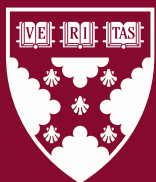# The Impact of the COVID-19 Pandemic on the Satisfaction of Workers in Low-Wage Jobs

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ABSTRACT

How did job satisfaction change during the pandemic for workers in low-wage jobs, and how did workers' experiences compare to those in professional jobs? Using nationally representative survey data, we show that the pandemic increased the dissatisfaction of workers in low-wage jobs and the importance of pay in determining overall job satisfaction for these workers. Before and during the pandemic, workers in low-wage jobs were significantly less satisfied than those in professional jobs. We then surveyed a group of managers about their perceptions of workers in low-wage jobs during the pandemic. Managers believed workers in low-wage jobs were less satisfied, which lead them to believe these workers would be less committed and thus deserved lower pay. We conclude by discussing our two key discoveries. First, we advance research on job satisfaction by providing evidence—that contrasts with existing findings—for differences in job satisfaction across different pay levels. Second, we contribute to the literature on stereotypes by documenting unique occupational stereotypes that perpetuate inequality. As jobs become more precarious and income inequality rises, the future of work requires greater attention to workers in low-wage job, as well as the psychological barriers to improving these jobs.

Keywords: Low-Wage Jobs; COVID-19 Pandemic; Pay; Job Satisfaction

INTRODUCTION

In the United States (US), an estimated 44% of workers are employed in low-wage jobs (in 2018, this was defined as full or part-time workers whose hourly earnings were less than $16.67 per hour or approximately $34,000 per year), a percentage that translates to approximately 53 million workers (Bateman & Ross, 2021; Ross & Bateman, 2019). Labor conditions in these jobs have been relatively "bad" for almost 50 years (Kalleberg, 2011), even as workers, activists, scholars, and policymakers have pushed for improvements to labor conditions in low-wage contexts (e.g., increasing pay and benefits). The COVID-19 pandemic appeared to serve as a turning point for the improvement of labor conditions in these jobs due to increased conversations about subpar conditions (Alpert, 2021; Olen, 2021), increased unionization efforts by workers (Elias & Lucas, 2022; Kullgren, Eckhouse, & Shanker, 2021), and the tightening of the labor market (linked to increased worker quit rates and vacancy rates; Domash & Summers, 2022; as well the American Rescue Plan stimulus checks; Press, 2022; Dayen, 2022). But did this increased attention and awareness of the poor working conditions in low-wage jobs translate to increased job satisfaction for workers in these jobs?

In this paper, we provide some of the most rigorous empirical evidence to date exploring whether and how the pandemic changed job satisfaction for low-wage workers in the US. We compare the experiences of workers in low-wage jobs to the experience of workers that are typically the focus of management research—those in professional jobs (i.e., workers who are in the top 20% of the income distribution and have at least a college degree; Williams & Boushey, 2010). Additionally, we conduct an exploratory survey-based study with a sample of managers in which we randomly assign managers to read about either workers in low-wage or professional jobs and to estimate their satisfaction before and during the pandemic. Through this work we address the following questions: 1) what effects did the COVID-19 pandemic have on worker

satisfaction in low-wage jobs; 2) what beliefs do managers hold about low-wage jobs; and 3) how do manager beliefs impact labor conditions in low-wage jobs.

We make two central discoveries in our investigation of these questions. First, in contrast to what prior job satisfaction literature would suggest, we find evidence for a significant difference in job satisfaction before and during the pandemic between workers in low-wage and professional jobs, highlighting the necessity of conducting research on low-wage contexts. Second, we find evidence that manager's hold stereotypes about low-wage jobs that perpetuate the poor labor conditions in these jobs, providing a conceptual advance to the stereotyping literature by documenting unique occupational stereotypes.

To the best of our knowledge, there is no comprehensive evidence exploring the impact of the pandemic on worker satisfaction, particularly for workers in low-wage jobs. Our work contributes to research on the future of work by shedding light on whether and how the pandemic catalyzed satisfaction changes for workers in low-wage jobs and what organizations need to do to increase job satisfaction for the 50+ million workers who occupy these jobs. This question is especially important considering continued high rates of turnover in low-wage jobs that have created stress for business owners during and following from the pandemic (Fuller & Raman, 2022). Further, by surveying a sample of managers about their perceptions of workers in low-wage jobs, our work provides insights into the role played by managers in perpetuating poor labor conditions. We hope that bringing manager psychology into the conversation on low-wage job labor conditions may spark new conversations and interventions about how to improve low-wage jobs and reduce organizational inequities.

In addition to understanding the effects of the pandemic on workers, we embarked on this research due to the lack of management research on the experiences of workers in low-wage

jobs, a fact that's reflected in the numerous recent calls for research focusing on workers in this occupation segment (see Bapuji et al., 2020; Burrell, 2020; Kossek & Lautsch, 2018; Van Eck, Dobusch, & Brink, 2021). The future of work requires research that looks beyond professional contexts to understand the jobs that most American workers hold: low-wage jobs. Although we focus on the US here, this investigation is also relevant to the broader global economy since approximately 30% of workers are employed in low-wage jobs globally (Lund et al., 2021).

Job Satisfaction in Low-Wage Jobs Before COVID

Job satisfaction, the "overall evaluative judgment about one's job" (Judge, Weiss, Kammeyer-Mueller, & Hulin, 2017, p. 1), has been linked to a variety of positive organizational outcomes, such as performance, wellbeing, and retention (Judge et al., 2017). As such, understanding what informs job satisfaction has been of central interest to organizational scholars since the emergence of this topic of study (Judge & Klinger, 2007).

Job satisfaction is determined by a range of characteristics that vary from worker personality traits to job characteristics (Hackman & Oldman, 1975; Judge & Klinger, 2007). Literature that focuses on job characteristics highlights the range of factors that can predict job satisfaction, such as autonomy, task variety, social support, and the nature of the work itself (Hackman & Oldman, 1975; Judge & Klinger, 2007; Morgenson & Humphrey, 2006). This prior research has suggested that there is relatively little relationship between different types of jobs, the income that people receive in their jobs, and job satisfaction (Judge et al., 2010).

Many low-wage jobs have been noted to lack the ingredients necessary for job satisfaction. The resounding conclusion from research on low-wage jobs in the US is that these constitute "bad" jobs. They are typically poorly paid (Ross & Bateman, 2019; Ton, 2014), inconsistently offer benefits (Carino, 2022; Gould, 2021; Loustaunau et al., 2021), have limited opportunities for advancement (Fuller & Raman, 2022), and provide inconsistent and erratic

hours (e.g., work-on-demand scheduling; Bidwell et al., 2013; Jacobs & Padavic, 2015; Schneider & Harknett, 2019). Further, the work itself can be routinized, such that workers are provided relatively few opportunities for autonomy over schedules and tasks or voice and input into their work and organizational processes (McCallum, 2020; Stephens, Markus & Phillips, 2014). Taken together, this research suggests that many of the critical ingredients of job satisfaction are missing in low-wage jobs in the US.

Qualitative research centering on the experiences of workers in low-wage jobs across the US preceding the pandemic has highlighted that workers are frustrated by their labor conditions. Workers across a variety of low-wage jobs have voiced their desire for better labor conditions (pay, benefits, and scheduling practices), more humane treatment from managers, and work that provides meaning and community with coworkers (Jacobs & Padavic, 2015; McCallum, 2020; Reich & Bearman, 2018). A great deal of research has documented the consequences of poor labor conditions for workers and employers. Meuris & Leana (2018) find that increased financial worry among workers in low-wage jobs is linked to a significant decline in job performance due to reduced cognitive bandwidth. Low wages have also been linked to reduced physical health (Pfeffer, 2018), mental health, and wellbeing (see Leana & Meuris, 2015 for a review).

The structural disempowerment of workers in the US has made it difficult for workers to push for change. For example, the excess supply of workers in these jobs, the decline in labor unions, and the rise in shareholder power that started in the 1970s (Battilana, Yen, Ferreras, & Ramarajan, 2022; Kalleberg, 2011) have led to organizations holding inordinate power in determining labor conditions, hours, and pay in low-wage jobs (Spreitzer, Cameron, & Garrett, 2017). Thus, there is reason to suspect that workers in low-wage jobs will be less satisfied with their jobs than professional workers, due to their lack of power and poor conditions. However,

most of the published research examining job satisfaction was conducted before the pandemic and has not yet focused on how COVID-19 has shaped worker experiences. It is possible that conditions in low-wage jobs have improved, given shifts in power between low-wage workers and employers during the pandemic due to the tightening of the labor market, which has been linked to wage growth across all sectors, including low-wage jobs (Duval, Oikonomou, & Tavares, 2022). It is also possible, with organizations focused on cost-cutting actions, that working conditions for low-wage jobs and resulting satisfaction *decreased* during the COVID-19 pandemic. In the following section, we review evidence for both possibilities.

Job Satisfaction in Low-Wage Jobs During COVID

The COVID pandemic caused major shifts in the labor market that could have influenced the satisfaction of workers in low-wage jobs. We review evidence for why the pandemic could have had either a positive or negative impact on worker satisfaction.

There is some evidence that job satisfaction could have improved during the pandemic. In April 2020, for low-wage workers, there was a sudden increase in consistent hours available, classified by researchers as "precarious stability" (Loustaunau et al., 2021), which could have contributed to an increase in job satisfaction for workers across the labor market, and particularly for workers in low-wage jobs. Furthermore, due to record worker turnover, particularly in low-wage industries like food services and retail (Gould, 2022), workers have been portrayed in the media as having increased power, upsetting the historical imbalance between worker and organization. Worker strikes and unionization efforts in the US increased dramatically during 2021 (Kullgren, Eckhouse, & Shanker, 2021) and these efforts have received support from the press and politicians such as Bernie Sanders, Alexandria Ocasio-Cortez, and President Joe

Biden. These labor market conditions might have positively impacted the benefits workers in low-wage jobs were entitled to (including pay and schedule flexibility) and their job satisfaction.

In contrast, the pandemic may have worsened the job satisfaction of workers in low-wage jobs. For instance, the workers interviewed in Loustaunau et al. (2021) spoke about how they frequently feared for their health and safety during the pandemic due to the inconsistent and often delayed implementation of COVID safety protocols. Workers shared their hopes for improved workplace safety, better pay, and better benefits, suggestions that align with qualitative work from before the pandemic. Additionally, even though worker pay has been improving, even for workers in low wage jobs, it has not kept up with inflation, and pay in many low-wage industries remains the lowest among all other industries (Desilver, 2021). Together, these factors could negatively impact the job satisfaction that workers in low wage jobs.

Summary of Studies

To test these competing possibilities, we investigate three central questions. First, we look at the overall job satisfaction of workers in low-wage jobs in the US labor market across the years 2019, 2020, and 2021. We look at trends in overall job satisfaction (employed full or part-time; Ross & Bateman, 2019) and how the pandemic years altered these trends. We then compare the satisfaction of workers in low-wage jobs to workers in professional jobs, which we define as those in the top 20% of the income distribution with at least a college degree; see Methods for more detail. Second, we look at what job characteristics inform overall levels of job satisfaction for workers in low-wage jobs before and during the pandemic, and then how these trends differ from professional jobs. We find evidence that the pandemic had a relatively negative effect on workers in low-wage jobs; while it positively or did not affect workers in professional jobs. Thus, for our third question, we explore whether a barrier to the persistent lack

of change in worker experiences can be explained by how managers perceive workers in low-wage jobs. We test these first two questions using data from a nationally representative survey conducted by the Gallup organization, while we turn to a large sample of managers on Prolific Academic (Kim et al., 2020) to test the third question.

 By exploring the effects of the pandemic on workers in low-wage jobs in the Gallup data, we examine whether the anecdotal increase in public discourse about these jobs during the pandemic translated into experienced job improvements. An additional study conducted with a manager sample allowed us to compare worker's actual experiences with manager perceptions to better understand if managers were accurate about the experiences of workers in low-wage jobs, and whether their perceptions were linked to the perpetuation of poor labor conditions.

STUDY 1

We used Gallup poll data to first explore whether overall job satisfaction varied among workers in low-wage jobs across the survey years 2019, 2020, and 2021. We then compared the experiences of workers in low wage jobs to those in professional jobs to gain a better understanding of how the experiences of low-wage workers compared to those who are typically the focus of management research. Finally, we looked at whether satisfaction with individual job characteristics informed worker's overall job satisfaction, and whether there were differences between job types and by year.

These analyses allow us to explore whether the COVID-19 pandemic had a positive or negative impact on workers in low wage jobs and how job characteristics shaped the job satisfaction of workers in these jobs overall and as compared to professional workers. In doing so, these analyses provide the most comprehensive test in the literature to date of how the satisfaction of workers in low wage jobs shifted in response to the COVID-19 pandemic.

METHODS

We conducted our analyses on three waves of cross-sectional data from the Gallup Poll Social Series on Work and Education (2019, 2020, 2021), which is collected every year in the month of August. Gallup conducts telephone interviews with a random sample of approximately 1,000 adults, 18 years and older, living in all 50 U.S. States and the District of Columbia.

Interviewees are randomly selected using random-digit-dial methods, with a minimum quota of 70% cell phone numbers and 30% landline phone numbers. Samples are then weighted to correct for unequal selection probability, non-response, and double coverage of landline and cell users in the two sampling frames, as well as national demographics (e.g., gender, age, race, education) based on the Current Population Survey. The combination of random sampling and weighting makes the survey nationally representative. This data is ideal to study our research questions because it is a large, nationally representative survey of American workers designed for trend analysis, as Gallup administers questions in the same order at the same time every year, and includes extensive demographic questions to allow for subgroup analysis.

We focused on the years 2019, 2020, and 2021 to explore differences in workers' satisfaction pre-pandemic and during the pandemic. We analyzed the two COVID years of 2020 and 2021 separately based on research showing that people's psychological and employment experiences were distinct across the two years of the pandemic (Carrillo-Tudela, et al., 2022; Foa, Fabian, & Gilbert, 2022; Fuller & Kerr, 2022).

The 2019-2021 dataset contained 3,559 observations before any exclusions. For the purpose of our analyses, we included participants who reported that they were working (i.e., employed full or part time; as suggested by Ross & Bateman, 2019) for an organization and were not self-employed (i.e., employed by a private company, non-profit, or government employee),

given that those who are self-employed typically have different employment experiences (Blanchflower, 2004).

All analyses were pre-registered on Open Science Framework (OSF) https://osf.io/nfmvx/?view_only=f47071582f984f2297c751e188191885 unless otherwise noted. We note and explain any deviations from our pre-registered analysis plan. We used R for all of our analyses and the code files are also posted on our OSF page.

Predictor Variables

Year. We created two dummy variables to represent years. The year category was dummy coded with the following categories, Dummy 1: 0 = 2019, 1 = 2020; Dummy 2: 0 = 2019, 1 = 2021.

Job Type. We looked at workers in two types of jobs: low-wage and professional jobs (Williams & Boushey, 2010). Low-wage jobs were defined as workers in the bottom one-third of the income distribution for that year. Professional jobs were defined as workers in the top 20% of the income distribution for that year with at least a college degree, following definitions taken from previous research.[1] Including low-wage and professional jobs, our final sample size was 716 participants across all three years (2019: *N*=291, 48% in low-wage jobs; 2020: *N*=219, 44% in low-wage jobs; 2021; *N*=206, 42% in low-wage jobs). The job type variable was dummy coded with the following categories 0 = low-wage job, 1 = professional job.

Measures

Overall Job Satisfaction. Overall job satisfaction was assessed with one item in which respondents were asked about their overall job satisfaction ("How satisfied or dissatisfied are you with your job?" from 1 = *completely dissatisfied* to 4 = *completely satisfied*, reverse-coded

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[1] We preregistered a third group of workers: middle-income jobs, which was defined as workers between the low-wage category and the professional category. However, given the wide range in education and income in this job category, we decided to present results focused on just low-wage and professional workers.

from the original). Prior research has established that one-item satisfaction measures are valid methods of assessing overall job satisfaction (Wanous, Reichers, & Hudy, 1997). See Table 1 for descriptive statistics across years.

Satisfaction with Job Characteristics. Respondents rated their satisfaction (1 = *completely dissatisfied* to 4 = *completely satisfied*, reverse-coded from the original) with 14 different job characteristics ("Now I'll read a list of job characteristics. For each, please tell me how satisfied or dissatisfied you are with your current job in this regard") as follows: vacation, health insurance, retirement plan, job security, on-the-job stress, amount of work required, promotion opportunities, flexibility of hours, recognition received at work, amount of pay, physical safety, relations with boss or immediate supervisor, and relations with coworkers.

As pre-registered, we conducted three exploratory factor analyses on these job characteristics (one per year). Across all three years, scree plots suggested that there were two dominant factors (i.e., eigenvalues greater than 1). We therefore fitted a two-factor solution on every year of data using a promax rotation with a maximum likelihood fitting method (Fabrigar et al., 1999). Across all three years, satisfaction with health insurance, retirement, and vacation time all consistently loaded together. We created a mean composite of these three items, which we refer to as "satisfaction with benefits" (overall α = .71; 2019 α = .78; 2020 α = .75; 2021 α = .66). All other characteristics were analyzed separately.

Controls. As per our pre-registration, we controlled for several individual-level variables that could influence job satisfaction or job characteristics (e.g., De Neve, Krekel, & Ward, 2018). Specifically, we controlled for respondent age, gender (man or woman), race and ethnicity (White, Black, Hispanic, Asian, or Other), marital status (married or living with a partner or not married/partnered), the number of adults living in the household, whether they have any children

under 18 (yes or no), number of hours typically worked per week, whether the respondent was a member of a union (yes or no), the respondents' employer (private, non-profit, or government), and area that the respondent lived in (big/small city, suburb, or rural).

Insert Table 1 about here

Analytic Strategy

As pre-registered, we included state fixed effects in all of our models, unless otherwise noted, to account for variation in wage and employment practices across states (e.g., different states have different minimum wages). All models include robust standard errors clustered at the year level to account for correlation within each year, unless otherwise noted.

First, we looked at whether there were differences in overall job satisfaction between job types, collapsed across years. Then, we interacted Year with Job Type to explore whether differences between jobs changed because of the pandemic. A significant interaction term indicated that the difference between professional jobs and low-wage jobs in 2020 and/or 2021 was significantly different compared to the difference between these two job types in 2019. We decomposed significant interactions using pairwise comparisons.

Second, we explored what job characteristics predicted overall job satisfaction. We first collapsed across all three years and used lasso regressions to explore what job characteristics were most important in determining overall job satisfaction. We then split each job type by year and ran a series of regressions in which all of the satisfaction ratings for each job characteristic were entered into one model predicting overall job satisfaction. Doing so allowed us to compare the relative magnitude of each job component on overall satisfaction. To test for differences between job types, we split the data by year and interacted each job component with the job type

variable. To test for changes across years, we split the data by job type and interacted each job component with the year variable.

Third, we looked at whether there were changes over time by job type on satisfaction with pay to better understand how this job characteristic changed because of the pandemic.

All models were run with and without pre-registered control variables, and with weights (no controls) and without weights (with controls). Gallup weights correct for non-response bias and unequal selection probability and makes the survey representative of the U.S. population. As pre-registered, we are reporting unweighted models with and without controls, and as per our pre-registration, we note any major deviations from the results when adding weights to the model with controls and share the results of the other models with weights in the supplement.

RESULTS

Table 2 overviews worker demographics by job type and year. Across all three years, consistent with our definition of workers in low-wage and professional jobs, workers in low-wage jobs had an average household income of $33,000 per year ($SD = \$11,100$), while workers in professional jobs had an average household income of $193,000 per year ($SD = \$93,900$).

Of note, workers in low-wage jobs tended to be younger than those in professional jobs ($M = 39.9$ v. $M = 45.7$), were more likely to be non-White (46.4% v. 27.7%), were less likely to be part of a union (6.8% v. 15%), were more likely to be employed by a private company (76.2% v. 60.3%) and were more likely live in a city (51.4% v. 30.8%). These demographic differences align with prior research on worker demographics in low-wage jobs (Jacobs & Padavic, 2015; Ross & Bateman, 2019). As noted above, we control for these demographics across models, thus these characteristics cannot explain the results we observed.

Insert Table 2 about here

Overall Job Satisfaction by Job Type and Year

Overall Satisfaction by Job Type. First, we explored whether there were differences

between workers in low-wage and professional jobs on overall job satisfaction across all three

years. We entered job type as a predictor in a linear model, with year entered as a fixed effect

and clustering by year. As summarized in Table 3, workers in low-wage jobs were marginally

less satisfied than those in professional jobs across all three years, $b = .20$, $SE = .11$, $p = .059$.

With weights added, this difference became significant, $b = .23$, $SE = .10$, $p = .02$, suggesting

that on average, workers in low-wage (vs. professional) jobs were less satisfied with their jobs.

Insert Table 3 about here

Satisfaction by Job Type and Year. We then ran regressions with Job Type, Year, and

Job Type x Year entered in the model to understand whether job satisfaction differences between

low-wage and professional jobs changed across COVID years. The results are summarized in

Table 4 and visualized in Figure 1.[2]

In 2019, workers in low-wage jobs were significantly less satisfied with their jobs than

professional workers, $b = .07$, $SE = .01$, $p < .001$. In 2020, this difference persisted and was

significantly larger than 2019, $b = .32$, $SE = .01$, $p < .001$. In 2021, these differences also

remained, $b = .10$, $SE = .04$, $p = .01$. An examination of the differences between jobs across

timepoints illustrated that the gap between job types in overall satisfaction grew during the

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[2] We had preregistered including state level unemployment numbers; however, given the high Variance Inflation Factor (VIF) for unemployment and state fixed effects when both were included in the model (indicating multicollinearity), we removed unemployment numbers from our analyses. While state fixed effects had a slightly higher VIF, we removed unemployment because state fixed effects likely would account for greater variance across states, making it a more conservative model.

pandemic, as exemplified by the increase in the effect size of worker type on job satisfaction in 2020 and 2021 (2019 d = .10; 2020 d = .55; 2021 d = .25; Ferguson, 2009[3]). Thus, we see a consistent gap between job types on job satisfaction and the COVID pandemic appears to have widened the satisfaction gap between workers in low-wage versus professional jobs.

Explorations of pairwise comparisons within job types indicated that workers in low-wage jobs experienced a decrease in job satisfaction in 2020 (M = 3.18, SD = .81) compared to 2019 (M = 3.31, SE = .79), $t(636)$ = 7.53, p < .001, d = -.18. Their job satisfaction remained similarly low in 2021 compared to 2020 (M = 3.10, SD = .93), $t(636)$ = .98, p = .59, d = -.07.

Workers in professional jobs experienced an increase in job satisfaction in 2020 (M = 3.65, SD = .59) compared to 2019 (M = 3.44, SD = .64), $t(636)$ = -8.24, p < .001, d = .26, and then their satisfaction returned to pre-pandemic levels in 2021 (M = 3.38, SD = .66), $t(636)$ = 1.74, p = .192, d = -.37.[4]

Insert Table 4 and Figure 1 about here

Workers in low-wage jobs tend to be less satisfied with their jobs than workers in professional jobs and this gap grew over time, overall suggesting that COVID had a negative impact on job satisfaction levels for workers in low-wage jobs.

What Job Characteristics Inform Overall Job Satisfaction

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[3] An effect size of 0.20 is considered "small," an effect size of 0.50 is considered "medium," and an effect size of 0.80 is considered "large" (Ferguson, 2009).

[4] With weights added, all results replicated with the exception of the coefficient representing the difference between workers in 2019, which became non-significant suggesting that the job satisfaction differences between low and professional jobs in 2019 were less robust than the differences observed in 2020 and 2021, which aligns with the relatively small effect size from 2019. We also ran an ordinal logistic model as a robustness check given the outcome variable was a four-point Likert item. To deal with convergence issues, we dropped state fixed effects. While we replicated the significant interaction term for 2020 x Professional, we did not replicate the interaction term for 2021 x Professional. Given the lack of state-fixed effects in the model, this lack of significance may be due to unexplained variance.

With our second set of analyses, we were interested in how satisfaction with job characteristics made jobs satisfying overall, and whether this changed across our years of interest. As previous research has established, job satisfaction is highly correlated with a number of organizational outcomes, such as employee retention and worker wellbeing (De Neve et al., 2018; Judge et al., 2017). As such, understanding what determines job satisfaction is critical, particularly in low-wage jobs, as our prior findings highlight how these workers tend to experience lower levels of satisfaction.

Job characteristics by worker type. As pre-registered, we started exploring what characteristics inform overall satisfaction using a group lasso regression using the grpreg R package (Breheny & Huang, 2015). A lasso is a form of regularization that excludes "unimportant" variables from a model by applying a penalty term (called "lambda") that shrinks unimportant slope parameters down to zero (George et al., 2016).[5] This allows us to examine which of the predictor variables were reliable and important predictors of overall job satisfaction when all the predictors and control variables (including state and year fixed effects) were added to one model.

First, we restricted the sample to low-wage workers across all three years. Results from the lasso for low-wage jobs suggested that the most important predictor of overall job satisfaction across years was satisfaction with money earned ($B = .30$)[6], followed by satisfaction with the amount of work required ($B = .18$), flexibility of hours ($B = .11$), and satisfaction with boss/supervisor ($B = .11$). The remaining terms in the model that weren't shrunk to zero were

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[5] To run a lasso, one must select a lambda value, or penalty term. We did so using 10-fold cross-validation command cv.grpreg, which sets up a reasonable default lambda grid and then selects the lambda value with the lowest mean square error (i.e., a minimum lambda), which we used as our penalty term. We standardized all our variables beforehand.

[6] Lasso regressions are a method from machine learning and are typically used to select reliable and important predictors of an outcome variable. Thus, there are no computed SEs or p-values, and the computation of such values is a subject of debate (Lee, Sun, Sun, & Taylor, 2016).

satisfaction with physical safety ($B = .07$); job security ($B = .05$); relationships with coworkers ($B = .04$); chances for promotion ($B = .03$); recognition received at work ($B = .03$); whether the respondent was married or partnered (those who weren't married/partnered were less satisfied with their jobs; $B = - .04$); and finally the area the respondent lived in (those who lived in the suburbs, $B = .03$ or a rural area, $B = .02$, were more likely to be satisfied with their jobs). Thus, for low-wage jobs, workers' overall satisfaction was informed most by pay. Further, given the two slopes for Years were shrunk down to zero, it appeared that overall job satisfaction in low-wage jobs was fairly unaffected by time relative to other job characteristics. Overall, these results suggest that for workers in low-wage jobs, satisfaction with pay was the most important and reliable predictor of overall job satisfaction both before and during the COVID-19 pandemic.

Second, although not pre-registered, we decided to replicate this analysis with workers in professional jobs. We found that the most important predictors of overall job satisfaction in professional jobs were chances for promotion ($B = .18$), relationships with coworkers ($B = .16$), the amount of work required ($B = .15$), recognition received at work ($B = .14$), amount of on-the-job stress ($B = .13$), and boss/supervisor ($B = .12$). The remaining terms in the model that weren't shrunk to zero were year (2020 $B = .05$; 2021 $B = -.02$), amount of money earned ($B = .04$), employer (non-profit, $B = .03$, government, $B = .02$), the number of adults in the household ($B = .03$), job security ($B = .02$), hours ($B = .01$), union membership ($B = - .01$), one's age ($B = .003$), and benefits ($B = .006$). Job satisfaction for workers in professional jobs was determined by a wider range of characteristics, though none of them stood out as strongly determining job satisfaction. Of note, the two slopes for Years remained significant for professional jobs, suggesting that job satisfaction varied across time for these workers.

Job characteristics by year and job type. As per our pre-registration, we then explored

how job characteristics influence job satisfaction for workers in low-wage jobs across each year.

Further, although not pre-registered, we explored these analyses for professional jobs and

compared them to low-wage jobs. Results from these analyses can be found in Table 5, Table 6,

and Table 7 and are graphically depicted in Figure 2, 3, and 4. All continuous predictors and the

outcome variable were standardized and centered in order to compare the relative magnitude of

each component on overall job satisfaction. Unless noted otherwise, all results replicated using

an ordinal logistic model and with weights added.[7] We provide specific statistical details in the

supplement and review high-level trends below.

Insert Tables 5, 6, 7 about here

Replicating our lasso results, across all three years, satisfaction with money earned was

consistently one of the largest predictors of job satisfaction for workers in low-wage jobs (2019:

$B = .27$, $p < .01$; 2020: $B = .34$, $p < .05$; 2021: $B = .32$, $p < .10$). Money was also significantly

more important to workers in low-wage jobs compared to professional jobs in 2019 ($b = -.22$, *SE*

$= .10$, $p < .05$) and 2020 ($b = -.38$, *SE* $= .12$, $p < .01$), results can be found in the supplement.

Again, similar to our lasso results, for professional workers in 2019, satisfaction with

opportunities for promotion ($B = .27$, $p < .01$) and relationships with coworkers ($B = .21$, $p < .01$)

were the sole determinants of overall job satisfaction. In 2020, satisfaction was instead driven by

the amount of on-the-job stress they experienced ($B = .38$, $p < .01$), as well as their boss ($B = .32$,

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[7] Of note, because our sample size was reduced for these regressions, the model would not converge when we used
state fixed effects, thus we omitted these analyses.

p < .01). Opportunities for promotions again became the primary determinant of job satisfaction in 2021 (*B* = .33, *p* < .05).

Finally, to better understand whether the importance of pay changed by year for low-wage jobs, we entered a series of interactions between Year and each job characteristic for just those in low-wage jobs into one regression (results can be found in the supplement). For satisfaction with pay, we found a significant interaction in 2020, *b* = .12, *SE* = .02, *p* < .001, and in 2021, *b* = .09, *SE* = .03, *p* < .001, suggesting that the importance of pay grew from 2019 to 2020 and 2021. An examination of the simple slopes suggested that there was no difference in the importance of pay for job satisfaction between 2020 and 2021, *t*(212) = .73, *p* = .75. Overall, these results suggest that during the pandemic pay became increasingly important for determining the overall job satisfaction of workers in low-wage jobs.

Insert Figures 2, 3, 4 about here

Study 2: Manager Sample

Our results highlight that workers in low-wage jobs tended to be less satisfied with their jobs during the two pandemic years and as compared to workers in professional jobs. These differences between job types were consistent throughout the pandemic, suggesting that both before and throughout the pandemic, workers in low-wage jobs were consistently less satisfied with their jobs. Thus, in contrast to the possibility that the COVID-19 improved working conditions for workers in low-wage jobs, these data suggest that workers in low-wage jobs experienced chronic dissatisfaction that persisted—and in some cases grew—as a result of the COVID-19 pandemic. To follow-up on these results, we wondered whether the persistent lack of improvements in job conditions for workers in low-wage jobs could be driven by manager

perceptions of these workers. Managers are in a position to advocate for the labor conditions experienced by their employees and often control certain labor conditions (e.g., pay raises, schedules), thus understanding how they perceive low-wage jobs is of critical importance.

In our second exploratory study, we randomly assigned a sample of managers on Prolific Academic to estimate the overall job satisfaction of workers in the professional jobs or the low-wage jobs during the three years of our study. Managers completed interpersonal perception scales about these workers to gain a better understanding of managers' perceptions of low-wage workers and the perceived barriers to changing various job characteristics. This study intended to provide initial evidence regarding the psychological barriers that may prevent managers from improving job conditions for workers in low-wage jobs such as pay, job security, and benefits.

METHOD

We recruited 400 managers (i.e., working full time, had supervisory responsibilities, and managed at least 2 people; Kim et al., 2020) from Prolific Academic. We excluded respondents who indicated in the demographics that they were currently managing 0 people or 1 person, leaving us with a final sample of 379 managers (M_{age} = 39.8; 73.9% had a BA or higher; 39.3% women; 77.4% White).

Predictor Variables

Managers were randomly assigned to read about a low-wage or a professional job. Both descriptions used the same language as our job criteria in Study 1 and included information on average household income. Participants were also told that these workers were full or part-time employees at organizations across the United States. Of note, we did not use the terms "low-wage" or "professional" to avoid biasing participants in any way.

Measures

After managers read a description of the jobs, they completed the job satisfaction scales and rankings task for each of the three years of our Gallup survey. Participants were told that if their satisfaction scores were within +/- .10 of the actual satisfaction scores of these workers, they would be eligible for a bonus of $.25, and we did pay bonuses based on accuracy, making the experiment incentive compatible. See Table 8 for descriptive statistics by job type.

Insert Table 8 about here

Job satisfaction. Participants were presented with three slider scales (one for each year) ranging from 1 (*completely dissatisfied*) to 4 (*completely satisfied*) with up to two decimal places. Sliders were set at the average job satisfaction score for both groups of workers and participants were asked to adjust the slider to represent the average job satisfaction score for their assigned group of workers.

We then subtracted the actual satisfaction score from the estimated score to form an accuracy index. A score of 0 indicates that managers were perfectly accurate in their estimates of worker satisfaction. Negative scores indicated that they underestimated worker satisfaction scores and positive scores indicated that they overestimated worker satisfaction scores.

Rankings. Participants were then shown a list of the 11 job characteristics from the Gallup data (benefits was presented as a composite) and were asked to rank each characteristic in order of importance for predicting overall job satisfaction. They completed this ranking task three times, once for each year. We analyzed the average rank of each characteristic, such that higher scores indicated that a characteristic was ranked as less important.

Difficulty of improvement. After completing the ranking task, managers imagined they were the head of HR at a company that employed these workers. They were shown their top three ranked job characteristics from the year 2021 and asked to rate how difficult it would be to improve each of these characteristics using one Likert-type item from 1 = *not at all difficult* to 7 = *extremely difficult*. We only presented participants with the top three characteristics to reduce participant fatigue.

Barriers. For any job characteristic that participants rated as being difficult to improve (anything greater than the midpoint of 4 on the Likert scale), they were asked to write down 1-5 barriers that would make improving this factor difficult. We created a count variable indicating how many barriers they listed.

Worker effort. Participants completed five items assessing perceived work effort of the workers (1 = *strongly disagree* to 7 = *strongly agree*; Brown & Leigh, 1996). Ratings were averaged to form a composite score (α = .96).

Worker competence. Participants completed four items assessing perceived competence of the workers (1 = *not at all* to 7 = *very much*; Fiske, Cuddy, Glick, & Zu, 2002). Ratings were averaged to form a composite score (α = .89).

Worker commitment. Participants completed three items assessing workers' perceived commitment to their jobs (1 = *extremely unlikely* to 7 = *extremely likely*; Heilman & Okimoto, 2008). Ratings were averaged to form a composite score (α = .93).

What workers should be paid. Participants completed one item assessing how much they thought workers in the job were typically paid per hour, and then one item on how much they should be paid per hour based on their worth to the functioning of society (Block, Croft, & Schmader, 2018). The items both used a slider scale ranging from $0 per hour to $100 per hour.

Demographics. We included several items asking about management demographics to use as control variables, including the number of years of management experience, number of people managed, whether managers had ever worked in the same job as they people they had managed, the average pay of the people they managed, and how often they had communicated with the people they managed.

RESULTS

Worker Job Satisfaction.

Estimates. We collapsed across all three years of job satisfaction estimates to explore average perceptions of job satisfaction. A Welch t-test revealed that managers believed that workers in low-wage jobs were significantly less satisfied with their jobs ($M = 2.13$, $SD = .50$) than workers in professional jobs ($M = 3.10$, $SD = .46$), $t(375.20) = -19.68$, $p < .001$, $d = -2.02$.

We then explored the general trends in managers' estimates of worker satisfaction across the years using a 2 (job type: low-wage vs. professional) x 3 (year: 2019, 2020, 2021) mixed ANOVA. See Figure 5 for a visualization of these effects. There was a main effect of job type, $F(1, 377) = 387.50$, p < .001, a main effect of year, $F(2, 754) = 83.37$, $p < .001$, and a significant interaction, $F(2, 754) = 8.86$, $p < .001$. Managers believed that low-wage workers experienced a significant reduction in job satisfaction every year (2019 to 2020 $d = .89$; 2020 to 2021 $d = .30$), which deviated from the slight decline in job satisfaction we observed for low-wage jobs in Study 1. Managers believed that professional workers experienced reduced job satisfaction from 2019 to 2020, but not from 2020 to 2021 (2019 to 2020 $d = .52$; 2020 to 2021 $d = .07$). Overall, managers thought that workers in low-wage jobs were significantly less satisfied than workers in professional jobs at each year (2019 $d = -2.35$; 2020 $d = -2.72$; 2021 $d = -2.95$). A series of one-way t-tests comparing each estimate to worker's actual mean satisfaction from the Gallup data

illustrated that managers significantly underestimated the job satisfaction of all workers across all years.

Insert Figure 5 about here

Accuracy Score. We then ran the same 2 x 3 mixed ANOVA to compare how accurate managers were at estimating worker satisfaction by job type and year. We again found a main effect of job type, $F(1, 377) = 188.72$, $p < .001$, a main effect of year, $F(2, 754) = 64.52$, and a significant interaction, $F(2, 754) = 14.57$, $p < .001$. Pairwise comparisons indicated that managers were significantly less accurate in estimating the job satisfaction of low-wage jobs compared to professional jobs across all three years (2019 $d = -1.99$; 2020 $d = -1.43$; 2021 $d = -2.18$). Managers underestimated the satisfaction in low-wage jobs more in 2020 and 2021 than 2019 (2019 to 2020 $d = .53$; 2020 to 2021 $d = .08$), suggesting that they viewed the pandemic as having more of a negative impact on the satisfaction of low-wage jobs than it actually did.

Rankings of Pay Importance by Year.

We then looked at the mean ranking of each job characteristic by year and job type, with higher scores indicating that the characteristic was more likely to be ranked as more important for job satisfaction. Across all three years, descriptive statistics suggested that pay was typically ranked as most important for workers in both types of jobs, followed by job security or benefits.

Given the importance of pay for the job satisfaction of workers in low-wage jobs in Study 1, we again used a 2 x 3 mixed ANOVA to explore whether managers' estimates of the importance of this characteristic differed across years. Results are depicted in Figure 6. There was a significant effect of year, $F(2, 754) = 32.50$, $p < .001$, a significant effect of job type, $F(1, 377) = 4.55$, $p = .03$, which was qualified by a significant interaction, $F(2, 754) = 3.52$, $p = .03$.

Pairwise comparisons indicate that, interestingly, managers believed that for low-wage workers, pay decreased in ranked importance from 2019 to 2020 ($d = -.41$) and then increased in ranked importance from 2020 to 2021 ($d = .33$), returning to pre-pandemic levels (2019 to 2021 $d = -.07$). [8] This stands in contrast to the findings from Study 1, in which pay was consistently important for satisfaction across all three years, and was significantly more important to workers in low-wage jobs than professional jobs in both 2019 and 2020.

Insert Figure 6 about here

Difficulty of Improving Pay.

There was no significant difference in rated difficulty of making improvements to worker pay, $t(283.04) = -1.33$, $p = .19$, suggesting that managers believed that it would be similarly difficult to make improvements to pay for both types of jobs.

Deserved Pay.

Finally, managers indicated that they believed workers in low-wage jobs should be paid significantly less than workers in professional jobs ($d = 2.15$). Specifically, they suggested that workers in low-wage jobs should earn approximately \$22.82 ($SD = 8.93$) per hour, while workers in professional jobs should earn approximately \$61.09 per hour ($SD = 23.58$). This result held when we included controls on the number of years of management experience, their education, industry, and having prior experience in the jobs held by their subordinates. See Figure 7 for a visualization of these results.

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[8] When looking at pairwise comparisons within each year, in 2019 managers believed pay was equally important to workers in low-wage and professional jobs ($p = .74$, $d = -.05$). However, in 2020 and 2021, managers believed that pay was more important to workers in low-wage jobs (2020 $d = -.40$; 2021 $d = -.36$) compared to professional workers.

Insert Figure 7 about here

Worker Perceptions.

We started by examining how workers in low-wage jobs were perceived by managers.

Using a series of Welch Sample t-tests (Delacre, Lakens, & Leys, 2017), managers rated workers

in low-wage jobs as significantly less competent ($d = -1.35$), less committed to their job ($d = -1.18$), and less likely to exert effort at work ($d = -.80$). All of these results held when including

various manager characteristics that could explain this effect, such as the number of years of

management experience, manager education, job industry, and having prior experience in the

jobs held by their subordinates. See Figure 8 for a visualization of the commitment differences.

Insert Figure 8 about here

Predicting Deserved Pay

We were struck by the large gap between the actual satisfaction of workers in low-wage

jobs and manager's estimates of the satisfaction of workers in low-wage jobs. While managers

were fairly accurate in intuiting the satisfaction levels of workers in professional jobs, they were

inaccurate in estimating the satisfaction of workers in low-wage jobs. We wondered whether this

overestimate of dissatisfaction could perpetuate the lack of increased pay for workers in these

jobs. We speculated that the belief that workers in these jobs were dissatisfied might predict the

belief that these workers were also less committed to their jobs as they enjoyed them less, and in

turn, these perceptions would inform the pay that workers were thought to deserve.

We tested this theory by exploring whether manager's estimates of worker satisfaction

were linked to perceived worker commitment, suggesting that managers believe that workers are

less committed to their job as a function of their dissatisfaction with them. Then we looked at whether perceived worker commitment was linked to the pay workers were thought to deserve.

We ran a serial mediation model using PROCESS for R (model 6). We entered the job type as the main predictor (0 = *Low-Wage*, 1 = *Professional*), the overall job satisfaction scores as the first mediator, the perceived worker commitment as the second mediator, and then deserved pay as the outcome variable. See Figure 9 for a visualization of this model. We observed a significant serial mediation, $b = 1.61$, $SE = .59$, 95% CI [.72, 3.15], suggesting that managers' beliefs about the dissatisfaction of workers in low-wage jobs lead them to believe these workers would be less committed and deserve less pay. These results held when we included controls on years of management experience, their education, industry, and having prior experience in the jobs held by their subordinates. As a robustness check, we switched the order of the mediators and there was no indirect effect, $b = -.08$, $SE = .29$, 95% CI [-.75, .45].

Insert Figure 9 about here

In conclusion, results from a large sample of managers suggest that workers in low-wage jobs are viewed less positively than those in professional jobs. Specifically, these workers are thought to be less committed, competent, and engage in less effort at work. Further these workers are thought to deserve significantly less in pay per hour than professional jobs, even holding constant various manager characteristics that could explain differences. Interestingly, the link between these estimates of dissatisfaction to pay operated through perceived worker commitment, suggesting that one barrier to improvements to low-wage jobs is managers' beliefs about their workers' job attitudes.

DISCUSSION

The present study is the first to explore whether the COVID-19 pandemic influenced the experiences of workers in low-wage jobs across the United States. By drawing on three years of nationally representative data that asked workers about their job attitudes and experiences, we aimed to understand whether the increased attention to labor conditions in low-wage jobs translated into substantial changes for workers. We find that workers in low-wage jobs experienced diminished job satisfaction during the pandemic years. Across all three years, we find that workers in low-wage jobs were consistently less satisfied than workers in professional jobs with their overall job. Thus, rather than serving as a turning point for workers, our results suggest that the pandemic maintained and often exacerbated existing differences between job types, aligning with emerging popular press articles suggesting that the pandemic may have short-lived benefits for workers in low-wage jobs without structural changes (Battilana & Casciaro, 2021; Molla & Stewart, 2022).

We then turned to one novel mechanism to potentially explain why we see such consistent differences between job types in job satisfaction: manager psychology. Interestingly, our exploratory experiment suggests that managers tend to underestimate the extent to which all workers are satisfied, and that they are particularly inaccurate about estimating the satisfaction of workers in low-wage jobs. This consistent overestimation of dissatisfaction for workers in low-wage jobs is linked to beliefs about what workers should be paid through perceived worker commitment. These results suggest that a manager's expectation that low-wage jobs are dissatisfying could be used to justify the lack of improvements to these jobs. Our core findings contribute to theory on job satisfaction, low-wage jobs, and stereotyping processes.

One of the key discoveries of this paper is that job satisfaction is shaped by pay level. A well-cited meta-analysis on job satisfaction has posited that jobs with different pay levels do not

substantially vary in overall job satisfaction ("level of pay had little relation to either job or pay satisfaction," Judge et al., 2010: 162). Moreover, a more recent paper suggests that workers who are highly educated, and likely to be in professional jobs, may actually be less satisfied with their jobs than lower wage workers due to increased work demands (Solomon, Nikolaev, & Shepard, 2021). Using a large nationally representative sample of US workers, we find evidence that is counter to this prior research. We document a stark difference in job satisfaction between job types, such that workers in low-wage jobs tend to be less satisfied overall. Further, the pandemic appears to have exacerbated these pre-pandemic satisfaction differences between job types. In other words, there's evidence that job satisfaction may be on a downward trajectory for some of the most vulnerable workers in America.

Second, our findings on the robust relationship between satisfaction with pay and overall job satisfaction in low-wage contexts before and during the pandemic contribute to the growing body of literature on the role of pay in organizational outcomes (Leana & Meuris, 2015). Emerging work has documented the negative consequences of low pay and financial concerns on worker wellbeing and organizational performance (Meuris & Leana, 2018; Pfeffer, 2018; Ton, 2014). Yet relatively little is known on how pay satisfaction links to job satisfaction. For instance, the meta-analysis by Judge et al. (2010) looked at the link between pay and pay satisfaction, as well as pay and job satisfaction, but did not examine the link between pay satisfaction and job satisfaction.

The lack of attention to this topic, aside from work on how pay influences motivation (as noted by Leana & Meuris, 2015), may be a function of the high and consistent pay offered in most professional managerial jobs. The lack of a relationship between pay and job satisfaction for professional workers suggests that this relationship may emerge in contexts where pay is

relatively low and thus weighted more heavily in workplace experiences. Given the link between job satisfaction and other organizational outcomes, our work demonstrates that one way to improve the job satisfaction of workers in low-wage jobs is through improvements to pay.

Overall, we build on many of the calls for further research on low-wage contexts by highlighting how a lack of attention to these workplaces may lead to the development of management theories that are not generalizable to the entire workforce but are posited as such (see Van Eck et al., 2021 for a similar discussion). The importance of pay for worker satisfaction suggests to us that the move toward providing workers in both low-wage and professional jobs with non-cash incentives (Thibault-Landry, Schrewyer, & Whillans, 2017) may have relatively little effect on worker satisfaction for workers in low-wage jobs unless their pay is improved. This argument aligns with our findings in Study 1, in which pay satisfaction was one of the strongest predictors of job satisfaction for workers in low-wage jobs, as well as many of the current demands of workers collectively organizing in low-wage industries (Press, 2022).

Consistent with the importance of pay, research by Berg & Frost (2005) found that a job enhancement program (i.e., increasing worker autonomy and upskilling/broadening of responsibilities) for workers in low-wage jobs at a hospital had little effect on workers' feelings of economic security, intrinsic motivation, and fair treatment. Rather increased pay and reduced workload mattered most for wellbeing. Of note, we are not suggesting that workers should not be offered additional autonomy or enjoyable work, but rather that without also improving many of the structural aspects of the work (i.e., pay, benefits, and safety conditions), such interventions in low-wage contexts may have little impact. Merely applying interventions aimed at improving job satisfaction that are derived from professional settings without considering the current labor conditions and treatment of workers in these jobs could backfire. An even more deleterious

consequences is that organizations who try to implement interventions that focus on characteristics like agency, autonomy, or enjoyability of work and are unsuccessful in doing so may come away from the experience assuming that workers in low-wage jobs do not care about benefits such as autonomy or additional work responsibilities.

The future of work requires additional consideration of the experiences of those in low-wage jobs. Management research must move beyond the study of white-collar, professional occupations to jobs that employ a majority of American workers. The field overlooks important nuances and points of intervention by focusing primarily on one type of worker. Indeed, one potential reason for the lack of significant findings in the Judge et al. (2010) meta-analysis is the underrepresentation of low-wage jobs in our datasets. Moreover, considerations of the experiences of those in low-wage jobs will matter even more in the future as companies will continue to rely on workers in industries like manufacturing and retail for their profits, while also competing for these workers with other companies as well as the gig economy.

Relatedly, our work contributes to the rapidly growing body of research on the effects of the COVID pandemic on workers by highlighting how the pandemic heightened the dissatisfaction of workers in low-wage jobs, both over time and as compared to workers in professional jobs. The increased dissatisfaction experienced by workers in low-wage jobs suggests that thus far, the increased conversations around low-wage labor conditions have yet to substantially shift the experiences of workers in these jobs. This aligns with the expectations of the workers themselves, who were deeply skeptical about the "hero" language used to describe them in the media, with many indicating that these narratives "detracted from debates about adequate pay and protection" (Billing et al., 2021: 13) and would be short-lived with little actual improvements to labor conditions. While those in professional, white-collar jobs have often been

working from home throughout the pandemic, those in low-wage jobs were often forced to continue working in-person. While we did not have specific information on the types of jobs workers were in during the years 2020 and 2021, an exploration of the low-wage jobs in 2019 suggest that these workers would have likely been working in-person during the pandemic.

Specifically, workers in low-wage jobs in Study 1 tended to be in construction (12.8%), cleaning and building service (8.5%), and food preparation and service work (8.5%). As highlighted by Loustaunau et al. (2021) being coerced to work during a global health crisis, with scattershot protection and payment, may have increased the dissatisfaction of workers in low-wage jobs. An additional compounding factor is that the pandemic likely highlighted the discrepancies in experiences between workers in low-wage versus professional jobs. As such, the growing dissatisfaction we document may be linked to the "great resignation" and increased unionization efforts of workers across a variety of industries. Indeed, class hierarchies are often maintained and justified through the distancing of class groups, what has been referred to as "firewalls" (Gray & Kish-Gephart, 2013). Future work should examine whether the disruptions of these firewalls within organizations can heighten job dissatisfaction, as well as the link between dissatisfaction and collective organizing efforts.

Altogether, we believe that the future of work requires a more nuanced understanding of the impediments to change in low-wage jobs, given the declines in satisfaction experienced by workers in low-wage jobs. In Study 2, we explored the psychological barriers among managers, who have the power to change labor conditions, or impede them. In the following section we review implications of these study results and provide suggestions for theory development.

Perceptions of Low-Wage Workers

Our finding that the perceptions of managers could be a factor that perpetuates poor labor conditions contributes to research on low-wage jobs by documenting a previously untested

barrier to their improvement. Prior research has tended to focus on structures and policies that impede improvements to labor conditions (e.g., Shepherd, 2021) or implicitly focused on manager psychology by studying the effects of manager treatment (Reich & Bearman, 2018) or manager decisions (e.g., scheduling decision; Jacobs & Padavic, 2015) on workers. We incorporate the literature on how interpersonal processes maintain class hierarchies in America (Fiske & Markus, 2012; Gray & Kish-Gephart, 2013), and find that manager perceptions play a key role in perpetuating low-wage labor conditions. We initially considered whether the overestimates of dissatisfaction could signal empathy toward those in low-wage jobs; however, in combination with the relatively low pay managers thought these workers deserved and the perceived lack of effort, commitment, and competence of workers in these jobs, we believe that managers' estimates of low job satisfaction perpetuate poor labor conditions. Even more disconcerting was the lack of a significant difference in the ratings of difficulty to improve worker pay, suggesting that managers view it as equally possible to improve pay in both types of jobs, but just don't believe workers deserve more than approximately $22.00 per hour.

Future work should investigate the manager characteristics that influence support for labor condition changes. For instance, we initially hypothesized that a manager's own social class might reduce some of the bias we documented. We found preliminary evidence that manager's personal income moderated deserved worker pay, yet it was such that in low-wage jobs there was no effect of manager income, while in professional jobs, as manager income increased, managers suggested higher pay for professional workers. These results highlight the robust bias against workers in low-wage jobs and further motivate the importance of studying perceptions of these workers to understand what makes managers more amenable to advocating for improvements to these jobs. Given that the managers in our sample had an annual income of

around 70-80K per year, the effects we document might be more extreme among a sample of corporate managers.

Our work contributes to the stereotype literature by highlighting that managers hold stereotypes about workers who earn low-wages, which perpetuate inequality at work (Durante & Fiske, 2017). Research explicitly focusing on perceptions of low-wage jobs or jobs themselves remains relatively rare. One study aimed at understanding the perceptions of scientists found that low-wage jobs tend to be viewed as lacking in both warmth and competence (e.g., fast food workers, sanitation workers, factory workers) or relatively neutral in warmth and competence (e.g., construction workers, retail workers; Fiske & Dupree, 2014), suggesting that different types of low-wage jobs likely have unique stereotypes that could inform labor conditions.

Future work should consider expanding upon this finding and document the content of stereotypes not only different types of jobs, but also superordinate categories of jobs, such as "white-collar" or "caregiving" jobs (see Block et al., 2019 for perceptions of STEM versus caregiving jobs). Given that the workers in low-wage jobs often vary along dimensions of social class (e.g., an increasing number of workers in low-wage jobs have college degrees; Mishel, 2014), we believe that research investigating stereotypes of occupations based on pay could provide additional advances in theory on stereotyping processes and organizational inequality. Moreover, our results have interesting implications for pay transparency research, which should consider the interpersonal consequences of revealing pay. Revealing that one earns low-wages could lead to stereotypes that have an impact on the future pay one is thought to deserve.

In summation, we believe that the future of work requires a more thorough understanding of stereotypes of workers in low-wage contexts in order to develop interventions that improve managers' willingness to invest in improving labor conditions. While our experiment highlighted

one such mechanism (perceptions of satisfaction and organizational commitment), future work should consider documenting the additional stereotypes about workers and then developing interventions to dismantle such stereotypes to promote more just labor conditions.

Implications for Practice

Our results join much of the prior work on low-wage jobs in suggesting that pay and benefits for workers in low-wage jobs should be improved. The current tightness of the labor market and high quit rates suggest that companies need to start investing in improvements to these jobs immediately. Further, the model of keeping wages low and profits high by allowing high rates of turnover, which can be up to 150% (Del Rey, 2022a), is rapidly becoming unsustainable. Recent reporting on Amazon warehouse jobs suggest that Amazon could run out of people to hire in the next two years due to their high turnover (Del Rey, 2022a). Increasing pay was one of the solutions posited to help reduce turnover, which echoes the demands of many Amazon worker unionization efforts (Del Rey, 2022b).

Organizations that employ low wage workers are in a position to improve worker pay, given the trends in pay discrepancies between low-wage workers and corporate managers. For instance, hourly wage growth has remained relatively slow for the past forty years (Gould, 2020), especially for workers at the bottom of the income distribution. From 2000 to 2019, workers in the bottom 10th percentile of the wage distribution only experienced a 10.8% increase in hourly wages, while those in the top 95th percentile experienced a 30.7% increase in hourly wages (Gould, 2020, Figure F). And in low-wage organizations, the pay gap between CEOs and employees grew during 2021, specifically "CEO pay at the 300 firms increased by $2.5 million to an average of $10.6 million, while median worker pay increased by only $3,556 to an average of $23,968" (Anderson, Pizzigati & Wakamo, 2022).

In terms of ameliorating the stereotypes we've documented, organizations may be able to circumvent this stereotyping process entirely by including workers in organizational decision-making. The move for the democratization of work provides many recommendations for managers and employers to consider, such as codetermination, in which workers have seats on the board of their employer, or cooperatives, which give all workers a voice in organizational decision-making (see Battilana et al., 2022).

Limitations and Future Directions

Below we highlight some limitations of our work and additional directions for future research. First, our work was unable to fully explore the effects of race or gender on both worker experiences and perceptions of workers. Women and people of color tend to be overrepresented in sectors that are typically low-wage (e.g., service and caregiving occupations; Boesch et al., 2021; Huizar & Gebreselassie, 2016), thus understanding how race, gender, and class intersect in these jobs is of critical importance for future research. While our sample size limited us from doing in-depth analyses in which we interacted race and gender with different job types, results from our regressions with race and gender included as controls suggested that race in particular may have an effect on job satisfaction. Black workers in low-wage jobs were significantly less satisfied than White workers with their jobs (see Table 4). Further, understanding how perceptions of worker demographics influence worker stereotypes and labor conditions is another fruitful direction for future research. For instance, people may inaccurately estimate the percent of women, racial minorities, middle-aged, or migrant workers in these jobs in order to justify the low-wages and poor treatment in them (see e.g., Ross & Bateman, 2019 for a report on the demographics of workers in low-wage jobs). This aligns with work on perceptions of welfare recipients, which has found that when the percent of people who receive welfare are described as majority Black, there is less support for welfare policies (Brown-Iannuzzi et al.,

2021). Second, our Gallup data was from those who were currently employed during the pandemic. As such, our results are specific only to those who were employed.

The effects of the COVID-19 pandemic on the dissatisfaction of workers in low-wage jobs highlight that much remains to be done to improve these jobs. As posited by Rank, Eppard, & Bullock (2021), it is not enough to make sure workers have opportunities to leave low-wage jobs. Rather, all jobs must be improved such we no longer have to refer to them as "low-wage."

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TABLE 1

Descriptive Statistics by Year for Study 1

	Low-Wage			Professional		
	2019 (*N*=141)	2020 (*N*=96)	2021 (*N*=86)	2019 (*N*=150)	2020 (*N*=123)	2021 (*N*=120)
Overall Job Satisfaction	3.31 (0.785)	3.18 (0.808)	3.10 (0.933)	3.44 (0.641)	3.65 (0.587)	3.38 (0.663)
Missing	0 (0%)	0 (0%)	0 (0%)	1 (0.7%)	0 (0%)	0 (0%)
Benefits	2.78 (0.957)	2.95 (0.912)	2.87 (0.867)	3.39 (0.677)	3.47 (0.640)	3.39 (0.584)
Missing	19 (13.5%)	14 (14.6%)	13 (15.1%)	12 (8.0%)	8 (6.5%)	11 (9.2%)
Job Security	3.45 (0.834)	3.51 (0.754)	3.37 (0.959)	3.66 (0.554)	3.59 (0.664)	3.68 (0.568)
Missing	1 (0.7%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
On-the-job Stress	3.00 (0.974)	2.94 (1.04)	2.86 (1.01)	2.93 (0.909)	3.11 (0.851)	2.91 (0.844)
Missing	1 (0.7%)	1 (1.0%)	0 (0%)	1 (0.7%)	0 (0%)	1 (0.8%)
Workload	3.43 (0.830)	3.29 (0.874)	3.27 (0.913)	3.29 (0.840)	3.43 (0.736)	3.35 (0.706)
Missing	0 (0%)	1 (1.0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Chances for Promotion	3.12 (1.06)	3.06 (1.03)	2.95 (1.08)	3.14 (0.898)	3.39 (0.794)	3.19 (0.949)
Missing	4 (2.8%)	2 (2.1%)	6 (7.0%)	6 (4.0%)	4 (3.3%)	9 (7.5%)
Flexibility of Hours	3.36 (0.920)	3.39 (0.903)	3.38 (0.843)	3.49 (0.775)	3.54 (0.684)	3.48 (0.809)
Missing	0 (0%)	1 (1.0%)	0 (0%)	0 (0%)	2 (1.6%)	0 (0%)
Recognition	3.17 (0.974)	3.00 (0.995)	3.27 (0.926)	3.36 (0.886)	3.50 (0.762)	3.32 (0.769)
Missing	1 (0.7%)	2 (2.1%)	0 (0%)	1 (0.7%)	0 (0%)	1 (0.8%)
Money Earned	2.80 (0.976)	2.78 (1.04)	2.62 (1.03)	3.27 (0.849)	3.46 (0.728)	3.20 (0.866)
Missing	1 (0.7%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Physical Safety	3.59 (0.737)	3.34 (0.820)	3.58 (0.759)	3.69 (0.677)	3.71 (0.637)	3.68 (0.625)
Missing	0 (0%)	1 (1.0%)	0 (0%)	1 (0.7%)	0 (0%)	2 (1.7%)
Boss	3.44 (0.798)	3.41 (0.889)	3.53 (0.683)	3.54 (0.788)	3.61 (0.700)	3.47 (0.819)
Missing	1 (0.7%)	0 (0%)	1 (1.2%)	3 (2.0%)	2 (1.6%)	0 (0%)
Relationships with Coworkers	3.70 (0.562)	3.72 (0.537)	3.65 (0.526)	3.77 (0.480)	3.79 (0.432)	3.76 (0.450)
Missing	3 (2.1%)	2 (2.1%)	0 (0%)	0 (0%)	2 (1.6%)	1 (0.8%)

Note: The "Missing" row contains all those who stated that they didn't know or refused. For the job characteristics, this row also contains anyone who said the characteristic was not applicable to them.

TABLE 2
Worker Demographics by Job Type and Year

	2019		2020		2021		Overall	
	Low-Wage Jobs (*N*=141)	Professional Jobs (*N*=150)	Low-Wage Jobs (*N*=96)	Professional Jobs (*N*=123)	Low-Wage Jobs (*N*=86)	Professional Jobs (*N*=120)	Low-Wage Jobs (*N*=323)	Professional Jobs (*N*=393)
Education								
High School or Less	60 (42.6%)	0 (0%)	34 (35.4%)	0 (0%)	32 (37.2%)	0 (0%)	126 (39.0%)	0 (0%)
Some College	50 (35.5%)	0 (0%)	33 (34.4%)	0 (0%)	34 (39.5%)	0 (0%)	117 (36.2%)	0 (0%)
College	27 (19.1%)	87 (58.0%)	24 (25.0%)	59 (48.0%)	16 (18.6%)	67 (55.8%)	67 (20.7%)	213 (54.2%)
Graduate Degree	4 (2.8%)	63 (42.0%)	5 (5.2%)	64 (52.0%)	4 (4.7%)	53 (44.2%)	13 (4.0%)	180 (45.8%)
Household Income (in thousands)	33.2 (11.4)	195 (96.1)	32.3 (10.4)	192 (93.0)	33.7 (11.4)	192 (92.9)	33.0 (11.1)	193 (93.9)
Age (years)	39.5 (16.3)	46.2 (12.7)	40.2 (16.3)	46.7 (12.9)	40.2 (15.9)	44.0 (14.0)	39.9 (16.2)	45.7 (13.2)
Gender								
Man	90 (63.8%)	93 (62.0%)	58 (60.4%)	70 (56.9%)	42 (48.8%)	74 (61.7%)	190 (58.8%)	237 (60.3%)
Woman	51 (36.2%)	57 (38.0%)	38 (39.6%)	53 (43.1%)	44 (51.2%)	46 (38.3%)	133 (41.2%)	156 (39.7%)

Race/Ethnicity

White	72 (51.1%)	105 (70.0%)	57 (59.4%)	89 (72.4%)	44 (51.2%)	90 (75.0%)	173 (53.6%)	284 (72.3%)
Black	26 (18.4%)	10 (6.7%)	12 (12.5%)	14 (11.4%)	18 (20.9%)	7 (5.8%)	56 (17.3%)	31 (7.9%)
Hispanic	38 (27.0%)	15 (10.0%)	24 (25.0%)	7 (5.7%)	19 (22.1%)	7 (5.8%)	81 (25.1%)	29 (7.4%)
Asian	1 (0.7%)	10 (6.7%)	0 (0%)	9 (7.3%)	3 (3.5%)	14 (11.7%)	4 (1.2%)	33 (8.4%)
Other or Undesignated	4 (2.8%)	10 (6.7%)	3 (3.1%)	4 (3.3%)	2 (2.3%)	2 (1.7%)	9 (2.8%)	16 (4.1%)

Married or Partnered

Yes	56 (39.7%)	123 (82.0%)	37 (38.5%)	97 (78.9%)	31 (36.0%)	99 (82.5%)	124 (38.4%)	319 (81.2%)
No	85 (60.3%)	25 (16.7%)	59 (61.5%)	26 (21.1%)	55 (64.0%)	21 (17.5%)	199 (61.6%)	72 (18.3%)
Missing	0 (0%)	2 (1.3%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (0.5%)

Number of Adults in Household	2.16 (1.01)	2.23 (0.823)	2.20 (1.16)	2.22 (0.883)	2.36 (1.49)	2.13 (0.673)	2.23 (1.20)	2.20 (0.799)
Missing	0 (0%)	0 (0%)	1 (1.0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.3%)	0 (0%)

Children under 18 in Household

Yes	41 (29.1%)	65 (43.3%)	29 (30.2%)	53 (43.1%)	30 (34.9%)	55 (45.8%)	100 (31.0%)	173 (44.0%)
No	100 (70.9%)	85 (56.7%)	67 (69.8%)	70 (56.9%)	56 (65.1%)	64 (53.3%)	223 (69.0%)	219 (55.7%)
Missing	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.8%)	0 (0%)	1 (0.3%)
Hours Typically Worked Per Week	42.3 (13.5)	46.0 (10.1)	41.2 (15.1)	44.7 (9.90)	40.5 (14.1)	46.2 (14.4)	41.5 (14.1)	45.7 (11.5)
Missing	1 (0.7%)	0 (0%)	1 (1.0%)	0 (0%)	1 (1.2%)	0 (0%)	3 (0.9%)	0 (0%)
Union Member								
Yes	8 (5.7%)	22 (14.7%)	8 (8.3%)	17 (13.8%)	6 (7.0%)	20 (16.7%)	22 (6.8%)	59 (15.0%)
No	133 (94.3%)	128 (85.3%)	87 (90.6%)	106 (86.2%)	80 (93.0%)	100 (83.3%)	300 (92.9%)	334 (85.0%)
Missing	0 (0%)	0 (0%)	1 (1.0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.3%)	0 (0%)
Employer								
Private	113 (80.1%)	94 (62.7%)	72 (75.0%)	73 (59.3%)	61 (70.9%)	70 (58.3%)	246 (76.2%)	237 (60.3%)
NonProfit	17 (12.1%)	17 (11.3%)	10 (10.4%)	13 (10.6%)	11 (12.8%)	15 (12.5%)	38 (11.8%)	45 (11.5%)
Government	11 (7.8%)	39 (26.0%)	14 (14.6%)	37 (30.1%)	14 (16.3%)	35 (29.2%)	39 (12.1%)	111 (28.2%)

Area Lived In

Big or Small City	67 (47.5%)	48 (32.0%)	48 (50.0%)	40 (32.5%)	51 (59.3%)	33 (27.5%)	166 (51.4%)	121 (30.8%)
Suburb	22 (15.6%)	74 (49.3%)	17 (17.7%)	52 (42.3%)	11 (12.8%)	53 (44.2%)	50 (15.5%)	179 (45.5%)
Town or Rural	52 (36.9%)	28 (18.7%)	30 (31.3%)	30 (24.4%)	24 (27.9%)	32 (26.7%)	106 (32.8%)	90 (22.9%)
Missing	0 (0%)	0 (0%)	1 (1.0%)	1 (0.8%)	0 (0%)	2 (1.7%)	1 (0.3%)	3 (0.8%)

TABLE 3
Effect of Job Type on Overall Job Satisfaction

	No Controls	Controls
Job: Professional	0.25 ** (0.09)	0.20 † (0.11)
Age		0.00 (0.00)
Gender: Woman		-0.06 (0.13)
Race: Black		-0.11 *** (0.01)
Race: Hispanic		0.10 (0.08)
Race: Asian		-0.10 (0.14)
Race: Other/Undisclosed		-0.14 (0.21)
Married or Partnered: No		-0.08 (0.07)
Number of Adults in Household		-0.03 *** (0.01)
Children under 18 in Household: No		0.03 ** (0.01)
Hours Typically Worked Per Week		0.00 (0.00)
Union Member: No		0.19 † (0.10)
Employer: Nonprofit		0.09 (0.09)
Employer: Government		0.05 (0.05)
Area Live: Suburb		0.08 (0.05)
Area Live: Rural		0.11 * (0.05)
Year: 2020	0.03 ** (0.01)	0.05 * (0.02)
Year: 2021	-0.14 *** (0.03)	-0.13 ** (0.05)
N. obs.	715	705
R squared	0.14	0.16
F statistic	2.14	1.89
P value	0.00	0.00

Note: State fixed effects are included in this model. Standard errors are in parentheses. They are heteroskedasticity robust and clustered at the Year level.

† $p < 0.1$
* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$

TABLE 4
Effect of Year and Job Type on Overall Job Satisfaction

	No Controls	Controls
Year: 2020	-0.14 *** (0.01)	-0.13 *** (0.02)
Year: 2021	-0.22 *** (0.03)	-0.18 *** (0.05)
Job: Professional	0.11 *** (0.01)	0.07 *** (0.01)
2020 x Professional	0.32 *** (0.01)	0.32 *** (0.01)
2021 x Professional	0.14 *** (0.03)	0.10 ** (0.04)
Age		0.00 (0.00)
Gender: Woman		-0.06 (0.13)
Race: Black		-0.13 *** (0.02)
Race: Hispanic		0.10 (0.08)
Race: Asian		-0.09 (0.14)
Race: Other/Undisclosed		-0.14 (0.21)
Married or Partnered: No		-0.08 (0.07)
Number of Adults in Household		-0.03 ** (0.01)
Children under 18 in Household: No		0.04 ** (0.01)
Hours Typically Worked Per Week		0.00 (0.00)
Union Member: No		0.18 † (0.11)
Employer: Nonprofit		0.09 (0.08)
Employer: Government		0.05 (0.05)
Area Live: Suburb		0.09 † (0.05)
Area Live: Rural		0.10 * (0.04)
N. obs.	715	705
R squared	0.15	0.17
F statistic	2.18	1.93

P value	0.00	0.00

Note: State fixed effects are included in this model. Standard errors are in parentheses. They are heteroskedasticity robust and clustered at the Year level.

† $p < 0.1$
* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$

TABLE 5
What Job Characteristics Predict Overall Job Satisfaction for Low-Wage and Professional Jobs in 2019

	Low-Wage Jobs: No Controls	Low-Wage Jobs: Controls	Professional Jobs: No Controls	Professional Jobs: Controls
Benefits	-0.04 (0.07)	-0.04 (0.09)	0.08 (0.09)	0.04 (0.10)
Security	-0.04 (0.07)	-0.08 (0.08)	0.03 (0.09)	0.05 (0.09)
On-the-Job Stress	0.18 * (0.07)	0.21 * (0.08)	0.13 (0.10)	0.09 (0.10)
Work Required	0.13 (0.13)	0.18 (0.14)	0.15 (0.11)	0.18 † (0.10)
Promotion Opportunities	0.16 (0.10)	0.15 (0.11)	0.29 ** (0.09)	0.27 ** (0.09)
Flexible Hours	0.22 * (0.10)	0.24 * (0.10)	-0.08 (0.10)	-0.10 (0.10)
Recognition	-0.02 (0.10)	-0.00 (0.11)	0.14 (0.11)	0.17 (0.11)
Pay	0.27 ** (0.08)	0.27 ** (0.08)	-0.01 (0.09)	0.07 (0.10)
Physical Safety	0.04 (0.09)	-0.01 (0.09)	0.02 (0.08)	0.08 (0.08)
Boss	0.12 (0.09)	0.13 (0.10)	0.03 (0.10)	0.05 (0.10)
Coworkers	0.10 (0.07)	0.09 (0.07)	0.23 ** (0.07)	0.21 ** (0.07)
Age		-0.06 (0.07)		0.04 (0.08)
Gender: Woman		-0.08 (0.16)		-0.04 (0.16)
Race: Black		-0.17 (0.21)		0.08 (0.23)
Race: Hispanic		-0.26 (0.16)		0.47 * (0.21)

Race: Asian				0.16 (0.24)
Race: Other/Undisclosed		-0.11 (0.42)		0.32 (0.39)
Married or Partnered: No		-0.16 (0.15)		0.03 (0.18)
Number of Adults in Household		-0.09 (0.06)		0.13 † (0.07)
Children under 18 in Household: No		-0.02 (0.16)		0.02 (0.17)
Hours Typically Worked Per Week		-0.07 (0.08)		0.02 (0.07)
Union Member: No		0.05 (0.28)		-0.25 (0.20)
Employer: Nonprofit		0.08 (0.18)		0.53 * (0.23)
Employer: Government		-0.07 (0.31)		0.15 (0.15)
Area Live: Suburb		0.39 * (0.19)		0.25 † (0.15)
Area Live: Rural		0.08 (0.16)		0.19 (0.16)
N. obs.	117	116	131	130
R squared	0.59	0.63	0.54	0.62
F statistic	13.55	6.11	12.78	6.39
P value	0.00	0.00	0.00	0.00

Note: All continuous predictors and the outcome are mean-centered and scaled by 1 standard deviation. Standard errors are in parentheses and are heteroskedasticity robust. State fixed effects are not included. Weights are not included.

† $p < 0.1$
* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$

TABLE 6
Job Characteristics Predicting Overall Job Satisfaction for Low-Wage and Professional Jobs in 2020

	Low-Wage Jobs: No Controls	Low-Wage Jobs: Controls	Professional Jobs: No Controls	Professional Jobs: Controls
Benefits	-0.15 (0.12)	-0.01 (0.14)	-0.03 (0.09)	-0.06 (0.10)
Security	0.15 (0.11)	0.08 (0.10)	0.13 (0.10)	0.10 (0.12)
On-the-Job Stress	-0.03 (0.11)	-0.07 (0.13)	0.29 * (0.12)	0.38 ** (0.13)
Work Required	0.10 (0.14)	0.21 (0.18)	0.08 (0.12)	0.12 (0.11)
Promotion Opportunities	-0.03 (0.13)	0.03 (0.13)	-0.04 (0.08)	-0.10 (0.09)
Flexible Hours	0.17 (0.16)	0.19 (0.16)	0.06 (0.08)	0.04 (0.09)
Recognition	-0.04 (0.13)	-0.08 (0.13)	0.04 (0.10)	0.05 (0.10)
Pay	0.47 *** (0.13)	0.34 * (0.13)	-0.01 (0.08)	0.01 (0.09)
Physical Safety	0.15 (0.10)	0.13 (0.14)	0.13 (0.11)	0.11 (0.10)
Boss	0.12 (0.12)	0.12 (0.13)	0.29 * (0.12)	0.32 ** (0.12)
Coworkers	0.23 * (0.09)	0.28 ** (0.09)	0.49 † (0.27)	0.20 (0.30)
Age		0.02 (0.09)		0.06 (0.07)
Gender: Woman		0.18 (0.19)		-0.18 (0.15)
Race: Black		-1.03 * (0.42)		0.35 (0.22)
Race: Hispanic		-0.28 (0.25)		0.12 (0.26)
Race: Asian				-0.02 (0.22)
Race: Other/Undisclosed		-0.50 (0.66)		-1.05 † (0.62)
Married or Partnered: No		0.05 (0.25)		0.30 † (0.16)

Number of Adults in Household		-0.08 (0.10)		0.03 (0.05)
Children under 18 in Household: No		-0.29 (0.20)		-0.20 (0.13)
Hours Typically Worked Per Week		0.12 (0.08)		0.04 (0.07)
Union Member: No		-0.41 (0.42)		-0.28 (0.24)
Employer: Nonprofit		-0.12 (0.30)		0.10 (0.20)
Employer: Government		-0.26 (0.28)		0.13 (0.17)
Area Live: Suburb		0.15 (0.23)		0.07 (0.16)
Area Live: Rural		0.14 (0.28)		0.15 (0.18)
N. obs.	81	78	110	110
R squared	0.59	0.69	0.63	0.69
F statistic	8.93	4.64	15.12	7.22
P value	0.00	0.00	0.00	0.00

Note: All continuous predictors are mean-centered and scaled by 1 standard deviation. Standard errors are in parentheses and are heteroskedasticity robust. State fixed effects are not included. Weights are no included.

† $p < 0.1$
* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$

TABLE 7
What Job Characteristics Predict Overall Job Satisfaction for Low-wage and Professional Jobs in 2021

	Low-Wage Jobs: No Controls	Low-Wage Jobs: Controls	Professional Jobs: No Controls	Professional Jobs: Controls
Benefits	-0.02 (0.14)	0.01 (0.19)	0.00 (0.11)	-0.11 (0.11)
Security	0.22 (0.13)	0.15 (0.15)	0.02 (0.07)	0.04 (0.08)
On-the-Job Stress	-0.18 (0.12)	-0.20 † (0.11)	0.01 (0.09)	0.01 (0.09)
Work Required	0.15 (0.15)	0.32 † (0.17)	0.12 (0.10)	0.19 † (0.10)
Promotion Opportunities	-0.09 (0.18)	0.02 (0.18)	0.29 * (0.11)	0.33 * (0.14)
Flexible Hours	0.07 (0.15)	0.05 (0.13)	0.07 (0.08)	0.14 (0.10)
Recognition	0.06 (0.18)	-0.02 (0.18)	0.09 (0.10)	0.01 (0.13)
Pay	0.44 ** (0.15)	0.32 † (0.19)	0.21 * (0.10)	0.20 † (0.11)
Physical Safety	0.09 (0.13)	0.11 (0.16)	-0.09 (0.09)	-0.04 (0.11)
Boss	0.24 (0.14)	0.33 * (0.14)	0.19 † (0.11)	0.21 † (0.12)
Coworkers	-0.03 (0.09)	-0.13 (0.10)	0.11 (0.08)	0.13 (0.09)
Age		0.05 (0.10)		-0.06 (0.09)
Gender: Woman		0.26 (0.19)		0.06 (0.18)
Race: Black		-0.10 (0.40)		0.27 (0.30)
Race: Hispanic		0.15 (0.29)		0.45 * (0.19)
Race: Asian		0.21 (0.42)		0.14 (0.22)
Race: Other/Undisclosed		0.83 † (0.44)		0.36 (0.34)
Married or Partnered: No		-0.47 * (0.21)		-0.30 (0.23)

Number of Adults in Household		0.06 (0.08)		0.00 (0.09)
Children under 18 in Household: No		-0.07 (0.28)		0.44 ** (0.16)
Hours Typically Worked Per Week		-0.09 (0.11)		0.14 (0.09)
Union Member: No		0.30 (0.49)		-0.05 (0.30)
Employer: Nonprofit		-0.06 (0.32)		0.22 (0.27)
Employer: Government		-0.14 (0.38)		0.26 (0.17)
Area Live: Suburb		0.69 * (0.31)		0.28 (0.20)
Area Live: Rural		-0.09 (0.22)		0.31 (0.23)
N. obs.	70	69	101	99
R squared	0.51	0.65	0.57	0.65
F statistic	5.56	3.05	10.61	5.21
P value	0.00	0.00	0.00	0.00

Note: All continuous predictors are mean-centered and scaled by 1 standard deviation. Standard errors are in parentheses and are heteroskedasticity robust. State fixed effects are not included. Weights are not included.

† $p < 0.1$

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

TABLE 8
Descriptive Statistics for Study 2

	Low-Wage (N=189)	Professional (N=190)	Overall (N=379)
Overall Estimated Job Satisfaction	2.13 (0.495)	3.10 (0.465)	2.62 (0.683)
Estimated Job Satisfaction in 2019	2.39 (0.569)	3.24 (0.488)	2.81 (0.680)
Estimated Job Satisfaction in 2020	2.06 (0.542)	3.05 (0.587)	2.56 (0.751)
Estimated Job Satisfaction in 2021	1.95 (0.591)	3.03 (0.601)	2.49 (0.802)
Accuracy in 2019	-0.924 (0.569)	-0.202 (0.488)	-0.562 (0.641)
Accuracy in 2020	-1.12 (0.542)	-0.600 (0.587)	-0.859 (0.621)
Accuracy in 2021	-1.15 (0.591)	-0.355 (0.601)	-0.750 (0.715)
Rank of Pay in 2019	2.31 (2.37)	2.40 (2.48)	2.36 (2.42)
Rank of Pay in 2020	3.02 (2.70)	3.72 (2.92)	3.37 (2.83)
Rank of Pay in 2021	2.44 (2.43)	3.07 (2.54)	2.75 (2.50)
Difficulty of Improving Pay	4.12 (1.88)	4.40 (1.66)	4.25 (1.79)
Missing	33 (17.5%)	60 (31.6%)	93 (24.5%)
Number of Barriers to Improve Pay	2.39 (1.29)	1.80 (0.804)	2.09 (1.11)
Missing	119 (63.0%)	119 (62.6%)	238 (62.8%)
Perceived Worker Effort	4.40 (1.48)	5.46 (1.13)	4.93 (1.41)
Perceived Worker Competence	4.50 (1.18)	5.89 (0.871)	5.20 (1.25)
Perceived Worker Commitment	3.71 (1.69)	5.44 (1.20)	4.58 (1.70)
Deserved Pay	22.8 (8.93)	61.1 (23.6)	42.0 (26.2)

Note: For ranks of pay, larger numbers indicate that pay was ranked as less important. For accuracy, 0 would indicate perfect accuracy and negative numbers indicate the extent to which managers underestimated worker job satisfaction.

FIGURE 1
Effect of Year x Job Type on Overall Job Satisfaction with Controls
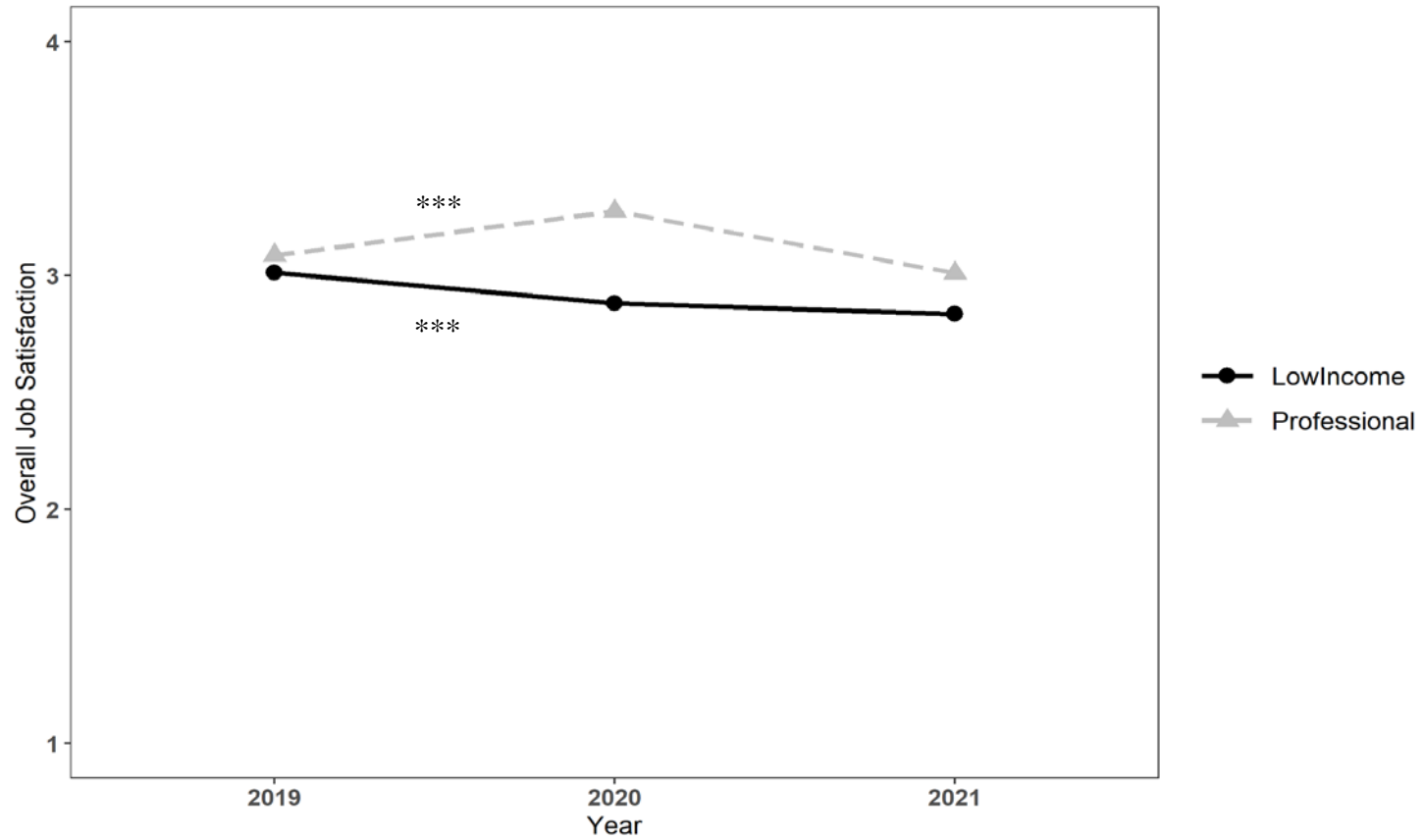
Note: All individual level covariates are included and no weights. Results from this regression can be found in Table 4.
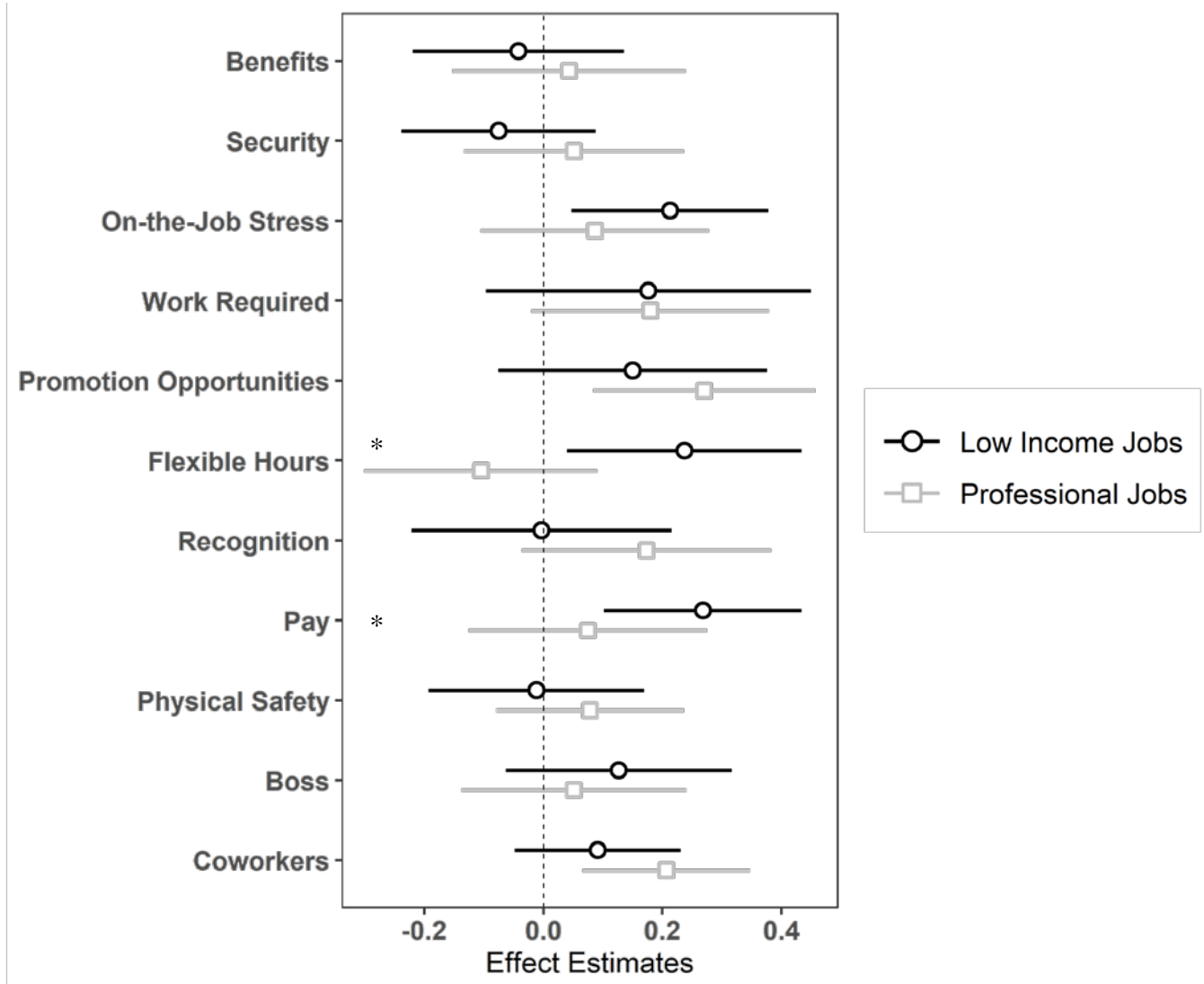$\dagger\, p < 0.1$;
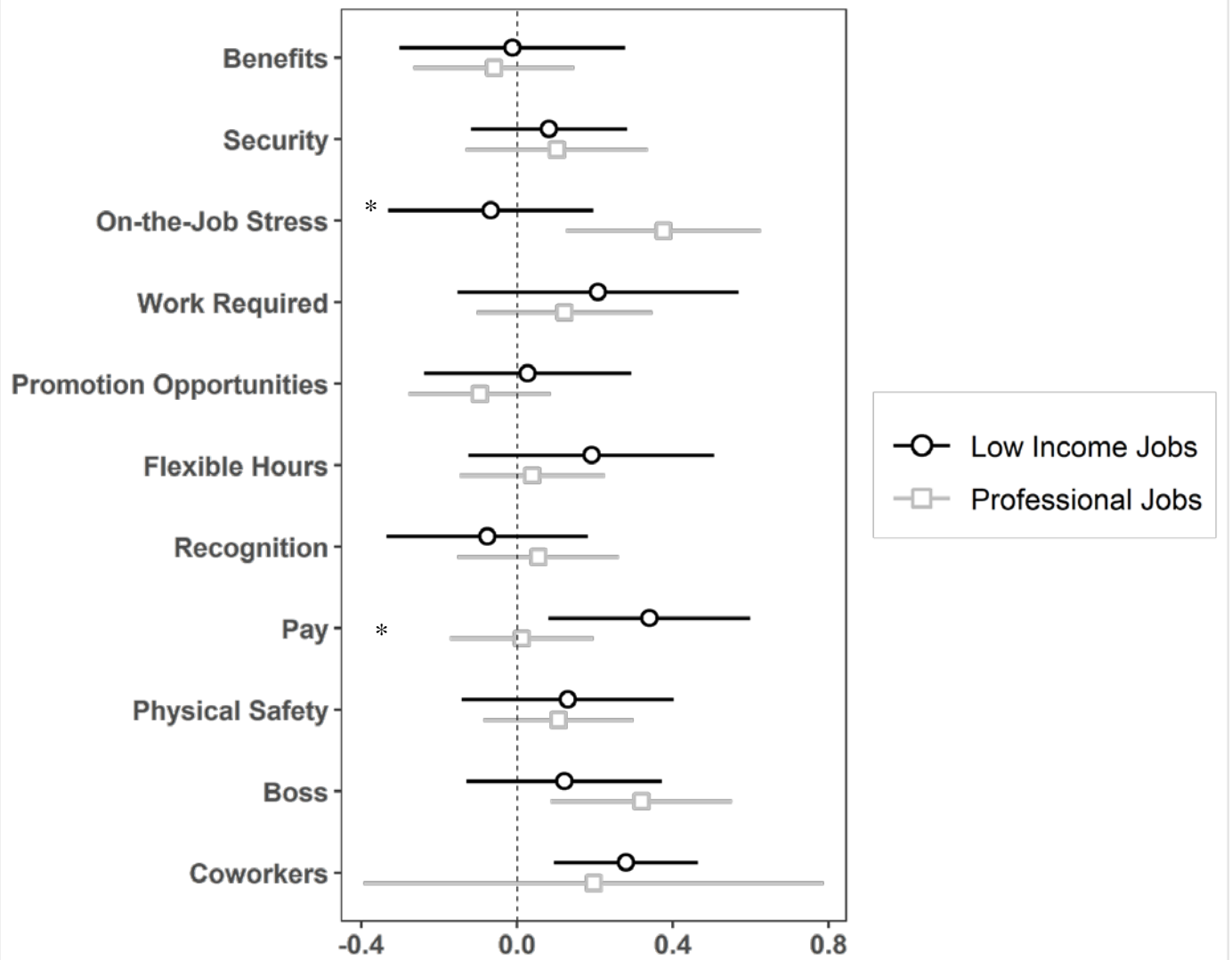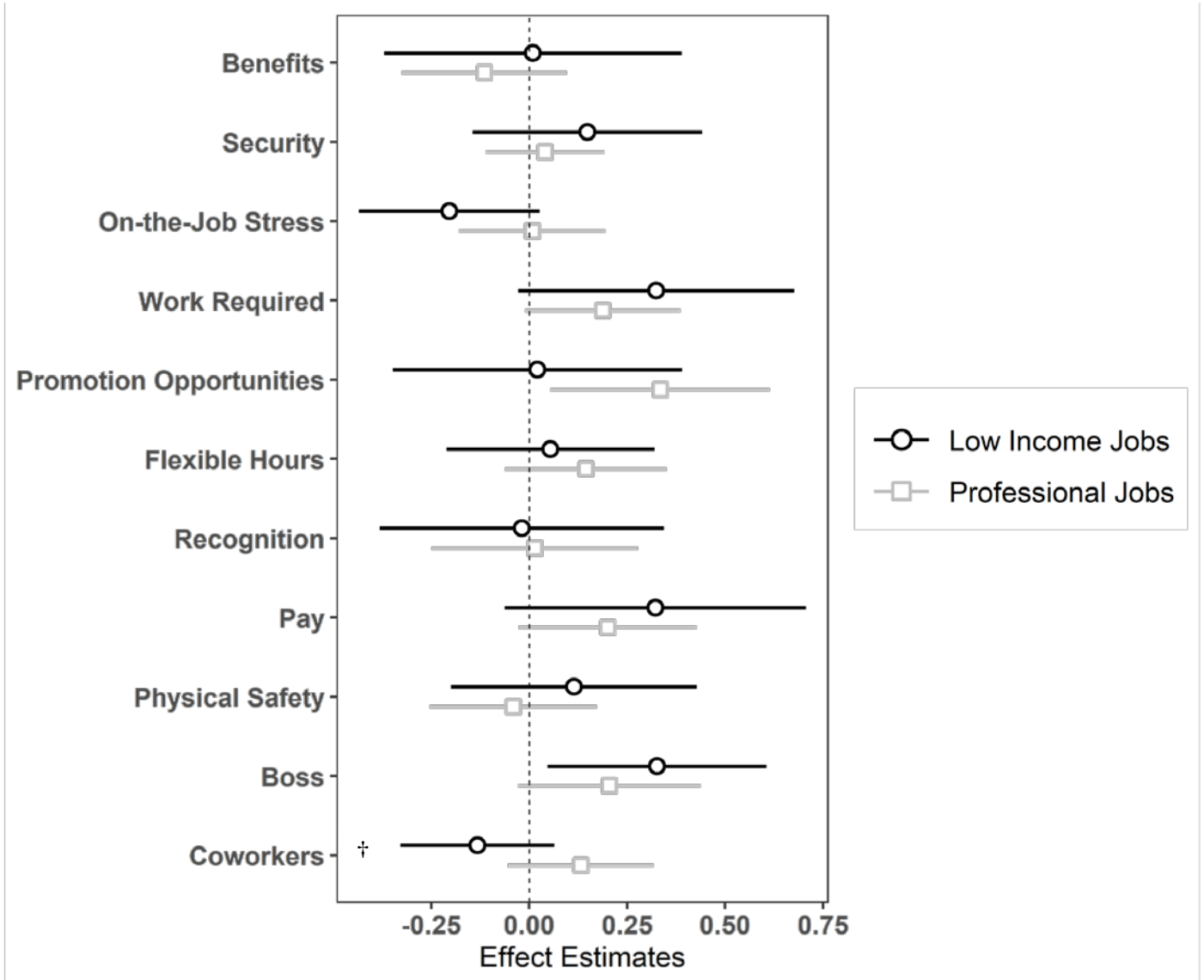$*\, p < 0.05$;
$**\, p < 0.01$;
$***\, p < 0.001$

FIGURE 2
Effect of Job Characteristics on Overall Job Satisfaction for 2019

Note: All individual level covariates are included and no weights are included. Lines that don't cross zero indicate a significant coefficient. Significant differences between job types are indicated with stars
† $p < 0.1$
* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$

FIGURE 3
Effect of Job Characteristics on Overall Job Satisfaction for 2020

Note: All individual level covariates are included and no weights are included. Lines that don't cross zero indicate a significant coefficient. Significant differences between job types are indicated with stars

† $p < 0.1$
* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$

FIGURE 4
Effect of Job Characteristics on Overall Job Satisfaction for 2021

Note: All individual level covariates are included and no weights are included. Lines that don't cross zero indicate a significant coefficient. Significant differences between job types are indicated with stars.

† $p < 0.1$
* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$

FIGURE 5
Manager Estimates of Job Satisfaction versus Actual Satisfaction
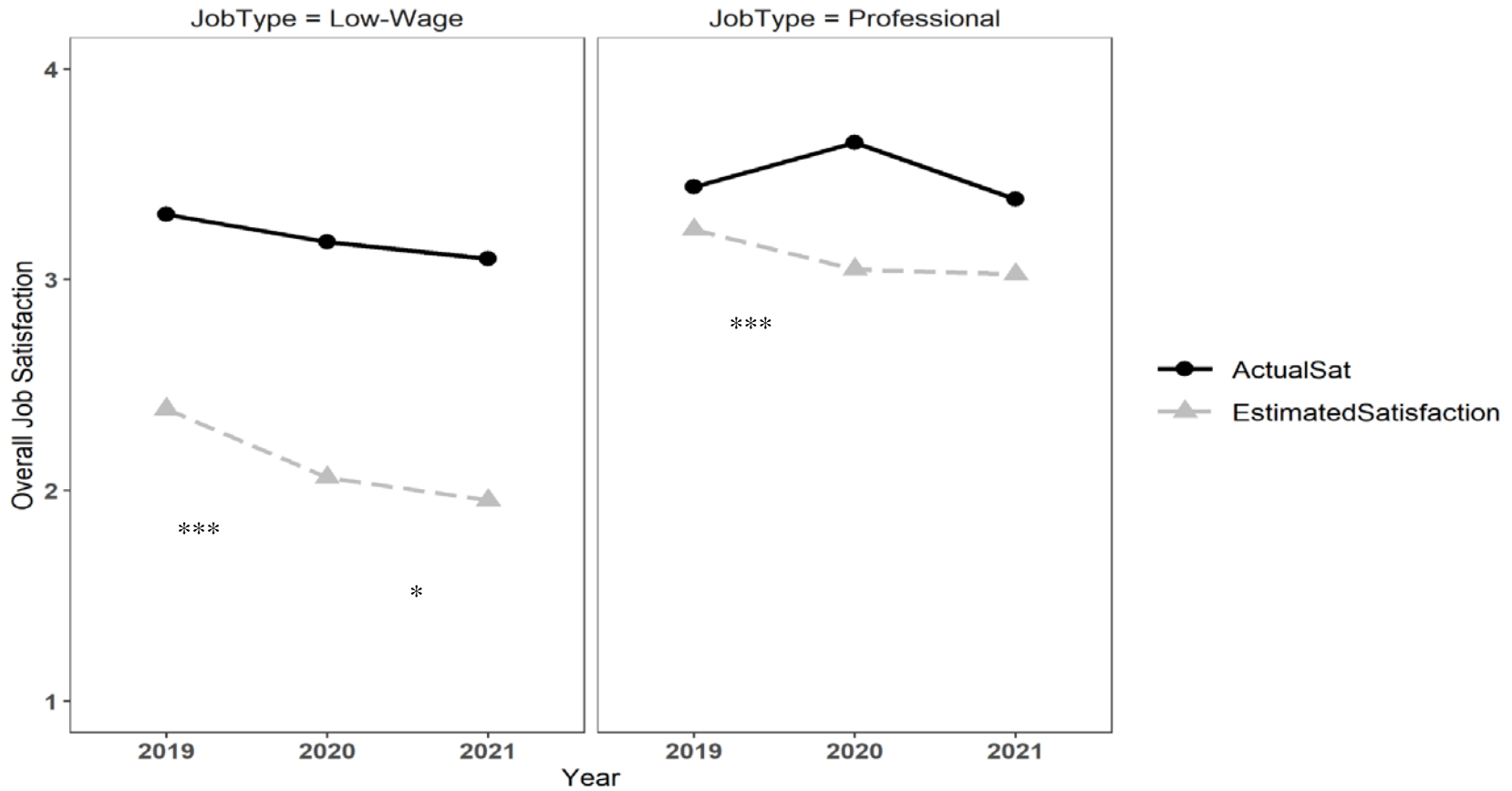
Note: all differences between actual and estimated satisfaction are significant ($p < .05$).
† $p < 0.1$
* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$

FIGURE 6
Rank of Importance of Pay over Time
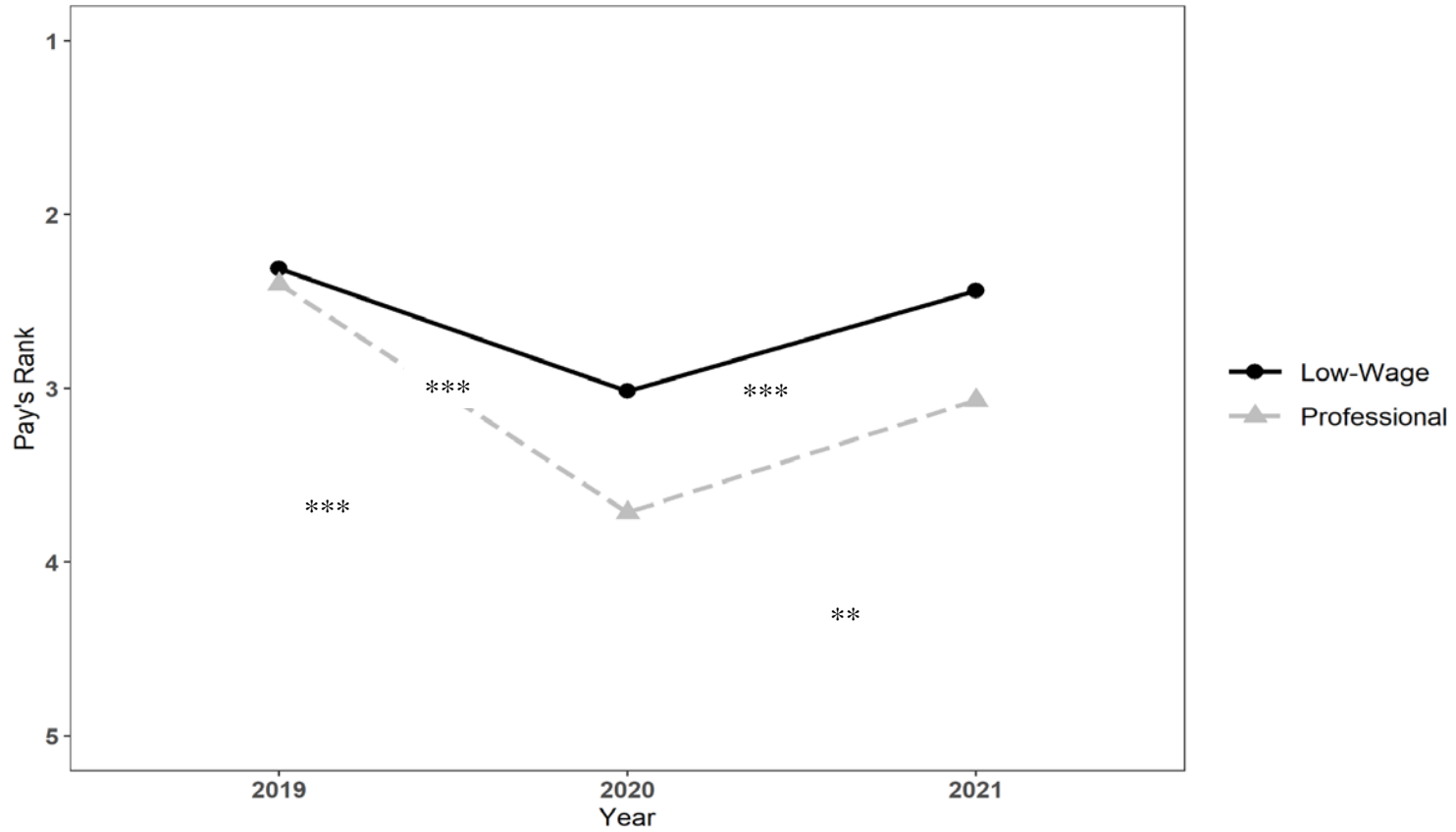
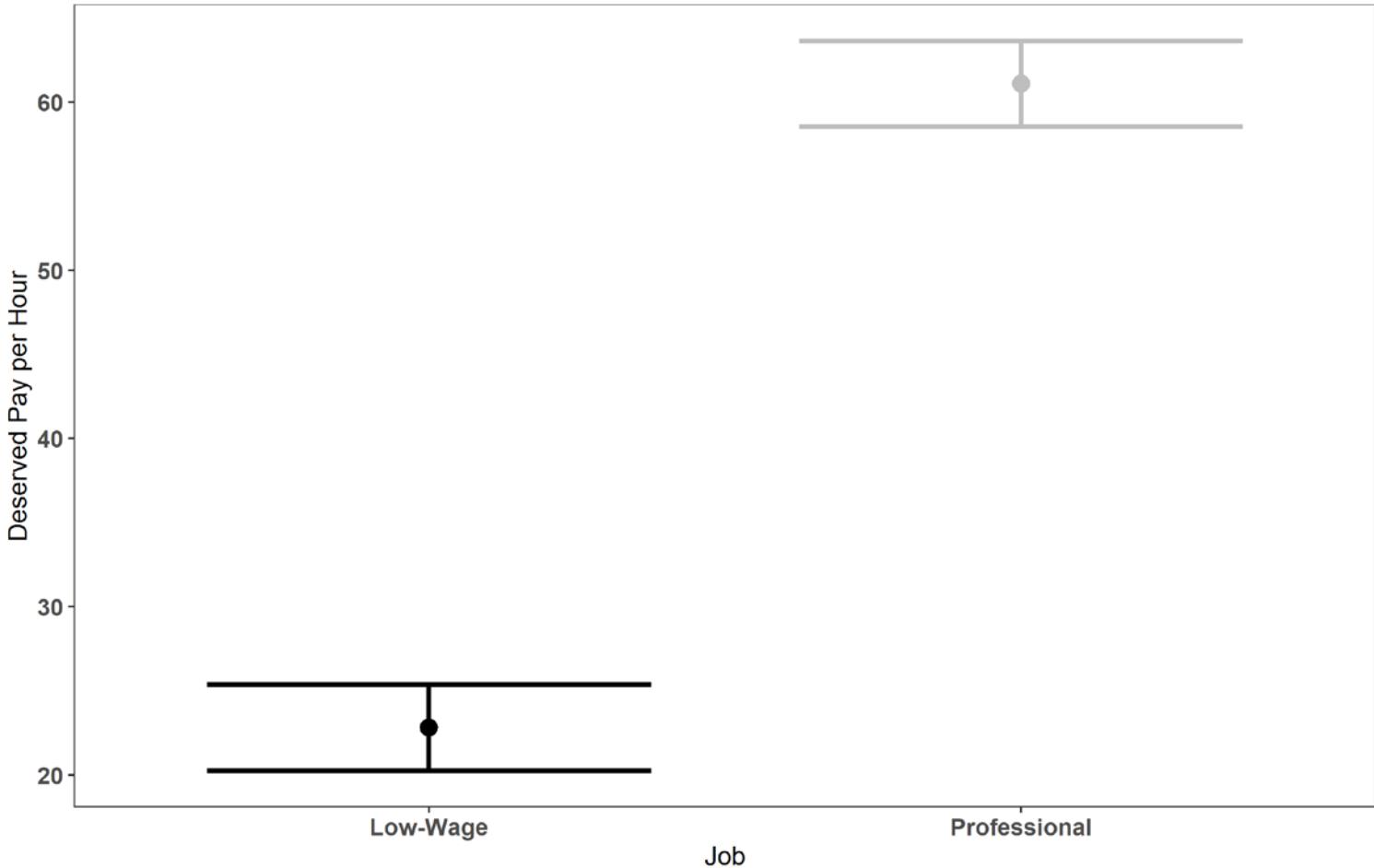Note: Lower scores indicate pay was ranked more highly.
† $p < 0.1$
* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$

FIGURE 7
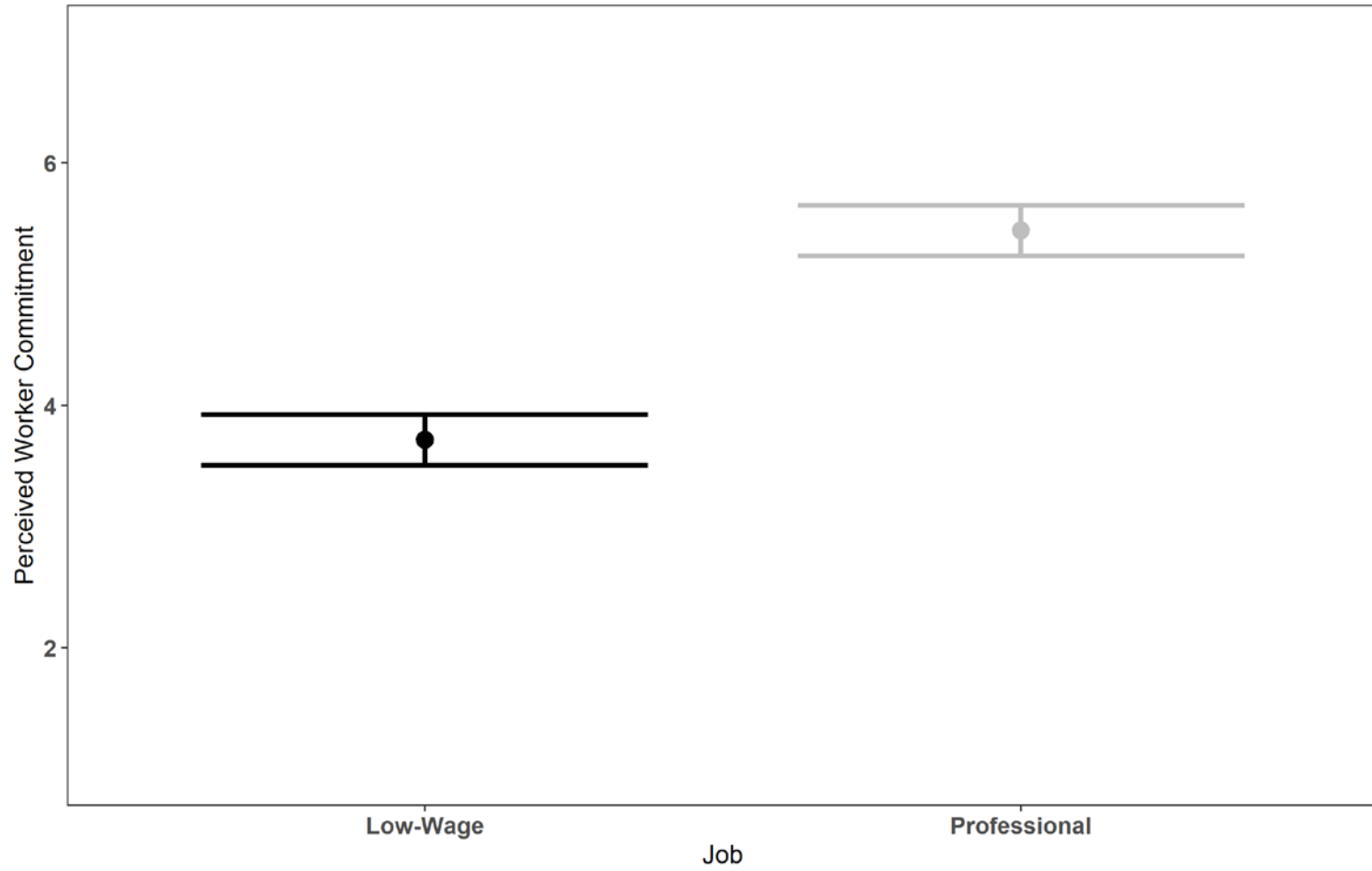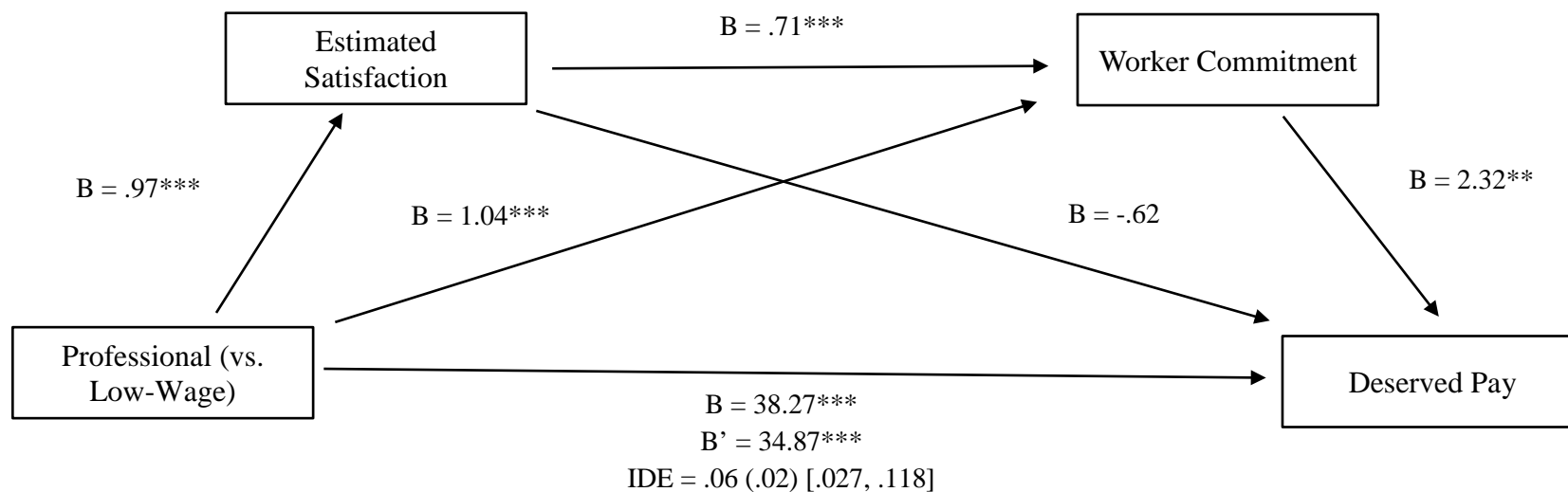**Deserved Pay per Hour for Study 2**

Note: Error bars indicate 95% Confidence Intervals.

FIGURE 8
Perceived Worker Commitment for Study 2

Note: Error bars indicate 95% Confidence Intervals.

FIGURE 9
Serial Mediation Model from Study 2

Note: All Bs represent unstandardized regression coefficients obtained through bootstrapping using 5,000 resamplings. This model does not contain controls.

$†\ p < 0.1$

$*\ p < 0.05$

$**\ p < 0.01$

$***\ p < 0.001$