

# Does Whom You Work With Matter? Effects of Referent Group Gender and Age Composition on Managers' Compensation

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Much research has examined gender and age effects on compensation, concluding that a wage gap exists favoring men and negative stereotypes against older workers persist. Although the effect of an employee's gender or age has been widely studied, little work has examined the impact of the demographic characteristics of a focal employee's immediate referent groups (e.g., subordinates, peers, or supervisors) on pay. The effect of the gender and age composition of a focal manager's subordinates, peers, and supervisor on the manager's compensation levels was investigated in a sample of 2,178 managers across a wide range of organizations and functional areas. After controlling for a number of human capital variables, results indicated that not only does a wage gap favoring men exist, but also managerial pay is lower when managers' referent groups are largely female, when subordinates are outside the prime age group, and when peers and supervisors are younger.

For many decades, organizational researchers have devoted considerable effort to examining relationships between demographic characteristics of workers (e.g., gender, race, and age) and a variety of work-related outcomes. Since the passage of the Equal Pay Act (1963), the Civil Rights Act (1964), and the Age Discrimination in Employment Act (1967), particular attention has been devoted to studying differential relationships between demographic characteristics and performance and pay outcomes, with an eye toward identifying possible biases. A large number of studies have consistently documented pay differences based on gender and age of workers (e.g., Durden & Gaynor, 1998; Fields & Wolff, 1995; Lewis, 1998; Marini, 1989; McEvoy & Cascio, 1989). Although controversy continues to exist over the extent of these differences (Eagly, 1995) and whether these differences are due to discrimination or to other causes such as occupational segregation, self-selection, or educational and work history patterns (Marini, 1989), it is well documented that a wage gap favoring men exists and that negative stereotypes against older workers persist.

Further examination of the wage and performance differences based on gender and age is important given the changing demographics of the workforce. In particular, the workforce is aging and increasing numbers of women are entering and participating (Of-fermann & Gowing, 1990; Tharenou, 2001). In addition, women are increasingly entering managerial positions, and estimates are

that they currently hold approximately 40% of all management positions in the United States (Guyon, 1998).

The preponderance of gender- and age-based studies have focused on the gender and age of the employees themselves and the effects of gender or age on pay. Some research, however, has considered occupational segregation effects (i.e., the percentage of women in the occupation), demonstrating that women tend to segregate into lower paying occupations (Bielby & Baron, 1986; Blau, 1996; Reskin & Ross, 1992). In addition, some research has focused on organizational effects (e.g., the percentage of female employees in the job, firm, or among top managers), showing that a greater percentage of women in the job, firm, or top management often depresses wages among employees in that job or firm (e.g., Huffman & Velasco, 1997; Reilly & Wirjanto, 1999). In the area of relational demography, research has examined an individual's age or gender relative to the age or gender of typical job incumbents or members of an applicant pool (cf. Cleveland & Shore, 1992; Cleveland, Shore, & Murphy, 1997; Tsui, Egan, & O'Reilly, 1992). This work suggests that it is not only the age or gender of the focal employee that is important but also the group context in which an individual belongs (Riordan, 2000).

Taken together, recent theory and research suggests that there are context or group effects operating to influence outcomes as well as individual characteristics that may be associated with age or gender. Little or no research, however, has examined the impact of the demographic characteristics of a focal employee's immediate referent groups (e.g., subordinates, peers, or supervisors) on pay. If some systematic effect or a systematic bias is operating that results in differential performance or pay outcomes based on an employee's gender or age, it is also likely that the same effects would be observed based on the gender or age composition of the focal employee's referent group. It is possible that the work conducted by some categories of peoples (e.g., women, young workers with less experience, older workers who have not moved up the hierarchy) is less valued than work done by others. That is,

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for example, managers whose peers or subordinates are largely women may receive lower pay than managers whose subordinates or peers are largely men, or a manager whose subordinates are primarily older may receive lower pay than one whose subordinates are primarily middle-aged workers. Thus, the primary purpose of this study is to examine, among managerial employees, the effect of the gender and age composition of a focal manager's referent groups (subordinates, peers, and supervisor) on the manager's compensation level.

### Gender and Compensation

Gender and compensation have been the subject of hundreds of studies over the past 20 years. Virtually all of these studies have demonstrated a pay gap favoring men (e.g., Fields & Wolff, 1995; Bamberger, Admati-Dvir, & Harel, 1995; Stanley & Jarrell, 1998; Lewis, 1998). Fields and Wolff (1995) concluded that "even after adjusting for productivity related characteristics of workers . . . there still remains a substantial wage gap at the industry level between genders" (p. 118). The gap ranges from roughly 54% to 96%, depending on the number of factors considered (e.g., industry, age, education, experience, hours worked, ability).

Both demand- and supply-side influences have been used to explain the wage gap (Marini, 1989). The demand side includes characteristics of the workplace, industry, or economy. For example, much research (e.g., Bielby & Baron, 1986; Fields & Wolff, 1995; Reskin & Ross, 1992) has demonstrated industry and occupational segregation effects whereby women tend to be disproportionately concentrated in lower paying or lower skilled jobs, which explains, in part, the wage gap (although women continue to earn less than men within each industry or occupational sector). Further, even within gender-balanced occupations, men and women tend to work in different firms, to be assigned to different job categories within the firm, or to be given different job titles, even when performing similar jobs (Jackson, 1983; Reskin & Ross, 1992). Women are also more likely to hold lower level management positions than are men, particularly in firms where men dominate middle and upper management (Tharenou, 2001). Thus, gender segregation at the job and firm level also occurs and accounts for some portion of the difference in pay (e.g., Huffman & Velasco, 1997; Reilly & Wirjanto, 1999).

Supply-side influences have also been given as some of the reasons for the wage gap (Marini, 1989). That is, for example, women contribute less to the workplace because they work fewer hours (BLS Bulletin 2340; U.S. Bureau of the Census, 2000), complete fewer years of on-the-job training, spend fewer years with the same employer, are more likely to work part-time (Corcoran & Duncan, 1979; Blau & Ferber, 1986; U.S. Bureau of the Census, 1987), have different types of educational experiences (Blau & Ferber, 1986), and have more interrupted careers (Tomaskovic-Devey & Skaggs, 1999). Lower pay is presumably justified due to the lower value of their contributions.

Much of the wage gap can be accounted for by both demand- and supply-side characteristics, and controlling for measures of these characteristics reduces the observed wage gap. Nevertheless, differences in pay between men and women persist even after controlling for these characteristics (Holzer & Neumark, 2000; Marini, 1989). A recent study by Graddy and Pistaferri (2000) illustrates this clearly. In a sample of graduating master's of

business administration students with very similar educational backgrounds, limited work histories, and entering very similar occupations, women received approximately 9% lower salaries than men. Explanations offered for the pay differential included the presumption on the part of the employer that women were more likely to take maternity leave (which is costly to firms) and that anticipated child-rearing and family responsibilities will lead to lower commitment on the part of women.

Empirical evidence has suggested that there are no commitment differences (Bielby & Bielby, 1998) or productivity differences (Tomaskovic-Devey & Skaggs, 1999) between men and women, nor are there differences between male and female managers in their propensity to quit (Lyness & Judiesch, 2001). Likewise, there is little evidence that men and women perform differently on a given task (Freedman & Phillips, 1988). In addition, child rearing does not well explain wage differences: Middle-aged women without children receive the same pay as those with children, but all women receive less pay than men (Wood, Corcoran, & Courant, 1993). Nonetheless, there is evidence that employers assume that women have lower job commitment than men, even though this is not the case, and they make smaller investments in skill training for women than men (Tomaskovic-Devey & Skaggs, 1999). Similarly, it has been argued that women acquire less human capital and firm-specific skills because of anticipated child bearing (Goldin & Polachek, 1987) and that firms are less willing to invest in women due to the perception (true or not) that, in the future, because of family responsibilities, women will be less committed (Graddy & Pistaferri, 2000). Further, England (1992) discussed error discrimination in which employers mistakenly underestimate group average productivity for minorities and women and make personnel decisions on the basis of stereotypes about productivity. Similarly, one frequent assumption made is that women have been hired not because of their qualifications or talent but because of specific efforts targeted at hiring from a demographic group. Hence, their qualifications are discounted and they are perceived to be incompetent in the job (Heilman, 1994; Heilman, Battle, Keller, & Lee, 1998; Heilman, Block, & Lucas, 1992). These perceptions of incompetence tend to be tenacious, abating only when evidence to the contrary is undisputable (Heilman, Block, & Stathatos, 1997). Such stereotypes also may result in lower expectations for women, which in turn reduce their performance ratings and opportunities for training and development, as well as their pay. Thus, gender alone typically explains relatively little variance in behaviors and outcomes; rather, it is perceived differences based on gender that are more important in explaining outcomes such as performance ratings and pay (Perry, 1997).

The combination of supply-side influences and error discrimination results in perceptions that women are less valuable in the workplace than men. Given this, those who work with women might also be seen as less valuable. Pfeffer and Davis-Blake (1987) tested four competing theories and supported the theory of institutionalization as an explanation for the effect of work group composition on salaries. This perspective argues that institutional factors including norms, roles, and stereotypes that exist in the larger social environment determine the effect of the proportion of women on salaries. Consistent with the above reasoning about value, they go on to suggest that at least in the United States, the concept of "women's work" has arisen. Work performed by women is less valuable and can be paid less than work done by



men. It follows from this that the proportion of women occupying a set of jobs constitutes a signal about the lower value of those positions. A larger proportion of women in a job should therefore depress wages. The fact that occupations with many female incumbents are lower paid than other occupations with comparable work content supports this assertion (England, Farkas, Kilbourne, & Dou, 1988). Experimental studies have demonstrated that both men and women attribute less value to work performed by women (Deaux, 1985; McArthur, 1985).

In addition to stereotypes and perceptions about the contribution of women in the workforce, several additional factors are likely to contribute to women being perceived as having less value, including power and status differences between men and women and preference for social similarity. In terms of status differences, socialization influences perceptions of status associated with the jobs held by men and women. Liben, Bigler, and Krogh (2001) disentangled the culturally engendered stereotypes of jobs from the gender of the jobholder by creating novel jobs and having children rate the jobs held by men and women. Children, aged 6–11 years, rated jobs portrayed by men with significantly higher status than the identical jobs portrayed by women. When professional articles or works of art were presented as having been done by men or women, the work was rated more highly if raters believed it was done by a man (Nivea & Gutek, 1981; Walston & O'Leary, 1981). Later in life, status issues further perpetuate the early socialization differences in the value of work conducted by men and women. Women and men are distributed differently into social roles; men tend to occupy higher status roles, and women occupy lower status roles (Eagly, 1983, 1987; Eagly & Steffen, 1984). Female-typed occupations generally have had less prestige, less power, and less pay than male-typed occupations (Dexter, 1985). Hence, one explanation for the lower value of work conducted by women is due to cultural socialization effects such that work done by women is of lesser status and hence lesser value.

With respect to power, like status, the reality remains that in almost every domain outside the family, women still lag behind men (Rhode, 1990). Women suffer from diminished position power as well as from perceived powerlessness on the part of others. Schlueter, Barge, and Blankenship (1990) found that male managers believed they had more power over subordinates than did female managers, and they were also perceived by others to have more power than female managers. In a similar vein, Reskin and Ross (1992) found an authority gap between male and female managers such that men had a larger number of subordinates and were more likely to have final say in decisions involving their own unit's work structure, goals, and personnel actions (e.g., hiring, scheduling, promoting). The greater degree of authority, power, and status attributed to men is likely to contribute to women being perceived as less valuable.

The social network literature also may be relevant to the ways in which gender composition of the workgroup affects pay. This literature has demonstrated the importance of demographic variables such as gender on the occurrence of social contacts and centrality of networks. Social similarity evokes attraction, and thus both men and women tend to interact within gender segregated networks. Social networks have been shown to be systems for mobilizing resources and acquiring power (Brass, 1985). Women are less central than are men in networks in which organizational power is located and resource allocation (e.g., pay) decisions are

made. Hence, female dominated groups may receive less support for their arguments and requests for resources (Hultin & Szulkin, 1999). Groshen (1991) concluded that even people who choose integrated occupations end up working primarily with the same gender.

Moreover, individuals are more likely to trust and rely on those who are more similar to themselves (Perry, 1997; Tsui et al., 1992). Uncertainty surrounding the organizational job or position may lead to a situation whereby social similarity becomes extremely important and valued (Kanter, 1977). As Kanter (1977) argued, many jobs, and particularly managerial jobs, contain a great deal of uncertainty. This uncertainty leads to the need for trust and mutual understanding and hence produces a situation whereby social strangers (those not seen as "their kind") are excluded, control is kept in the hands of socially homogeneous peers, and there is less willingness to deal with people who are different. Leaders in a variety of situations are likely to show a preference for socially similar subordinates and peers. Because men have been the traditional holders of managerial positions, ultimately, this situation leads to men's desires to "reproduce" themselves in kind (Kanter, 1977). As such, the higher desirability of socially similar men would lead to perceptions of women as less desirable and thus less valuable. In addition, the concept of "basking in reflected glory" (Cialdini et al., 1976) proposes the idea that men will be seen as most desirable. This notion suggests that individuals prefer to associate with and identify with "winners." In our context, the winners are those with status, power, and higher salaries (i.e., men). As such, those who find themselves surrounded by women are not among the winners and thus may be seen as less valuable.

In more recent years, arguments concerning the impact of similarity have also been offered in the relational demography literature. On the basis of the similarity–attraction paradigm (Byrne, 1971) and social categorization theory (Turner, 1987), individuals are more attracted to and have more positive personal and work responses to those who are similar to themselves demographically (e.g., Jackson et al., 1991; Tsui & O'Reilly, 1989). These arguments have been extended to include the notion that a cognitive matching process occurs whereby decisions about employees are based on the extent to which they match job stereotypes. Job stereotypes include information about the job and tasks, relevant job-related behaviors, personality types, gender, and other demographic characteristics of the incumbent (Perry, 1997). The gender composition of the job is one factor that affects this job stereotype. As demonstrated by Cleveland, Festa, and Montgomery (1988), as the proportion of women in the job changes, perceptions of the job itself also change. Given that jobs traditionally held by women have been seen as less valuable and have been paid less than jobs traditionally held by men, we can speculate that more women in a work group means that individuals in that group are less likely to receive high wages. Taken together, the perceptions and stereotypes about women's contributions at work, the lesser status and power typically afforded women, as well as the desire for social similarity are likely to produce a situation where women are perceived as less valuable in the workplace and given less compensation than men.

If work conducted by women is truly less valued in the workplace, we would expect that those who are associated with women also would be seen as having lower value, thereby depressing the



value of anyone working with large numbers of women. Gattiker and Cohen (1997) found that men make more money than women overall, but men also make more money than women even in occupations dominated by women (e.g., nurse, biochemist, biologist). Similarly, Reilly and Wirjanto (1999) found that the proportion of women in the work establishment affected pay. There was a negative wage premium associated with the proportion of women in the working establishment after controlling for education, experience, tenure, occupation, industry, and so forth. Pfeffer and Davis-Blake (1987) in their study of college and university administrators showed that the proportion of female incumbents depressed wages for both male and female administrators. Similarly, a relatively high number of women amongst the management ranks in an organization was associated with wage penalties for managers (Huffman & Velasco, 1997). As Huffman and Velasco (1997) pointed out, these consistent significant negative effects of female representation on pay or rewards can be taken as evidence that the work done by women is valued and rewarded at lower rates than that done by men.

Most of the empirical work that has been done at the organizational level supports the institutionalization perspective by showing that the larger the percentage of women, the lower the wages (cf. Reilly & Wirjanto, 1999; Pfeffer & Davis-Blake, 1987). The focus of the present research extends these findings by assessing this phenomenon at the workgroup level. Specifically, we contend that, consistent with the institutionalization perspective, because women are perceived as less valuable, wages of both women and men who work with greater numbers of women will suffer. That is, working with less valued employees will result in devaluing of one's work. A manager who is responsible for subordinates who are less valued (more women subordinates), who works with peers who are less valued (more female peers), and who is supervised by an employee who is less valued (female supervisor) will receive lower pay than a manager who associates with higher valued employees (more males).

We also note that the effect of female composition of the referent groups (subordinates, peers, and supervisor) may be nonlinear. Research findings and conclusions may turn critically on the issue of proportional representation or on tipping points based on different distributions of categories of people (Kanter, 1977). That is, there may be a "tipping point" or "inflection point" whereby the effect is only realized after the degree of female representation reaches a critical level. Work in the area of relational demography has indicated that the extent to which an individual is different from others in the group, less positive outcomes result (e.g., Jackson et al., 1991; Riordan, 2000; Riordan & Shore, 1997). Other research has indicated that men in work settings in which the proportion of women is small are more satisfied than when the proportion of men and women is approximately equal (e.g., Wharton & Baron, 1987). Tsui and her colleagues (Tsui et al., 1992) explained such nonlinear effects on the basis of social categorization theory. For men, gender may an important social category for self-categorization. Further, because many high-status occupations and high-status managerial jobs have traditionally been dominated by men, the presence of a significant percentage of women in these traditionally male-dominated work settings may weaken the psychological attractiveness of the group, increase anxiety, and threaten self-esteem. Thus, before the tipping point, effects of female composition may be

small, but after the tipping point (e.g., a majority of women), the effects of female composition may be pronounced (Huffman & Velasco, 1997). Specifically, we hypothesized that after controlling for the effects of demographic, background, education, experience, job, and function characteristics,

*Hypothesis 1:* Managerial compensation levels will be negatively related to (a) the proportion of female subordinates, (b) the proportion of female peers, and (c) having a female supervisor. Nonlinear relationships between the proportion of female subordinates and peers and the managers' compensation will also be evidenced.

### Age and Compensation

Age is another demographic characteristic that may be associated with workplace value. Although an employee's pay generally increases with age (cf. Barnum, Liden, & DiTomaso, 1995; Hurd, 1990), as early as 1956, Mark suggested that there was widespread belief that work performance declines with age. Arguments about negative perceptions of older workers have also been offered by Rosen and Jerdee (1976) and by Warr (1994). Similar to the arguments above based on gender, age alone typically explains less variance in performance-related outcomes and pay than perceptions and inaccurate stereotypes about age (Perry, 1997).

A number of studies have examined the effects of age on attributions of performance and on actual performance. For example, studies have indicated that poor performance in older workers is more likely to be attributed to stable factors, such as ability, and other factors that are not amenable to training and unlikely to change (Banziger & Dresvenstedt, 1982; Dedrick & Dobbins, 1991; Ferris, Yates, Gilmore, & Rowland, 1985; Reno, 1979). Similarly, based on a review of the research, Perry (1997) indicated that older job applicants are often evaluated less favorably than younger applicants due to older worker stereotypes, but this effect may also depend on context variables such as the type of job and the amount of job-relevant information available. The decremental theory of aging (Giniger, Dispenzieri, & Eisenberg, 1983) posits a negative relationship between age and performance and has been supported by studies showing that abilities such as dexterity, speed of responses, agility, hearing, vision, and so forth, decline with age (McEvoy & Cascio, 1989). Cleveland et al. (1997) found that managers' ratings of employees' promotability were negatively related to age. However, empirical evidence indicates that older workers tend to have lower absenteeism and turnover and fewer accidents than younger workers (Hom & Griffeth, 1995; Rhodes, 1983). Older workers also score as well as younger workers on memory, reasoning, and spatial relations tests (Powell, 1998). Further, workers who are older than their supervisors tend to have more positive work behaviors, such as less absenteeism and more citizenship behaviors (Perry, Kulik, & Zhou, 1999). In addition, whereas attitudes toward older people are becoming more positive, sizeable numbers of employers continue to maintain negative and inaccurate stereotypes about older workers (Taylor & Walker, 1993). Thus, even though job experience and skills likely increase with age (Topel, 1991), it is clearly possible that aging workers will be seen as having less versatility and less value.

Meta-analytic results have consistently indicated that there is no overall linear relationship between age and performance (e.g.,



Hunter & Hunter, 1984; McEvoy & Cascio, 1989; Waldman & Avolio, 1986). However, it is possible that the age–performance relationship is nonlinear. McEvoy and Cascio (1989) found that age was related to performance for younger employees (25–30 years of age), suggesting that among young workers, very young workers are less productive presumably due to their lower levels of experience. Further, although McEvoy and Cascio (1989) did not find support for a nonlinear relationship whereby performance increases as one moves from young workers to middle-aged workers and then decreases as workers become older, they noted that their meta-analytic study did not allow for adequate testing of this hypothesis and that nonlinear relationships between age and performance have been documented in past research with performance peaking in persons around age 40. For example Cole (1979) found such a nonlinear relationship with a group of scientists. This suggests that younger workers, because of their lack of experience, and older workers, because of perceptions of age-related declines, are likely to be seen as less valuable than those in the “prime” of their careers.

Research on age-typing of jobs also supports these notions. For example, in the words of Lawrence (1988)

People use age to classify members of a social system into categories and to match them with roles and statuses. The matching process between age categories and roles and statuses produces widely shared beliefs about the standard or typical ages of members holding each social position. (p. 310)

Similarly, Kanter (1977) observed shared age-related norms that employees use in defining fast track and plateaued workers. In other words, we have expectations for how old people in various positions *should* be. When the age of a job incumbent differs markedly from this desired or expected age, that individual is viewed more negatively. Age typing may also have consequences for assessments of individuals within those jobs (Cleveland & Landy, 1987). For example, old-typed jobs are perceived as requiring more skills than young-typed jobs (Macan, Detjen, & Dickey, 1994). Further, Cleveland and Landy (1983, 1987) argued that in a job typically held by younger workers or in a job perceived to be held by younger workers, older workers tend to be rated more negatively than younger workers, whereas the reverse is true for old-typed jobs. Regardless of whether the job is perceived to be a younger job or is actually a position for a younger person, older workers tend to be perceived or evaluated more negatively.

Given the persistent negative perceptions pertaining to older workers (Taylor & Walker, 1993) coupled with the empirical findings regarding age and performance relationships, we hypothesized that the age composition of the workgroup would influence the salary for managers associated with that workgroup. Further, there may be differential effects for younger and older employees (Riordan, 2000). Those individuals who supervise more older and younger workers are expected to receive lower pay than those who supervise employees in their “prime” (around age 40).<sup>1</sup> That is, we expect a nonlinear relationship between managerial pay and the age of a manager’s subordinates.

We propose that organizational decision makers use cues about age appropriateness in the situation in determining the value of employees, which in turn impacts, to some degree, compensation levels. Subordinates who are older than their supervisor typically

violate job, age, and status norms that the older more experienced supervisors should supervise the younger and less experienced subordinates (Perry et al., 1999). It is well known that job as well as age-associated stereotypes are used in making decisions about employability, promotion, compensation, and judgments of performance (Perry, 1997). To the extent that job stereotypes exist such that older workers are not typically supervised by younger workers, violation of this stereotype may lead to negative perceptions about worth and value, and the assumption is likely to be that the older worker is less competent or less able to contribute. In addition to age-typing of jobs and negative perceptions about performance and responses of older workers, additional factors may contribute to older workers being perceived as contributing less or having less value. Workers who are older than their supervisor are likely to feel resentment, respond negatively, and perform more poorly (Tsui, Xin, & Egan, 1995). In addition, these older subordinate-level workers may be frustrated or less motivated because they have not assumed supervisory responsibilities or have not been able to advance up the organizational hierarchy (Kanter, 1977). Maurer (2001) suggested that a decline in self-confidence for career-relevant learning experiences may contribute to older workers’ greater reluctance to pursue learning and development activities. These attitudes could further lower the real or perceived value of older workers. Hence, on the basis of perceptions that older workers may be less competent as well as the assumption that older workers with younger supervisors will respond negatively, older workers may be perceived to contribute less and be of less value to the organization. As such, one who supervises such lesser valued employees should in turn receive less pay.

Younger workers are also presumably less valuable because they lack experience and have accumulated less firm-specific knowledge (Topel, 1991). Workers who are younger than their supervisor have also been found to have greater absenteeism and to engage in fewer citizenship behaviors (Perry et al., 1999). Similarly, younger workers are more likely to engage in job searches and make job changes than middle-aged or older workers (Arthur & Rousseau, 1996). As before, age and job stereotypes may be relied on in making compensation decisions. Organizational decision makers are likely to hold job and age stereotypes that younger workers have less experience, less commitment, and less stability, and hence are of lesser value than employees who have several years of experience and are of prime age. Thus, because of young subordinates’ lesser experience and value, managers with a large number of younger employees are likely to be seen as supervising lower valued employees and hence receive lower pay.

With respect to a manager’s peer group or supervisor, we expect negative effects on compensation when the peer group or supervisor is made up of younger workers. Wages tend to rise with seniority presumably because such workers have accumulated knowledge and specific human capital over time that is valuable to the firm (Topel, 1991). Thus, we expect little or no negative effect

<sup>1</sup> The prime age of 40 was selected for a number of reasons. First, it is consistent with age discrimination legislation. Second, in Cleveland and Landy’s (1987) study of expected ages for 40 jobs, the typical ages ranged from 36 to 44 years, suggesting 40 as a midpoint. Third, Lawrence (1988) found that the typical age for individuals at Career Level 1 was 40.4 years.



for having older peers among the managerial ranks or an older supervisor. Because of their competencies, older individuals who possess valued skills are likely to have been given increased managerial responsibilities and promotions; hence, it would be expected that a manager would have older peers and an older supervisor, and the greater skill set and experience of older peers or an older supervisor should not have a negative impact on focal managers' salaries. However, when peers or the supervisor are younger, compensation may be negatively impacted. The stereotype and age-typing of managerial jobs is that managers should be around age 40 or so (Cleveland & Landy, 1987). Younger supervisors or managers may also be perceived to have lesser experience, training, and ability to lead effectively (Perry et al., 1999). Because of these age and job expectations pertaining to managerial jobs, younger managers and younger supervisors of managers are likely to be viewed as having less capacity and to contribute less than older peer managers and supervisors. Those managers who are associated with these younger peers and supervisors are in turn likely to receive lower compensation. Specifically, we hypothesized that after controlling for the effects of demographic, background, experience, education, job, and function characteristics,

*Hypothesis 2a:* Managers who supervise workers who are, on average, outside the prime age group will receive lower compensation than those who supervise employees whose ages are, on average, within the prime age group (i.e., around 40).

*Hypothesis 2b:* Managers who work with peers who are, on average, younger than the prime age group will receive lower compensation than those who work with peers who are, on average, within or above the prime age group.

*Hypothesis 2c:* Managers who have a supervisor(s) who is younger than the prime age group will receive lower compensation than those with a supervisor(s) within or above the prime age group.

## Method

### Sample

Data were collected from 4,480 managers across 654 different organizations throughout the United States who participated in a leadership development program. In addition, 13,706 subordinates, 13,752 peers, and 3,994 supervisors provided gender and age data that were used to determine the gender and age composition of the focal manager's subordinate, peer, and supervisor groups. Supervisors also provided ratings of the manager's overall performance. Only managers for whom at least three subordinates and three peers provided gender and age data were included in the sample (note that results reported below were nearly identical when only managers for whom at least six subordinates and six peers provided age and gender data were included). Ninety percent of the managers had data from one supervisor; 10% had data from two supervisors. Complete data across all study variables were available for 2,178 managers. The data were collected between 1991 and 2000, with 85% collected over 4 years, between 1993 and 1997. The final sample included data from 512 different companies and the number of managers per company ranged from 1 to 80 (average was 4). Among managers with complete data, 73% were male, the average age was 41, and 91% were White. Managerial experience ranged from never been a manager (1%) to 20 or more years of experience (11%), with 70% having been a manager for 6 or more years.

### Measures

*Gender composition of referent groups.* For each focal manager, the fraction of subordinates, peers, and supervisors who were female was calculated to reflect the gender composition of the referent groups. Gender composition scores range from 0 to 1, with 0 representing no women in the group and 1 representing 100% women in the subordinate, peer, or supervisor group for a focal manager.<sup>2</sup> To examine the possibility of nonlinear relationships or tipping points, polynomial terms were also calculated for each referent group.

*Age composition of referent groups.* There is no single index available to adequately tap group composition of a continuous variable such as age. The mean age of the referent group can provide important information about this group characteristic; however, it does not account for the distribution of age. For example, using average age of subordinates does not allow for determining the difference between a subordinate group whose members all have approximately equal ages and one whose members are distributed across a large range of ages. It is therefore important to account for dispersion (Chan, 1998) when using a mean score to reflect a group characteristic. Thus, for each focal manager, the average age of the subordinates, peers, and supervisors (in cases in which there was more than one supervisor) was calculated. The standard deviation of age for each referent group (subordinates, peers, supervisors) was calculated and controlled for in the analyses to account for the extent of dispersion around the mean age. Thus, age group composition is represented by the average age of the referent group, with variation around the average accounted for so that the mean age more appropriately represents the effect of age composition. Given that our hypotheses reflected nonlinear relationships for age, squared average age was also computed for each referent group.

*Control variables.* Previous literature has consistently demonstrated that demographic and background characteristics such as age, gender, race, education, experience, organizational level, and industry are related to performance and compensation (Gerhart, 1990; Marini, 1989; Fields & Wolff, 1995; Stanley & Jarrell, 1998). Therefore, the following comprehensive set of control variables was included in all analyses:

1. Year in which the data for the manager were collected ranging from 1991 to 2000;
2. Performance of the focal manager, assessed from supervisory ratings across five items on a 5-point scale ranging from 1 (*never*) to 5 (*almost always*),  $\alpha = .91$ ;
3. Gender of the focal manager, coded as 1 = male, 2 = female, based on self-reported data;
4. Years of managerial experience assessed with a 7-point scale ranging from 1 (*never been a manager*) to 7 (*20 or more years as manager*);
5. Highest educational level achieved assessed with a 7-point scale ranging from 1 (*some high school*) to 7 (*graduate degree*);

<sup>2</sup> Gender composition of the referent groups was based on the number of surveys returned by peers and subordinates. The number of surveys returned ranged from 3 to 17. We had no reason to believe that men or women would select subordinates or peers based on their gender. In most cases, surveys were handed out to all subordinates and a large sample of peers. We assumed the persons they handed them out to and those that returned them were representative of the gender composition of the referent groups. Further, results were almost identical when we examined only those managers for whom the number of respondents was close to the number of subordinates in the manager's group.



6. Age of focal manager assessed by asking managers to report their age;
7. Race of focal manager, coded as 1 = non-White, 2 = White, based on self-report data;
8. Organizational level, assessed with a 6-point scale ranging from 1 (*nonmanagement*) to 6 (*top executive*);
9. Job category, coded as 1 = line, 2 = staff;
10. Years in current job position, assessed with a 5-point scale ranging from 1 (*less than 1 year*) to 5 (*more than 10 years*);
11. Number of employees supervised assessed by asking the manager to indicate the number of direct reports he or she supervises; and
12. Functional area in which the manager works, coded as 21 dummy variables representing industry-job functions such as administration, finance, marketing, sales, human resources, and engineering.

In addition, research has often revealed significant interactions between gender and these control variables when examining compensation. Therefore, interactions between gender and years of managerial experience, education, age, organizational level, job category, years in current position, and number employees supervised were also included as additional control variables.

**Compensation.** Compensation level was assessed with an 8-point self-report scale ranging from 1 (\$10,000 to \$30,000) to 8 (*more than \$150,000*). Each category reflected a \$20,000 pay range. The average compensation level score was 4.0, indicating that the mean pay of the managers was approximately \$70,000.

## Results

Means, standard deviations, and correlation coefficients among variables are presented in Tables 1 and 2. Table 1 contains intercorrelations among all variables with the exception of the functional area dummy variables. Table 2 presents intercorrelations between the functional area dummy variables and the remainder of the study variables. It is important to note the correlations between gender and the functional area variables are fairly low, indicating that the percentage of male managers in the sample who are in a given functional area is similar to the percentage of female managers in our sample who are in that functional area.

Consistent with prior work (e.g., Barnum et al., 1995; Fields & Wolff, 1995; Marini, 1989; Reskin & Ross, 1992; Stanley & Jarrell, 1998), significant relationships were found between the control variables and compensation (see Table 1). More specifically, years of managerial experience, educational level, age, and organizational level were positively related to compensation. Consistent with wage gap research, women received significantly less compensation than men. It should also be noted women received significantly higher performance evaluations than men (although the magnitude of the relationship was not large), suggesting that discriminatory ratings favoring men are not likely to be occurring. However, older workers received lower performance evaluations, consistent with age discrimination arguments.

Examination of the zero-order correlations for relationships between gender and age composition of referent groups revealed an interesting pattern. First, consistent with prior research (e.g.,

Reskin & Ross, 1992), there were significant relationships between the gender of the manager and the gender composition of the group (correlations ranged from .25 to .39), such that women were more likely to have women subordinates, peers, and supervisors than were men. Further, there were significant correlations among the gender composition of the referent groups, again indicating that same gender subordinates, peers, and supervisors tend to cluster together. To further depict this clustering, Table 3 shows the number of male and female focal managers with varying percentages of female subordinates, peers, and supervisors. As can be seen in Table 3, female managers were more likely to have a greater percentage of women in their referent groups than were male managers; however, there was still quite a substantial number of male managers with a large percentage of women in their referent groups.

Similar results were observed for age composition. Managers' age was positively related to the average age of their referent groups (correlations ranged from .19 to .22) and average age across referent groups was significantly and positively correlated.

Results in Table 1 further indicate that both gender and age composition of the referent groups are related to compensation such that a higher percentage of males in the referent group and a greater average age is positively related to compensation of a focal manager.

We conducted hierarchical regressions to more fully analyze the results for gender and age composition of a manager's referent subordinate, peer, and supervisor groups. Compensation was regressed on the set of control variables in the first step (Model 1), interactions between gender and other control variables in the second step (Model 2), followed by the gender and age composition group variables in the third step (Model 3). Note that for functional area dummy variables, the "other" area was designated as the referent. Further, following procedures outlined by Cohen and Cohen (1983), successively higher polynomial (squared, cubed) terms were also entered in a hierarchical manner for the group composition variables to test for nonlinear relationships between gender and age composition and outcomes (e.g., gender composition of subordinates squared, gender composition of subordinates cubed). Thus, successively higher polynomial terms for all group composition variables were added in the equation and then retained when significant.

Table 4 contains the results of the regression analysis for compensation. Results generally supported Hypotheses 1 and 2 pertaining to the relationships between group composition variables and a manager's compensation level. Consistent with past research, the set of control variables (excluding gender and age of the manager) accounted for 48% of the variance in compensation. The gender and age of the manager accounted for a significant additional 2% of the variance in their compensation once the effects of the other control variables were accounted for. Thus, the entire set of control variables accounted for 50% of the variance in manager's compensation. Interactions between the gender and age and the remaining control variables accounted for an additional 1% of the variance in compensation.

The relationship between manager's gender and compensation indicates that women receive lower pay than men (beta in Model 1 of Table 4 is  $-.65$ ) when other control variables are accounted for. Similarly, manager's age is positively related to compensation. The significant interactions between gender and the control vari-



Table 1  
Means, Standard Deviations, and Intercorrelations

| Variable                        | M    | SD   | 1.   | 2.   | 3.   | 4.   | 5.   | 6.   | 7.   | 8.   | 9.   | 10.  | 11.  | 12.  | 13.  | 14.  | 15.  | 16.  | 17. | 18. | 19. | 20. | 21. |
|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|
| 1. Year data collected          | 1995 | 2.00 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |
| 2. Sex                          | 1.27 | 0.44 | .07  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |
| 3. Yrs manager                  | 5.05 | 1.33 | -.04 | .17  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |
| 4. Education                    | 4.48 | 1.30 | -.06 | -.08 | -.04 |      |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |
| 5. Age                          | 41.2 | 7.61 | -.02 | -.15 | .55  | .04  |      |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |
| 6. Race                         | 1.91 | 0.29 | -.07 | -.02 | .04  | -.03 | .04  |      |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |
| 7. Org level                    | 3.15 | 1.06 | .01  | -.05 | .41  | .13  | .22  | .05  |      |      |      |      |      |      |      |      |      |      |     |     |     |     |     |
| 8. Job category                 | 1.58 | 0.49 | .09  | .05  | -.07 | -.07 | -.09 | .02  | .03  |      |      |      |      |      |      |      |      |      |     |     |     |     |     |
| 9. Yrs current position         | 2.58 | 1.19 | -.02 | -.03 | .35  | -.13 | .33  | .00  | .00  | -.05 |      |      |      |      |      |      |      |      |     |     |     |     |     |
| 10. Number supervised           | 9.65 | 11.4 | .02  | -.01 | .06  | -.13 | .05  | -.06 | -.07 | -.09 | .09  |      |      |      |      |      |      |      |     |     |     |     |     |
| 11. Sex composition subordinate | 0.43 | 0.37 | .04  | .39  | -.10 | -.03 | -.12 | -.02 | -.06 | .10  | .01  | -.03 |      |      |      |      |      |      |     |     |     |     |     |
| 12. Sex composition peers       | 0.29 | 0.31 | .09  | .37  | -.12 | -.10 | -.14 | -.06 | -.11 | .05  | -.05 | .02  | .42  |      |      |      |      |      |     |     |     |     |     |
| 13. Sex composition supervisors | 0.17 | 0.37 | .06  | .25  | -.09 | -.03 | -.10 | -.01 | -.09 | .02  | -.05 | -.01 | .28  | .33  |      |      |      |      |     |     |     |     |     |
| 14. SD age subordinates         | 6.74 | 3.85 | .01  | .03  | .01  | .01  | .09  | -.01 | -.04 | -.02 | .06  | .01  | .06  | -.01 | .00  |      |      |      |     |     |     |     |     |
| 15. SD age peers                | 6.00 | 3.44 | .00  | -.02 | .05  | .00  | .05  | .02  | -.01 | .03  | -.01 | .01  | -.01 | .02  | -.04 | .06  |      |      |     |     |     |     |     |
| 16. SD age supervisor           | 0.44 | 1.79 | -.05 | .00  | .01  | .04  | -.01 | -.04 | .00  | .00  | -.01 | -.01 | -.03 | -.04 | -.03 | -.04 | .00  |      |     |     |     |     |     |
| 17. M age subordinates          | 38.6 | 6.46 | .00  | -.15 | .22  | .06  | .37  | .01  | .15  | -.08 | .15  | .06  | -.23 | -.18 | -.13 | .27  | .19  | -.01 |     |     |     |     |     |
| 18. M age peers                 | 41.7 | 5.80 | .01  | -.15 | .24  | .16  | .41  | .01  | .19  | .07  | .16  | .04  | -.18 | -.29 | -.14 | .06  | .06  | .02  | .43 |     |     |     |     |
| 19. M age supervisor            | 45.1 | 7.03 | -.03 | -.15 | .19  | .19  | .30  | .03  | .16  | .07  | .11  | -.03 | -.14 | -.19 | -.23 | .04  | .06  | -.04 | .28 | .40 |     |     |     |
| 20. Performance                 | 4.02 | 0.59 | -.02 | .07  | -.03 | .10  | -.05 | .01  | .06  | .00  | -.03 | -.01 | -.01 | -.01 | -.02 | -.02 | .05  | .01  | .02 | .07 | .09 |     |     |
| 21. Compensation                | 3.99 | 1.67 | .05  | -.26 | .33  | .30  | .33  | .06  | .55  | -.10 | .01  | -.11 | -.27 | -.29 | -.20 | -.09 | -.05 | .01  | .20 | .29 | .27 | .06 |     |

Note.  $N = 2,178$ . Correlations  $\geq .05$  are significant at  $p \leq .05$ . Sex was coded as 1 = male, 2 = female. Years (Yrs) manager is a 7-point scale ranging from 1 (never been a manager) to 7 (20 or more years as manager). Education is a 7-point scale ranging from 1 (some high school) to 7 (graduate degree). Race was coded as 1 = non-White, 2 = White. Organizational (Org) level is a 6-point scale ranging from 1 (nonmanagement) to 6 (top executive). Job category was coded as 1 = line, 2 = staff. Yrs current position is a 5-point scale ranging from 1 (less than 1 year) to 5 (more than 10 years). Sex composition is the percentage of a manager's group that is female, ranging from 0 to 1. Compensation is an 8-point scale ranging from 1 (\$10,000 to \$30,000) to 8 (more than \$150,000).



Table 2  
Means, Standard Deviations, and Correlations With Functional Area (Dummy Variables)

| Functional area            | M    | SD   | Year | Sex  | Yrs man | Education | Age  | Race | Org lvl | Job cat | Yrs pos | No. sup | Sex sub | Sex peer | Sex sup | SD sub | SD peer | SD sup | Age sub | Age peer | Age sup | Perf | Comp |
|----------------------------|------|------|------|------|---------|-----------|------|------|---------|---------|---------|---------|---------|----------|---------|--------|---------|--------|---------|----------|---------|------|------|
| Admin/executive            | 0.09 | 0.29 | .00  | -.04 | .19     | .02       | .15  | .02  | .40     | .00     | .04     | -.01    | -.01    | -.01     | -.06    | -.01   | -.01    | -.02   | .11     | .12      | .11     | .01  | .24  |
| Admin service              | 0.05 | 0.22 | .02  | .05  | .02     | -.07      | .07  | .00  | -.02    | .05     | .04     | .00     | .10     | .05      | .06     | .04    | .05     | -.03   | .04     | .07      | .03     | .00  | -.10 |
| Business unit              | 0.05 | 0.23 | .00  | -.02 | .01     | -.03      | .00  | -.03 | .04     | -.07    | -.01    | -.01    | .02     | .04      | -.03    | .00    | .02     | -.01   | .00     | -.05     | -.02    | -.02 | .02  |
| Production line            | 0.01 | 0.10 | -.03 | .00  | -.01    | .02       | -.03 | -.03 | -.04    | -.04    | .00     | .01     | .02     | .01      | .05     | .01    | -.01    | .01    | .01     | -.02     | .01     | -.07 | .00  |
| Legal                      | 0.01 | 0.09 | .05  | .00  | .01     | .10       | .03  | .01  | .02     | .05     | .07     | -.02    | .03     | .02      | -.02    | -.01   | -.03    | .02    | .00     | .02      | .07     | .03  | .04  |
| Finance/accounting         | 0.07 | 0.25 | .01  | .06  | -.05    | .05       | -.07 | -.01 | .02     | .08     | .00     | .10     | .10     | .05      | .00     | -.02   | -.01    | .02    | -.09    | -.06     | -.06    | -.01 | .00  |
| Purchasing/buying          | 0.01 | 0.12 | .01  | -.05 | .01     | .00       | .01  | .00  | .01     | .01     | -.03    | -.04    | .03     | -.02     | -.01    | .04    | .05     | .01    | .01     | .01      | -.01    | .01  | .00  |
| Info sys/data proc         | 0.07 | 0.25 | .01  | .01  | -.07    | -.03      | -.05 | .03  | -.05    | -.03    | -.01    | -.04    | .00     | .04      | .04     | -.04   | .02     | .02    | -.04    | -.04     | -.03    | .03  | .01  |
| Advertise/public relations | 0.01 | 0.07 | .02  | .01  | .00     | .02       | .01  | .02  | -.01    | .03     | -.03    | -.04    | .04     | .05      | .06     | .01    | .02     | .01    | -.07    | -.05     | .00     | .00  | .01  |
| Marketing                  | 0.03 | 0.17 | .02  | .02  | -.03    | .10       | -.03 | -.04 | .06     | .01     | -.06    | -.06    | .07     | .04      | .08     | -.06   | -.02    | -.04   | -.08    | -.06     | -.03    | .03  | .10  |
| Sales                      | 0.06 | 0.24 | .02  | .00  | -.08    | -.09      | -.11 | -.01 | -.06    | -.02    | -.05    | -.02    | -.01    | .01      | .00     | -.02   | .03     | -.02   | -.08    | -.08     | -.05    | -.03 | .03  |
| Service delivery           | 0.02 | 0.12 | -.02 | .01  | -.01    | -.03      | -.01 | .01  | -.04    | -.02    | .05     | .05     | .03     | .06      | .05     | -.01   | .03     | .01    | -.02    | -.01     | -.05    | .00  | -.07 |
| Customer service           | 0.05 | 0.23 | .03  | .16  | -.01    | -.12      | -.03 | -.02 | -.06    | -.01    | .01     | .08     | .14     | .17      | .12     | .08    | .01     | -.02   | -.07    | -.07     | -.05    | .01  | -.18 |
| R & D                      | 0.04 | 0.19 | -.03 | -.03 | -.09    | .20       | .02  | -.05 | -.09    | -.05    | .01     | -.04    | -.08    | -.07     | -.02    | -.02   | .00     | -.01   | .01     | .06      | .08     | .03  | .06  |
| Engineering                | 0.09 | 0.28 | -.04 | -.12 | -.07    | .14       | .03  | -.01 | -.10    | -.09    | -.03    | .03     | .24     | .17      | -.12    | .02    | .04     | .01    | .08     | .11      | .07     | -.03 | .06  |
| Operations                 | 0.11 | 0.31 | .01  | -.06 | .03     | -.14      | -.04 | .01  | -.03    | .05     | .02     | .10     | -.09    | -.02     | -.02    | -.03   | .02     | -.03   | .02     | -.05     | -.04    | .00  | -.09 |
| Manufacturing              | 0.07 | 0.26 | -.02 | -.09 | .03     | -.05      | .03  | -.01 | -.07    | -.02    | .00     | .12     | .18     | .13      | -.08    | .04    | .00     | .04    | .10     | .02      | .00     | .05  | -.03 |
| Prod dist/warehouse        | 0.02 | 0.15 | .04  | -.05 | .02     | -.09      | -.03 | -.01 | -.06    | .03     | -.02    | .03     | -.04    | -.03     | .00     | .01    | -.02    | -.01   | -.01    | -.07     | -.05    | -.06 | -.08 |
| Real estate/prop mgmt      | 0.00 | 0.05 | .04  | .01  | .03     | .01       | .00  | .02  | .03     | .02     | .02     | -.02    | .04     | -.02     | .00     | .03    | .03     | .01    | -.02    | -.02     | .01     | .01  | .02  |
| Personnel/HRM              | 0.07 | 0.25 | -.03 | .14  | .02     | .12       | .03  | .00  | .05     | .14     | -.02    | -.12    | .22     | .06      | .05     | .01    | -.04    | .05    | -.01    | .04      | .03     | .02  | -.01 |
| Other                      | 0.07 | 0.26 | .01  | .02  | .02     | -.01      | .01  | .04  | -.06    | .03     | -.04    | .02     | .03     | -.01     | .01     | -.02   | .01     | .02    | -.01    | .02      | .01     | .00  | -.01 |

Note.  $N = 2,178$ . Correlations  $\geq .05$  are significant at  $p \leq .05$ . Sex was coded as 1 = male, 2 = female. Years manager (Yrs man) is a 7-point scale ranging from 1 (*never been a manager*) to 7 (*20 or more years as manager*). Education is a 7-point scale ranging from 1 (*some high school*) to 7 (*graduate degree*). Race was coded as 1 = non-White, 2 = White. Organizational level (Org lvl) is a 6-point scale ranging from 1 (*nonmanagement*) to 6 (*top executive*). Job category (cat) was coded as 1 = line, 2 = staff. Yrs current position (Yrs pos) is a 5-point scale ranging from 1 (*less than 1 year*) to 5 (*more than 10 years*). Sex composition is the percentage of a manager's group that is female, ranging from 0 to 1. Compensation is an 8-point scale ranging from 1 (*\$10,000 to \$30,000*) to 8 (*more than \$150,000*). Admin = administrative; Info sys = information systems; proc = processing; R & D = research and development; Prod dist = product distribution; prop mgmt = property management; HRM = human resource management; No. sup = number of employees supervised; Sex sub = sex composition of subordinates; Sex peer = sex composition of peers; Sex sup = sex composition of supervisors; Age sub = age of subordinates; Age peer = age of peers; Age sup = age of supervisor; Perf = performance; Comp = compensation.



Table 3  
*Number of Managers With Various Percentages of Women in Referent Groups*

| % female subordinates | Male managers | Female managers | % female peers | Male managers | Female managers | % female supervisors | Male managers | Female managers |
|-----------------------|---------------|-----------------|----------------|---------------|-----------------|----------------------|---------------|-----------------|
| 0                     | 528           | 42              | 0              | 765           | 109             | 0                    | 1,296         | 182             |
| 1–25                  | 262           | 49              | 1–25           | 262           | 65              | 1–25                 |               |                 |
| 26–50                 | 387           | 114             | 26–50          | 384           | 177             | 26–50                | 32            | 16              |
| 51–75                 | 233           | 156             | 51–75          | 86            | 120             | 51–75                |               |                 |
| 76–100                | 184           | 223             | 76–100         | 97            | 170             | 76–100               | 166           | 386             |

*Note.* Numbers in table reflect the number of managers in the sample with that percentage of women in their referent group. For supervisors, managers had only one or two supervisors.

ables observed in Model 2 (Table 4) indicate that the pay gap between men and women is larger at higher organizational levels and at higher ages.

An additional 4% of the variance in compensation was accounted for when the set of group composition variables was added to the equation. Results for gender composition of a manager's referent groups were strong (see Table 4). In support of Hypothesis 1, the percentage of female subordinates and female peers with which a manager works was related to lower compensation in a nonlinear way. Further, having a female supervisor (or in some cases two female supervisors) is related to lower pay for a manager. These findings are particularly noteworthy because performance, the type of job (manager), as well as the functional area (e.g., marketing, sales, accounting) within which men and women were working was controlled. That is, these results are not merely due to the jobs in which men and women work or to occupational segregation effects. A workgroup that is characterized by a majority of women depresses wages for that workgroup's manager, regardless of occupational or functional area or the gender of the manager.

To depict these results more clearly, Figure 1 shows the relationship between gender composition of each of the managers' referent groups (subordinates, peers, and supervisor) and their estimated pay loss. On the basis of the beta weights in the regressions and by using the full range of percentage of female subordinates (from 0% to 100%), estimated pay loss was computed by converting the predicted pay to dollars based on the midpoint of the pay range within each compensation level category. The baseline is an all male group (0% women) and pay loss was estimated using the beta weights in Table 4 to show the decrease in pay as the percentage of women in the referent groups rises.

As can be seen in Figure 1, as the percentage of women in the referent group increases, managerial pay becomes substantially lower. These effects are particularly salient when a manager supervises a large percentage of female subordinates. Note also that this relationship was nonlinear for subordinates in support of the hypothesis (significant beta for gender composition of subordinates squared in Table 4), but were not nonlinear for peers as expected. For subordinates, an inflection or tipping point occurs around 50% women, suggesting that effects on compensation are small when the percentage of women is low, but once women become the majority (over 50%), managerial pay decreases sharply as the percentage of his or her female subordinates increases. It is also important to point out that these effects are additive such that, for example, a manager who supervises 60% females and whose

peers are 50% female has substantially lower pay than one who has 50% female peers but not a majority of female subordinates.

Hypotheses 2a, 2b, and 2c focused on the relationship between age composition of the subordinate, peer, and supervisor groups and manager's compensation. Results in Table 4 reveal partial support for these hypotheses. First note that the standard deviations of subordinates' and peers' age were negatively related to compensation. A larger standard deviation is obtained when a manager has employees (or peers) with disparate ages (i.e., employees or peers who are younger and older). This finding partially reflects the notion that having more employees of varying ages depresses pay. Second, and more importantly, the average age of the manager's subordinates, peers, and supervisor (after controlling for variation in age) was significantly related to compensation. Nonlinear effects were also observed for subordinate age and supervisor age. Figure 2 graphically depicts these relationships (and were derived as described above for gender composition). In this case, age 40 was used as the baseline age because this age represents the midpoint of "prime age" and it is the age at which the Age Discrimination in Employment Act becomes relevant.

As can be seen in Figure 2, in support of Hypothesis 2a, a nonlinear relationship between age and compensation was found. As the average age of subordinates becomes younger or older, pay becomes lower. Some support was also found for peer (Hypothesis 2b) and supervisor age (Hypothesis 2c). Working with younger peers or with a younger supervisor is related to lower pay; however, pay increases as peers and supervisors become older.

It is also important to note that no significant interactions were found between gender or age of the manager and gender or age group composition variables. Likewise, no significant interactions were found between gender composition variables and age composition group variables. However, given their simultaneous inclusion in the regression, the group composition effects are additive such that, for example, a manager who supervises 60% women and whose peers are 50% female has substantially lower pay than one who has 50% female peers but not a majority of female subordinates. Or, a manager who supervises 80% women whose average age is 30 would be expected to receive approximately \$9,300 less than a manager who supervises all men around age 40.

Further, we conducted similar analyses using managerial performance as the dependent variable. The gender and gender composition of the referent groups was not consistently or significantly related to performance rating. These results suggest that supervisory evaluations of performance are not biased based on the gender



Table 4  
*Regression of Compensation on Sex and Age Composition of Group*

| Variable                           | B (SE)         |                |                |
|------------------------------------|----------------|----------------|----------------|
|                                    | Model 1        | Model 2        | Model 3        |
| Constant                           | -149 (.26)***  | -159 (.26)***  | 176 (.25)***   |
| Year data collected                | 0.07 (.01)***  | 0.08 (.02)***  | 0.08 (.01)***  |
| Performance rating                 | 0.10 (.04)**   | 0.09 (.04)**   | 0.04 (.04)     |
| Sex of manager                     | -0.64 (.06)*** | 1.36 (.47)***  | 1.70 (.46)***  |
| Yrs managerial experience          | 0.07 (.03)**   | 0.01 (.08)     | 0.01 (.08)     |
| Education level                    | 0.22 (.02)***  | 0.28 (.06)***  | 0.31 (.06)***  |
| Age of manager                     | 0.04 (.00)***  | 0.09 (.01)***  | 0.08 (.01)***  |
| Race of manager                    | 0.21 (.09)**   | 0.21 (.09)**   | 0.19 (.09)**   |
| Organizational level               | 0.70 (.03)***  | 0.91 (.08)***  | 0.85 (.08)***  |
| Job category (staff/line)          | -0.23 (.05)*** | -0.17 (.16)*** | -0.19 (.16)    |
| Yrs in current position            | -0.06 (.02)**  | -0.17 (.07)**  | -0.18 (.07)*** |
| No. employees supervised           | -0.01 (.00)*** | -0.01 (.01)    | -0.01 (.01)    |
| Sex × Organizational Level         |                | -0.17 (.06)*** | -0.17 (.06)*** |
| Sex × Yrs Managerial Experience    |                | 0.05 (.06)     | 0.05 (.05)     |
| Sex × Education                    |                | -0.05 (.05)    | -0.08 (.05)**  |
| Sex × Age                          |                | -0.04 (.01)*** | -0.04 (.01)*** |
| Sex × Job Category                 |                | -0.05 (.12)    | 0.00 (.12)     |
| Sex × No. Employees Supervised     |                | 0.00 (.01)     | 0.00 (.01)     |
| Sex × Yrs in Position              |                | 0.09 (.05)     | 0.10 (.05)*    |
| Functional area                    |                |                |                |
| Admin/executive                    | 0.12 (.13)     | 0.10 (.13)     | 0.13 (.13)     |
| Admin service                      | -0.53 (.15)*** | -0.54 (.15)*** | -0.39 (.14)*** |
| Business unit                      | 0.02 (.15)     | 0.02 (.15)     | 0.04 (.14)     |
| Production line                    | 0.39 (.27)     | 0.37 (.27)     | 0.43 (.26)*    |
| Legal                              | 0.23 (.29)     | 0.15 (.30)     | 0.17 (.28)     |
| Finance/accounting                 | 0.06 (.14)     | 0.04 (.14)     | 0.13 (.13)     |
| Purchasing/buying                  | -0.14 (.23)    | -0.17 (.23)    | -0.12 (.22)    |
| Info system/data processing        | 0.30 (.14)**   | 0.29 (.14)**   | 0.25 (.13)**   |
| Advertise/public relations         | 0.10 (.36)     | 0.03 (.36)     | 0.44 (.35)     |
| Marketing                          | 0.59 (.18)***  | 0.58 (.18)***  | 0.72 (.17)***  |
| Sales                              | 0.60 (.14)***  | 0.57 (.14)***  | 0.55 (.14)***  |
| Service delivery                   | -0.48 (.23)**  | -0.46 (.23)**  | -0.32 (.22)    |
| Customer service                   | -0.68 (.15)*** | -0.72 (.15)*** | -0.52 (.14)*** |
| R & D                              | 0.52 (.17)***  | 0.49 (.17)***  | 0.32 (.16)**   |
| Engineering                        | 0.31 (.13)**   | 0.30 (.13)**   | 0.10 (.13)     |
| Operations                         | -0.23 (.12)**  | -0.22 (.12)*   | -0.23 (.12)**  |
| Manufacturing                      | 0.02 (.14)     | 0.01 (.14)     | -0.13 (.13)    |
| Product dist/warehouse             | -0.40 (.19)**  | -0.39 (.19)*   | -0.39 (.19)**  |
| Real estate/property mgmt          | 0.25 (.54)     | 0.18 (.54)     | 0.43 (.52)     |
| Personnel/HRM                      | -0.16 (.14)    | -0.15 (.14)    | -0.02 (.14)    |
| Sex composition of subordinates    |                |                | 0.06 (.25)     |
| Sex composition of subord, squared |                |                | -0.60 (.24)**  |
| Sex composition of peers           |                |                | -0.35 (.10)*** |
| Sex composition of supervisor      |                |                | -0.19 (.07)**  |
| SD of subordinate ages             |                |                | -0.03 (.01)*** |
| SD of peer ages                    |                |                | -0.03 (.01)*** |
| SD of supervisor ages              |                |                | -0.01 (.01)    |
| M age of subordinates              |                |                | 0.14 (.04)***  |
| M age of subordinates, squared     |                |                | -0.01 (.00)*** |
| M age of peers                     |                |                | 0.02 (.01)***  |
| M age of supervisor                |                |                | 0.12 (.04)***  |
| M age of supervisor, squared       |                |                | -0.01 (.00)*** |
| R                                  | .70            | .71            | .75            |
| R <sup>2</sup>                     | .49***         | .50***         | .54***         |
| ΔR <sup>2</sup>                    |                | .01***         | .04***         |

*Note.*  $N = 2,178$ . Year data collected ranges from 1991 to 2000. Sex was coded as 1 = male, 2 = female. Years (Yrs) managerial experience is a 7-point scale ranging from 1 (*never been a manager*) to 7 (*20 or more years as manager*). Education is a 7-point scale ranging from 1 (*some high school*) to 7 (*graduate degree*). Race was coded as 1 = non-White, 2 = White. Organizational level is a 6-point scale ranging from 1 (*nonmanagement*) to 6 (*top executive*). Job category was coded as 1 = line, 2 = staff. Yrs in current position is a 5-point scale ranging from 1 (*less than 1 year*) to 5 (*more than 10 years*). Sex composition is the percentage of a manager's group that is female, ranging from 0 to 1. Compensation is an 8-point scale ranging from 1 (*\$10,000 to 30,000*) to 8 (*more than \$150,000*). Admin = administrative; Info = information; R & D = research and development; Product dist = product distribution; Property mgmt = property management; HRM = human resource management.

\*  $p \leq .10$ . \*\*  $p \leq .05$ . \*\*\*  $p \leq .01$ .



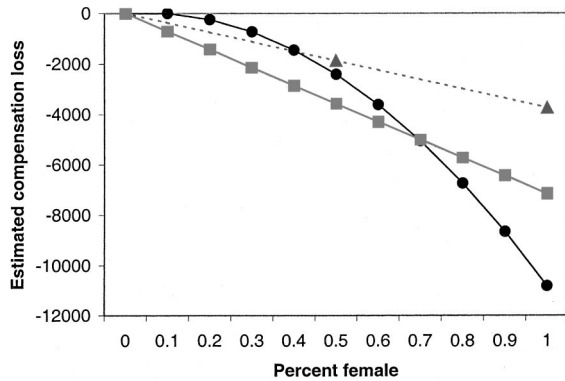


Figure 1. Estimated compensation loss based on gender composition of groups. Subordinates are indicated by a circle, peers are indicated by a square, and supervisors are indicated by a triangle.

or age composition of one's subordinates, peers, or supervisor; however, compensation levels are impacted by the gender and age composition of a manager's referent groups.

### Discussion

This study took a unique approach to further the understanding of the pay gap between men and women in several ways. First, a large number of demographic background variables and a large variety of occupational or functional areas were controlled in the analyses. Further, job type was controlled because all focal individuals in the sample were employed as managers. Lazear and Rosen (1990) suggested that the pay gap should be reduced when

studying managers as opposed to nonmanagerial employees. Second, we assessed the impact of the composition of a manager's referent groups (i.e., subordinates, peers, and supervisor) rather than the composition of the organization or the occupation. Third, we looked at both the gender and age composition of the managers' referent groups.

The results from this study revealed a number of interesting findings. Consistent with previous findings among a variety of samples and across cultures (e.g., Gattiker & Cohen, 1997; Huffman & Velasco, 1997; Pfeffer & Davis-Blake, 1987), we supported the existence of a wage gap between male and female managers while controlling for performance, demographics, and a number of human capital variables. Like other researchers, however, we do not have clear answers as to why this gap exists (Holzer & Neumark, 2000). Some of the reasons given in earlier research have included stereotypes that women are less committed or less productive, fears that women will leave the workforce because of family responsibilities, women's willingness to work for less, or lower aggressiveness in negotiating salaries or raises.

Although these factors may contribute to the general wage gap between men and women, our findings suggest another contributing factor to wage gaps. Specifically, it appears that those who work with women in the workplace have lower salaries. Managers who supervised a majority of women suffered significantly when it came to compensation compared with those who supervised a majority of men. Further, because women are more likely to supervise women, their pay is more likely to suffer. Having a majority of female peers or a female subordinate was also problematic for a manager's compensation.

Our results are consistent with those of Pfeffer and Davis-Blake (1987) in their study of university administrators. It appears that,

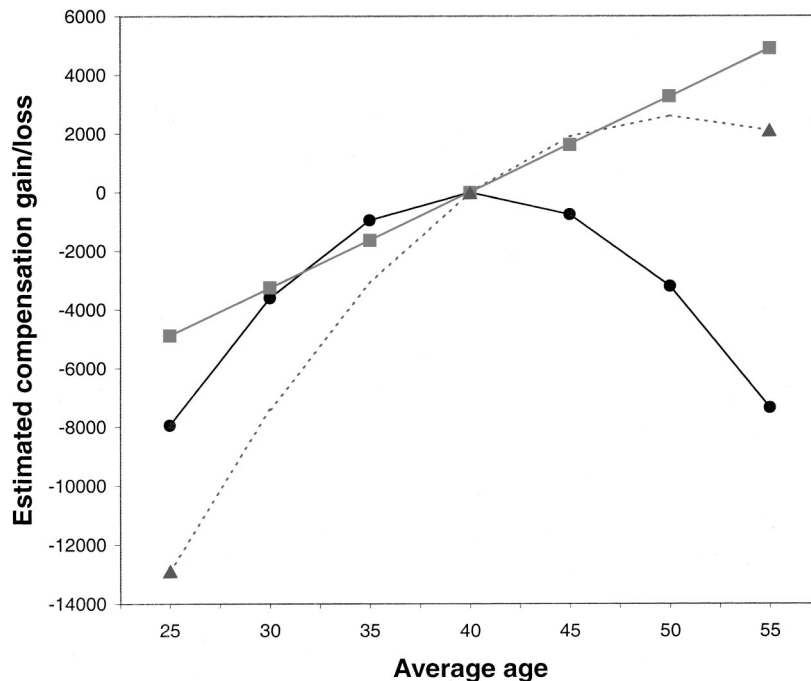


Figure 2. Estimated compensation gain or loss based on age of group members. Subordinates are indicated by a circle, peers are indicated by a square, and supervisors are indicated by a triangle.



consistent with their arguments pertaining to institutionalization theory, which suggests that stereotypes and roles contribute to perceptions of work done primarily by women and its value, those who supervise or work with women, regardless of the type of work they do, are seen as less valuable. The underlying reasons why supervising or working with women may be perceived as less valuable are not entirely clear. As suggested earlier, the lower power and status (e.g., Dexter, 1985; Rhode, 1990) attributed to women may partially account for these findings. Similarly, although women have increasing representation in managerial ranks, the gap in authority given to women remains large (Jacobs, 1992). Lower status, authority, and power may also lead to women receiving fewer of the resources they need to contribute in more substantial and valued ways in the organization. It is also possible that women engage in more organizational citizenship behaviors than men, and spending time on these activities detracts from more rewarded behavior as well as from perceptions of value. Additional rationales rest upon the notion of incomplete information. With complete information and no discrimination, employers would assign individuals to jobs and provide compensation based on individual productivity. However, some evidence suggests that employers have worse information about women than men, and as a result of this imperfect information, they may rely on stereotypes and are likely to base expected productivity in jobs partially on group membership (Holzer & Neumark, 2000). Finally, the results could be due to some type of gravitation whereby lower paid managers willingly move toward or are guided by the organization toward predominately female workgroups. Clearly, more research is needed to better understand why these gender composition effects occur.

The findings for the gender and age of the manager's supervisor are also open to some alternate interpretations. Because supervisors often have some input into compensation decisions, they have some direct effect on the compensation dependent variable. Thus, rather than devaluing work, the findings for supervisor could be due to the notion that female supervisors assign female managers less pay than male supervisors or that older supervisors tend to give higher pay to older managers than younger supervisors.

Unfortunately for female managers, the effects of depressed wages are also compounded due to clustering. That is, women tend to work with and for other women. Reskin and Ross (1992) as well as Boyd, Mulvihill, and Myles (1991) found gender of manager and subordinates to be correlated. One argument proposed to explain these findings is that the basic mechanism generating unfair wage differences between genders is men's desire to preserve their advantages and the power structure within work organizations (Reskin, 1988; Glick & Fiske, 1996). Gender segregation or clustering reflects a norm against women exercising power, and such gender segregation creates opportunities for women to supervise other women (Reskin & Ross, 1992). Hultin and Szulkin (1999) suggested that "men not only have the desire and incentives to maintain their advantages in the reward distribution process, they also have the ability to do so" (p. 457). However, clustering could also reflect attraction-similarity (e.g., Ziller, 1972) and social categorization (e.g., Tajfel & Turner, 1985). Similarity to others in background is an important determinant for attraction to and identification with referent others in a group (Turner, 1987) and leads to greater interaction and interpersonal communication (Larkey, 1996). Schneider's (1987) attraction-selection-attrition

theory is based on this premise and is used to explain the relative homogeneity in a particular workforce on a given characteristic. Regardless, this pattern of findings suggests that female managers are in double jeopardy in some sense because there is an overall wage gap favoring men, and they are more likely than men to have female subordinates, peers, and supervisors, which will depress wages further. Male managers have the benefit of the overall wage gap and are less likely to associate with large numbers of women. Perhaps they are aware that men who are associated with females are penalized in pay.

A similar phenomenon occurred with regard to the ages of a manager's subordinates. Those with subordinates outside the prime age group (i.e., younger or older than 40) suffered in terms of pay. Again, a value argument seems most plausible. To the extent that younger workers are viewed as less valuable due to lesser experience or firm-specific skills, those who supervise or work with them are also likely to be seen as having lesser value. To the extent that older workers are perceived as contributing less (deserved or not), managers who supervise older workers are more likely to receive lower pay, presumably because their subordinates are not perceived to be contributing as much value to the organization. Further, clustering effects based on age were also found, similar to those found for gender. Again, this could reflect a subtle form of power distribution within organizations or simply similarity-attraction.

It is interesting to note that the effects for both age and gender composition are most notable for subordinates when compared with peers and supervisors. One reason for the strongest effects occurring for subordinates may be because this group and its composition is most salient for the manager. In some jobs, managers interact infrequently with peers and even have a difficult time identifying who their peers are. However, a manager's group of subordinates is easily identified and salient to those who supervise or interact with the manager. In addition, a manager's performance is based, in part, on how well his or her subordinates perform, thus making them a more relevant group to the manager than his or her peers.

Our results regarding gender and age composition of subordinate groups are also consistent with the notion of a tipping or inflection point (Kanter, 1977; Huffman & Velasco, 1997). A small proportion of female subordinates has little impact on focal manager's compensation; however, once the workgroup is 40% to 50% female, the drop in compensation becomes dramatic. There is also a tipping point for age of subordinates, and this relationship is clearly curvilinear. Having subordinates whose ages average 40 is most advantageous for a manager's compensation. As the average age increases or decreases, managerial pay declines.

Our focus was on the impact of the composition of a manager's referent group in relation to his or her compensation. Future research could explore such issues from a relational demography perspective (e.g., Jackson et al., 1991; Tsui et al., 1992). That is, at the individual level, it is possible that the relative effects of demographic differences between an individual manager and the members of his or her referent group may be related to compensation levels or may add further explanation to some of the findings here.

The implications of these results for organizations are that they need to seriously investigate the extent to which implicit or explicit wage depression is occurring based on gender and age composition



of referent groups and clustering effects based on gender and age. On the basis of our results, female managers are not poorer performers, yet even after controlling for job type, functional area, and numerous background and human capital variables, salaries are depressed for female managers. In addition, when workgroups, peer groups, or supervisors are female, salaries are depressed for both male and female managers. There seem to be few explanations available other than the institutionalization argument that work that is performed largely by women is seen as less valuable.

Regarding age, having a workgroup of either young or old subordinates depresses wages. Again there appears to be a value judgment made that work done by old or young employees is less valuable and thus those who supervise these employees are deserving of a lower salary.

It is important to note that our study was conducted across a large number of organizations rather than within a single organization. Some different patterns of findings might be revealed when examining these issues within an organization. For example, across organizations, the relationship between pay and performance ratings is small. This is likely due to the fact that most performance evaluations made by a supervisor are often based on an individual's performance relative to others within that group or organization. Similarly, performance ratings are often closely tied to compensation within a job category within an organization. Hence, performance should account for more variation in compensation within an organization than we observed here, across organizations. Similarly, because our performance measure was not organization specific, and the sample varied across organizations, little relationship between performance and the gender and age group compensation variables was seen (see Table 1). Stronger effects may be revealed by conducting a within organization analysis. Similarly, it is important to point out that we have a slightly nested design in that there were four managers, on average, from each organization in our sample. To determine if this nesting impacted results, we calculated ICC(1). The resulting value was .001, indicating that there is very little similarity in compensation within organizations, relative to between organizations. Second, we conducted a regression using dummy variables to control for organization. The results for key study variables were essentially the same. Nevertheless, it is advisable that future work that uses nested data account for it by using procedures, such as hierarchical linear modeling.

It would also be advisable in future research to better understand the actual job context of subordinates. As suggested by Cleveland and Smith (1989), "jobs have gender stereotypes associated with them . . . and these job perceptions interact with the gender of the job incumbent (or applicant) to influence judgments" (p. 744). Perhaps in female-typed jobs, having predominately female employees compared with male employees does not have the same wage-depressing effect. Similarly, Cleveland and Landy (1987) demonstrated and Cleveland and Berman (1987) supported that jobs have age stereotypes associated with them. Again, for jobs that are stereotypically younger, perhaps younger workers do not depress wages. Future research should address the importance of age and gender stereotypes of jobs in addition to workgroup composition on managers' pay.

Top managers may be wise to investigate the extent to which value discrimination is occurring in their organizations and take steps to understand the reasons for it. If reasons other than dis-

crimination (e.g., skill levels, training, experience, productivity) cannot be found, steps should be taken to correct disparities. As Kanter (1977) noted, examination of relative numbers is critical because they can play a large role in outcomes such as stress, work effectiveness, performance, promotion prospects, and pay.

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