



Cornell University  
ILR School

Cornell University ILR School  
**DigitalCommons@ILR**

---

Articles and Chapters

ILR Collection

---

2002

# Changes in Employment and Working Conditions Among Technical and Professional Workers

Rosemary Batt

*Cornell University*, [rb41@cornell.edu](mailto:rb41@cornell.edu)

Danielle van Jaarsveld

*Cornell University*

Follow this and additional works at: <http://digitalcommons.ilr.cornell.edu/articles>

 Part of the [Human Resources Management Commons](#), and the [Labor Relations Commons](#)

Thank you for downloading an article from DigitalCommons@ILR.

[Support this valuable resource today!](#)

---

This Article is brought to you for free and open access by the ILR Collection at DigitalCommons@ILR. It has been accepted for inclusion in Articles and Chapters by an authorized administrator of DigitalCommons@ILR. For more information, please contact [hlmdigital@cornell.edu](mailto:hlmdigital@cornell.edu).

---

# Changes in Employment and Working Conditions Among Technical and Professional Workers

## **Abstract**

Recent organizing drives and strike activity among technical and professional employees raise the question of whether the employment conditions of these workers are deteriorating more generally. To consider this question, this paper reviews empirical research and national surveys on trends in employment contracts and working conditions of technical and professional employees. On average, we find that employment security and benefits have deteriorated, more pay is at risk, and hours of work have increased, negatively spilling over from work to family life.

## **Keywords**

working conditions, technical employees, professional employees, benefits, employment security

## **Disciplines**

Human Resources Management | Labor Relations

## **Comments**

### **Suggested Citation**

van Jaarsveld, D. D. & Batt, R. (2002). Changes in employment and working conditions among technical and professional workers [Electronic version]. *Proceedings of the 54<sup>th</sup> annual meeting of the Industrial Relations Research Association* (pp. 156-163). Madison, WI: Industrial Relations Research Association.

### **Required Publisher Statement**

© [Labor and Employment Relations Association](#). Reprinted with permission. All rights reserved.

## VIII. ASSOCIATIONS, UNIONS, AND THE CHANGING NATURE OF PROFESSIONAL WORK

---

### Changes in Employment and Working Conditions Among Technical and Professional Workers

DANIELLE D. VAN JAARSVELD AND ROSEMARY BATT  
*Cornell University*

#### **Abstract**

Recent organizing drives and strike activity among technical and professional employees raise the question of whether the employment conditions of these workers are deteriorating more generally. To consider this question, this paper reviews empirical research and national surveys on trends in employment contracts and working conditions of technical and professional employees. On average, we find that employment security and benefits have deteriorated, more pay is at risk, and hours of work have increased, negatively spilling over from work to family life.

Recent organizing drives among physicians, psychologists, graduate students, and high-tech workers at IBM and Microsoft have attracted national attention. Similarly, in 2000 we witnessed militant strikes by the Screen Actors Guild in Hollywood and a 40-day strike by aerospace engineers at Boeing, the longest white-collar strike in history. These incidents raise the question of whether the employment conditions of technical and professional workers are deteriorating more generally, such that they may be more likely take collective action than in the past. To consider this question, we review

---

Author's Address: ILR Human Resource Studies, Cornell University, Ithaca, NY 14853-3901.

national evidence on the extent of change in working conditions and employment contracts for technical and professional workers.

One indicator of changing conditions at work is attitudinal data from national surveys. In one survey of a nationally representative sample of individuals (conducted annually since 1984 by Gantz Wiley Research), technical and professional workers reported significant improvements in the intrinsic aspects of their work such as the use of skills, discretion, participation at work, and sense of personal accomplishment. However, they reported significant declines in extrinsic aspects of work, including job security and satisfaction with pay and benefits (National Research Council 1999). Similarly, analyses of the General Social Survey show that perceptions of job security among white-collar workers declined significantly between the 1980s and 1990s (Aaronson and Sullivan 1998). In the following sections, we review national trends in job security, compensation, hours of work, electronic monitoring, and work/family balance.

### **Employment Security**

National indicators of employment security include trends in the rates of nonstandard employment contracts, job stability, and worker displacement. Data on the use of nonstandard contracts are available from the Bureau of Labor Statistics (BLS) Contingent Work Supplements to the Current Population Survey (CPS) for 1995, 1997, and 1999. Analyses of the 1995 data showed that 30 percent of female professionals and 25 percent of male professionals worked in nonstandard arrangements, which include regular part-time, temporary, on call/day laborer, self-employed, independent contractor, and contractor (employed by a contract company; Spalter-Roth 1997). By 1999, contingency rates among professional workers had increased somewhat from 1995 (Hipple 2001). Professional specialties were among the occupations with the highest rates of nonstandard contracts in 1999, along with farming, forestry and fishing, and administrative support (Hipple 2001). Similarly, the number of temporary staffing agencies that focus on placing technical and professional employees specifically in temporary positions increased by five-fold between 1990 and 1999 (Melchionno 1999). Moreover, projections based on the BLS data are that temporary employment will grow by almost 50 percent for technicians, 68 percent for engineers, 78 percent for sales and marketing positions, and 123 percent for computer engineers and scientists between 1996 and 2006 (Melchionno 1999).

Employment security and career growth is a significant issue for professional employees in temporary, freelance, or subcontracting arrangements. In a recent survey of new media professionals in New York City, for example, respondents reported that they spent 14 hours per week of unpaid time just to upgrade their skills to be "employable" (Batt et al. 2001). Despite the fact

that the study focused on a very successful group with an average income of \$99,000 per year (1998 dollars) at a time when the industry was booming, only half felt their jobs were secure and only 60 percent were satisfied with their career prospects (Batt et al. 2001).

One measure of job stability is job tenure, or the length of time an employee stays with one employer. BLS data show that the job tenure of college-educated employees has declined almost as much as that of less educated workers. For example, between 1979 and 1996, the percent of college-educated workers with 10-year-tenure jobs declined by 6.9 percentage points, compared to 7.3 percentage points among workers with less than a high school degree (Mishel, Bernstein, and Schmitt 2001).

Another measure of job stability is the rate of job loss or displacement due to factors such as downsizing or restructuring that are unrelated to individual behavior (e.g., quits or discharges). Using displaced worker surveys of the CPS, Farber found that the proportion of technical and professional workers who experienced job loss because their positions were abolished grew from 1.1 to 1.7 percent between the two periods of economic recession 1981–1983 and 1991–1993 (Farber 1997). He also showed that between the two periods of economic recovery 1987–1989 and 1993–1995, the proportion of technical and professional workers whose positions were abolished increased from 1.0 to 2.2 percent (Farber 1997). In subsequent analyses of data through 1999, Farber (2001) found that more educated workers experienced a higher increase in the job loss rate during the early and mid-1990s than did other groups. Among workers with at least 16 years of education, job loss due to a position or shift being abolished was 1.5 percent in 1981–1983, 3.2 percent in 1993–1995, and 2.2 percent in 1997–1999 (Farber 2001).

Although white-collar workers continued to be less likely than blue collar workers to lose their jobs, the gap in displacement rates between the two groups has narrowed considerably since the early 1980s. In his analysis of the displaced workers supplements to the CPS, for example, Helwig (2001) found that the displacement rate for blue collar workers for the 1981–1982 period was 7.3 percent compared with 2.6 percent for white-collar workers. Meanwhile, by 1997–1998, the displacement rates were 3.1 percent and 2.4 percent, respectively (Helwig 2001). In sum, several indicators suggest that job security for technical and professional workers has declined, and the reasons for that decline are not cyclical but structural, driven by managerial choice.

## **Pay and Benefits**

On average, technical and professional workers experienced real wage growth during the 1980s and 1990s (Mishel, Bernstein, and Schmitt 2001). This trend masks the fact that male technical workers experienced a decline

in hourly wages between 1989 and 1995 (Mishel, Bernstein, and Schmitt 2001). However, the rising rate of nonstandard contracts among these workers also has some negative wage and benefit implications. Multivariate analyses of the 1995 BLS data, for example, showed that technical and professional workers in nonstandard contracts had significantly lower wages and benefits than did their full-time counterparts (Spalter-Roth et al. 1995:48).

In addition, while most technical and professional workers experienced real wage increases, the growth of performance-based pay strategies has put more pay at risk. Many companies have shifted from incentive pay, based on bonuses and add-ons, to “risk sharing” in which a portion of pay is at risk or employees receive stock options in lieu of pay. Stock option plans, particularly popular for high-tech workers, grant employees the right to buy company stock at a specified price during a set period once the option has vested. Companies granting broad-based stock options to all employees rose from 5.7 percent in 1993 to 10.3 percent in 1997 according to one study of the proxies of 350 of the largest public companies (Mercer 1997). The downturn of the stock market, however, left many workers with underwater stock options—options in which the exercise price for a company’s stock exceeded the current market price (Delves 2001). In other cases, employees have filed lawsuits alleging that firms such as DoubleClick and IBM dismissed them right before their stock options vested (Kowalski 2000).

In the area of benefits, health insurance and pension coverage for higher-skilled workers has declined, according to data from the BLS national compensation survey of medium and large private establishments. Of full-time workers in medium and large private establishments who participated in medical care plans, only 31 percent had individual coverage wholly financed by their employer in 1997, down from 77 percent in 1980. In 1997, 20 percent of full-time medical plan participants in medium and large private establishments were eligible to receive fully employer-paid coverage for their families, a significant decrease from 51 percent in 1980. For professional, technical, and related employees, pre-coverage expenses as well as average employee monthly contributions for individual coverage and family coverage for both HMO and non-HMO plans increased substantially for the period from 1991–1997 (BLS 1999, table 8). Some firms also are transforming health insurance plans into “defined contribution” systems in which they provide a set amount of money for each employee’s health benefits, thereby capping the company’s costs (Winslow 2000).

Employers also have shifted investment risk to workers by converting defined benefit pension plans into defined contribution plans: 401(k) plans or Employee Stock Ownership Plans (ESOPs; Ippolito and Thompson 2000). For example, data from the 1999 National Compensation Survey reveal that in

private industry, the percentage of professional, technical, and related employees participating in a defined benefit plan was 29 percent, while the percent covered by defined contribution plans was 56 percent (BLS 1999, table 1; BLS table 1 1997)

In defined benefit plans, employees are guaranteed a fixed income based on their years of service, and the company absorbs the risks associated with changes in interest rates and inflation. In addition, the Pension Benefit Guarantee Corporation, a governmental agency, guarantees the accrued benefits up to a certain point. In defined contribution plans, by contrast, employers contribute a set annual rate to employees' retirement accounts (typically fifty cents to every dollar invested by the employee). Employees absorb the market risks and can take the cash value of the plan whenever they leave the company. These plans are favorable for mobile workers, but generally provide lower payouts and are not guaranteed by the Pension Benefit Guarantee Corporation. In addition, because ESOP plans invest employee savings in the employer, employees cannot diversify their portfolio and risk loss of savings in the event of poor corporate performance or bankruptcy, as in the Enron case (Cummings et al. 2002). Employees increasingly have challenged firms for 401(k) losses through class-action lawsuits in corporations such as Procter & Gamble, Qwest Communications International Inc., and Enron Corporation (Schultz 2001). In other cases, such as IBM, technical and professional employees not only filed a lawsuit to challenge IBM's conversion of their defined-benefit plan to a cash-balance plan, but also formed IBM/Alliance, an employee organization pursuing an ongoing organizing drive under the auspices of the Communication Workers of America (CWA).

### **Work Hours and Work/Family Balance**

Technical and professional employees also are working longer hours, according to analyses of CPS data. The share of full-time professionals working 49 hours or more per week increased between 1985 and 1993 (Rones et al. 1997). Compared to other occupations, professionals and managers were most likely to work long workweeks. The work hours of men and women in married couples also have risen. In 1998, 31 percent of married couples had both spouses working 35 or more hours per week, up from 13 percent in 1969 (U.S. Department of Labor 1999). Couples with small children are spending more combined hours at work, and the number of couples where both spouses work long hours has increased (U.S. Department of Labor 1999). In addition, the availability of paid time off has declined (U.S. Department of Labor 1999). Finally, among professional employees in regular full-time jobs, mothers and fathers in dual-earner families with children have average weekly hours of 45.9 (fathers) and 42 (mothers) (Spalter-Roth 1997).

A central question is whether professionals prefer to work these long hours. The most comprehensive data on this question come from the National Study of Families and Households (NSFH), a nationally representative sample of more than 10,000 men and women, (including spouses and partners) in 1987–1988 and 1993–1994. Clarkberg and Moen (2001) analyzed the relationship between the preferences and the actual hours worked by couples in the two waves of data. They found that only 41 percent of wives and 44 percent of husbands are working the schedule they prefer. Approximately two-thirds of those who were not working their desired schedule were working longer hours than they wanted. Among dual-earner professional couples, the odds of being overworked were 50–90 percent higher than among nonprofessional couples (Clarkberg and Moen 2001).

Increased work hours also have negative spillover effects on family well-being. A Cornell study found that the proportion of workers who reported high levels of work–family conflict jumped dramatically for those who put in more than 50 hours a week (Institute for Workplace Studies 1999). Similarly, Canadian researchers conducted two separate surveys of 6,500 public and private sector employees in 1991 and 2001 (Duxbury and Higgins 2001). Compared to 1991, professional workers in 2001 reported significantly higher levels of depression and stress and lower levels of job satisfaction and organizational commitment. Parental status was significantly related to job stress in 2001, but not in 1991, a finding that did not differ by gender. Although “family-friendly policies” were introduced in the past decade, male and female professionals reported that taking advantage of those policies would negatively affect their career prospects. In both periods, professional women reported the highest levels of role overload and work-to-family conflict compared to nonprofessional women, and professional and nonprofessional men.

Another source of stress comes from the increased use of electronic performance monitoring. In 2001, over three-quarters of U.S. firms recorded and reviewed employee activities on the job, twice the percentage that did so in 1997 (American Management Association 2001). While little data specific to technical and professional employees exists, a wide variety of monitoring mechanisms typically cover these employees, including advanced communications technologies such as computer laptops, voice mail, e-mail, and cell phones; and company norms increasingly imply that speedy response to these communications is an indicator of commitment and performance. A national survey of technicians in the telecommunications industry, for example, found that 25 percent are electronically monitored on a regular basis (Batt et al. 2000).

Increased productivity pressure and performance monitoring are associated with higher stress. According to a survey conducted by Northwestern National Life, employees experiencing job stress frequently suffer from health ailments

(Northwestern Life 1991). In 1997, OSHA reported that roughly two-thirds of cases of occupational stress involving days away from work occurred to workers in white-collar occupations (Webster and Bergman 1999). High levels of stress can lead to increased health risks. In one study of female lawyers, researchers compared female lawyers who work long hours with part-time female lawyers (Fraser 2001). Those who worked longer hours were 5 times as likely to suffer great stress at work and 3 times as likely to have a miscarriage. Similarly, a University of Michigan study of nurses who work more than 40 hours a week found that nurses who worked longer hours were 70–80 percent more likely to deliver premature, underweight babies (Fraser 2001).

## Discussion and Conclusions

This paper provides an initial assessment of changes in the employment contracts and working conditions of technical and professional employees. On average, it appears that job security and benefits have deteriorated, more pay is at risk, and hours of work have increased, negatively spilling over from work to family life. Some case studies also point to heightened job-related stress. However, there are many areas in which data on employment conditions for these occupational groups are unavailable. Moreover, we were unable to assess variation in these trends by detailed occupational subgroups. In future research, we intend to undertake more fine-grained analyses of trends in the nature of work, technology, and employment contracts for employees in technical and professional specialties.

## References

- Aaronson, D., and D.G. Sullivan. 1998. "The Decline of Job Security in the 1990s: Displacement, Anxiety, and Their Effect on Wage Growth." *Economic Perspectives* (Federal Reserve Bank of Chicago), Vol. 22, no. 1 (Q1), pp. 17–43.
- American Management Association. 2001. *Electronic Monitoring and Surveillance*. New York: American Management Association.
- Batt, R., S. Christopherson, N. Rightor, and D. van Jaarsveld. 2001. *Net Working: Work Patterns and Workforce Policies for the New Media Industry*. Washington, DC: Economic Policy Institute.
- Bureau of Labor Statistics. 1998. *Employee Benefits in Medium and Large Establishments, 1995*. Bulletin 2496, Washington, DC: U.S. Department of Labor.
- Bureau of Labor Statistics. 1999. *Employee Benefits in Medium and Large Establishments, 1997*. Bulletin 2517, Washington, DC: U.S. Department of Labor.
- Bureau of Labor Statistics. 2001. *Employee Benefits in Private Industry, 1999*. News release, Washington, DC: U.S. Department of Labor.
- Clarkberg, M., and P. Moen. 2001. "Understanding the Time-Squeeze." *American Behavioral Scientist*, Vol. 44 (March 7), pp. 1115–36.
- Cummings, J., J.R. Emshwiller, T. Hamburger, S.J. Paltrow, J. Sapsford, E. Schultz, and R. Smith. 2002. "Though Enron Case Isn't Over, Lessons Already Emerge." *Wall Street Journal*, January 15, p. A.4.

- Delves, D. 2001. "Underwater Stock Options." *Strategic Finance*, Vol. 83, no. 6, pp. 26–32.
- Duxbury, L., and C. Higgins. 2001. *Work-Life Balance in the New Millennium: Where Are We? Where Do We Need to Go?* Ottawa, ON: Canadian Policy Research Networks.
- Farber, H.S. 1997. "The Changing Face of Job Loss in the United States, 1981–1995." *Industrial Relations Section Working Paper 38*. Princeton, NJ: Princeton University.
- Farber, H.S. 2001. "Job Loss in the United States, 1981–1999." *Industrial Relations Section Working Paper 453*. Princeton, NJ: Princeton University.
- Fraser, J.A. 2001. *White-Collar Sweatshop*. New York: W.W. Norton.
- Helwig, R.T. 2001. "Worker Displacement in a Strong Labor Market." *Monthly Labor Review*, Vol. 124, no. 6, pp. 13–28.
- Hipple, S. 2001. "Contingent Work in the Late 1990s." *Monthly Labor Review*, Vol. 124, no. 3, pp. 3–27.
- Ilg, R.E., and S.E. Haugen. 2000. "Earnings and Employment Trends in the 1990s." *Monthly Labor Review*, Vol. 123, no. 3, pp. 21–33.
- Institute for Workplace Studies. 1999. *Overtime and the American Worker*. Ithaca, NY: Cornell University.
- Ippolito, R.A., and J.W. Thompson. 2000. "The Survival Rate of Defined-Benefit Plans, 1987–1995." *Industrial Relations*, Vol. 39, no. 2, pp. 228–45.
- Kowalski, R. 2000. "As Options Spread, So Too Do Suits From Workers Fired Before They Vest." *TheStreet.com*. <[www.thestreet.com/tech/internet/900423.html](http://www.thestreet.com/tech/internet/900423.html)>.
- Melchionno, R. 1999. "The Changing Temporary Workforce." *Occupational Outlook Quarterly*, Vol. 43, no. 1 (Spring), pp. 25–32.
- Mercer, W.M. 1997. "Stock Options Move Beyond Companies Executive Suites." Press release, December. New York: William M. Mercer.
- Mishel, L., J. Bernstein, and J. Schmitt. 2001. *The State of Working America*. Ithaca, NY: ILR Press.
- National Research Council (NRC). 1999. *The Changing Nature of Work: Implications for Occupational Analysis*. Committee on Techniques for the Enhancement of Human Performance. Commission on Behavioral and Social Sciences and Education, National Research Council. Washington, DC: National Academy Press.
- Northwestern National Life Insurance Company. 1991. *Employee Burnout: America's Newest Epidemic*.
- Rones, P.L., J.M. Gardner and R.E. Ilg. 1997. "Trends in Hours of Work Since the Mid-1970s." *Monthly Labor Review*, Vol. 120, no. 4, pp. 3–14.
- Schultz, E.E., and T. Francis. 2001. "Fair Shares? Why Company Stock Is a Burden for Many." *The Wall Street Journal*, November 27, p. A.1.
- Spalter-Roth, R.M., A.L. Kalleberg, E. Russell, N. Cassirer, B.F. Reskin, K. Hudson, D. Webster, E. Appelbaum, and B.L. Dooley. 1997. *Managing Work and Family*. Washington, DC: Economic Policy Institute and Women's Research & Education Institute.
- U.S. Department of Labor. 1999. *Report on the American Workforce*. Washington, DC: U.S. Department of Labor.
- Webster, T., and B. Bergman. 1999. "Occupational Stress: Counts and Rates." *Compensation and Working Conditions*, Vol. 4, no. 3, pp. 38–41.
- Winslow, R., and C. Gentry. 2000. "Health-Benefits Trend: Give Workers Money, Let Them Buy a Plan." *The Wall Street Journal*, February 8, p. A.1.