined moderators of the relationship including the type of subjective well-being (e.g., job satisfaction, life satisfaction, and subjective well-being; Bowling et al., 2010), whether job satisfaction is measured as an overall or composite variable (Bowling et al., 2010), the facets of job satisfaction (Bowling et al., 2010), gender (Tait et al., 1989), general mental ability (Gonzalez-Mulé et al., 2017), and personality (Steel et al., 2019). Despite making many contributions to the understanding of this relationship, many important questions remain unanswered.

As described above, as the nature of work and the workforce has changed, it seems possible that the relationship between job satisfaction and SWB has changed. The present study provides an updated large-scale analysis of the relationship between job satisfaction and SWB with a focus on the ways in which that relationship has potentially changed over time. To do so, this study will provide the most comprehensive meta-analysis to date and supplement these findings with data from the General Social Survey (GSS), a large, nationally representative sample. Together, these two studies are used to address gaps in the extant literature and to address several overlapping research questions.

First, although several meta-analyses have examined the association between SWB and job satisfaction, there is considerable variability both within and between meta-analyses. For

instance, existing estimates range from $r = .39$ (Steel et al., 2019) to $\rho = .48$ (Bowling et al. 2010) depending on the meta-analytic data provided. Given this range of estimates, a first step of the present study is to provide an updated summary of the association between job satisfaction and SWB.

In addition to variability between meta-analyses, there is considerable variability within the meta-analytic estimates in each meta-analysis, such as Tait et al. (1989). For instance, the credibility intervals and standard deviation of rho were sufficiently wide in Bowling et al. (2010) and Tait et al. (1989) to suggest the presence of moderators. Although some moderators have been supported in prior meta-analyses (e.g., type of SWB measure and whether the job satisfaction measure was a global or composite measure), these moderators have tended to be measurement oriented and have rarely focused on contextual variables. In recent years, management research has underscored the importance of considering context, such as changes in the workplace over time, which can affect the meaning of relationships between variables (Johns, 2018). Thus, a second contribution of this study is the examination of several, previously unexamined contextual variables. Specifically, this study examines time-period and occupational characteristics as moderators.

The present study examines three previously unexamined contextual moderators of the relationship between job satisfaction and SWB, in time period, hours worked, and occupational complexity. As noted by Johns (2006), context has often been ignored in the management research, yet can play a critical role in shaping the relationship between variables. These variables were chosen as they directly correspond to key changes in the nature of work. First, the year the data were collected is examined to determine whether the relationship between job satisfaction and SWB has changed over time. To the extent that changes in jobs have occurred

over time, year can become a useful surrogate for the broader macro context (Johns, 2018; Wegman et al., 2018). In addition, there is evidence that, on average, jobs are more complex in recent years (Wegman et al., 2018), the number of middle-skill jobs has decreased, and the economy has polarized into high- and low-skill jobs (Autor & Dorn, 2013). Given these changes, it is important to understand the impact of job satisfaction on SWB of the average worker as well as those in both lower skill and higher skilled jobs. Likewise, there is evidence that the amount of time spent working has substantially increased over the years. To the extent that hours worked gives an indication of how central work is in day-to-day life, a change in hours worked could potentially be associated with a shift in the impact of job on life satisfaction. Together, this set of moderator analyses will help to understand how the impact of job satisfaction on SWB has increased over time.

Next, the demographics of the workforce have also shifted over time. This present study presents a large-scale analysis of the influence of three demographic moderators on the relationship between job satisfaction and SWB. As with the contextual moderators, these correspond to variables that have changed in the U.S. workforce and thus, are particularly salient to study. Specifically, race, gender, and age are examined as moderators of the relationship between job and life satisfaction. As the workforce has become more diverse, more female, and older (Cheng et al., 2020), there has been increasing attention on the experiences of these workers. Specifically, race has not been considered as a demographic moderator in past large-scale studies of the job satisfaction-SWB relationship. Similarly, gender has not been examined in a meta-analysis since Tait et al. (1985), where the authors found that there were no differences between men and women on this relationship in studies published after 1974. In addition, a review of the relationship between job and life satisfaction by Rain et al. (1991) indicated that

more focus on age, or life stages, was necessary. Consistent with the increased attention on changing workforce demographics, this study will provide large scale analyses of how, if at all, the impact of job satisfaction on SWB differs between men and women, older and younger workers, and black versus white workers.

A third overarching question addressed by this study will be to examine whether the importance of different facets of job satisfaction on SWB have changed over time. Facets of job satisfaction have been explored previously in Bowling et al.'s (2010) meta-analysis, where they found that satisfaction with pay, supervision, co-workers, pay, and promotion had differential relationships with life satisfaction and happiness. The overlap between different facets of job satisfaction and life satisfaction can give an indication of the relative importance of different aspects of the job to one's satisfaction with life. However, the number of relevant studies included was relatively small ($k= 10-11$). Thus, this meta-analysis will provide updated and more robust estimates of these relationships. Also of importance, as the workforce has changed then the importance of these facets has potentially changed over time. Thus, by examining time as a moderator of this relationship, it will be possible to develop inferences concerning how the relative importance of different facets of job satisfaction on SWB has changed in recent years.

In sum, this study will advance the understanding of the relationship between job and SWB in three primary ways. First, an updated meta-analytic review is provided, and this is supplemented with the results of a large-scale primary study. Next, three previously unexamined contextual moderators and four demographic moderators, including three previously unexplored moderators, will be examined. Third, potential changes in the association between facets of job satisfaction and life satisfaction will be examined to determine whether the importance of some facets have changed over time. Together, these analyses will provide a greater understanding of

the impact of job satisfaction on life satisfaction in the modern world of work. These questions will be addressed using two large-scale data sources. First, a meta-analytic database, composed of studies spanning from 1957 to 2020, will be used. Second, data from the General Social Survey (GSS) will be used to supplement and replicate the meta-analytic findings. The GSS is a nationally-representative, repeated cross-sectional survey design which will allow me to examine moderators previously unexamined in large-scale studies of this relationship.

Table 1. Summary of prior meta-analyses on job satisfaction and SWB

Meta-analysis	Focal Question	Moderators of the Relationship	<i>k</i>	$\rho_{Job\ Satisfaction-SWB}$
Tait, Padgett, & Baldwin (1989)	What is the relationship between job and life satisfaction? Also considered moderation by gender and for studies published before and after 1974.	Job satisfaction, life satisfaction, gender, and time (dichotomous)	57	.44
Bowling, Eschleman, & Wang (2010)	What is the relationship between SWB and job satisfaction? Included happiness, life satisfaction, affect, and facets of job satisfaction. Also examined the causal relationship from job to life satisfaction and vice versa.	SWB variable (life satisfaction, happiness, positive affect, and negative affect) and facets of job satisfaction	53	.48
Gonzalez-Mulé, Carter, & Mount (2017)	What is the relationship of general mental ability with both job satisfaction and life satisfaction? Used a meta-analytic structural equation model with Tait et al. (1989)'s estimate*.	Job satisfaction, life satisfaction, general mental ability, emotional stability, extraversion, income, and job complexity	33	* β =.29
Steel, Schmidt, Bosco, & Uggerslev (2019)	Does the relationship between life and job satisfaction hold after controlling for personality? The correlation between job and life satisfaction was obtained from metaBUS analyses but was not corrected**.	Job satisfaction, life satisfaction, neuroticism, extraversion, openness, agreeableness, conscientiousness, psychoticism, and defensiveness	140	** r =.39

CHAPTER 2

LITERATURE REVIEW

Subjective Well-Being, Happiness, and Life Satisfaction

SWB is a broad category of pleasant and unpleasant emotions or affect, along with broad assessments of satisfaction with domains including work, family, leisure, health, finances, oneself, and who one associates with (Diener et al., 1999). According to Bowling et al. (2010), subjective well-being (SWB) is inclusive of life satisfaction, happiness, the presence of positive affect, and the absence of negative affect. Life satisfaction is a general, cognitive assessment of the quality of one's life and can indicate how happy a person is, as it is considered that happiness requires total satisfaction with life as a whole (Diener et al., 1985). Within Erdogan et al.'s (2012) review of the life satisfaction literature, life satisfaction is a key indicator of SWB along with the presence of positive affect and the absence of negative affect. Erdogan et al. indicate that SWB is the most accepted assessment of happiness within the organizational literature. Most researchers would agree that life satisfaction is related to happiness (e.g., Gonzalez-Mule et al., 2017) and SWB (e.g., Diener 1984). Within this study, I use primarily use the term SWB, but it is used interchangeably with happiness and life satisfaction in the organizational literature (Steel & Ones, 2002; Judge & Kammeyer-Mueller, 2011). Consistent with this, previous reviews of the SWB literature have established life satisfaction and affect as either indiscriminate from one another or else distinct but similar components of SWB (Lucas et al., 1996; Diener et al., 1999). Bowling et al. (2010) suggested, based on their meta-analytic results, that life satisfaction, happiness, and positive affect were like one another but distinct from negative affect. More

recent meta-analyses, that do not look at job satisfaction, have included happiness as a measure of SWB alongside life satisfaction (e.g., Capaldi et al., 2014; Bartels, 2015). Below, I review meta-analytic evidence on potential differential relationships between job satisfaction and SWB.

Prior Meta-analyses on the Relationship between Job Satisfaction and SWB

Job satisfaction remains the most popular job attitude to explore in the organizational literature over the past century (Judge et al., 2017). It is an evaluation about how one feels about their job, which be separated into judgements about one's job as a whole or facets of their job, e.g., pay, supervision, or co-workers. Job satisfaction is tied to various job outcomes, such as performance, productivity (Judge et al., 2001), and counterproductive work behaviors (Kish-Gephart et al., 2010). As one of the more commonly examined work-related attitudinal variables, the relationship between job and life satisfaction provides an important index of the impact of one's job on one's overall satisfaction with life. To the extent that life satisfaction is associated with positive outcomes such as reduced cardiovascular mortality (Chida & Steptoe, 2008), better sleep (Brand et al., 2010), reduced burnout (Haar & Roche, 2010), and generally better health (Fujita & Diener, 2005), one's job might likewise affect these global health outcomes.

The relationship between job and life satisfaction is typically explained in the part-whole theory, or that there is a causal relationship from job satisfaction to SWB because job satisfaction is a subdimension of SWB (Judge & Locke, 1993). Bowling et al. (2010) found evidence for a reciprocal relationship between SWB to job satisfaction, with the relationship from SWB to job satisfaction being stronger. This was found by looking at studies which measured job satisfaction and SWB at Time 1 and 2 intervals. In addition, the spillover hypothesis explains that work positively spills over into general life domains, evidenced in the positive correlation found

between life and job satisfaction. There is little question that they are related, but now I move forward by explaining how the changing nature of work has impacted this relationship.

To date there have been four meta-analytic reviews of the relationship between job satisfaction and life satisfaction. Tait et al. (1989) was the earliest meta-analysis, although it was preceded by several reviews which considered the relationship between job and life satisfaction (e.g., Rain et al., 1991; Rice, Near, & Hunt, 1980). In contrast with the conclusions of earlier narrative reviews, Tait et al. (1989) concluded that, job and life satisfaction were relatively strongly related with an estimated rho of .44 based on 34 independent samples. As I discuss below, this meta-analysis also examined several moderators relevant to the present review.

Bowling et al. (2010) improved upon this study by including happiness, positive affect, and negative affect as part of the facets of SWB (which includes life satisfaction). Bowling et al. found a stronger relationship between job satisfaction and life satisfaction than was found in the Tait review ($\rho=.48$). A key contribution of the Bowling review was the expansion of life satisfaction to include other elements of subjective well-being including happiness. This was due in part to arguments that life satisfaction is a cognitive dimension of SWB, but happiness is a affective dimension that is similar in terms of appraisal of one's life (Diener et al., 1999). Although only 15 samples examining happiness were included, Bowling et al. found that happiness and job satisfaction carried a strong relationship of $\rho=.43$. In addition, Bowling is the only meta-analysis to date to have examined the facets of job satisfaction in predicting SWB, e.g., satisfaction with pay and promotion. However, each of these meta-analyses was characterized by a relatively small number of samples ($k=2-11$). Thus, one goal of this meta-analysis will be to provide more robust estimates of the relationships between job satisfaction and happiness and the facets of job satisfaction and life satisfaction.

The next two meta-analyses were less concerned about the nature of the bivariate relationship and instead were focused on moderators of the relationship between job and life satisfaction. Gonzalez-Mulé et al. (2017) examined the indirect and direct effects of general mental ability (GMA) on the job-life satisfaction relationship. Their main finding was there are small correlations between GMA and both life and job satisfaction, but most relevant to the present study is the relationship reported between job and life satisfaction ($\beta=.29$) within their meta-analytic structural equation model which includes other variables such as income and job complexity as mediators between GMA and job and life satisfaction. The authors of this study acknowledge that the relevant data included within their meta-analysis comes from Tait et al. (1989; $\rho=.44$; $k=57$) and so do not necessarily contribute to updating the known relationship between job and life satisfaction. Steel et al. (2019) takes a top-down perspective (e.g., individual characteristics are stronger factors in this relationship) in examining the job-life satisfaction relationship, again not including happiness as they consider the effects of personality (i.e., the Big Five). After controlling for personality, Steel and colleagues reported $r=.37$ ($k=140$) for job satisfaction and life satisfaction, which is smaller than the previous estimate of Bowling et al. (2010). It should be noted that within this study's meta-analytic SEM model, the original estimate of $\rho=.48$ was used from Bowling et al. (2010). Within these meta-analyses, contextual moderators have not been accounted for and so allow this study an opportunity to further contribute to the literature.

This study focuses on how work affects SWB due to the increasing impact that work has on American lives. By approaching this meta-analysis from a bottom-up perspective, or how attitudes from one domain affect another, I can direct attention towards changes that influence the average American worker, such as how increasing work hours may spillover into non-work

life. These changes have broad implications for how Americans are satisfied in general, both positively and negatively. For example, a stronger relationship for job-life satisfaction over time can mean benefits for spillover but also carries the opposite consideration, that more time spent at work could influence increased negative spillover. Thus, this meta-analysis is necessary to not only improve on previous meta-analyses but also to better understand the changes in work that Americans are subject to and how it affects their lives.

Chapter 3

THE PRESENT STUDY

Subjective well-being here is an overall evaluation of one's life and is here inclusive of the terms life satisfaction, positive affect, and happiness. SWB is most often associated with job satisfaction through the spillover hypothesis and bottom-up models, as opposed to the compensation and segmentation hypotheses (Judge & Watanabe, 1994). The compensation hypothesis offers that people look for rewards in one domain to compensate for anything lacking in the other. Typically, this would be supported by a negative correlation between SWB and job satisfaction. The segmentation hypothesis would indicate that work and non-work domains are separate from one another. This hypothesis implies that there is no real connection between SWB and job satisfaction, as they are independent of one another. Spillover theory posits that what occurs in one domain will spill over into the other, such as work life spilling over into non-work life. This seems to be the most common way for SWB and job satisfaction to affect one another based on Judge & Watanabe (1994). In other words, satisfaction within the work domain positively spills over into general life domains. The bottom-up approach is that life satisfaction is a function of satisfaction in other life domains, such as work. In other words, being content at work would lead to greater satisfaction generally in life. For example, being content at work would indicate satisfaction in life but being stressed at work could negatively influence life satisfaction (Erdogan et al., 2012). Typically, the bottom-up approach is applied when examining job and life satisfaction connections and is the one used here (e.g., Bowling et al., 2010). This is opposed to the top-down approach where life satisfaction is a function of other stable traits. For

example, the top-down approach is used in Steel et al. (2019) to postulate that people who score higher on neuroticism may be more inclined to feel dissatisfied with their lives due to being predisposed to experiencing negative emotions.

Due to the nature of jobs being a large part of adult lives, i.e., working US adults spend more time working than any other activity besides sleep (Bureau of Labor Statistics, 2019), it is expected that job satisfaction will have a large impact on life satisfaction. Due to the nature of spillover, it can be extrapolated that a decline in job satisfaction would contribute to a decline in life satisfaction. With the positive spillover hypothesis (Rain et al., 1991) in mind, and based on substantial meta-analytic evidence from the past (see Table 1), positive experiences at work should have a positive impact in the domain of subjective well-being.

Hypothesis 1: Job satisfaction and SWB will have a positive relationship.

Although past meta-analyses stemming from other literatures usually collapse across different elements of SWB (life satisfaction, happiness, and positive affect) to form an overall SWB variable (e.g., Howell & Howell, 2008; Luhmann et al., 2012; Ngamaba et al., 2018), Bowling et al. (2010) examined differential relationships between job satisfaction and the facets of SWB. Their meta-analysis showed that job sat was similarly related to life satisfaction, positive affect, and happiness, and concluded that “[a]s a whole, this may suggest that life satisfaction, happiness, and positive affect are similar to each other, but distinct from negative affect (Bowling et al., 2010: 924)”. However, the associations between job satisfaction and positive affect and happiness were based on a relatively small to moderate number of independent samples (i.e., $k = 47$ for PA and $k = 15$ for happiness). Thus, a secondary purpose of the meta-analysis will be to update the Bowling et al. (2010) review and to re-evaluate the potential for differential relationships between job satisfaction and the three facets of SWB (life

sat, happiness, and positive affect) explored here. Importantly, the GSS does not directly measure life satisfaction but instead measures another element of SWB, happiness. Documenting similar relationships between job satisfaction and life satisfaction and happiness in the meta-analysis will provide strong justification for the comparability of the findings between the meta-analysis and the GSS.

Job satisfaction can lead to changes in the explored domains that are life satisfaction, SWB, and happiness (Judge et al., 1998). To summarize, one of the goals of this meta-analysis will be to clarify and update differences between happiness, life satisfaction, and positive affect by summarizing correlations between measures used and their relationship with job satisfaction. Bowling et al. (2010) originally examined life satisfaction and happiness, while using SWB and life satisfaction interchangeably. This interchangeability of SWB and life satisfaction is likely due to how a popular measure of life satisfaction, i.e., the Satisfaction with Life scale (Diener et al, 1985), was created by researchers of SWB although the scale itself narrowly focuses on global life satisfaction. An issue brought up in Bowling et al. (2010) is the number of studies that include a measure of life satisfaction ($k=53$) and happiness ($k=15$) are substantially disproportionate to one another, although the corrected correlations are similar ($\rho=.48$ and $\rho=.43$, respectively). Happiness, life satisfaction, and positive affect may be similar according to previous meta-analyses but the lack of data on the relationship between happiness and job satisfaction brings up the question of whether it is indeed the same facet of SWB as life satisfaction. Happiness can be considered a part of the affective or emotional component of SWB as opposed to life satisfaction which includes cognitive components of SWB (Ryan & Deci, 2001). Thus, I explore the question of whether job satisfaction will have a similar relationship with the facets of SWB explored, namely happiness, life satisfaction, and positive affect.

Research Question 1: Will job satisfaction have differential relationships with life satisfaction, happiness, and positive affect?

Moderators

A primary advantage of analyzing the relationship using both a meta-analysis and a large scale, repeated cross-sectional database is the ability to examine moderators that would not be possible with either dataset separately. Specifically, meta-analyses are often unable to examine moderators when relevant data go unreported in primary studies (e.g., age, race, income are rarely examined in meta-analyses). Further, examining moderators using a large-scale primary data source such as the GSS will provide a more powerful analysis that could be provided in a typical primary study. The present study will examine moderators of the relationship between job satisfaction and SWB using both the meta-analytic database and the GSS when possible and will examine additional moderators unique to the GSS when the meta-analytic database provides insufficient data to facilitate moderator analyses.

Although the relationship between job satisfaction and SWB has been the subject of several meta-analytic summaries, existing meta-analyses have rarely attended to more substantive moderators of this relationship. Although some have been suggested as important moderators of the relationship between job satisfaction and SWB, many have not been previously tested or existing primary studies have yielded inconsistent results (Rain et al., 1991; Unanue, et al., 2017). Thus, the primary purpose of this study is to provide the most comprehensive and large-scale analysis of moderators of the relationship between job satisfaction and SWB.

In particular, this study focuses on moderators that reflect how both the US workforce and workplace has changed in recent decades. In other words, as work context has changed over

the past several decades (Hoffman et al., 2020; Wegman et al., 2018), there is a need to examine moderators which reflect this change. This study examines both contextual (i.e., job complexity, education, and time) and individual (i.e., income, hours worked, sex, age, race, and ethnicity) moderators of the relationship between job satisfaction and SWB. In doing so this study will uncover *when* and *for whom* job satisfaction has a particularly strong impact on SWB.

Time

Several aspects of the workplace have changed over time, such as job polarization (Autor & Dorn, 2013), wage stagnation (Bergeson et al., 2014), and technology (White et al., 2020). Year can be a useful summary variable for broad contextual changes that have occurred over time. Although the various ways in which work has changed are too numerous to review here, several changes suggest that work will play a more central role in more recent years. When the economy consisted of a greater number of manufacturing-oriented jobs, it would have literally been impossible for many employees to take their work home with them. In contrast, the shift to more service and knowledge-oriented jobs (Autor & Dorn, 2013), along with rapid advances in information technology, has given many workers the ability to complete their work from anywhere at any time. With such flexibility comes the potential for greater spillover from work to non-work life domains. This is evident both in terms of hours spent at work in the form of a small increase in hours worked on average but especially evident in hours spent working from home or during non-work hours (Bureau of Labor Statistics, 2003; 2019). Indeed, as anecdotal evidence of the increasing impact of work on individuals' lives overall, the past fifteen years have seen an explosion of interest in work-life conflict and the propensity of work to spill over into one's private life (e.g., Michel et al., 2009; Shockley & Singla, 2011; French et al., 2018). Together, to the extent that on average, people are spending more time working and the

boundaries between work and home life have become increasingly blurred, it stands to reason that work will play a greater role in employees' overall sense of subjective well-being. Thus, I hypothesize that the relationship between job satisfaction and SWB will be moderated by time, such that the relationship will be stronger as time passes.

Hypothesis 2: Year of study will moderate the relationship between job satisfaction and SWB, such that the relationship will be stronger with increased years.

Job Complexity

Job, or occupational, complexity is the level of skill needed to perform successfully within one's job (Hollingshead, 1974). In other words, job complexity is associated with how mentally demanding a job is and the number of unique skills needed for effective performance. As noted previously, a well-documented change is the skill polarization of the US economy, with middle skill occupations being replaced with high and low skill occupations (Autor & Dorn, 2013). At the same time, on average, there is a shift toward greater complexity (Wegman et al, 2018) and this shift has occurred both within and across occupations (Autor et al., 2003). Given the increased prevalence of high- and low-skilled jobs, as well as the general failure of management research to conduct research in low skilled samples, it is important to consider the impact of jobs on the SWB of employees across the spectrum of job complexity.

Although little research has examined the moderating effect of complexity on the job satisfaction-SWB relationship, several studies have examined variables related to complexity. Yet much of this research was conducted in the 1970's before occupational polarization had begun and much has yielded mixed results. Previously, job importance was considered as a moderator of the life satisfaction-job satisfaction relationship. The rationale is that for individuals in more mission-critical or socially valued jobs, one's work will be a more important

part of their identity and have a greater propensity to spill over into their non-work life. On the other hand, those in lower complexity jobs are possibly less likely to take their work home with them or will derive satisfaction from other aspects of their life. Consistent with this idea, past studies and reviews have examined related variables and found some, albeit mixed, evidence of a moderating effect. For instance, London et al. (1977) and Rice et al. (1980) found that job satisfaction has greater impact on overall life satisfaction for those in college graduate positions than non-graduates. Given that educational level is often used as a surrogate for complexity, this is suggestive that job satisfaction will be a stronger predictor of SWB in more complex jobs. In addition, studies examining job importance have supported moderation of the job-life satisfaction relationship (Iris & Barrett, 1972). The measures of job importance seem to capture aspects outside of job complexity, i.e., “time consumed by work”. Thus, I expect job complexity to have a moderating effect on the relationship between job and life satisfaction in that the more complex the job, the stronger the relationship.

Hypothesis 3: Job complexity will moderate the relationship between job satisfaction and SWB, such that the relationship will be stronger with higher job complexity.

Education

In the past two decades, the mean level of education of the US labor force has dramatically increased (International Labor Organization, 2015). Thus, it is important to examine the impact of work on the life satisfaction of more educated workers. The primary mechanisms through which education level is expected to moderate the relationship between job satisfaction and SWB is like those discussed with job complexity. This stands to reason given that education level needed to hold a job is often used as an indicator of job complexity. As I noted previously, education level was examined as a moderator in a handful of primary studies in the 1970s

(London et al., 1977; Rice et al., 1980). The rationale is that more educated workers are more likely to be in a professional position (e.g., managers) and have a more central work identity or job involvement (Kaufman, 1982). Due to this centrality of their work identity, it stands to reason that their evaluation of satisfaction at work would have a greater impact on their overall well-being.

In support of this notion, Bamundo & Kopelman (1980) provide evidence that education moderates the job and life satisfaction relationship, more so than did occupation as a moderator. Rain et al. (1980) reviews several moderators of the job-life satisfaction relationship and found that white-collar and college graduate respondents were more likely to have their job satisfaction have a greater impact on life satisfaction, possibly due to the greater role their job had in their life as a result of their education. Thus, I expect education to moderate the relationship between job satisfaction and SWB, to the degree that more advanced education increases this relationship.

Hypothesis 4: Education will moderate the relationship between job satisfaction and SWB, such that the relationship will be stronger for those with more education.

Income

Associated with education and job complexity, there is evidence for income moderating the relationship between job satisfaction and SWB. There is a debate about whether income can buy happiness, and this lends controversy to how exactly income can moderate the relationship between job satisfaction and life satisfaction (Georgellis & Lange, 2012). Income increasing could go together with increasing quality of life (Fahey et al., 2005), enhancing the spillover relationship between job satisfaction and SWB. Another side to this argument is whether income could affect the relationship between job and life satisfaction by reducing spillover through increased material aspirations, resulting in decreased SWB (Easterlin, 2001). In a large-scale

analysis of the association between life and job satisfaction of over 10,000 respondents in Europe (Georgellis & Lange, 2012), it was found that as income increases, the relationship between job and life satisfaction becomes stronger. This was more pronounced for those participants with the upper thresholds of income.

Due to more complex jobs requiring higher education, one could expect higher income associated with working in those occupations. Working a more complex, highly demanding position has been associated with higher income and thus, being better able to provide for basic and complex needs in one's non-work life (Gonzalez-Mulé et al., 2017). This could lead to moderation of the job satisfaction-SWB relationship where higher income allows those who are more satisfied at work to continue spilling over into their general well-being. As opposed to those with lower incomes being unable to enhance their well-being through increased job satisfaction due to unmet basic needs, such as unpaid bills, debt, or lack of material satisfaction, Thus, I expect income to moderate the relationship between job and life satisfaction and enhance the relationship with higher income.

Hypothesis 5: Income will moderate the relationship between job satisfaction and SWB, such that the relationship will be stronger with higher income.

Hours Worked

Americans are spending an increasing amount of time at work, i.e., an average of 8.5 hours for full-time working adults in 2019 (Bureau of Labor Statistics, 2019), with an increase of 0.6 hours a day from 2003 (Bureau of Labor Statistics, 2003) on regular weekdays. Overall, full-time American workers spend 42.5 hours at work on the weekdays and 5.53 hours on the weekends and holidays. Thus, it is especially important to understand the impact of work on well-being for individuals who work more hours. With an increasing use of technology,

researchers (White et al., 2020) have pointed out concerns that work and non-work life are increasingly inseparable. The hours cited above are simply those spent at work, not including time spent traveling to and from work, completing additional work at home, or even thinking about work. Steel et al. (2019) points out that being satisfied with time spent at work is inherently valuable, to the extent that individuals spend more time involved with work should have greater opportunity for positive spillover into their non-work life. In addition, Rice et al. (1985) argue that increased time spent at work indicates a greater level of importance of the activity to an individual. Although hours per week worked was not supported at the time as a strong moderator, Americans have clearly increased the amount of time spent at work since the 1973 dataset used in Rice et al. (1985). Thus, based on the idea that when one spends more time doing something satisfying it will have a greater impact on one's well-being, I hypothesize that hours worked will moderate the relationship between job and life satisfaction to the extent that more hours worked creates a stronger relationship.

Hypothesis 6: Hours worked will moderate the relationship between job satisfaction and SWB, such that the relationship will be stronger with increased hours worked.

Gender

In recent decades, the percentage of women within the workplace has increased to over 50% up from about 30% in 1950 (Bureau of Labor Statistics, 2002; 2021). The notion that gender moderates the job-life satisfaction relationship goes as far back as Brayfield et al. (1957), where they provide evidence that women find their work a less important factor in their lives than men. Looking at several measures of job satisfaction and general satisfaction, there were no significant correlations for women. Issues with this early analysis is that the sample was relatively small (N=93), and the male participants occupied high-level positions while the female

participants worked clerical positions. Although this may have been more representative of the differences in positions occupied by either gender at the time. It stands to reason that under these circumstances, work would have a reduced impact on one's overall well-being.

However, in more recent years, changes in women's lives suggests that the relationship between job satisfaction and SWB has changed. As dual-income families have become more commonplace, the work-family interface has shifted to account for this change (Powell & Greenhaus, 2010) and is constantly changing over time. Specifically, gender moderates the relationship between family- and work-related decisions due to the complex relationship of gender roles, work, and family (Powell & Greenhaus, 2010). Based on this evidence, gender should have a greater impact on the relationship between work and non-work. Women have also made gains in attaining leadership roles (Cheng et al., 2020), professional jobs, and college degrees (DiPrete & Buchmann, 2013). Due to this, they are more likely to contribute to a greater portion of their family's total income. It seems likely that in more recent years, work is more central to women's lives and thus stands to reason that job satisfaction and SWB will have a stronger relationship. Consistent with this argument, Tait et al. (1989) provided evidence that the work-nonwork relationship was greater for men than women prior to 1974, however this difference disappears in studies published after 1974. Although an important finding, research has not considered the moderating effect of gender on the relationship between job satisfaction in well-being since this meta-analysis in 1989. Thus, it is important to re-examine this question using both more recent data and a more comprehensive data set. In addition, Rain et al. (1991) points out that it is still important to consider sex as a moderator among other potential moderators of the job-life satisfaction relationship due to the increasing presence of women in

the workplace at the time. I put forth the question of whether gender moderates the relationship between job satisfaction and SWB considering the aforementioned evidence and reasoning.

Research Question 2: Will gender moderate the relationship between job satisfaction and SWB?

Age

The next demographic moderator I examine is age. In terms of retirement, Americans are doing so in large numbers after driving the trend for retiring at much later ages. The reasons behind retiring later could be economic, e.g., recessions or increased cost of living, or based on policy changes in recent years, e.g., Social Security reform increasing the age needed for receiving benefits (Cheng et al., 2020). Other reasons could include work remaining central to one's identity even at retirement ages as Americans continue to live longer. With this in mind, age is an important moderator to consider in the job satisfaction-SWB relationship as America shifts towards an older workforce.

Some past research has examined the effect of age on the job satisfaction-SWB relationship, for example in a study of 911 heads of household, Bamundo & Kopelman (1980) found that age moderated the job-life satisfaction relationship to a curvilinear degree. That is, the job-life satisfaction relationship was strongest for those in the 40-49 and 60-69 age categories than the 30-39 or 50-59 age categories. They considered the notion that as one ages, individuals will further commit themselves to their job. In addition, evidence of a "Mid-life Transition" (Levinson, 1978) was used to explain why individuals in their forties may experience more turbulence in their life stage, increasing the degree to which age moderates the job-life satisfaction relationship, i.e., strengthens the relationship. Although age is a moderator that has been cited as potentially important to the job satisfaction-SWB relationship (Unanue et al.,

2017), it remains rarely tested as a moderator in this relationship. Perhaps as people age, they find that their job becomes more central to their life, or else more important. Age could possibly moderate the job satisfaction-SWB relationship similarly to other moderators proposed such as income, education, or job complexity, whereas workers progress in age they are more likely to satisfy higher levels of these other variables. With these potentials in mind, I explore the question of whether age moderates the relationship between job satisfaction and SWB.

Research Question 3: Will age moderate the relationship between job satisfaction and SWB?

Race and Ethnicity

The United States workforce has become increasingly diverse over the past century, with 91.7% of the population increase from 2000 to 2010 attributed to racial minorities (Cheng et al., 2020). Given the increase in diversity and the general underrepresentation of non-white workers (Roberts et al., 2020), it is critical to more closely investigate whether the interplay between job satisfaction and subjective well-being of non-white workers. Likely due to the way that studies report on race (e.g., Roberson et al., 2017; White vs. non-White), prior meta-analyses have not accounted for how race affects the relationship between job satisfaction and SWB. Although I will attempt to investigate this question with a meta-analytic database, the data from the GSS will allow for a more thorough analysis. Unfortunately, though, the GSS only gives the option to self-identify as White, Black, or Other when it comes to race. To supplement this, I will also compare those who identify as Latino/Hispanic versus those who don't as the GSS began adding this option in 2000.

Particularly, being Black or Latino in America comes with several forms of inequality, such as persistent lack of representation in leadership (Rosette et al., 2008), pay disparities

(Hernandez et al., 2019), and both overt and covert discrimination (McConahay, 1986). All of this and more can potentially moderate how satisfied one is within their work and overall life. Those who identify as racial and ethnic minorities may also be more inclined to segment their work and non-work life, moderating the relationship for non-White workers similar to how gender moderated this relationship in Tait et al. (1989). For example, Black workers report spending time code-switching in order to avoid discrimination or repercussions of their White colleagues stereotyping them (McCluney et al., 2019). In other words, based on how well one fits in at work while identifying as a racial/ethnic minority, I may see that race or ethnicity weakens the relationship between job satisfaction and SWB. Thus, I explore the question of whether race and ethnicity moderate the job satisfaction-SWB relationship.

Research Question 4: Will race moderate the relationship between job satisfaction and SWB?

Research Question 5: Will ethnicity moderate the relationship between job satisfaction and SWB?

Marital Status

The last demographic moderator I examine is whether someone is married or not, or marital status. Marriage may be another factor that affects both the work domain and general happiness, considering the bottom-up perspective in that perceptions of how job satisfaction relates to SWB is impacted by overall evaluation of satisfaction in all domains (Steel et al., 2019). More broadly, evidence does point to married Americans being happier (Blanchflower & Oswald, 2011), higher life satisfaction being connected to a higher likelihood of marriage (Luhmann et al., 2013), and marriage affecting the work-family interface (Heller & Watson, 2005). In general, if married Americans are typically happier, this positive evaluation of life may

have a positive bearing on the job satisfaction-SWB relationship. Being married may moderate the job-life satisfaction relationship through the virtue of being better able to provide for needs of non-work domain through income, increasing the likelihood of discussing the positive or negative impacts of work, or even suppressing the negative effects of work by having support in a partner. In support of this, Benin & Nienstedt (1985) found that there is an interaction between dual-income households and job satisfaction in producing happiness, in other words there is an effect of job satisfaction on happiness that is impacted by marriage. This same effect was not found for single-income households, but the proportion of dual-income households has substantially increased in the US (Byron, 2005; Raley et al., 2006). Thus, I expect marital status to moderate the relationship between job and life satisfaction.

Hypothesis 7: Marital status will moderate the relationship between job satisfaction and SWB, to the extent that the relationship will be stronger for married individuals.

Three Way Interactions with Year

Although I do not develop specific hypotheses, this study will also examine three-way interactions with each of the above moderators and year as the interacting variable. As the primary interest of this study is to understand how the relationship between job satisfaction and SWB has changed over time and the nature of this relationship in the modern world of work, it is important to examine if this relationship is stronger or weaker in recent years and for growing segments of the labor force (e.g., women and in complex occupations). Doing so will provide the clearest picture of the impact of job on life satisfaction in the modern world of work.

Facets of Job Satisfaction and Life Satisfaction

Bowling et al. (2010) found that facets of job sat had differential relationships with life satisfaction. Specifically, global job satisfaction had a stronger relationship with life satisfaction ($\rho=.48$) than facets of work itself ($\rho=.21$), supervisors ($\rho=.20$), co-workers ($\rho=.23$), pay ($\rho=.21$) and promotion ($\rho=.14$). Bowling et al. suggested that correlations of facets were due to life and job satisfaction being measured at a similar level of specificity (Fishbein & Ajzen, 1974). Importantly, relatively few studies examined the associations between each facet of job satisfaction and their relationship to life satisfaction ($k=10-11$) and happiness ($k=2-3$) though (Bowling et al., 2010). An additional goal of this study will be to provide more robust analyses of these relationships. Specifically, to the extent that the work context has changed in recent years, it is possible that different aspects of the job are more (or less) important to employee's subjective well-being.

First, to the extent that work has become more interdependent, and cooperation has become increasingly important (Wegman et al., 2018), it seems likely that satisfaction with supervisor and coworkers will have likewise become more important predictors of life satisfaction. For instance, if one is working in a situation where cooperation is not required, then it seems unlikely that having a good relationship with coworkers would have a large impact on someone outside of work. On the other hand, to the extent work is increasingly interdependent, one's coworkers would be expected to have an increased impact on well-being. Indeed, interpersonal conflict is listed as one of the most important stressors at work (Nixona et al., 2011) and teams are one of the most popular topics in research on work (Mathieu et al., 2017). Thus, I expect that satisfaction with interpersonal relationships at work (supervisors and coworkers) will be increasingly important antecedent of life satisfaction.

Next, since the 1970s, US workers have seen their wages remain flat in terms of growth, but the cost of living has increased independent of this wage stagnation. This is known as a middle-class squeeze (Bergeson et al., 2014), where workers' wages, especially those lower- and middle-skilled workers, are unable to keep up with increasing inflation. When one adds in accumulating debt from student loans (Houle, 2014) and underfunded pension plans (Reuters, 2020), one can see that US workers are overall earning less net income and increasingly responsible for their own retirement. Thus, I expect extrinsic rewards, such as pay and the opportunity to advance, are increasingly important over time and will have a stronger relationship with life satisfaction.

Finally, the arguments for all moderators and facets made above make it likely that the facet of satisfaction with work itself will have a stronger relationship with life satisfaction over time. As work is expected to be increasingly central to one's life (Diefendorff et al., 2003), workers spend more time at their job, and jobs become intrinsically motivating over time, the connection between the work itself and life satisfaction should be stronger.

Hypothesis 8: Satisfaction with the work itself, supervision, coworkers, pay, and advancement will have stronger relationships with SWB in more recent years.

Chapter 4

METHOD

Study 1: Meta-analysis Method

Literature search and coding procedures

I used the reference section in Bowling et al. (2010) to identify relevant studies conducted prior to 2009, which included up to 130 studies from 1967 to 2008. I did not use the samples for which the sole focus was on negative affect and job satisfaction. To gather primary studies published since 2008, I first searched Google Scholar for studies published from January 2009 to December 2020. When searching I included the key terms: *job satisfaction*, *work satisfaction*, *employee satisfaction*, *life satisfaction*, *happiness*, and *well being*. I then expanded to searching multiple electronic databases, including GALILEO, PsycINFO, and Web of Science, to find journal articles, dissertations, theses, and conference presentations published from January 2009 to December 2020. In this search, I used the terms *job satisfaction*, *work satisfaction*, and *employee satisfaction* in combination with *life satisfaction*, *happiness*, *positive affect*, and *well being* as article key terms or subject areas. In all, this search yielded 512 potential articles, theses, dissertations, and conference presentations.

Criteria for Inclusion

To be included in the meta-analysis, samples had to be available in English. Second, the sample had to include working adults 18 years and older. Third, the study had to provide a correlation between at least one measure of job satisfaction (i.e., global job satisfaction, facet job satisfaction, or work satisfaction) and one measure of subjective well-being (i.e., global life

satisfaction, happiness, well-being, or subjective well-being). Based on the criteria for inclusion, 212 usable samples were found based on the search from 1967-2020.

Coding of Studies

Studies were coded for the following bibliographical information: year of publication and type of publication. Studies were also coded for the following sample information: sample size, sample demographics (i.e., % male, mean age, age standard deviation, % White, % Black, % married), organization and job tenure (in years; mean and standard deviation), hours worked (mean and standard deviation), job type (i.e., description of jobs used in sample), and nationality (i.e., what country was the sample based in). Finally, the following information about the methodology was also collected: whether the study was cross-sectional, the measure of job satisfaction used (i.e., citation), the measure of subjective well-being used (i.e., citation), whether a facet or global measure was used for job satisfaction, r between relevant variables, reliability (alpha) of the measures used, and the sample size. Correlation coefficients were collected as the primary measurement of interest. All studies were coded by at least 3 research assistants ($\alpha=.93$) and any disagreement on initial codes was resolved via discussion prior to submitting their results.

Whenever there are studies with multiple timepoints and the samples are not independent of one another, only the first time a relevant correlation is presented will be recorded. Additionally, whenever there are multiple measures of SWB used for the same sample, for example if both a correlation with life satisfaction and positive affect is recorded, these will be recorded in two ways. For the general SWB meta-analytic correlation, the measure's correlations will be averaged. For the independent correlations of job satisfaction with life satisfaction, positive affect, and happiness, they will be recorded independently and not averaged. Unlike

Bowling et al. (2010), I do not have a separate hypothesis for composite job satisfaction measures (e.g., reported composites of individual job satisfaction facets and the Minnesota Satisfaction Questionnaire; Weiss et al., 1967) and so will include those relevant correlations as part of the meta-analysis for the different measures of SWB and overall SWB.

Coding of Moderators

Year. Consistent with past meta-analyses using year as a substantive variable (e.g., Wegman et al., 2018), year is coded as the year the data were collected. If year of data collection is not reported, the year the data were collected is coded as two years prior to the publication of the study.

Job Complexity. The type of job(s) of the participants, or an occupation code, i.e., ooc10 code (United States Census Bureau, 2020), is collected from the description of the sample, and then coded using Hollinghead's Index (Hollingshead, 1957) as a rubric. This index groups occupations based on skill complexity, ranging from least complex (1) to most complex (9), but this was not conducted if: a) occupation was not described in the sample, b) it was not possible to distinguish the types of jobs included (e.g., a mixture of several occupations was sampled), or c) the occupation could not be matched on O*NET for the purpose of coding complexity. Due to low instances of this being reported within studies, this coding was simplified to a 1-3 scale. Furthermore, to aid in coding more recent occupations, I referred to O*NET's SVP ranges and Job Zones for guidance (O*NET Online, 2021).

Education. To code education, I used the mean number of years of education reported by participants, e.g., 12 years of education.

Income. Income was coded as the mean amount a working participant makes in a year.

Mean Sample Age. Age was coded as the mean years of age of the sample.

Sample Percent Male. Most studies provided either the percentage of the sample that is male or female, which is collected as percent male.

Sample Percent Race. Most studies provided at least the percentage of the sample that identified as White, but I also searched for the percentage of the sample that identified as Black or Hispanic/Latino.

Sample Percent Married. Marital status is coded as the percent of the sample that is currently married as opposed to widowed, divorced, separated, or never been married.

Hours Worked. Hours worked is coded as the average hours one works in a week, at all jobs.

Meta-analytic Procedures

This psychometric meta-analysis primarily follows the Hunter & Schmidt (2004) method. I compute a sample-weighted mean correlation and then correct said correlation for measurement error using the reported reliability in the original study, whenever available. Whenever a reliability estimate is not reported, I construct an artifact distribution using the average reliability coefficients reported in the primary studies and formulas by Hunter & Schmidt (2004). I then calculate 95% confidence intervals around each corrected correlation to test for significance, or when the confidence interval excludes zero.

Meta-analytic Moderator Analyses

To detect the presence of moderators of the relationship between job satisfaction and SWB, I calculate the percentage of variance across studies due to artifacts and a *Q* statistic. If the percentage of variance due to artifacts (i.e., sampling and measurement error) comes out to less than 75% (Hunter & Schmidt, 2004) and/or the *Q* statistic is significant (Sagie & Koslowsky, 1993), then there is potential moderation. Each of the moderators will be examined as a

continuous moderator using weighted least squared (WLS) regression with inverse sampling error weighting (Steel & Kammeyer-Mueller, 2002). Specifically, the relationship between job satisfaction and SWB will be regressed on each moderator variable separately. If moderator variables have heavy positive skewness, they will be first log or power transformed to an approximate normal distribution prior to the WLS regression analysis (Blume et al., 2010; Steel & Kammeyer-Mueller, 2002). To test possible three-way interactions with year, each variable will be mean-centered and an interaction term will be created by multiplying year by each moderator variable. Regression analyses for moderators will be conducted by regressing the correlation between SWB and job satisfaction onto the two main effects and the interaction term.

Study 2: General Social Survey Analyses

To further investigate moderators on the relationship between job satisfaction and SWB, data from the General Social Survey were used to supplement the meta-analytic results. The GSS is a nationally-representative, repeated cross-sectional survey of American attitudes that is conducted at least every other year from 1972 to 2018.

Unfortunately, meta-analysis is not well suited to examine many of the moderators of interest here. Specifically, much published research does not report sufficient information on several of the moderators of interest to sufficiently examine them. For instance, many studies do not include information on sample race, hours worked, or specific occupations. In addition, using sample-based characteristics to draw inferences about individual level relationships can be subject to an ecological fallacy. Thus, it is important to examine moderators at the individual level of analysis. For that, the General Social Survey provides a large, nationally representative sample (N= 44,949) over a 46-year time period (1972-2018). I leveraged the GSS to provide a parallel and complementary large-scale analysis of the relationship between job satisfaction and

SWB. The GSS asked questions related to both job satisfaction and happiness in the same administration 32 times over the 46-year time period.

Measures

Job Satisfaction. The GSS has asked the question, “On the whole, how satisfied are you with the work you do--would you say you are very satisfied, moderately satisfied, a little dissatisfied, or very dissatisfied?” Although single-item scales are generally viewed unfavorably, past studies have supported the value of single item measures of job satisfaction (Wanous et al., 1997; Nagy, 2002).

Happiness. Although the GSS does not ask questions related to life satisfaction per se, an item related to happiness has been included 32 times in the time span of the study. Thus, happiness was measured using a single item from the GSS, “Taken all together, how would you say things are these days--would you say that you are very happy, pretty happy, or not too happy?” Based on past research, life satisfaction and happiness are often used interchangeably (Pavot & Diener, 2007). Indeed, a past meta-analysis has shown that happiness and life satisfaction have approximately the same relationship with job satisfaction, $\rho=.43$ and $\rho=.48$ respectively (Bowling et al., 2010).

Moderators

Year. Year is coded as the year the GSS data were collected.

Job Complexity. Occupation codes, i.e., an occ10 code, is taken and coded using Hollinghead’s Index (Hollingshead, 1957) and the methods described above.

Education. To code education, I used the number of years of education reported by participants.

Income. Income is reported as the gross amount a working participant makes in a year. I used the “REALRINC” variable reported by the GSS, which accounts for inflation by estimating income in terms of 1986 dollars (Ligon, 1994).

Age. Age is reported as the participants years of age.

Gender. Gender is coded as a dichotomous variable, i.e., male or female. In this case, male was coded as 1 and female was coded as 2.

Race. The GSS data provides three options for race: White, Black, and Other. In this case, White was coded as 1 and Black was coded as 2. Other was not used in this comparison as it includes multiple other racial options.

Ethnicity. From 2000 onwards, the GSS asks whether participants identify as Hispanic or Latino. If participants answer yes to this, they will be coded as Hispanic or Latino. Hispanic/Latino participants are coded as 2 and non-Hispanic/Latino participants are coded as 1.

Marital Status. Marital status is dichotomously coded either currently married or widowed/divorced/separated/never been married. Married individuals are coded as 1 and non-married individuals are coded as 2.

Hours Worked. Hours worked is reported as the average hours one works in a week, at all jobs.

Moderator Analysis

For this analysis, the GSS data are examined using moderated multiple regression (MMR; Cohen et al., 2013) using best practices laid out by Aguinis & Gottfredson (2010). All continuous variables from the GSS dataset are mean-centered prior to entering them into the regression equation. Using moderated multiple regression, I will test whether each variable moderates the relationship between job satisfaction and life satisfaction by examining whether

the interaction term explains unique variances beyond the two main effects. I will also test the three-way interaction of each moderator with year on the relationship between job satisfaction and happiness using a test for slope differences developed by Dawson and Richter (2006).

Chapter 5

RESULTS

Meta-analytic Results: Relationship of Job Satisfaction with SWB

All meta-analytic procedures were conducted in R using the ‘psychmeta’ package (Dahlke & Wiernik, 2019). Table 2 presents a summary of correlations and descriptive statistics for all meta-analytic data and Table 3 presents a summary of the relationships between job satisfaction and life satisfaction, positive affect, and happiness. I report the mean sample size weighted correlations, estimated mean-corrected correlations, estimated standard deviations, 95% confidence intervals, and 80% credible intervals of ρ .

As reported in Table 3, in the combined analysis of collapsing across all three measures of SWB, job satisfaction is positively and strongly related to SWB ($\rho = .53$, $k = 212$). This provides support for Hypothesis 1 in that there is a positive relationship between job satisfaction and SWB. In meta-analyses separating the three SWB measures, life satisfaction ($\rho = .54$, 95% CI = .52-.55, $k = 143$), positive affect ($\rho = .48$, 95% CI = .44-.52, $k = 66$) and happiness ($\rho = .48$, 95% CI = .43-.52, $k = 23$) were significantly and similarly related to job satisfaction. Table 3 also provides the results for the 95% CI between job satisfaction and all measures of SWB. Life satisfaction, positive affect, and happiness overlap on the 95% CI for their respective ρ , answering Research Question 1 in that the three indicators of SWB did not significantly differ in their relationship with job satisfaction.

Meta-analytic Moderator Analyses

Table 4 presents the results of the weighted least squares regression conducted in R used to examine moderation. Each WLS model was fitted using a weight of $1/SD^2$ in order to give greater weight to samples with less error variance. As the 95% confidence intervals for ρ overlapped for each estimate of job satisfaction with life satisfaction, positive affect, and happiness, justification was provided for combining these variables in the moderator analysis. The correlation between job satisfaction and SWB was regressed on each moderator. Unfortunately for some of the moderator analyses the number of samples was relatively small, potentially reducing the power to detect significant effects. Consistent with Hypothesis 2, year moderated the relationship between job satisfaction and SWB, such that the relationship was stronger in more recent years ($\beta=.04$, $p<.001$, $k=212$), with a change in R^2 of .08 for year as a moderator (see Table 4). For illustrative purposes, I used the regression results to determine a predicted value for the correlation over the decades. The predicted mean r for 1970 was .29, .33 for 1980, .36 for 1990, .39 for 2000, .43 for 2010, and .46 for 2020.

Sufficient data was gathered ($k=11-210$) for other moderators of the job satisfaction and SWB relationship, not including education, income, or ethnicity. Occupational complexity ($\beta=-.01$, $p=.559$, $k=73$) did not moderate the job satisfaction and SWB relationship, failing to support Hypothesis 3. Sample percent male ($\beta=.00$, $p=.647$, $k=174$) failed to moderate the job satisfaction and SWB relationship, answering Research Question 2 in that gender does not moderate the relevant relationship. Mean age ($\beta=-.00$, $p=.698$, $k=133$) does not moderate the job satisfaction and SWB relationship, answering Research Question 3 in that age does not moderate this relationship.

Sample percent white ($\beta_{\text{White}} = -.05$, $p = .048$, $k = 35$) was significant for the sample percent White moderator ($\Delta R^2 = .11$), answering Research Question 4 in that race moderates the job satisfaction and SWB relationship depending on the proportion of the sample that identifies as White. It seems that the higher the percent White a sample is, the job satisfaction-SWB relationship was weaker. On the other hand, sample percent Black did not moderate the relationship between job satisfaction and SWB ($\beta_{\text{Black}} = -.02$, $p = .511$, $k = 21$). Sample percent married ($\beta = .01$, $p = .576$, $k = 52$) did not moderate the relationship between job satisfaction and SWB, failing to provide support for Hypothesis 7. Finally, hours worked ($\beta = .05$, $p = .291$, $k = 11$) did not moderate the relationship between job satisfaction and SWB, failing to provide support for Hypothesis 8.

Although many of these moderators were non-significant, they do vary in terms of N (e.g., $k_{\text{hours worked}} = 11$) and are based on statistics offered at the mean level due to the nature of this meta-analytic sample. Next, I provide results from analyses provided at the individual-level through the General Social Survey.

Sample 2 General Social Survey Analysis

The correlations and descriptive of the study variables from the GSS are presented in Table 5. Again, consistent with Hypothesis 1, in the GSS data, job satisfaction and happiness were significantly correlated ($r = .26$, $p < .001$).

Tables 6-15 present the results of the moderated multiple regressions conducted using the ‘pequod’ program in R (Mirisola & Seta, 2016). To test for moderation, both job satisfaction and each potential moderator were centered. Then, an interaction term for the interaction between job satisfaction and each moderator was created. Then, a set of multiple regression analyses were conducted in which the main effect of job satisfaction and each moderator variable were entered

as predictors of happiness. Finally, the interaction term was added to the regression. If this term is significant, then evidence is provided for moderation. Any significant moderators will be graphed to aid in their interpretation.

Year ($\beta=.01$, $p=.023$; see Table 6) was a significant moderator of the relationship of job satisfaction and happiness. However, although the interaction term was significant, an inspection of Figure 1 shows that the simple slopes for earlier and more recent years were quite similar ($b_{Year+1\ SD}=.27$, $p<.001$; $b_{Year-1\ SD}=.25$, $p<.001$). Although statistically significant, the interaction with year is arguably not practically significant, thus Hypothesis 2 was not supported.

Job complexity was a significant moderator ($\beta=.03$, $p=.008$; see Table 7), but upon examining Figure 2 there are similarities between the low and high complexity slopes ($b_{High\ complexity}=.28$, $p<.001$; $b_{Medium\ complexity}=.24$, $p<.001$; $b_{Low\ complexity}=.27$, $p<.001$). The medium complexity slopes do appear to be slightly different in nature compared to both the low and high complexity simple slopes, with the slope for medium complexity jobs being weaker than that for both high and low complexity. However, as with the other moderators, the absolute difference in the slopes was quite small leading me to reject Hypothesis 3. Education was not a significant moderator ($\beta=.01$, $p=.114$; see Table 8), failing to provide support for Hypothesis 4. Income was a significant a moderator ($\beta=.02$, $p=.004$; see Table 9), but in examining the simple slopes provided in Figure 3 for low and high income ($b_{Income+1\ SD}=.27$, $p<.001$; $b_{Income-1\ SD}=.23$, $p<.001$), they appear to be similar. These results fail to provide support for Hypotheses 5, or that the relationship of job satisfaction and SWB is not stronger as income increases. As the final contextual moderator, hours worked was found to be a significant moderator ($\beta=.01$, $p=.002$; see Table 10) of the relationship of job satisfaction and happiness. In examining the simple slopes provided in Figure 4 ($b_{Hours\ Worked+1\ SD}=.27$, $p<.001$; $b_{Hours\ Worked-1\ SD}=.24$, $p<.001$), the simple

slopes are not practically different from one another. This fails to provide support for Hypothesis 6, or hours worked does not moderate the relationship between job satisfaction and happiness.

Next are the demographic moderators, starting with gender. Gender was a significant moderator of the job satisfaction-happiness relationship ($\beta = -.03$, $p = .006$; see Table 11), such that at first glance it appears the relationship was stronger for men than for women. In examining the simple slopes for gender in Figure 5, the slopes appeared to have no practical difference ($b_{Male} = .28$, $p < .001$; $b_{Female} = .24$, $p < .001$) and thus answers Research Question 2. More specifically, gender does not seem to moderate the relationship between happiness and job satisfaction. Age was a significant moderator ($\beta = .02$, $p = .006$; see Table 12), but examining the simple slopes in Figure 6 indicates that there is a similarity between the slopes for high and low age ($b_{Age+1\ SD} = .28$, $p < .001$; $b_{Age-1\ SD} = .25$, $p < .001$). Thus, Research Question 3 is answered in that age does not moderate the relationship of job satisfaction and happiness.

Race was not a significant moderator of the relationship ($\beta = -.02$, $p = .116$; see Table 13), answering Research Question 4 in that there is no difference in the strength of the job satisfaction and happiness relationship between White and Black individuals. Ethnicity, or whether individuals identify as Hispanic or Latino, also failed to moderate the job satisfaction and happiness relationship ($\beta = -.00$, $p = .996$; see Table 14). This answers Research Question 5, or whether ethnicity moderated the relationship. Finally, marital status did not moderate the relationship between job satisfaction and happiness ($\beta = .02$, $p = .108$; see Table 15), failing to provide support for Hypothesis 7. The relationship is not stronger for married individuals.

Three-way Interactions

Table 16 presents the results of the analysis of three-way interaction with each moderator of interest, job satisfaction, and year to investigate whether there are any changes over time. In

order to provide these results, each three-way interaction was conducted using the following steps. First, happiness was regressed onto job satisfaction (X), year (Z), and the relevant moderator (W). Next, the product term, or interaction, of each pair of these variables were then added into the equation, i.e., XZ, XW, and ZW. Finally, the product term, or three-way interaction (XZW), of all three predictors was added into the equation. When accounting for all these predictor variables in the regression equation, if the product term of all three predictors (XZW) is significant then there is a three-way interaction (Dawson & Richter, 2006).

Based on the moderated multiple regression results conducted within R using the ‘pequod’ package (Mirisola & Seta, 2016), there are no significant three-way interactions.

Facets of Job Satisfaction

Table 3 also presents the meta-analytic results for each facet of job satisfaction (i.e., coworkers, supervisors, promotion, pay, and work itself) and each of the three measures of SWB used. When considering life satisfaction, which carried the largest number of studies with facets included, all five facets show a significant relationship with life satisfaction and are supported by the results reported by Bowling et al. (2010). Table 17 presents the results of the regression of the relationship of life satisfaction and the facets of job satisfaction by using year of data collection as a moderator in a weighted least squares regression conducted in R. None of the five facets appear to be moderated by year and so fail to provide support for Hypothesis 8, in other words none of the relationships between the facets and life satisfaction appear to have significantly changed over time.

Table 2. Correlations and descriptive statistics for meta-analytic data

	1	2	3	4	5	6	7	8	9
1. r _{Job Satisfaction-SWB}									
2. Year	.33**								
3. Job Complexity	-.07	.25*							
4. % Male	.03	-.19*	-.20						
5. Mean Age	-.03	-.17	.13	.09					
6. % White	-.34*	-.44**	.30	-.06	-.07				
7. % Black	-.15	-.70**	-	.27	.60*	-.65**			
8. % Married	.08	-.28*	-.07	.44**	.48**	.78**	-.71		
9. Hours Worked	.35	.41	0.91	.25	.48	-.48	-	.38	
<i>M</i>		2003	2.62	49.30	38.97	81.09	24.77	70.48	41.57
<i>SD</i>		12.75	.68	25.93	6.96	20.73	35.94	22.59	5.72
<i>N</i>		210	73	174	133	35	21	52	11

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 3. Meta-analytic results of job satisfaction and subjective well-being

Job satisfaction variable	k	N	Mean r	SD _r	Mean ρ	SD _{ρ}	95% CI	80% CR	Q- Statistic	% Artifact Var.
Subjective Well-being	212	213436	.47	.10	.53	.10	[.51, .54]	[.40, .65]	3498.17*	6.03%
Life Satisfaction	143	192064	.48	.09	.54	.09	[.52, .55]	[.42, .65]	2812.25*	5.05%
Satisfaction with coworkers	15	2683	.24	.21	.28	.23	[.15, .42]	[-.03, .60]		
Satisfaction with supervisors	13	2328	.21	.12	.24	.11	[.16, .32]	[.10, .39]		
Satisfaction with pay	12	2376	.13	.15	.16	.16	[.05, .28]	[-.06, .39]		
Satisfaction with promotion	11	1894	.17	.12	.19	.11	[.10, .29]	[.04, .35]		
Satisfaction with work itself	13	2249	.33	.20	.40	.23	[.25, .54]	[.09, .70]		
Positive Affect	66	18478	.40	.14	.48	.15	[.44, .52]	[.28, .67]	501.81*	12.95%
Satisfaction with coworkers	3	607	.03	.05	.04	.00	[-.09, .17]	[.04, .04]		
Satisfaction with supervisors	3	607	.14	.10	.16	.09	[-.14, .46]	[-.01, .33]		
Satisfaction with pay	4	764	.06	.17	.07	.18	[-.25, .39]	[-.22, .37]		
Satisfaction with promotion	3	607	.13	.09	.15	.07	[-.12, .42]	[.01, .28]		
Satisfaction with work itself	4	723	.27	.12	.31	.11	[.09, .53]	[.13, .49]		
Happiness	23	17270	.41	.09	.48	.09	[.43, .52]	[.36, .60]	175.89*	12.51%
Satisfaction with coworkers	1	231	.20	—	.24	—	[.09, .38]	[—, —]		
Satisfaction with supervisors	1	231	.24	—	.29	—	[.14, .43]	[—, —]		
Satisfaction with pay	1	231	.27	—	.32	—	[.18, .47]	[—, —]		
Satisfaction with promotion	1	231	.20	—	.24	—	[.09, .39]	[—, —]		
Satisfaction with work itself	3	757	.27	.05	.32	.00	[.17, .47]	[.32, .32]		

*Significant at the .001 level.

Table 4. Results of weighted least-squares regression of moderators of SWB-Job Satisfaction correlations

Moderator	<i>k</i>	β	SE	<i>p</i>	<i>R</i> ²
<i>Year</i>	212	.04	.01	<.001	.08
<i>Occupational Complexity</i>	73	-.01	.02	.559	.00
<i>% Male</i>	174	.00	.01	.647	.00
<i>Mean Age</i>	133	-.00	.01	.698	.00
<i>% White</i>	35	-.05	.02	.048	.11
<i>% Black</i>	21	-.02	.03	.511	.02
<i>% Married</i>	52	.01	.02	.576	.01
<i>Hours Worked</i>	11	.05	0.05	.291	.12

Table 5. Correlations and descriptive statistics for General Social Survey data

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Happiness												
2. Job Satisfaction	.26**											
3. Year	-.01	.02**										
4. Race	-.10**	-.08**	.05**									
5. Hispanic	-.03**	-.02	.06**	-.07**								
6. Gender	-.02**	-.00	.07**	.09**	-.02**							
7. Education	.08**	.06**	.18**	-.08**	-.24**	.03**						
8. Age	.04**	.13**	.11**	-.04**	-.12**	-.01*	-.02**					
9. Hours worked	.02**	.07**	.05**	-.06**	-.03**	-.19**	.08**	.01				
10. Job Complexity	.08**	.12**	.07**	-.11**	-.14**	-.04**	.50**	.08**	.10**			
11. Marital status	.21**	.07**	-.14**	-.14**	-.01	-.15**	-.02**	.15**	.03**	.06**		
12. Income	.09**	.10**	.07**	-.10**	-.02*	-.20**	.29**	.19**	.17**	.28**	.13**	
M	2.22	3.34	1995	85.4 _a	87.9 _b	55.6 _c	13.60	40.58	45.28	- _d	44.2 _e	26450
SD	.61	.77	13.12	-	-	-	2.90	12.24	11.32	-	-	30461
N	29435	29491	31892	29952	13246	31892	31797	31783	30988	31026	31884	30988

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

a. Race is coded as 1 being White and 2 being Black.

Statistic reported is % of data that is White.

b. Ethnicity is coded as 1 being non-Hispanic/Latino and 2 being Hispanic/Latino.

Statistic reported is % of data that is non-Hispanic/Latino.

c. Gender is coded as 1 being male and 2 being female. Statistic reported is % of data that is Male.

d. Job complexity is coded as 1 being least complex and 3 being most complex.

e. Marital status is coded as 1 being married and 2 being not married.

Statistic reported is % of data that is married.

Table 6. Linear regression of job satisfaction and happiness moderated by year

Moderator of job satisfaction and happiness	β	SE	t	p	ΔR^2
Job Satisfaction	.26	.01	46.08	<.001	.07
Year	-.01	.01	-2.45	.014	.00
Year*Job Satisfaction	.01	.01	2.28	.023	.00

Table 7. Linear regression of job satisfaction and happiness moderated by job complexity

Moderator of job satisfaction and happiness	β	SE	t	<i>p</i>	ΔR^2
Job Satisfaction	.19	.03	7.38	<.001	.07
Job Complexity _a	.10	.01	9.49	<.001	.00
Job Complexity*Job Satisfaction	.03	.01	2.28	.008	.00

a= Job complexity is coded on a 1-3 scale with 1 being the least complex and 3 being the most complex.

Table 8. Linear regression of job satisfaction and happiness moderated by education

Moderator of job satisfaction and happiness	β	SE	t	p	ΔR^2
Job Satisfaction	.26	.01	45.40	<.001	.07
Education	.06	.01	11.13	<.001	.00
Education*Job Satisfaction	.01	.01	1.58	.114	.00

Table 9. Linear regression of job satisfaction and happiness moderated by income

Moderator of job satisfaction and happiness	β	SE	t	p	ΔR^2
Job Satisfaction	.25	.01	41.11	<.001	.07
Income _a	.06	.01	9.42	<.001	.00
Income*Job Satisfaction	.02	.01	2.85	.004	.00

a= Income is reported in terms of 1986 dollars.

Table 10. Linear regression of job satisfaction and happiness moderated by hours worked

Moderator of job satisfaction and happiness	β	SE	t	p	ΔR^2
Job Satisfaction	.26	.01	44.85	<.001	.07
Hours Worked	.00	.01	0.85	.393	.00
Hours Worked*Job Satisfaction	.01	.01	2.47	.014	.00

Table 11. Linear regression of job satisfaction and happiness moderated by gender

Moderator of job satisfaction and happiness	β	SE	t	<i>p</i>	ΔR^2
Job Satisfaction	.31	.02	17.79	<.001	.07
Gender _a	-.03	.01	-2.86	.004	.00
Gender*Job Satisfaction	-.03	.01	-3.03	.002	.00

a= Gender is coded as 1 being male and 2 being female.

Table 12. Linear regression of job satisfaction and happiness moderated by age

Moderator of job satisfaction and happiness	β	SE	t	p	ΔR^2
Job Satisfaction	.26	.01	45.50	<.001	.07
Age	.00	.01	0.51	.608	.00
Age*Job Satisfaction	.02	.01	2.78	.006	.00

Table 13. Linear regression of job satisfaction and happiness moderated by race

Moderator of job satisfaction and happiness	β	SE	t	p	ΔR^2
Job Satisfaction	.28	.02	14.65	<.001	.07
Race _a	-.23	.02	-13.55	<.001	.01
Race*Job Satisfaction	-.02	.02	-1.57	.116	.00

a= Race is coded as 1 being White and 2 being Black.

Table 14. Linear regression of job satisfaction and happiness moderated by ethnicity

Moderator of job satisfaction and happiness	β	SE	t	p	ΔR^2
Job Satisfaction	.27	.03	8.06	<.001	.07
Ethnicity _a	-.08	.03	-2.99	.003	.00
Ethnicity*Job Satisfaction	-.00	.03	-0.00	.996	.00

a= Ethnicity is coded as 1 being non-Hispanic/Latino
and 2 being Hispanic/Latino.

Table 15. Linear regression of job satisfaction and happiness moderated by marital status

Moderator of job satisfaction and happiness	β	SE	t	<i>p</i>	ΔR^2
Job Satisfaction	.22	.02	12.21	<.001	.07
Marital Status _a	.39	.01	34.75	<.001	.04
Marital Status*Job Satisfaction	.02	.01	1.61	.108	.00

a= Marriage is coded as 1 being not married and 2 is married.

Table 16. Three-way interactions of year and moderators of job satisfaction and SWB

3-Way Interaction ^a	β	SE	t	p
<i>Education*Job Satisfaction*Year</i>	.00	.01	0.53	.597
<i>Job Complexity*Job Satisfaction*Year</i>	.01	.01	0.92	.360
<i>Income*Job Satisfaction*Year</i>	.01	.02	0.42	.674
<i>Hours Worked*Job Satisfaction*Year</i>	.00	.01	0.73	.467
<i>Gender*Job Satisfaction*Year</i>	.01	.01	0.62	.534
<i>Age*Job Satisfaction*Year</i>	-.00	.01	-0.46	.645
<i>Race*Job Satisfaction*Year</i>	-.00	.02	-0.08	.937
<i>Ethnicity*Job Satisfaction*Year</i>	-.01	.07	-0.18	.858
<i>Marriage*Job satisfaction*Year</i>	.01	.01	0.58	.563

a. Each 3-way interaction is reported separately but each was run with main effects and moderators included in the equation. Each equation had happiness regressed onto the main effects, each product interaction, and the product of all three predictors, i.e., the additional moderator, year, and job satisfaction.

Table 17. WLS regression of correlation of life satisfaction and job satisfaction facets onto year

Job Satisfaction Facet	<i>k</i>	<i>N</i>	β	SE	<i>p</i>	<i>F</i>	<i>Residual Std. Error</i>
<i>Life Satisfaction</i>							
Coworkers	15	2683	.03	0.04	0.443	0.63	1.31
Pay	12	2376	-.01	0.05	0.801	0.07	1.30
Promotion	11	1894	.01	0.04	0.806	0.06	1.31
Supervision	13	2328	.02	0.05	0.679	0.18	1.32
Work	13	2249	.10	0.06	0.099	3.25	1.27

Figure 1. Moderation of job satisfaction and happiness by year

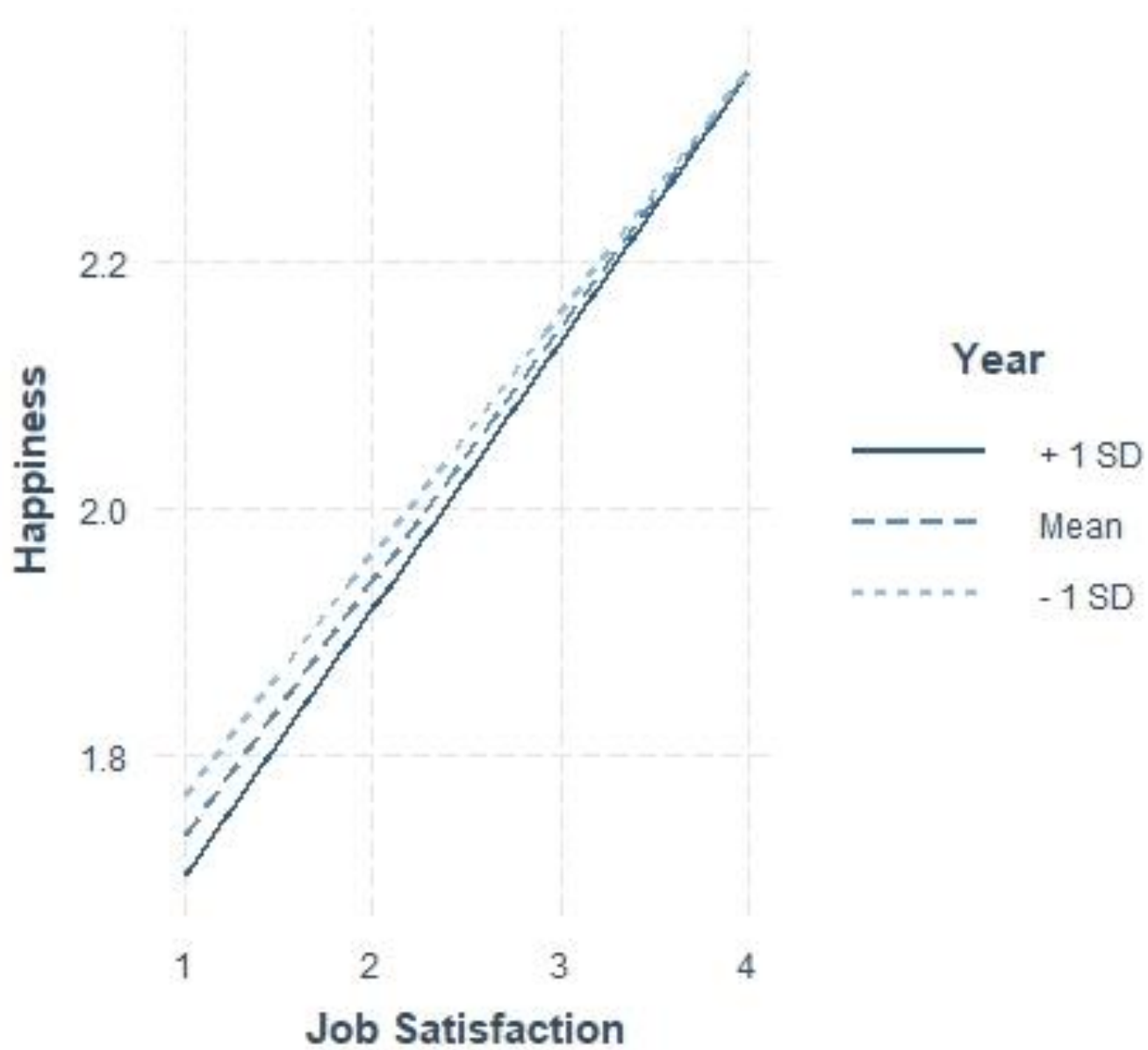


Figure 2. Moderation of job satisfaction and happiness by job complexity

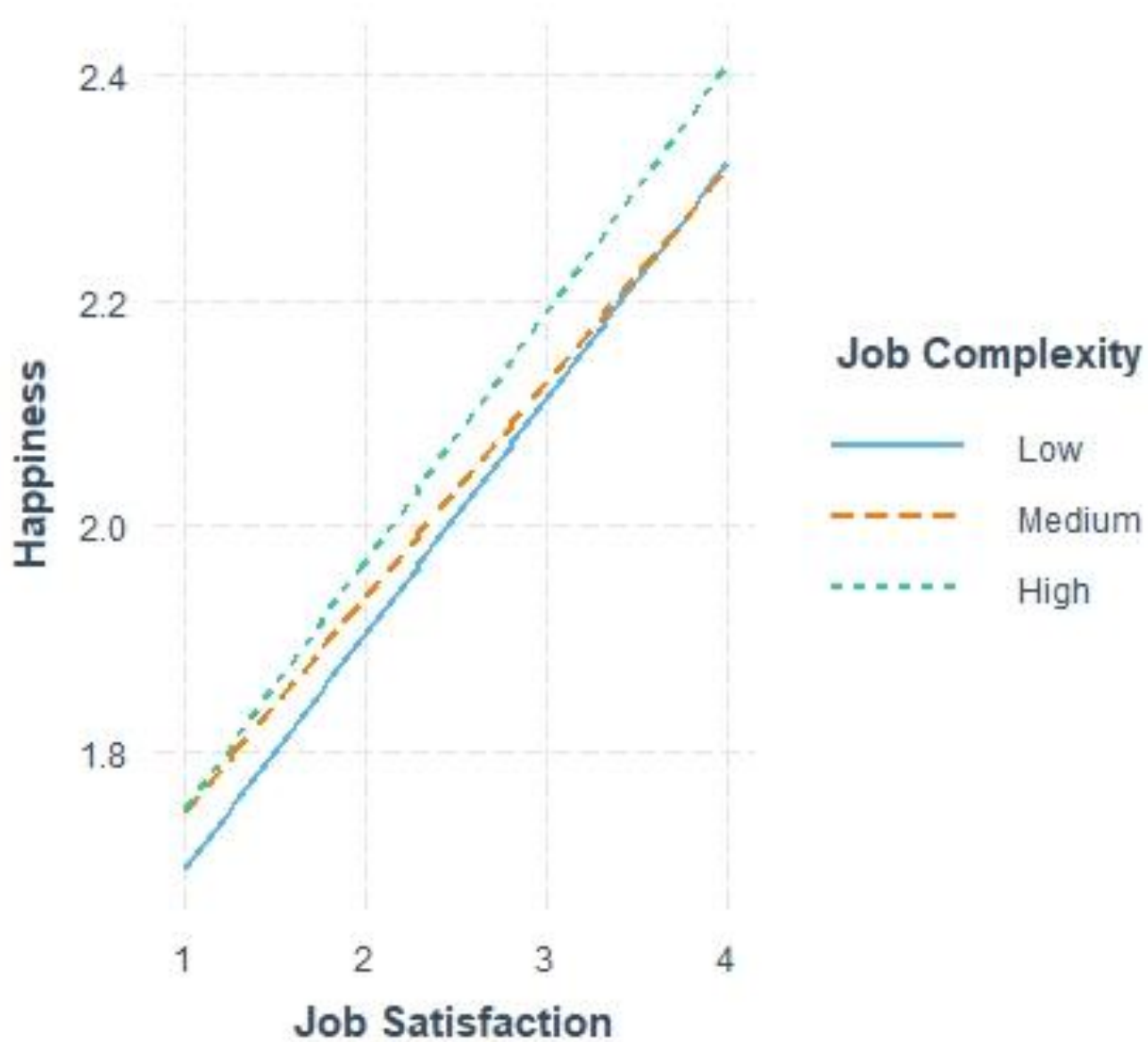


Figure 3. Moderation of job satisfaction and happiness by income

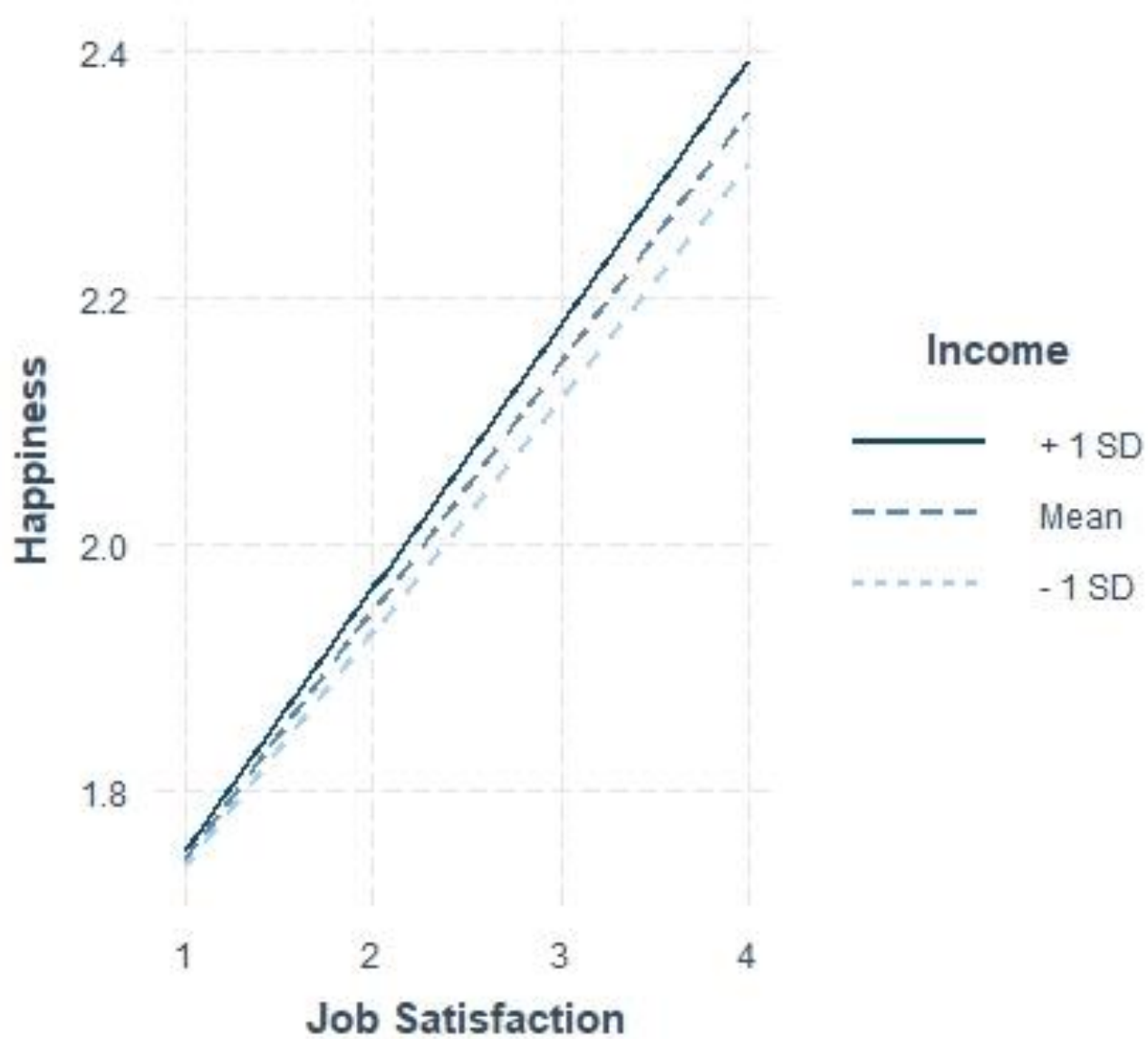


Figure 4. Moderation of job satisfaction and happiness by hours worked

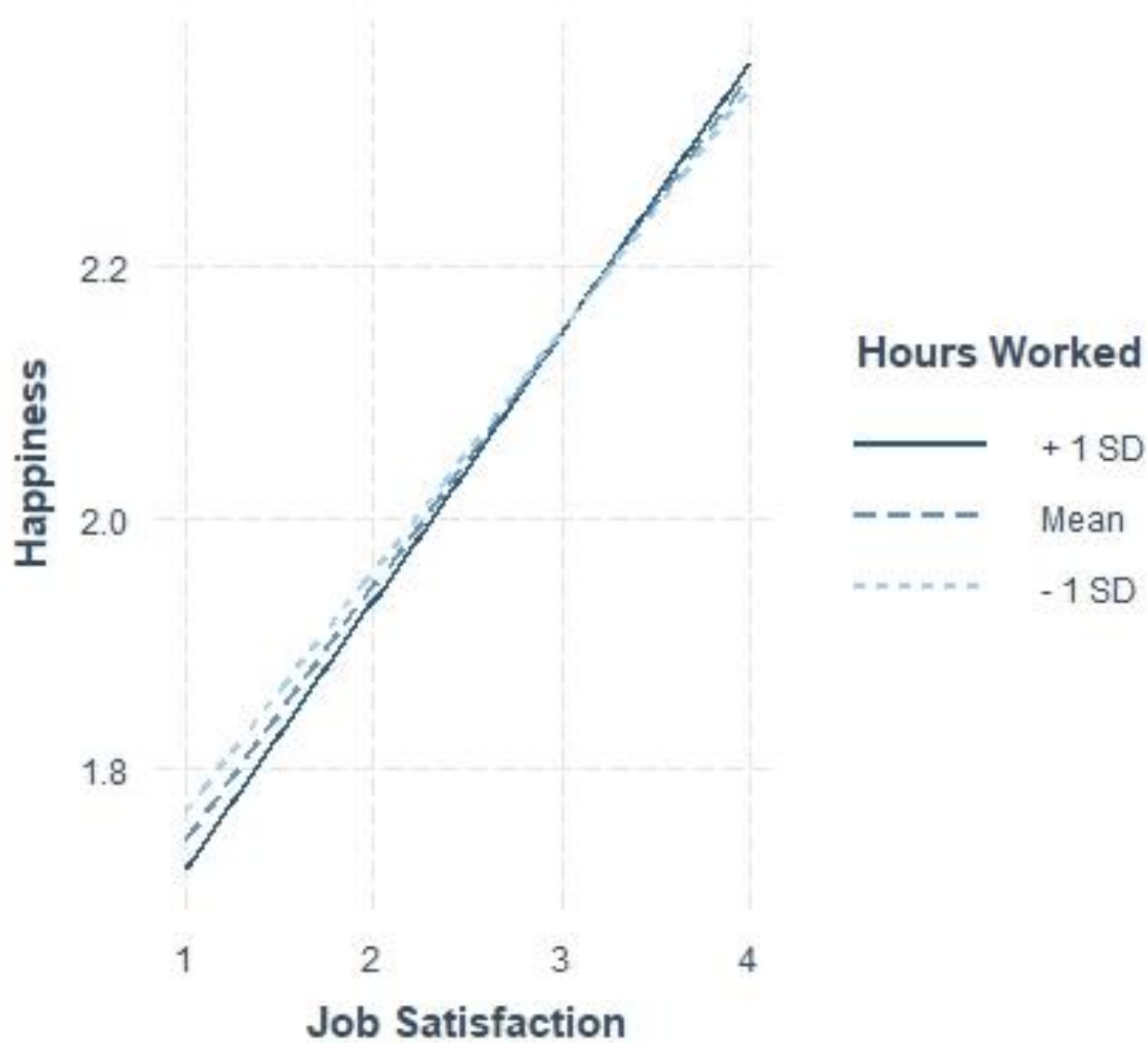


Figure 5. Moderation of job satisfaction and happiness by gender

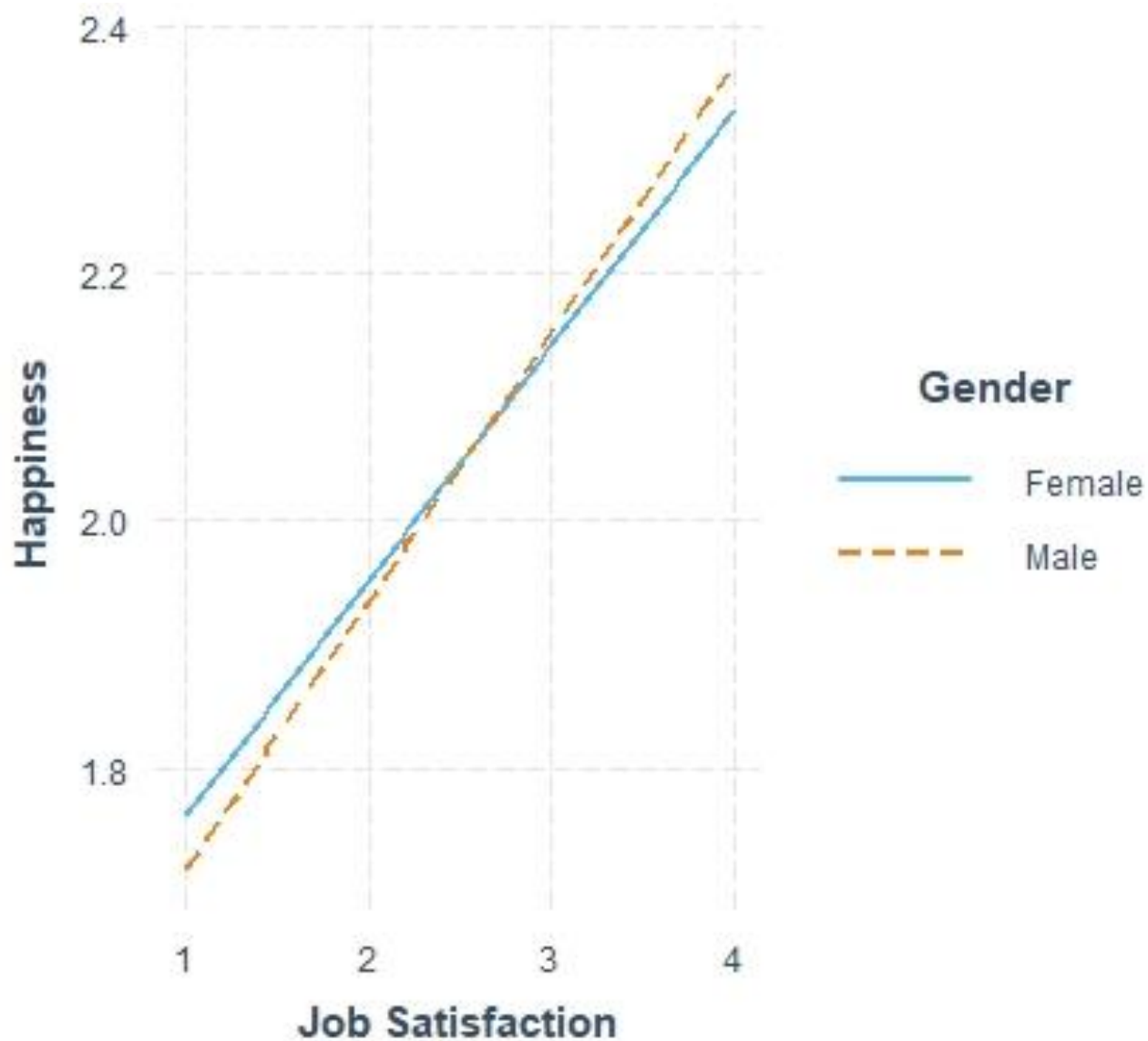
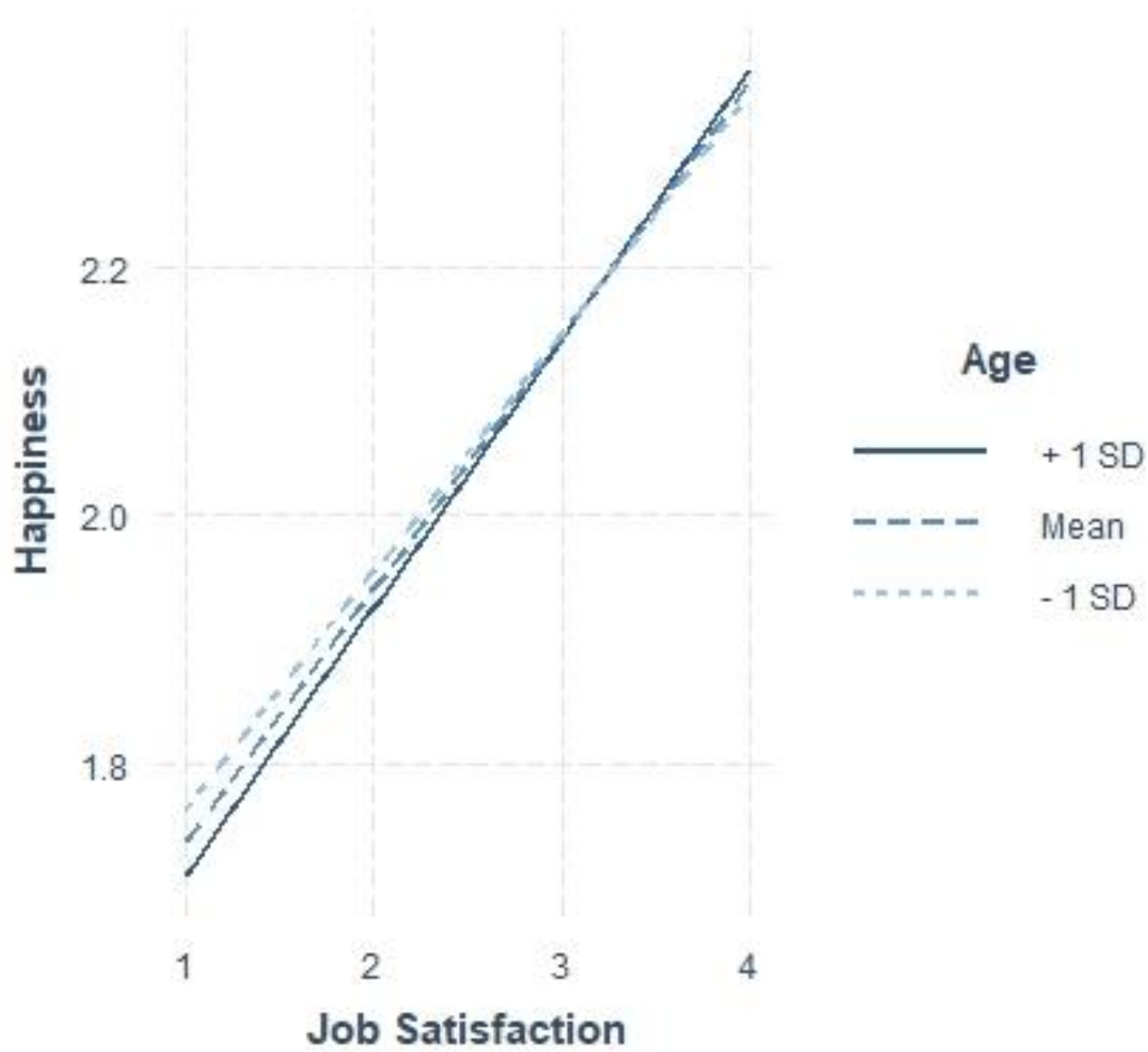


Figure 6. Moderation of job satisfaction and happiness by age



Chapter 6

DISCUSSION

This paper used two large scale data sets to examine the relationship between job satisfaction and subjective well-being with a focus on moderators of this relationship and how the relationship has changed over time. Together, the results make several contributions to the literature. First, the meta-analysis provides an update to the most recent meta-analytic review (e.g., Bowling et al. 2010), including a 39% increase in the number of independent samples. Consequently, the results provide a more accurate (and slightly larger) point estimate relative to that found in the Bowling et al. review. Next, this is the first large scale study to consider several theoretically relevant moderators of this relationship. In contrast to early primary studies (e.g., Tait et al., 1989) and narrative reviews (e.g., Rain et al., 1991), commonly proposed and supported moderators were not supported in either the meta-analysis or with the GSS data. These results indicate that the relationship between job satisfaction and SWB is robust to a variety of contextual and demographic factors. Finally, a previously unexplored moderator, year, was revealed to be an important moderator in the meta-analytic data set. This discussion will focus on these overarching contributions, differences between the meta-analytic data set and the GSS, and implications of these findings.

Overarching Contributions

Update of prior meta-analyses

A primary contribution is that this study provided an updated meta-analysis of the association between SWB and job satisfaction. Specifically, the present study nearly doubled the

number of studies included in Bowling et al.'s meta-analysis by including 104 additional independent samples relative to the most recent meta-analysis by Bowling et al. (2010).¹

It is remarkable that between 1965 and 2008, 75 independent samples (including facet satisfaction composites) collected had examined the association between job and life satisfaction alone. In contrast, in the past twelve years, this relationship has been examined in 68 independent samples! The increasing attention for overall SWB is similar. This increased attention suggests that scholars are more cognizant of the impact of satisfaction and work on individuals' well-being. This is a positive advance in terms of the field's focus on the impact of work on workers' lives.

This updated and more robust meta-analysis showed that job satisfaction is slightly more strongly related to life satisfaction relative to the estimates of prior meta-analyses. For instance, in the most recent meta-analysis by Bowling et al., ρ was .48 (95% CI = .45-.51₂) relative to a ρ of .54 (95% CI = .52-.56) in the present study. When comparing across meta-analyses, it is important to ensure that any differences aren't attributable to corrections. To examine this possibility, we compared the mean sample-weighted correlation. The mean r of .40 (95% CI: .37-.43) reported by Bowling et al. is also significantly weaker than that found in the present study, $r = .48$ (95% CI = .47-.50), given the non-overlapping confidence intervals. Thus, both the corrected and uncorrected relationships are significantly greater than that found in the Bowling et al. (2010) meta-analysis.

1. This comparison is made by examining the data collected in addition to those available samples pulled from Bowling's citations, i.e., 108 independent samples for SWB and job satisfaction.
2. Although Bowling et al. (2010) does not report a confidence interval for their estimate of ρ , I calculated a 95% confidence interval using data from Bowling and compared it to one made using the standard deviation statistics that were reported.

It is also noteworthy that the results of both this and the Bowling et al. meta-analysis reveal stronger effects relative to the earliest meta-analysis by Tait et al. (1989; $\rho=.44$; 90% CI: .41-.47). Thus, the present meta-analysis shows a 22% increase in the strength of this relationship relative to the first meta-analysis on the subject and a 12% increase relative to the most recent.

Although this review points to a significantly stronger relationship relative to other reviews, there were also some consistent findings that emerged. Specifically, despite some differences in magnitude, overall job satisfaction has a strong association with life satisfaction, accounting for almost 25% of the variance in life satisfaction.

Next, consistent with Bowling et al. the relationships of job satisfaction and all three aspects of SWB did not differ significantly based on the overlapping confidence intervals. This supports Bowling et al.'s suggestion that life satisfaction, positive affect, and happiness can be used interchangeably as indicators of SWB. Both job satisfaction and positive affect and happiness demonstrated a similar, positive relationship as with job satisfaction and life satisfaction. The p statistics reported here have overlapping 95% confidence intervals although the mean p for both positive affect and happiness fall below that of the 95% confidence interval for life satisfaction and job satisfaction.

A final point that warrants consideration regarding the strength of association between job satisfaction and SWB is the differences in the results between the General Social Survey and the meta-analysis. Specifically, job satisfaction was much more strongly related to SWB in the meta-analysis relative to the GSS. Although this could partly be accounted for by the corrections used in meta-analysis, even the sample weighted correlation was a good deal larger (e.g., .26 vs. .48). One possibility is that because the GSS was measuring happiness, and the association with happiness was slightly weaker in the meta-analysis, this could partially account for the

difference. A more likely explanation is that both job satisfaction and happiness were measured with single item measures in the GSS. Single item measures are commonly criticized for having low levels of reliability. Thus, it could be that relatively low levels of reliability attenuated the observed relationship.

Moderators

Next, this is the first meta-analytic and large-scale primary study in recent years to examine several moderators of the association between job satisfaction and SWB. This is despite reviews urging researchers to examine moderators (Bowling et al., 2010) and early primary supporting various moderators (e.g., Tait et al., 1989; Rice et al., 1980; Rain et al., 1991). In contrast with the hypotheses, there was little evidence for moderation across either sample. This is a surprising finding, given that the moderators examined here have been supported in prior studies. For instance, education (Bamundo & Kopelman, 1980; Rice et al., 1980), occupation level (London et al., 1977; Bamundo & Kopelman, 1980), income (Bamundo & Kopelman, 1980; Georgellis & Lange, 2012), gender (Brayfield et al., 1957; Tait et al., 1989), and age (Bamundo & Kopelman, 1980) have all been supported in previous primary studies. However, the present results, across two large-scale studies did not support these variables as moderators. These findings are interesting, in that they suggest that the relationship between job satisfaction and SWB is robust to a variety of demographic and contextual variables. In other words, job satisfaction appears to play an important role in workers' subjective well-being, regardless of individual characteristics or the nature of the work.

Although most of the moderators were not supported, the percent of the sample that was White was revealed as a moderator in the meta-analysis (although neither race nor ethnicity were supported in the GSS data). Specifically, the relationship between job satisfaction and SWB was

weaker for samples with more white participants. This analysis was exploratory, so some caution is urged in interpreting the result. In addition, due to data constraints, the data were necessarily coded as percent white versus non-white. That is, all other races were collapsed into a non-white category, as most studies did not report adequate information for a more fine-grained breakdown. Thus, there is some ambiguity in interpreting this effect. However, meta-analysis is a valuable and powerful approach to identify moderators, so this is a potentially interesting result that deserves further attention.

A surprise, hours worked had a statistically significant, but practically non-significant moderation effect on the job satisfaction-SWB relationship. As I examined full-time workers, perhaps higher hours worked is normalized for this category of workers ($M=45.28$; $SD=11.32$). An aspect to consider is whether there is a difference between full-time workers in the US versus part-time workers who may work more than one job and thus more hours spread across several roles. It is unknown whether workers are considering hours worked during regular business hours or if they include hours worked outside of the office, on weekends, and holidays. Rather than look at hours worked, a variable which gives a sense of stressful overtime or psychological burnout may be more useful as a moderator.

When considering the demographic moderators, the conclusion made for gender is consistent with the meta-analysis by Tait et al. (1989). Specifically, Tait and colleagues found that sample gender only moderated this relationship in studies published prior to 1974. Given that most of the studies in this meta-analysis were published after 1974, it stands to reason that the moderating effect would not be supported here. That is, the GSS only has data dating back to 1972 and so the statistically significant, but practically non-significant moderation, effect stands in line with this previous conclusion from Tait et al. (1989). For ethnicity, data is fairly recent

(i.e., since 2000) and so lacking in a sense to compare non-Hispanic/Latino and Hispanic/Latino groups.

In interpreting these moderator results, there are several issues to consider. One being that the studies used within the meta-analytic study were inconsistent in reporting information needed for moderator analysis, such as hours worked ($k=11$). Within the GSS data, although large amounts of individual-level data were reported, all the statistically significant moderators turned out to be non-significant in the practical sense. This could be due to no real moderation occurring or it is not being examined with the right analyses or tool, (e.g., there could be curvilinearity that I am not accounting for). The present study focused on objective moderators, rather than psychological variables. However, it may be more useful to focus on psychological variables. For instance, instead of using objective hours worked, may be more likely to find support using a variable such as sense of being overworked or burnout. Similarly, given weak links between pay and satisfaction with pay (Judge et al., 2010), using satisfaction with pay may be a more fruitful area rather than using income. Similarly, personality variables such as work centrality would stand to reason as potential moderators of this relationship (Rain et al., 1991).

Job satisfaction and SWB in the modern world of work

The third overarching contribution is the identification of year as a potentially important moderator of the association between job satisfaction and life satisfaction. Specifically, the meta-analysis showed that the relationship increased over time. This is consistent with my hypothesis that because the nature of work has changed, people's work will be more central to their sense of satisfaction and well-being. However, it is not clear why this relationship has changed over time. In particular, the other moderators that were expected to help explain this effect (e.g., hours worked) were non-significant along with three-way interactions with year. Thus, these variables

individually do not account for this effect. It could be that these various factors have combined to yield an environment in which work is more central to workers' lives although no single factor is responsible for this. In any case, it is clear that individuals' work lives have become more important to their overall sense of well-being in recent years.

On the other hand, the moderating effect of year revealed in the GSS data was much more muted. As in, it was statistically significant but practically nonsignificant. In addition, there were no significant three-way interactions between year and other moderators or changes over time for facets of life satisfaction. Therefore, the support for year moderating the job satisfaction-SWB relationship is mixed but gives some indication that the world of work is changing and so is the relationship between job satisfaction and subjective well-being.

As noted above, only one of these variables emerged as moderators in both samples. In using meta-analytic data, only year and percentage of samples that were White were found to be significant moderators of the job satisfaction and SWB relationship. Within the GSS data, year, job complexity, income, hours worked, gender, and age were all found to be significant moderators, but practically non-significant moderators, of the job satisfaction and happiness relationship. They at least provide the same evidence for lack of moderation as did the meta-analytic results for those same variables. The only overlap in significant moderators appears to be that of year.

The only other significant moderator for the meta-analytic data was percent of the sample samples that was White. The moderators examined, mean percentage White and race of the respondent, may not be as similar as I first thought when gathering data for this study. As mentioned earlier, this was the first time race was considered as a moderator of this relationship, so further avenues of research should be considered.

As Wegman et al. (2018) notes, several aspects of the workplace are changing and although several moderators here were not significant other indicators of context will be important to consider in future studies. For example, although there is evidence that interdependence is increasing at work, the only indicator of this that was available for analysis was satisfaction with coworkers. Unfortunately, this data was limited when it came to investigating the effect it had on SWB in that few studies were available to examine the relationship between satisfaction with coworkers and life satisfaction ($k=15$). Continuing to monitor these trends will prove important in understanding not only how workers are affected by changes in context but also how it impacts their non-work life.

Future Directions and Limitations

The present study points to several potentially important area for future research. First, the contradictory findings concerning the moderating effect of year across two large scale studies warrants further attention. It would be informative to examine this question with other large archival datasets in order help reconcile these contradictory findings. Related, given the weak associations between the lack of evidence for moderating effects, it appears that these moderating variables are not useful in explaining why the association with year has increased. Thus, future research exploring other potential reasons for the increasing correlations between job satisfaction and SWB over time is needed.

Next, it would be interesting to explore cross-cultural differences in the relationship between job satisfaction and SWB. The General Social Survey includes only respondents from the United States. However, it's sister survey program, the International Social Survey Program, includes respondents from many different countries. It would be interesting to leverage this dataset to explore cross-cultural differences and may be worthwhile in investigating whether

these relationships hold for other workforces. Similarly, although not examined as part of this study, the meta-analytic database includes many studies from different cultures. Given the large number of studies, it might be possible to meta-analytically explore the relationship between job satisfaction and SWB while using culture as a moderator.

In addition, I was not able to find considerably more studies which considered the relationship between facets of job satisfaction and different measures of SWB. While disappointing, a closer look needs to be taken at these relationships in order to better understand the changing context of the workplace. As mentioned above, using psychological variables rather than objective variables may help better understand whether any moderation will occur. Next, amplified by the COVID-19 global pandemic, telework has become increasingly prevalent over the years. It would be interesting to consider how telework impacts spill over from job to life satisfaction.

Next, there were several limitations common to meta-analytic moderator analysis. For instance, many of the moderator analyses were associated with a small number of studies, potentially limiting statistical power. In addition, in the meta-analysis, moderators were necessarily examined at the sample, rather than the individual level. However, this limitation is ameliorated by the analysis of parallel moderators in the GSS data. In addition, as the GSS, an archival data set, this study was limited to the measures that had been collected with the GSS, including single item measures of both life and job satisfaction. Other issues include a lack of consistent demographic, e.g., some studies provide percentages of samples that identify as Black but the majority did not, or statistical information provided within studies lacking reliabilities for measures used, although this was offset by using Hunter & Schmidt's (2004) methods for artifact distributions within the meta-analysis.

Implications for Practice

These findings have some important implications for practice. First, organizations should be aware of the impact that the workplace has on workers' overall subjective well-being. Although not the focus of this study, other research has underscored that job satisfaction has a causal impact on life satisfaction (Bowling et al., 2010). In this way, employers bear some responsibility for the health and well-being of their workers and arguably, society more broadly. Indeed, that neither work context nor worker demographics did not moderate the focal relationships suggest that this responsibility is present in jobs across the employment spectrum and across employee demographics. Further, there was some evidence, albeit mixed, that the impact of work on SWB is even stronger in more recent years, underscoring the critical role that modern organizations play in their employees' well-being.

Conclusion

This paper demonstrates that, through a meta-analysis and large-scale analysis using a nationally representative database, job satisfaction has a consistent and moderate to strong association with life satisfaction, positive affect, and happiness. Indeed, the relationship of job and life satisfaction was significantly stronger in the meta-analysis than that estimated in two prior meta-analyses. In addition, this relationship is robust to a variety of individual and contextual moderators. Finally, there is some evidence, albeit mixed, that the association between job satisfaction and SWB has increased in recent years. Together, this study underscores the substantial impact that work has on well-being and further suggests that, if anything, the importance is increasing in recent years.

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APPENDIX A

List of studies used in the meta-analysis

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