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# Emotional Labour Demands, Wages and Gender: A Within-Person, Between-Jobs Study

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## Abstract

Although research suggests the important role of gender in emotional labour, its effect on the relationship between emotional labour demands and wages has not been examined explicitly. The current study investigates this relationship by testing hypotheses derived from theories of vocational choice and labour market supply and demand. Hypotheses are tested using a unique within-person, between-jobs longitudinal dataset with information on two jobs for each worker in a national sample of U.S. workers (N=5,488). After controlling for relevant variables related to wages, results suggest men incur wage penalties of approximately 6% when moving to occupations with higher emotional labour demands. Women do not experience statistically significant wage effects from moving to an occupation with higher emotional labour demands. These findings are discussed and interpreted based on the theoretical frameworks.

\* Authorship is alphabetical; both authors made equal contributions to this research.

It is not surprising that the increasing research attention to the concept of emotional labour (e.g. Brotheridge & Grandey, 2002; Diefendorff & Richard, 2003; Glomb & Tews, 2004) mirrors an increasingly services-based economy. Individuals in service occupations (e.g. airline attendants, sales workers) frequently have to abide by specific 'display rules' (Goffman, 1959) that are considered necessary by organizations. The suggestion that organizations capitalize on the emotional labour (EL) of their employees to gain customer satisfaction was put forth in the seminal work on EL by Hochschild (1983); subsequent work supported the organizational value of EL, particularly in service occupations (Grandey & Brauburger, 2002; Pugh, 2001). Because Hochschild conceptualized EL as something that is 'sold for a wage and therefore has exchange value' (p. 7), one might question whether individuals in occupations with high EL receive any pecuniary benefits as a result of this exchange. This question was explored in a study by Glomb, Kammeyer-Muller, & Rotundo (2004), who used occupational-level data to investigate the presence of compensating wage differentials for jobs with EL demands.

The Glomb et al. (2004) research did not study explicitly the role of gender in their examination of EL and wages. However, their study evidenced some intriguing gender effects as a by-product of their core research question. Specifically, their paper shows a positive relationship between the proportion of females and EL demands in an occupation. This is consistent with sociological studies (Hochschild, 1983) that have shown a higher percentage of women perform EL than men. Further, the Glomb et al. (2004; p. 713) listing of the jobs highest in EL suggest that these jobs are not just stereotypically female such as nurses, but also stereotypically male jobs such as police officers and bailiffs. However, the interplay of EL, gender and its influences on wages has not been investigated.

The influence of EL and gender on wages is an important question where additional research is warranted (Wharton, 1993). It is well established that earnings differentials between men and women continue to exist, even though they have diminished over time (e.g. Blau and Kahn, 2000). The Glomb et al. (2004) study accounted for the effect of gender at the occupational level by controlling for the percentage of females in occupations. However, economic (Bayard, Hellerstein, Neumark & Troske, 2003; Blau & Kahn, 2000) and sociological (Kilbourne, England, Farkas, Beron, & Weir, 1994) analyses have consistently indicated that gender interacts with several important determinants of wages such as education, tenure, occupation and industry, thereby making it critical to estimate separate wage equations for men and women. In the current study, we examine the wage dynamics for women and men to determine if there are different returns to EL demands for men and women.

The current study investigates three related research questions. The first two questions are primarily a replication and an extension of the Glomb et al. (2004) findings using individual level longitudinal data. Specifically, we examine (1) whether the effect of EL demands on wages is negative and (2) the interactive effect of EL demands and cognitive demands on wages. This replication is a 'constructive replication' (Lykken, 1968) using a different sample, methodology and analysis. Eden (2002) is just one recent example of the compelling and consistent call for replication to advance scientific theory (Amir and Sharon, 1990; Furchtgott, 1984; Lykken, 1968; Rosenthal, 1990; Smith, 1970). Replication in the area of EL and wages is particularly valuable where only a handful of studies have examined these

effects. As stated by McGrath (1981, p. 129), ‘multiple methods is not just a desirable approach but rather is the sine qua non for the knowledge accrual process’.

However, this study does not stop at a constructive replication. The third research question is a unique contribution and examines the wage effects associated with EL demands to determine whether these effects differ for males and females. As noted above, research on EL as a determinant of wages has not integrated issues of the gender.

To investigate these wage dynamics, we integrate theory from the psychological field on vocational choice and theory from the economics field on labour market supply and demand. Specifically, we use these ideas to propose that EL demands by themselves are not an unfavourable job factor; for some workers, the presence of job interactions is desirable. Therefore, a wage differential may not be required to attract workers into these occupations. However, labour market supply and demand differs for women and men with respect to EL demands and will drive differences in wages. Our argument rests on the notion that, although occupations we typically think of as high in EL demands are majority female (e.g. waitresses and flight attendants), there are in fact similar numbers of occupations that are male and female-dominated that are high in EL demands. However, the number of jobs available in these occupations is much larger for female-dominated than male-dominated high EL demands occupations, thereby making the supply of high EL demands jobs lower for men than women.

Additionally, this study makes an empirical contribution by studying EL in a large, nationally representative sample (n=5,488) that includes data for two jobs held by each individual, making it possible to control for worker-specific characteristics that are relatively stable over time (e.g. ability, personality, interests). In doing so, we act upon the suggestion of Glomb et al. and examine the relationship between EL demands and wages using a longitudinal research design at the individual level. This allows us to account for unobserved ability and other characteristics and thus minimize a potentially large omitted variable bias. A recent paper by Inness, Barling and Turner (2005) illustrated the advantages of such a ‘within-person, between-jobs design.’ In the current work, this unique design enables us to assess the relative influence of a change in EL demands on wages as women and men move from one job to another while controlling for a multitude of other variables known to influence wages.

### **Emotional labour**

Grandey (2000) highlighted that EL has been conceptualized in different ways, but views the common element of ‘regulating both feelings and expressions for the organizational goals’ as central to the EL construct. EL has been examined across a variety of contexts such as traditional frontline service occupations, for example, flight attendants (Hochschild, 1983) and bill collectors (Sutton, 1991), as well as contexts where EL may be less expected, but in fact is quite high, such as managers (Brotheridge & Grandey, 2002) and paralegals (Lively, 2002). A distinction has been made between job-focused EL (emotional demands at the occupational level) and employee-focused EL (emotional dissonance at the individual level; Brotheridge and Grandey, 2002). Our study focuses on the former perspective by examining the wage differentials associated with different EL demands in occupations. EL is considered

a job demand similar to physical and cognitive demands (Cote & Miners, 2006; Glomb et al., 2004), consistent with notions of job-focused EL.

It is critical to highlight that we are not focusing on the intra-individual emotional regulation process, i.e. employee-focused EL, which has been examined extensively in the literature (e.g. Grandey & Brauburger, 2002). Rather, the emphasis of this study is on job-focused EL wherein we are considering the job demands that any individual working in a particular occupation experiences on account of job interactions. For example, the level of job-focused EL (EL job demands) for all police officers would be the same even though individual police officers may have differing levels of employee-focused EL; that is, police officers may evidence differences in emotional regulation in response to the same job demands present in this occupation. In sum, we will be considering an objectively determined level of EL for each occupation (discussed later) that assesses EL job demands for each occupation.

### **Relationship between emotional labour demands and wages**

The conceptualization of EL as a job demand that might enjoy monetary returns similar to occupations with cognitive demands (Johnson, 1997) was empirically tested by Glomb *et al.* (2004). Glomb *et al.* examined the relationships between EL demands and wages using the theory of compensating the wage differentials, which posits that occupations with higher job demands (e.g. cognitive demands, Johnson, 1997; physical risks, Olson, 1981) pay higher monetary rewards to attract and retain employees.

However, results of the Glomb *et al.* (2004) study did not provide clear evidence in support of the theory of compensating wage differentials. Their results suggested that there was an interactive effect of EL demands and cognitive demands on wages such that higher levels of EL demands were associated with lower wage rates for occupations low in cognitive demands and higher wage rates for occupations high in cognitive demands. The following hypotheses test these findings in our constructive replication of Glomb *et al.* (2004) with one important difference; this study examines these hypotheses using individual level longitudinal data across two jobs, which allows for controlling for individual characteristics.

*Hypothesis 1: Higher EL demands are associated with lower wages.*

*Hypothesis 2: There is an interactive effect between cognitive demands and EL demands such that higher EL demands are associated with lower wages when cognitive demands are lower and higher wages when cognitive demands are higher.*

The theoretical explanations provided for this interactive effect of EL and cognitive demands were labour market supply and demand arguments, the Vitamin model (Warr, 1987) and the role of worker willingness. Labour market supply and demand arguments explain the wage increase for individuals high in both cognitive and EL demands using scarcity explanations.

Employers are unlikely to use wage penalties for individuals in occupations with high EL demands and high cognitive demands because these individuals are more scarce and have access to both low and high cognitive demand occupations, and therefore have more job opportunities. The Vitamin model provided an explanation for these results as it allows for the consideration of EL as a ‘positive job demand’ in the high EL and low cognitive demands condition and a ‘negative job demand’ in the high EL and high cognitive demands condition. In Glomb *et al.* (2004), the worker willingness hypothesis was proposed as a *post hoc* explanation for the results; workers may be willing to take on EL demands due to personal preferences, vocational choices, or because these are the best options available to them.

Our study builds upon and extends this theorizing in several ways. First, the essence of the worker willingness explanation is captured in the theory of vocational choices that facilitates an understanding of why workers would exhibit willingness for occupations with EL demands. Second, labour market supply and demand arguments are used to posit differential wage effects for men and women related to the labour supply of jobs with EL demands.

### ***Worker willingness***

All else equal, why would individuals purposely choose occupations high in EL demands? The general assumption seems to be that the ‘labour’ of jobs high in EL demands would make these jobs undesirable and consequently, economic models of compensation would posit that a compensating wage differential is necessary. However, there are both theoretical and empirical reasons to question the assumption that these jobs are undesirable.

From a theoretical perspective, the theory of vocational choices suggests workers are willing to take jobs with high EL demands when they match their vocational interests (Holland, 1985). In his theory of vocational choices, Holland (1985) proposed that individuals and occupations can be characterized based on their interests into six types: Realistic, Artistic, Investigative, Social, Enterprising and Conventional (RAISEC). The theory of vocational choices indicates that the match of individual interests with a specific occupation will lead to outcomes such as vocational satisfaction, vocational stability, achievement and job satisfaction (Lubinski, 2000; Spokane, Meir, & Catalano, 2000), although it also acknowledges that other individual characteristics such as ability and personality affect the occupational matching process. Since vocational interests have been shown to be fairly stable over time (Lubinski, 2000), it is likely that individuals would gravitate towards occupations that match their interests, even if EL demands are associated with these occupations. As such, Adelman (1995, p. 378–79) observes that workers ‘see a number of good reasons for performing emotional labor’. Ashforth and Humphrey (1993) also argue that the potential negative effects associated with EL could be moderated by the identification with a particular

role (e.g. registered nurse) and ‘identification may render emotional labour *enjoyable* and enhance well-being’ (p. 107; emphasis in original)—an idea that is indicative of the notion of a vocational preference.

From an empirical perspective, research suggests that jobs with EL demands may not necessarily be undesirable jobs with high levels of job dissatisfaction. Although Hochschild (1983) contended that EL would be related to lower job satisfaction, the empirical findings with respect to this relationship suggest a more complex relationship (Bono & Vey, 2005; Grandey, 2000), especially considering the job- and employee-focused EL distinctions. Many empirical studies indicate that the dimensions of job-focused EL have positive correlations with job satisfaction (Wharton, 1993; Adelman, 1995; Diefendorff & Richard, 2003; Wong *et al.*, 2005). As Wharton (1999) observes ‘... comparisons of performers and nonperformers of EL suggest that jobs involving EL may have some pleasures as well as dangers for workers, relative to other types of work. For example, jobs that provide workers with opportunities to interact with others on the job – even if these interactions are limited – seem to be more satisfying to workers than jobs allowing less social interaction’ (p. 166).

Other studies that assess employee-focused EL (Grandey, Fisk, & Steiner, 2005; Zapf, Vogt, Seifert, Mertini, & Isic, 1999) have suggested a negative relationship. While there are mixed findings in the literature regarding the EL and job satisfaction relationship, a majority of studies suggest that emotional dissonance or employee-focused EL is negatively related to job satisfaction, while the frequency of emotional displays (job-focused EL) is positively related to job satisfaction (Zapf, 2002). This idea is congruent with a similar proposition by Morris and Feldman (1996).

Although, this issue is beyond the scope of this paper, we feel that the term EL inaccurately suggests that this ‘labour’ is an oppressive and an aversive job condition for all. Instead, we prefer a more complex conceptualization such as the job- and employee-focused EL ideas of Brotheridge and Grandey (2002) that differentiate the emotional and interactional requirements of a job from the individual employee's reactions to those requirements and their experience of dissonance. Other theories such as the Vitamin Model (Warr, 1987) also provide a complex view of job demands and suggest that, at some levels, interacting with others is a desirable characteristic and at others it is burdensome (Glomb *et al.*, 2004). Indeed, recent studies have referred to the job-focused EL aspects, which are conceptualized as EL demands in the Glomb *et al.* (2004) work, as interpersonal interaction requirements (Diefendorff, Richard, & Croyle, 2006) and as interactions with the public (Grandey *et al.*, 2007). A more complex perspective enables EL demands or interactions with others to be a desirable job characteristic in general, yet still allows for negative outcomes such as burnout

to accrue to a given individual from the presence of this characteristic or in situations where demands are excessive.

To summarize, the theoretical work on vocational choices and the empirical research on job satisfaction and EL demands suggest these jobs may not be universally undesirable and individuals may be willing to incur a wage penalty for more satisfying work that better matches their interests. We do not test explicitly the vocational preferences or job satisfaction of our participants in this study. Rather, the theory of vocational choices and the empirical research on the EL and job satisfaction provide the theoretical underpinnings of the individual rationale for job choice and support the assumption that individuals may choose to work in high EL demands jobs as they are not as undesirable as is often assumed. On the contrary, these jobs are attractive due to the social interaction elements of these jobs.

### ***Labour market theory: Supply and demand***

If we assume then that some workers are willing to perform or prefer jobs with EL demands, the question becomes whether or not these jobs are available and whether this availability depends on gender. A critical influence on wages is the supply and demand of labour for a given occupation. Labour market theory suggests that the relatively higher supply of labour is associated with lower wages at a given level of labour demand (Ehrenberg & Smith, 2000). If we assume that high EL demands occupations have higher positive outcomes (e.g. job satisfaction, fulfillment of vocational interests) relative to low EL demands occupations, all else equal, high EL demands occupations would not need to offer higher wages to attract and retain employees due to there being sufficient labour supply (an idea consistent with Hypothesis 1). However, this reasoning is too one-dimensional; the supply and demand argument becomes more complex as we consider the role of gender.

When differences in EL demands are considered in conjunction with labour market supply and demand, theory and empirical results would suggest different returns to EL demands for men and women. In her work, Hochschild (1983) found 50% of jobs held by women are jobs with high EL demands, compared to only 25% of jobs held by men. Although at first glance, this might seem to suggest that occupations high in EL demands are also female-dominated, this is too simplistic an understanding of the gender and EL relationship and confuses the issue of female-dominated occupations with the *number of females* working in those occupations. Research suggests there are both male- and female-dominated high EL demand occupations. In examining the list of 15 occupations with high EL demands presented in Glomb *et al.* (2004) and corresponding employment data from the Current Population Survey (CPS; the U.S. Census), we observed that there are in fact a larger number of male-dominated high EL demands occupations (e.g. police officers, ambulance drivers, correctional officers)



compared to female-dominated high EL demands occupations (e.g. social workers, nurses, transportation attendants). This suggests that both men and women are employed in occupations with high EL demands, but these occupations themselves are different for men and women. More importantly, the *employment rates in these occupations* may be different such that even though there may be male-dominated occupations that are high in EL demands, the number of jobs available in these occupations may be fewer in the labour market compared to female-dominated occupations high in EL demands, and so more women could be working in high EL demands jobs. Indeed, based on data from the year 2000 CPS, the total employment in the top 3 high EL female-dominated occupations was twice as large as that in the top 3 high EL male-dominated occupations (using the list of occupations with high EL demands described in Glomb *et al.*, 2004). For example, one of the male-dominated jobs, first-line supervisors of police detectives, has 104,325 jobs in the workforce, whereas one of the high female-dominated jobs, social workers, has 644,630 jobs in the workforce (i.e. six times more). These data illustrate that although there are similar numbers of *occupations* high in EL demands that are male and female-dominated, there are fewer *jobs* in the high EL demands male-dominated occupations compared with the high EL demands female-dominated occupations. Thus, there is likely to be a higher supply (relative to demand) of males for such high EL demands jobs. As per labour market theory, this relative surplus in labour supply is likely to drive down wages for males working in occupations with high EL demands.

*Hypothesis 3: The wage penalty associated with EL demands will be greater for men than for women.*

## **Method**

### ***Data***

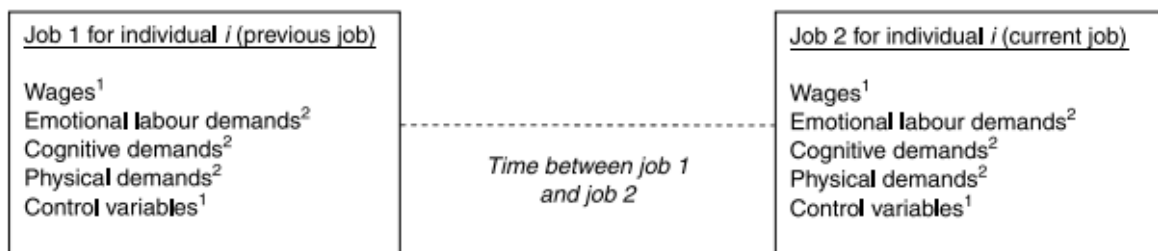
The data for this study come from three publicly available United States datasets: the Occupational Mobility and Job Tenure Supplement to the Current Population Survey (CPS), 2004 (referred to as the Displaced Workers Supplement or DWS), the Occupational Information Network (O\*NET) and the Dictionary of Occupational Titles (DOT). The two Standard Occupational Classification (SOC) systems used in these databases were matched using a publicly available ‘crosswalk’ from the National Crosswalk Service Center (NCSC, 2004). The NCSC's crosswalk uses the DOT to link across the two classification systems.

The CPS is a monthly survey sponsored by the U.S. Census Bureau and the U.S. Bureau of Labour Statistics (2004) based on a probability sample of approximately 50,000 households.

The DWS, conducted once every other year, is a supplement to the monthly CPS. The DWS collects additional information from all CPS respondents 20 years of age or older, who lost or left a job involuntarily within the three years prior to the survey for one of the following reasons: their plant or company closed down or moved, or their plant or company continued to operate but there was not sufficient work for them, their position or shift was abolished, their seasonal job was completed, their self-operated business failed, or some other reason.

Data from the 1996, 1998, 2000 and 2002 DWS and the corresponding basic monthly CPS data were pooled to obtain the dataset used in this study; thus the timeframe for the study spanned from 1993 to 2002 (see Figure 1 for an illustration of the data structure). Given differences between part-time and full-time employment (Blank, 1998; Costa, 2000), we limited our analysis to individuals who had been displaced from and were employed at the time of the survey in full-time (i.e. at least 35 h/per week) jobs. Our sample included 5,488 individuals (3,289 men and 2,199 women; see Table 1 for descriptive statistics). The average age for both men and women was 38 years, 85% of women and 89% of men were white and 93% of women and 90% of men had a high school degree or higher education.

Figure 1. Data structure.



Data Source

<sup>1</sup> Occupational Mobility and Job Tenure supplement (referred to as the Displaced Workers Supplement or DWS) of the Current Population Survey (CPS) and corresponding CPS data

<sup>2</sup> Occupational Information Network (O\*NET) and the Dictionary of Occupational Titles (DOT)

Table 1. Means, standard deviation and bivariate correlations for study variables for current job

Variable	Males		Females		1	2	3	4	5	6	7	8	9	10
	M	SD	M	SD										
Log weekly wages	6.43	0.58	6.20	0.52		.21	-.18	.53	-.12	-.13	.24	.22	-.02	.14
Emotional labour demands	0.00	1.00	0.00	1.00	.20		-.39	.43	-.38	-.45	-.07	.51	-.36	.45
Physical demands	0.00	1.00	0.00	1.00	-.25	-.70		-.25	.54	.70	.12	-.57	.45	-.45
Cognitive demands	0.00	1.00	0.00	1.00	.51	.60	-.62		-.28	-.27	.54	.34	-.07	.12
Emotional labour squared	1.00	0.97	1.00	1.28	-.06	.33	-.16	-.06		.44	.16	-.37	.76	-.29
Physical squared	1.00	0.89	1.00	1.72	.11	.00	.09	.00	.06		.06	-.68	.42	-.58
Cognitive squared	1.00	1.11	1.00	1.04	.34	.15	-.24	.65	-.03	.01		-.05	.39	-.33
Emotional labour × physical	-0.70	0.75	-0.38	1.35	-.01	-.21	.00	.05	-.62	-.54	-.01		-.34	.77
Emotional labour × cognitive	0.60	0.78	0.43	1.01	.15	-.08	-.05	.22	.36	.05	.56	-.40		-.34
Cognitive × physical	-0.62	0.78	-0.25	1.02	-.27	-.05	.00	-.34	-.04	-.49	-.56	.34	-.54	

Note. Entries below the diagonal are for men ( $n = 3,289$ ) and above the diagonal are for women ( $n = 2,199$ ). Correlations greater than 0.04 are significant at  $p < .05$ . The results reported are for the respondent's current job; the pattern of results is similar for the previous job.

For each individual, we used the job data based on SOC code for the previous and current job from the CPS/DWS and the wage data reported by respondents for the current and previous job. We then linked the SOC codes for the previous and current job with the job demands (described below) for that SOC job code. The main advantage of this longitudinal data lies in the availability of information on two jobs for each respondent that enables stable individual characteristics to be controlled as the job characteristics (such as EL demands) vary.

## **Measures**

### ***Wages***

Consistent with standard practices in human capital models and compensation research (Gerhart & Milkovich, 1989), we used the natural log of real weekly earnings in the previous and current job from the CPS/DWS data for the wage variables. The natural log of earnings is used to reduce the right-side skew present in wage distributions (Kilbourne et al., 1994) and also allows interpretation of the effects in terms of percentage of wages. Since the sample was based on full-time workers, we used weekly rather than hourly wages. Weekly earnings include base wages or salaries, as well as overtime pay, tips and commissions. In an attempt to distinguish regular pay from other pay, we included a control variable that identifies all individuals who reported having received overtime pay, tips or commissions.

To ensure consistency across time, weekly earnings were adjusted for inflation using the Consumer Price Index (CPI, 2004) for all urban consumers and are expressed in 2002 dollars. Through the use of time dummy variables, weekly earnings were also adjusted for the effects of different years of analysis in the study.

### ***Job demands***

In developing the job demands measures (i.e. EL demands, cognitive demands, physical demands), we followed the methodological approach of Glomb et al. (2004) who used data from O\*NET 3.1, the version available at the time of their study. In accordance with Glomb et al., we used the generalized work activities (GWA) and work context (WC) items from O\*NET 4.0, 2004 (the final 'analyst' version of the O\*NET database). We supplemented these O\*NET items with the General Education Development (GED; language, reasoning and mathematics) and the Specific Vocational Preparation (SVP) items from the DOT database.

All GWA and WC items used in Glomb et al. (2004) were included in the analysis along with the GED (language, reasoning and mathematics) and SVP items for our sample of 883

occupations. Seventeen O\*NET occupations could not be matched as they lacked the requisite GED and SVP data. The results of the principal component analysis with a direct oblimin (oblique) rotation are consistent with those of Glomb et al. (2004) and are available from the authors upon request. It should be noted that the four factor solution (information, managing, emotional and physical demands) explained 71.8% of the variance in our sample of 883 occupations, which is consistent with the Glomb et al. analysis of 560 occupations in which 73.3% was explained. Based on Glomb et al., the information and managing demands were combined to form the cognitive demands measure. The three job demands, cognitive ( $\alpha=.98$ ), physical ( $\alpha=.93$ ) and EL ( $\alpha=.90$ ), were computed by standardizing within each scale to arrive at an aggregate score for each job demand.

The EL demands scale is based on the following items: assisting and caring for others (GWA), deal with external customers (WC), frequency in conflict situations (WC), deal with angry/unpleasant people (WC), performing for or working directly with the public (GWA) and communicating with persons outside the organization (GWA), with only the last item being an addition to those included in the Glomb et al. measure of EL. This item was not used in the Glomb et al. study because of its cross-loading with the managing factor in their study. However, since the item loaded strongly on the EL demands factor and also reflects the item 'provide a service to others' (an item on the EL scale derived from O\*NET 3.1, which has been deleted from O\*NET 4.0), its inclusion ensures consistency with the measure of EL demands developed by Glomb et al. (2004).

It is important to recognize this measure of EL demands is not measuring the construct of EL at the individual level, but assesses the EL demands of the job due to interactions on the job that are required by one's occupation. However, the fact that job interactions lead to EL is acknowledged in the literature (e.g. Hochschild, 1983, Brotheridge and Grandey, 2002) and enables obtaining a measure of EL demands at the occupational level. This Glomb et al. approach has also been used by Cote and Miners (2006) to capture emotional demands and their results suggest its reasonableness for use in this way. Moreover, from a theoretical perspective, since we are examining the relationship between EL demands and wages, what really matters in the wage determination process are the objective EL demands of the job (that our scale attempts to capture) and not the perceived EL demands that we would obtain from an individual in a particular job. From a methodological perspective, problems related to common method bias are mitigated since the EL demands scale was constructed based on data from occupational analysts in O\*NET, which is independent of the individual level data used in the regression analysis.

### ***Control variables***

Given that the wage determination process is different for men and women (e.g. Bayard et al., 2003; Blau & Kahn, 2000), when estimating separate wage equations, it is important to consider the effect on wages for men working in female-dominated occupations as well as for women working in male-dominated occupations. Hence, we calculated the proportion of females in each occupation using pooled monthly CPS data covering the time period from 1993 to 2002 and included it as a control.

Based on prior research, we also included other important control variables that have been shown to have an effect on wages such as industry (Gibbons & Katz, 1992), job tenure (Hutchens, 1989), age (Murphy & Welch, 1990), private and public sector (Bender, 1998) and private and non-profit status (Preston, 1989). The squared terms for both tenure and age were added to the model to capture nonlinear effects based on human capital models (Ehrenberg & Smith, 2000). It should be noted that the above controls are typically included in wage studies in the economic literature given their known influence on wages.

## Results

### *Descriptive results*

A comparison of the job demands between the overall CPS and our DWS sample suggest the DWS subsample is representative of the CPS data, which is a random probability sample of the U.S. population. Specifically, a similar proportion of individuals were working in occupations at the median level of cognitive demands (45% in the CPS compared to 47% in our DWS sample), EL demands (31% in the CPS compared to 38% in our DWS sample) and physical demands (65% in the CPS compared to 59% in our DWS sample).

Occupations with high EL demand scores (those in the 90th percentile) are listed in Table 2 and reveal a large amount of overlap with those occupations identified as high in EL demands by Glomb et al. (2004). These occupations are also consistent with the sales, managerial, healthcare and other service occupations identified by Hochschild (1983) as high in EL. Unlike Glomb et al. (2004) who only reported high EL demands jobs, we also report the proportion of females in each of the high EL demands occupations (Table 2), which provides empirical support for the suggestion that there are a large number of either male- or female-dominated occupations high in EL demands. Based on the criterion of the occupation comprising at least 2/3 females (or males), 19 of 30 occupations were either male- or female-dominated with an approximately equal number of male-dominated (9 occupations) and female-dominated (10 occupations) occupations with high EL demands.

Table 2. Select occupations with emotional labour demand scores in the 90th percentile

Ranking	Occupation	Female%
1	Lawyers	<b>33</b>
2	Correctional institution officers	<b>23</b>
3	Registered nurses	<b>93</b>
4	Bill and account collectors	<b>70</b>
5	Physicians	<b>32</b>
6	Sheriffs, bailiffs and other law enforcement officers	<b>18</b>
7	Dispatchers	51
8	Guides	56
9	Business and promotion agents	<b>49</b>
10	Social workers	<b>70</b>
11	Public transportation attendants	<b>78</b>
12	Therapists	<b>73</b>
13	Chief executives and general administrators	<b>25</b>
14	Managers, properties and real estate	57
15	Receptionists	<b>97</b>
16	Sales counter clerks	<b>64</b>
17	Managers, marketing, advertising, and public relations	37
18	Sales workers, mechanical equipment	<b>9</b>
19	Sales workers, apparel	<b>80</b>
20	Waiters and waitresses	77
21	Public relations specialists	63
22	Administrators, education and related fields	60
23	Sales workers, hardware and building supplies	<b>21</b>
24	Sales workers, furniture and home furnishings	50
25	Sales workers, electronic equipment	<b>26</b>
26	Teachers, special education	<b>82</b>
27	Physicians' assistants	54
28	Counselors, educational and vocational	<b>69</b>
29	Police and detectives, public service	<b>12</b>
30	Postal clerks, except mail carriers	<b>47</b>

Note. Bold designates occupations in which the percent female is greater than 2/3 or less than 1/3 (indicating 2/3 or more male).

To determine participants' levels of EL demands in the previous and current job, we calculated the distribution across EL demands deciles for both the previous and the current job (Tables 3 and 4). An interesting finding from these matrices is that, for the current job, 52.8% of women are in occupations with EL demands scores in the top three deciles, whereas only 31.7% of men are in similar occupations; the percentages for the previous job are very similar (51.3% females and 31.0% males). These results replicate and update the Hochschild (1983) finding that a much higher proportion of women are in occupations with high EL demands. With respect to the other demands, the percentage of males in occupations with high physical demands (in the top three deciles), is approximately 41% and is much higher than the percentage of females (less than 5%). The percentages of males and females in occupations with high cognitive demands are similar (approximately 35% for females and 31% for males).

Table 3a. Sample distribution across emotional labour demands deciles for previous job

Emotional labour decile	Full sample		Male sample		Female sample	
	Percentage	Cumulative	Percentage	Cumulative	Percentage	Cumulative
1	6.58	6.58	7.69	7.69	4.91	4.91
2	6.03	12.61	7.54	15.23	3.77	8.69
3	11.21	23.82	15.99	31.23	4.05	12.73
4	8.09	31.91	9.58	40.80	5.87	18.60
5	7.76	39.67	9.94	50.74	4.50	23.10
6	15.25	54.92	16.18	66.92	13.87	36.97
7	5.96	60.88	2.10	69.02	11.73	48.70
8	14.32	75.20	13.68	82.70	15.28	63.98
9	15.56	90.76	10.95	93.65	22.46	86.45
10	9.24	100.00	6.35	100.00	13.55	100.00

Table 4a. Occupational mobility matrix for the male sample using emotional labour demands deciles

Deciles for previous job	Deciles for current job										Total
	1	2	3	4	5	6	7	8	9	10	
1	<b>2.83</b>	0.61	1.19	0.85	0.70	0.79	<b>0.09</b>	<b>0.18</b>	<b>0.24</b>	<b>0.21</b>	7.69
2	0.94	<b>3.13</b>	0.94	0.94	0.36	0.61	<b>0.03</b>	<b>0.09</b>	<b>0.27</b>	<b>0.21</b>	7.54
3	1.06	1.12	<b>8.76</b>	1.22	0.85	1.31	<b>0.12</b>	<b>0.40</b>	<b>0.61</b>	<b>0.55</b>	15.99
4	0.52	0.61	1.25	<b>4.04</b>	0.67	1.19	<b>0.15</b>	<b>0.52</b>	<b>0.33</b>	<b>0.30</b>	9.58
5	0.49	0.33	1.03	0.61	<b>4.80</b>	0.76	0.15	0.64	0.67	0.46	9.94
6	0.67	0.61	0.97	1.06	0.70	<b>8.51</b>	0.12	1.89	1.12	0.52	16.18
7	<b>0.00</b>	<b>0.09</b>	<b>0.09</b>	<b>0.03</b>	0.12	0.18	<b>0.55</b>	0.33	0.33	0.36	2.10
8	<b>0.24</b>	<b>0.09</b>	<b>0.58</b>	<b>0.55</b>	0.55	2.07	0.36	<b>6.51</b>	1.79	0.94	13.68
9	<b>0.33</b>	<b>0.12</b>	<b>0.79</b>	<b>0.49</b>	0.55	0.79	0.43	1.49	<b>4.68</b>	1.28	10.95
10	<b>0.33</b>	<b>0.15</b>	<b>0.21</b>	<b>0.18</b>	0.18	0.33	0.18	0.61	1.22	<b>2.95</b>	6.35
Total	7.42	6.87	15.81	9.97	9.49	16.54	2.19	12.65	11.28	7.78	100.00

Note. Entries on the main diagonal represent percentages of workers who did not move between emotional labour demands deciles (total percentage=46.76). Entries in the upper right-hand corner and lower left-hand corner represent percentages of workers who moved from low to high emotional labour demands deciles (total percentage=4.30) and from high to low emotional-labour demands deciles (total percentage=4.27), respectively.

Our within-person, between-jobs approach means we are looking at each participant's current and previous job and their constituent EL demands, enabling us to create gender-specific occupational mobility matrices based on EL demands deciles (Tables 4a and 4b). In these matrices, the rows represent the deciles for the previous job, the columns represent the deciles for the current job and the numbers in the cells represent the percentages of workers who moved across EL demands deciles. For the male sample, 46.8% of workers had both jobs in the same EL demands decile, as compared to 42.5% of workers in the female sample. Note that these workers might have switched occupations (e.g. from sales clerks to cashiers), but the EL demands scores for their previous and current occupations fell in the same decile. Overall, for the male sample, the total percentage of workers who moved to lower EL demands deciles was 25.3 (e.g. from sales clerks to data-entry keyers) and the total percentage of workers who moved to higher EL demands deciles was 27.9 (e.g. from data-entry keyers to sales clerks). For the female sample, the percentages were 28.7 and 28.9, respectively. Note that many of these movements were fairly slight—from one decile to an adjoining one. The total percentage of workers who moved from low to high EL demands deciles (defined as movement from deciles 1–4 to deciles 7–10) was 4.3 for males and 6.3 for females and the total percentage of workers who moved from high to low EL demands deciles (defined as movement from deciles 7–10 to deciles 1–4) was 4.3 for males and 3.6 for

females. Thus, overall individuals tend to have a fair amount of consistency in occupational-level EL demands despite switching jobs.

Table 4b. Occupational mobility matrix for the female sample using emotional labour demands deciles

Deciles for previous job	Deciles for current job										Total
	1	2	3	4	5	6	7	8	9	10	
1	<b>1.50</b>	0.36	0.27	0.36	0.18	0.27	<b>0.32</b>	<b>0.41</b>	<b>0.91</b>	<b>0.32</b>	4.91
2	0.45	<b>1.32</b>	0.27	0.41	0.05	0.18	<b>0.09</b>	<b>0.14</b>	<b>0.32</b>	<b>0.55</b>	3.77
3	0.55	0.09	<b>1.36</b>	0.32	0.36	0.32	<b>0.18</b>	<b>0.23</b>	<b>0.32</b>	<b>0.32</b>	4.05
4	0.77	0.14	0.36	<b>1.77</b>	0.14	0.55	<b>0.41</b>	<b>0.86</b>	<b>0.64</b>	<b>0.23</b>	5.87
5	0.18	0.23	0.32	0.18	<b>1.23</b>	0.32	0.50	0.73	0.55	0.27	4.50
6	0.50	0.23	0.50	0.77	0.45	<b>6.59</b>	0.82	1.77	1.27	0.95	13.87
7	<b>0.32</b>	<b>0.09</b>	<b>0.00</b>	<b>0.09</b>	0.50	1.23	<b>5.23</b>	1.82	1.41	1.05	11.73
8	<b>0.41</b>	<b>0.09</b>	<b>0.05</b>	<b>0.23</b>	0.41	2.05	1.68	<b>6.32</b>	2.64	1.41	15.28
9	<b>0.41</b>	<b>0.18</b>	<b>0.50</b>	<b>0.45</b>	1.09	1.82	1.91	3.00	<b>10.00</b>	3.09	22.46
10	<b>0.23</b>	<b>0.14</b>	<b>0.27</b>	<b>0.09</b>	0.23	0.73	0.64	1.18	2.91	<b>7.14</b>	13.55
Total	5.32	2.86	3.91	4.68	4.64	14.05	11.78	16.46	20.96	15.33	100.00

Note. Entries on the main diagonal represent percentages of workers who did not move between emotional labour demands deciles. (total percentage=42.46). Entries in the upper right-hand corner and lower left-hand corner represent percentages of workers who moved from low to high emotional labour demands deciles (total percentage=6.25) and from high to low emotional labour demands deciles (total percentage=3.55), respectively.

### *Regression results*

In longitudinal data, there are unobserved time-invariant effects due to omitted (time invariant) variables (Wooldridge, 2002). These unobserved effects, which are not measured by the researcher, may include different factors related to the individual such as cognitive ability, personality, work values, etc. that are relatively stable and influence the dependent variable (Wooldridge, 2002). For example, studies have reported wage effects associated with cognitive ability (Murnane et al., 1995; Schumacher & Hirsch, 1997) and personality traits such as proactive personality (Seibert, Crant, & Kraimer, 1999) and the Big Five (Mueller & Plug, 2006), which requires us to control for such individual differences factors when estimating our wage models. Using longitudinal data we can address this omitted variable problem and account for the individual-specific unobserved effects (e.g. cognitive ability, personality) as these effects are assumed to be constant over time

Ordinary least squares (OLS) is not an appropriate method of analysing longitudinal data because the unobserved effects, which are included in the error term, may be correlated with some of the independent variables, which violates a key OLS assumption — that the independent variables and the error term should be uncorrelated (Wooldridge, 2002). Hence, we used fixed effects estimation, an econometric technique especially suited for longitudinal data, as our method of analysis (Wooldridge, 2002). With this empirical approach, all individual characteristics that are fixed over time, regardless of whether or not they are observed by the researcher, are automatically controlled for in the wage model. For example, if wages (dependent variable) are influenced by job tenure (independent variable), individual ability (an unobserved variable) is likely to be correlated with job tenure, as individual ability is likely to be a key antecedent of job tenure. Fixed effects estimation takes into account such correlations between the observed (or measured) independent variables and the unobserved (or unmeasured) variables captured in the error term. In other words, this technique controls for individual differences such as unmeasured ability that Hwang et al. (1992) deemed



important to account for when estimating wage equations. In addition, it should be mentioned that fixed effects estimation also addresses the issue of correlated errors due to individuals being nested in time. [See England, Farkas, Kilbourne, & Dou (1988) and Kilbourne et al. (1994) for similar examples using fixed effects estimation, and Greene (2003), Gujarati (2003) and Wooldridge (2002) for methodological explanations of fixed effects estimation].

Hypothesis 1 examined the effect of EL demands on wages. We first estimated the wage model using the entire sample and then separately by gender. The estimation was performed hierarchically starting with the controls and main effects and then including the interactive and squared effects (Table 5). With regard to the full sample, the control variables for age, tenure and receipt of overtime pay, tips and commissions were all significant, as were the industry dummies ( $F=7.62$ ,  $p<.05$ ). The coefficient estimates for all variables can be interpreted as a percentage increase (or decrease) in log weekly wages associated with a particular variable; for example, a 1 year increase in age is associated with a 6.9% increase in wages, all else equal. The coefficients for these control variables are similar in magnitude as other wage studies (e.g. Bayard, et al., 2003; Waldfogel, 1997). The coefficient estimates for cognitive and EL demands were statistically significant ( $p<.05$ ) and revealed opposite wage effects. All else equal, a one standard deviation increase in cognitive demands was found to be associated with a wage gain of 6.6%, while one standard deviation increase in EL demands was found to be associated with a wage loss of 3.4%. This provides evidence that there is a wage penalty for working in occupations with high EL demands, supporting Hypothesis 1.<sup>1</sup> In these fixed-effects models, the dependent variable is the deviation of the log weekly wage from the mean log weekly wage for each individual. The full model explained 11.4% of the variation in these deviations. The percentage variance explained by this wage model is similar to those of other wage studies using longitudinal data (e.g. 12–18% of the variance based on model specification in England et al., 1988; 11% in Gibbons & Katz, 1992; 13% in Tyler, Murnane, & Willett, 2000).

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<sup>1</sup> In longitudinal data, individuals are nested in time. In these data, individuals are also nested in occupations, which may bias standard errors and affect tests of statistical significance as pointed out by a reviewer. In our data, some individuals switch occupations between Times 1 and 2. To account for the nesting effects due to occupations, we used the ‘cluster’ option in STATA 9.0 that allows estimating a variance–covariance matrix in which the error terms are interdependent within groups (occupations) and independent across groups (occupations). This ‘cluster’ procedure is a modification of the Huber–White correction (that is reported in Table 5) and accounts for interdependent errors within occupations and heterogeneous errors across occupations (Rogers, 1993; Wooldridge, 2002). The covariance matrix is weighted by each occupation (at Time 2) rather than by each individual and the effective sample size for statistical tests is equal to the number of unique occupations (at Time 2) instead of the number of individuals. For recent applications of such a procedure to account for nested effects see Liao (2007) and Zellmer-Bruhn et al. (2008). We used the cluster option for the occupations at Time 2 and also, separately, for the occupation at Time 1. The results of these analyses indicated only very minor differences in the standard errors between the Huber–White corrections reported in the text and the corrections with the cluster procedure and the tests of statistical significance yielded the same results.

Table 5. Results of fixed effects analysis of log weekly wages.

	Full sample		Male sample		Female sample	
<i>Control variables</i>						
Proportion female	-.088**	-.096**	-.122*	-.131**	-.083*	-.092*
Age	.069**	.069**	.088**	.088**	.043**	.042**
Age <sup>2</sup> /100	-.068**	-.068**	-.091**	-.091**	-.037*	-.036*
Tenure	.013**	.014**	.016**	.016**	.011**	.011**
Tenure <sup>2</sup> /100	-.023*	-.023*	-.036**	-.035**	-.001	-.001
Jobs with overtime pay, tips and commissions	-.171**	-.170**	-.177**	-.177**	-.163**	-.163**
<i>Job demands</i>						
Cognitive demands	.066**	.078**	.088**	.090**	.045**	.056**
Emotional labour demands	-.034**	-.038**	-.057**	-.052**	-.008	-.006
Physical demands	-.022*	-.030**	-.034*	-.037*	-.009	-.029*
<i>Squared terms</i>						
Cognitive <sup>2</sup>		-.010		-.017†		-.006
Emotional labour <sup>2</sup>		.010		.001		.014
Physical <sup>2</sup>		.015†		.018		.016*
<i>Interactions</i>						
Emotional labour × Physical		-.001		.016		-.002
Emotional labour × Cognitive		.004		.020		-.006
Cognitive × Physical		.003		-.011		.012
R <sup>2</sup>	.11	.12	.12	.12	.12	.12
N	5488	5488	3289	3289	2199	2199

Notes. † $p < .10$  \* $p < .05$  \*\* $p < .01$ . All job demands variables were standardized prior to analysis. All models included controls for industry and sector of employment. Proportion female was measured from 0 to 1. Estimates are reported after correcting the standard errors for heteroskedasticity using the Huber-White corrections that generate robust standard errors (Raudenbush & Bryk, 2002; Wooldridge, 2002).

Hypothesis 2 tested the interactive effect of EL demands and cognitive demands reported by Glomb et al. (2004). The coefficient estimate for this interaction term was positive, but not statistically significant, failing to support this interaction effect in the full sample. The interaction terms for physical and cognitive demands and for EL and physical demands, as well as squared terms for all job demands variables were also not significant in the full sample.

Hypothesis 3 examines the wage effects related to the EL demands separately for men and women. The Chow test was used to test for structural differences between the male and female wage equations (Chow, 1960). The Chow test examined whether the coefficients estimated through linear regressions for males are equal to the coefficients estimated through linear regressions for females [see Greene (2003) or Gujarati (2003) for methodological details]. Results led us to reject the hypothesis of similar wage structures ( $p < .01$ ) supporting the estimation of different wage equations by gender. This is standard practice when estimating wage equations given different wage determination processes for men and women. It should be emphasized that because we estimate different wage equations for different male and female subsamples this analysis does not compare males with females directly. Rather, this analysis compares men (women) working in high EL demands occupations with men (women) working in low EL demands occupations.

The results for the male sample revealed a statistically significant negative wage effect for EL demands. Specifically, the wage penalty associated with a one standard deviation increase in EL demands was estimated to be 5.7%. For the female sample, the coefficient estimate for EL demands was also negative, but had a much smaller magnitude (less than 1%) and was not statistically significant.<sup>2</sup>

It should be noted that the difference in the statistical significance of EL demands between the male and female samples does not appear to be an artifact of different occupational mobility patterns between men and women. As previously mentioned, the gender-specific occupational mobility matrices suggest that the variation in EL demands between the previous and the current jobs was similar for male and female respondents (i.e. the absence of a wage effect for women is not due to lower variation in EL demands as compared to men). Further, it is important to remember that this effect was observed after accounting for the proportion of females in each occupation. Consistent with prior studies, there was a negative relationship between the proportion of females and wages. Our results indicate a 12% wage differential between pay in an all male occupation and an all female occupation. When considered with our results, this means that although wages in male-dominated occupations tend to be higher than in female-dominated occupations (consistent with prior research), when examining these occupations separately by gender, wages in high EL demands male-dominated occupations tend to be lower than in low EL demands male-dominated occupations. In contrast, wages in high EL demands female-dominated occupations do not appear to be different from those in low EL demands female-dominated occupations. Together, these findings provide support for Hypothesis 3 that there are different wage effects for men and women based on EL demands.

## Discussion

This study presents a multifaceted view of the role of EL, gender and wages. More than two decades after Hochschild's seminal work on EL, the gender differences in employment in EL occupations persist, with approximately 53% of women and 32% of men being employed in occupations defined as having high EL demands. These percentages are strikingly similar to Hochschild's (1983) finding that almost 50% of the jobs held by women are jobs with high occupational-level EL demands, compared to about 25% for men.

We find that the occupations with high EL demands are mainly sales, managerial, healthcare and other service occupations and are similar to those identified by Hochschild (1983) and Glomb et al. (2004). An interesting finding that emerges from this longitudinal dataset is that there is very little mobility of individuals between occupations from high to low EL demands (and vice versa); a pattern displayed by both females and males. Our results suggest that the occupational switches are often to occupations with similar levels of EL demands. Overall, this pattern of limited mobility across occupations based on EL demands may be interpreted

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<sup>2</sup> Supplemental analyses intended to test the robustness of our findings were carried out using several subsamples that allowed controlling for the effects of alternative factors such as race, union status, worker ability, proportion of employment in occupation, the year of job loss and the potential interactive effects between job demands and the proportion of females in occupations that may be influencing the wage equation. Results of these analyses suggest that our primary findings are not influenced by these factors and are available from the authors upon request.

in two ways. It could be indicative of individuals exhibiting a vocational choice in terms of their employment in occupations with similar job demands, thereby supporting our propositions. Alternatively, it may be that individuals' experience at a certain level of EL demands increases the likelihood of getting other jobs with similar levels of EL and so movement out of a class of jobs with a given level of EL may be difficult (or undesirable) for individuals. Although explaining the reasons for the lack of movement in EL demands with job change is beyond the scope of this study, the reasons for stability in EL demands may be worthy of further investigation. To our knowledge, the stability of EL demands across job changes has not been investigated.

### *EL, gender and wages*

Our results suggest complex effects of EL demands on wages such that the overall result of negative returns to EL demands masks gender-specific wage effects. For each additional standard deviation increase in EL demands, men incur a wage penalty of almost 6%, whereas women do not experience any statistically significant wage effects. We would like to reiterate that we are not comparing males and females directly. Rather, males in occupations with high EL demands receive a 6% wage penalty compared to males in occupations with low EL demands. Further, our results show that there is no corresponding wage penalty for females in high EL demands occupations compared to females in low EL demands occupations. Given that there are numerous factors that can influence wage determination, a 6% wage penalty associated with EL demands is noteworthy and of practical import. These results are after controlling for a number of factors known to influence wages such as other forms of job demands and proportion female in an occupation.

The labour market supply–demand framework along with ideas of vocational choice and worker willingness allows us to understand the different wage effects for men and women. As discussed above, a majority of the women in our sample (about 53%) work in high EL demands occupations, whereas fewer men (about 32%) work in such occupations suggesting that men have more limited access to high EL demands jobs as compared to women. Also, our data suggest that there is an almost equal number of male-dominated as female-dominated occupations with EL demands in the 90th percentile. However, the total employment in the top 3 high EL female-dominated occupations was twice as large (5.6%) as that in the top 3 high EL male-dominated occupations (2.6%). This suggests that, although there are both male and female-dominated high EL demands occupations, the employment opportunities in such occupations may be fewer for men compared to women. This reinforces the point that, while men and women may both be willing to seek jobs high in EL demands, they may not be equally likely to obtain them. This leads to a relatively higher surplus of labour supply of men desiring jobs high in EL demands and, consequently, lower wages compared to wages for males in low EL demands male-dominated occupations.

This argument rests on the assumption that men and women both desire jobs with high EL demands — an assumption that has not been formally tested, but may be tenable given the results of this study, the theory of vocational choice, the notion of worker willingness and prior research (e. g. Adelman, 1995; Wharton, 1999). As noted above, both men and women may seek jobs with high EL demands since employment in such occupations would provide opportunities for exercising vocational choices and/or experiencing job satisfaction. In

support of this claim, we find that three of the top five occupations in EL demands belong to a vocational category (i.e. lawyers, registered nurses and physicians) and many others have a strong vocational grounding. Further, while men may seek jobs with high EL demands, this does not imply that they prefer the high EL demands occupations traditionally associated with women (e.g. airline attendants, nurses, etc.). As our results suggest, many high EL demands occupations such as police officers, sales workers in certain industries, and correctional officers have a very large proportion of men.

From a comparative perspective, it is pertinent to discuss this work in the context of the Glomb et al. (2004) study. The Glomb et al. (2004) study on EL demands and wages was conducted at the occupational level. Although our work extends this line of inquiry, our individual level results evidence some differences from their findings. Specifically, in addition to the main effect of EL demands on wages, Glomb et al. found an interaction effect for EL demands and cognitive demands; we did not find such an effect in this study. There are several possible reasons for these differences. First, results may be influenced by the different measurement of the wages variable as well as differing levels of variability; for any given occupation the Glomb et al. study used the mean level of wages of individuals in that occupation whereas in our study for a given occupation we have the full variability of individuals reporting wages in that occupation. Second, our results are only generalizable to the population of full-time workers whereas the Glomb et al. study examined occupational wage differentials regardless of part-time versus full-time employment. Underlying differences in wage structures between part-time and full-time workers cannot be accounted for fully by a control variable for employment status necessitating an analysis limited to full-time workers. Other explanations might be related to our inclusion of additional controls for relevant employee and employer characteristics such as age, tenure and industry. In addition, the longitudinal design of our study allows our estimates of the effect of EL demands on wages to be obtained after controlling for unobserved individual characteristics such as skills, work values and abilities. The focus of the Glomb et al. study was at the occupational level and therefore these factors could not be controlled for in their analysis.

### ***Limitations and future directions***

One limitation of the current work is that job demands were measured at the occupational level rather than the individual job level. Thus, our operationalization of EL demands at the occupational level does not allow for within-occupation variability where it is likely to exist. However, we feel that the advantages of these data outweigh the imprecision from within-occupation variability. Specifically, in the current study, data were available from a large, representative sample inclusive of a wide variety of jobs, organizations, industries and wages. Further, the longitudinal nature of the data makes it possible to control for worker ability, skills, preferences, etc. when examining how EL demands are related to wages. Conversely, many studies of EL are cross-sectional and have small samples from one or two occupations or organizations. Future research might strive to incorporate individual job level data on EL demands from a variety of occupations.

Also related to the job demands measure for EL, the scale emphasized the assessment of job interactions. As mentioned earlier, this emphasis is consistent with previous conceptualizations (Hochschild, 1983, Brotheridge & Grandey, 2002) and operationalizations

(Glomb et al., 2004; Cote & Miners, 2006). However, we are unable to ascertain whether these interactions were mandated by organizations in a pure 'demand' form or were autonomously engaged by individuals who may enjoy such interactions on the job. The interplay among EL demands, interests, autonomy and wages is an issue that can be examined in greater depth in future research.

The levels of EL demands captured by our measure may be masking gender specific differences in the type of EL demands or frequency of EL displayed in an occupation. Studies indicate that, even within the same occupation, emotional expression differs across male and female workers (Hochschild, 1983; Leidner, 1991; Pugh, 2002; Rafaeli, 1989). Thus, the type of EL experienced may differ for men and for women. However, we do not feel this is a significant limitation of our work given that we are comparing men in high EL demand occupations with men in low EL demand occupations and similarly for women. Further, these issues may be more likely to influence outcomes such as ability to adhere to display rules or burnout from the occupation (Erickson & Ritter, 2001), rather than wages, which are determined by actual job demands and not perceptions of or responses to these job demands.

The measurement of the returns to work in the form of wages may not capture all the monetary returns that an employee receives from the job (Milkovich & Newman, 2002). The dependent variable in this study measured weekly earnings and not total compensation (i.e. cash compensation and benefits). Future work examining the returns to EL could develop more comprehensive measures of the monetary and even non-monetary returns that are inclusive of additional benefits.

Finally, our findings might provoke further consideration of the conceptualization of the EL demands. From an economic perspective, our findings and those of Glomb et al. (2004) suggest that the term EL demands may be inappropriate in the context of wage studies, as economic theory would suggest that any type of labour demand should be associated with a corresponding return. The term 'emotional content' of jobs may be a more accurate description of the wage effects associated with EL.

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