

## Job satisfaction and teamwork: the role of supervisor support

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### Summary

The link between teamwork and job satisfaction was investigated in a sample of 48 manufacturing companies comprising 4708 employees. Two separate research questions were addressed. First, it was proposed that supervisor support would be a weaker source of job satisfaction in companies with higher levels of teamworking. Multilevel analysis indicated that the extent of teamwork at the company level of analysis moderated the relationship between individual perceptions of supervisor support and job satisfaction. Second, it was proposed that the extent of teamwork would be positively related to perceptions of job autonomy but negatively related to perceptions of supervisor support. Further, it was proposed that the link between teamwork and job autonomy would be explained by job enrichment practices associated with teamwork. Analyses of aggregated company data supported these propositions and provided evidence for a complex mediational path between teamwork and job satisfaction. Implications for implementing teamwork in organizations are discussed. Copyright © 2001 John Wiley & Sons, Ltd.

### Introduction

Teamwork typically involves groups of interdependent employees who work cooperatively to achieve group outcomes (Parker and Wall, 1998). Effective team implementation can enhance the motivational properties of work and increase job satisfaction. However, the job satisfaction of team members is determined by multiple factors such as the composition of the team, group processes within the team, and the nature of the work itself (Campion *et al.*, 1993; Gladstein, 1984). Because these factors operate in combination, there is no simple process through which teamwork influences job satisfaction. Despite the potential advantages of teamwork, the introduction of teams sometimes fails to result in expected outcomes for individuals and organizations (Hackman, 1990). This paper explores ways in which changes in leadership roles influence overall job satisfaction in teams.

Within the broad field of leadership, we focus on employee experiences of supervisor support: the extent to which supervisors provide encouragement and support to employees within their work

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groups. The support and consideration of supervisors is a strong determinant of job satisfaction in a wide variety of work settings (Yukl, 1989). Theoretically, better understanding about the role of leadership changes in teams may help explain some inconsistent research findings concerning the impact of teamwork on satisfaction. On a practical level, it is important to identify factors that will facilitate the effective implementation of teams in the work place.

We explored the relationship between teams and satisfaction using data from a large research project in the U.K. that investigated management practices and employee attitudes in manufacturing companies. Data from the project were used to assess research questions about job satisfaction at two levels of analysis. First, we focused on the individual level of analysis to investigate the importance of supervisor support for job satisfaction when teams are introduced in companies. This level of analysis allowed us to assess the degree to which the link between supervisor support and job satisfaction was influenced by the extent of teamwork in each company. Second, we focused on the company level of analysis to investigate differences in average satisfaction levels across companies. This analysis enabled us to differentiate the role of teamwork from more general job enrichment practices and to investigate how these practices were linked, via supervisor support, to job satisfaction. Analyses at the different levels draw on the strengths of a multi-organization sample in which information was obtained from individual employees, manager interviews, and company records.

## Individual Level: The Changing Impact of Supervisor Support

Supervisors play an important role in structuring the work environment and providing information and feedback to employees. As a consequence, supervisor behaviors have an impact on the affective reactions of team members (Durham *et al.*, 1997). However, introducing teams can result in a significant change to the role of supervisors within organizations (Tannenbaum *et al.*, 1996). Parker and Wall (1998) identify a number of options for leadership roles in teams. These options range from the complete elimination of supervisory positions to the retention of supervisory positions but with redefined role requirements such as facilitation. All of these options change the role of supervisors in teams so that supervision is a less important source of support and direction (Kerr *et al.*, 1986).

Our first goal was to investigate the impact of supervisor support on employee satisfaction under different levels of team implementation. Little research has tested whether the impact of leadership changes when teams are introduced. One possible consequence of the changing role of supervision when teams are introduced is that the traditional support provided by supervisors becomes less important for employee satisfaction. Therefore, there should be a weaker link between the perceived supportiveness of supervisors and the satisfaction levels of employees in companies where teams have been introduced. The companies in the present study differed in the degree to which they had introduced teamwork. Some companies had made no change toward the use of teams, some had implemented teamwork across the whole organization, and others had introduced minimal elements of teamworking.

Although leadership may have less influence on satisfaction for employees working in teams, this does not mean that a supervisor's support has no impact on satisfaction. Leadership is consistently recognized as important for the initiation and ongoing development of teams (Bass, 1997; Manz and Sims, 1987; Tjosvold, 1995) and is often included as an important determinant in models of team satisfaction (e.g., Campion *et al.*, 1993; Cohen *et al.*, 1996; Gladstein, 1984). In traditional work structures, supervisors have long been recognized to play an important part in developing roles and expectations of employees (Graen and Scandura, 1987). This function is also important when

teamwork is introduced because supervisors can play a key role in modelling teamwork and setting the ground rules for team members to engage in team processes (McIntyre and Salas, 1995). Immediate supervisors also provide salient information about the support of the broader organization for change and their behaviors are likely to be interpreted as representative of wider organizational processes (Kozlowski and Doherty, 1989). Therefore, although we propose that supervisor support will be a less important source of satisfaction when teams are introduced, we also propose that supervisor support will continue to exert a positive influence on employee satisfaction.

Based on the above discussion, hypotheses were developed to predict the overall impact of supervisor support on job satisfaction, variation in the impact of supervisor support on satisfaction across companies, and a link between the extent of teamwork and the importance of supervisor support. First, we proposed that the overall link between job supervisor support and job satisfaction will be positive regardless of the level of teamwork in an organization.

*Hypothesis 1:* Supervisor support will have a positive impact on job satisfaction across all companies.

Next we proposed that there would be systematic variation in the link between perceptions of supervisor support and satisfaction across the range of companies in the study. It is important to establish this variation because it demonstrates that the link between supervisor support and satisfaction is not the same within different companies.

*Hypothesis 2:* The relationship between perceptions of supervisor support and job satisfaction will vary systematically across companies.

If hypothesis 2 is supported, it allows the possibility that variation in the link between supervisor support and satisfaction can be explained by company level differences. Our key hypothesis was that these differences could be explained by the extent of teamwork in each company. Therefore, the following hypothesis was tested.

*Hypothesis 3:* Supervisor support will be more strongly related to job satisfaction in companies with higher levels of teamwork compared to companies with lower levels of teamwork.

The study also assessed other organizational characteristics that might influence job satisfaction. In particular, the performance of the company is likely to influence the level of job satisfaction of employees in the company (Ryan *et al.*, 1996). Companies with higher levels of productivity and performance are likely to have more resources, greater security, and provide more opportunities for employees. The direction of the effect between organizational performance and employee satisfaction has received little research attention (Ostroff, 1992). The current study used productivity as a company level control measure to account for other factors not associated with teamwork. Similarly, the size of the organizational unit may have an impact on individual job satisfaction because smaller establishments tend to be associated with more satisfied workers (LaRocco, 1985; Steers and Rhodes, 1987). Analysis by Clark (1996) suggested that greater provision of intrinsic rewards (e.g., relations at work) from smaller organizations results in significantly raised satisfaction in those workers who value such characteristics. Therefore, organizational size was also included as a control variable. The following hypotheses tested the role of these two measures at the company level of analysis.

*Hypothesis 4:* Companies with higher profit levels will report higher overall levels of job satisfaction.

*Hypothesis 5:* Companies with more employees will report lower overall levels of job satisfaction.

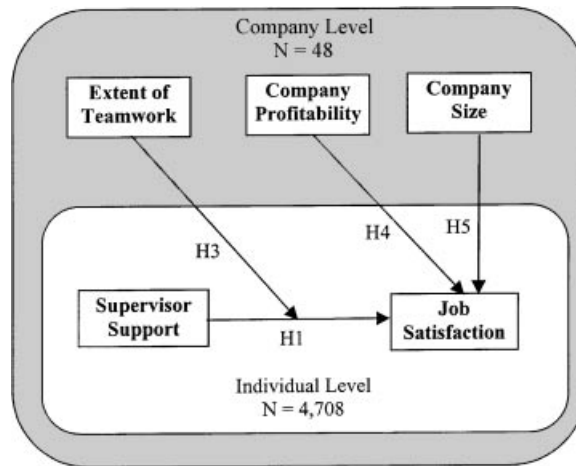


Figure 1. Hypothesized cross-level influences on job satisfaction

Figure 1 summarizes the hypothetical relationships that were investigated. The figure differentiates measures obtained at the individual level of analysis from those obtained at the company level of analysis. At the individual level, perceptions of supervisor support and job satisfaction were assessed. At the organizational level, the extent of teamwork, profitability, and company size were assessed.

## Company Level: The Mediational Role of Supervisor Support and Job Autonomy

In addition to changing the role of supervisors, the introduction of teams is typically accompanied by changes to the design of work roles for employees. We focused on job enrichment practices as a common practice carried out by organizations aiming to redesign the work place. These practices include increasing the responsibilities of employees, the variety of tasks performed, and the flexibility to implement tasks. Research in the area of job enrichment has consistently demonstrated positive links to employee satisfaction (Hackman and Oldham, 1980; Neuman *et al.*, 1989). A key outcome for employees from job enrichment practices is the experience of job autonomy: the extent to which employees experience a sense of choice and discretion in their work. There is also a long line of research supporting the positive impact of job autonomy on job satisfaction (Parker and Wall, 1998).

Job enrichment practices, such as increasing job variety, can result in higher job satisfaction because of higher levels of perceived autonomy. The introduction of teamwork is also often undertaken with the goal of creating an enriched work environment in which employees can experience greater autonomy (Wall *et al.*, 1986). Evidence suggests that teams with higher levels of autonomy are more effective (Beekun, 1989). However, job enrichment practices are not necessarily implemented through a teamwork structure. For example, job variety may be increased through a job rotation programme or through a team structure in which team members share all tasks. In both cases we expect that the enrichment practice of increased job variety will result in higher levels of job satisfaction. However, where job enrichment is part of a teamwork we expect less direct support for employees from supervisors. In this way, supervisor support can be lower when teams are introduced.

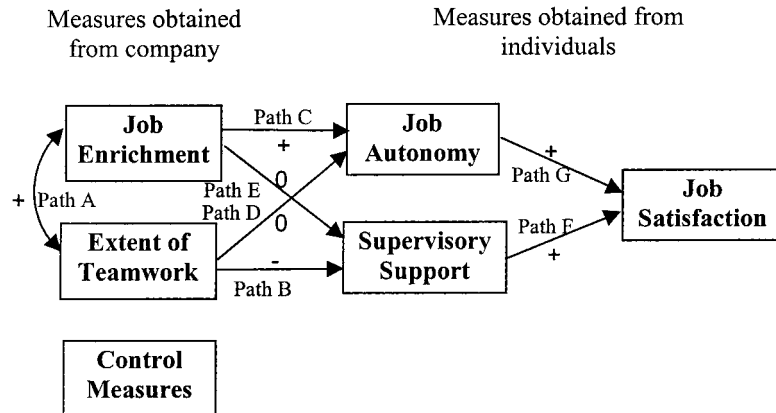


Figure 2. Hypothesized relationships among organizational level constructs

We hypothesized that job enrichment associated with the introduction of teams results in greater autonomy for employees but that team structures themselves reduce levels of supervisor support. In this way, teamwork can indirectly influence job satisfaction in both a positive and a negative direction. The proposed negative impact of teams on supervisor support is implicit in the literature on teams but has not been tested directly. Support for this negative impact would provide one explanation for the difficulties associated with the introduction of teams and suggest an important mechanism for managing the transition from more traditional work structures to teamwork. A negative impact of teamwork on supervisor support would highlight the need to ensure support for the functional role of leaders particularly during transition. Overall, if the introduction of teams is not associated with effective adaptation of supervisory roles, there may be negative outcomes for teams (Komaki *et al.*, 1989).

Figure 2 depicts the proposed mediational role played by job autonomy and supervisor support at the company level of analysis. This level of analysis allowed us to investigate the mediational processes through which teamwork and leadership perceptions influence job satisfaction. The model does not propose that satisfaction is a collective construct but provides an opportunity to investigate factors associated with average differences across companies. The figure distinguishes between the extent of teamwork in an organization and the degree of job enrichment in the workplace. Although the two constructs are distinct, teamwork and job enrichment were expected to be correlated (Path A) because the introduction of teams is typically associated with changes in job design (Parker and Wall, 1998). The introduction of teams was expected to have a direct negative impact on levels of supervisor support (Path B). That is, the introduction of teams itself can reduce the level of supervisor support in organizations. Job enrichment was expected to lead to higher levels of job autonomy (Path C). There was expected to be no direct effect of the extent of teamwork on job autonomy (Path D) as this relationship is explained by the correlation with job enrichment. Job enrichment that provides greater flexibility and control was expected to have no direct influence on the levels of supervisor support within teams (Path E).

Job autonomy has been found to mediate the impact of job enrichment on team outcomes (Janz *et al.*, 1997). Therefore, both supervisor support and job autonomy were expected to have a positive impact on job satisfaction (Path F and Path G, respectively).

In summary, we proposed that typical team interventions may reduce the level of supervisor support in the work place by focusing on increased flexibility and autonomy for employees. However, if the

## Contextual Sidebar

### The companies

The companies were spread throughout the United Kingdom, and were drawn from the manufacture of metal goods and mechanical engineering sector, plastics and rubber sector, and a third miscellaneous category. They were predominantly single site and averaged approximately 260 employees. Almost all the firms reported undergoing significant change in structure and work design. Over 80 per cent of companies reported greater decentralization. However, when senior managers were asked to indicate the lowest hierarchical level where employees had the authority to make selected decisions, responses revealed that supervisors and operators mostly had limited opportunities for decision making.

### Workers' views of the workplace

Organizational climate surveys conducted across the companies reinforced the perception that changes in HRM and empowerment were implemented with limited effectiveness. Employees reported low levels of participation, lack of open communication, and little decentralization. Pressure on employees to produce and formalization (the use of rules and formal procedures to control activities) dominated employees' perceptions of their organizations.

### Time

The study was conducted between 1994 and 1995.

positive impact of supervisory support is reduced, then the overall change in satisfaction may be less than expected if the change is not compensated for by other changes in the workplace.

## Method

### *Sample and procedure*

The companies in this study were 48 manufacturing companies in the U.K. that were involved in a larger project examining organizational design, management practices, employee attitudes, innovation and economic performance. The companies ranged in size from 60 to 1929 employees, with an average of 246 employees ( $SD = 318.8$ ). Teams had been introduced to varying degrees across the range of companies. The companies were predominantly single site and single product operations.

Measures at the individual level of analysis were obtained through a survey of all staff in each company. Data were collected on employee job satisfaction, and employee perceptions of supervisory support and work autonomy. In most companies 100 per cent of employees were surveyed but in companies with more than 500 employees ( $n = 3$ ) a random sample was taken. Response rates within companies ranged from 5–100 per cent with a mean response rate of 52.5 per cent ( $SD = 26.4$  per cent). The questionnaire surveys were either distributed to employees by the organization or handed to employees on-site by a member of the research team. Listwise deletion of missing cases resulted in a final sample for analyses of 4708 in 48 companies. Individual measures used in the second analysis were aggregated to the company level of analysis.

Measures of teamworking and job enrichment were collected at the company level through on-site, in-depth, semi-structured interviews with senior managers and directors. The interview information formed the basis of researcher ratings of teamworking and job enrichment. We did not rely on managers' ratings because their responses were not similarly anchored across companies. For example, an inexperienced manager in one company might rate a rather limited implementation of job enrichment as disproportionately substantial. The field-researchers' had contact with managers and experience of work conditions across all companies in the study.

### *Individual level measures*

*Job satisfaction* was measured by Warr *et al.* (1979) 15-item measure ( $\alpha = 0.92$ ). The scale was developed and standardized in previous research on blue-collar employees (Cook *et al.*, 1981; Cook and Wall, 1980). The response format ranged from *extremely dissatisfied* (1) to *extremely satisfied* (7).

*Supervisory support* was measured by five items ( $\alpha = 0.88$ ) from an index of organizational climate developed for use with blue-collar workers (Lawthom *et al.*, 1997). The response format ranged from *definitely false* (1) to *definitely true* (4). An example item was 'Supervisors here are friendly and easy to approach'.

*Work autonomy* was measured by four items ( $\alpha = 0.68$ ) from the same index of organizational climate used to assess supervisory support (Lawthom *et al.*, 1997). The response format ranged from *definitely false* (1) to *definitely true* (4). An example item was 'Management let people make their own decisions most of the time'.

### *Company level measures*

#### **Teamwork**

The interview questions covered the degree to which teams, rather than individuals, had responsibility for work, the structure of the teams, how they were managed and how targets were set. Using this information, researchers rated the degree to which teamworking had been implemented. Scoring was on a 4th-point scale from 'not at all' to 'extensively'.

#### **Job enrichment**

The interview covered the following aspects of job design: the extent of job rotation; the extent of multiskilling of shopfloor employees; the cycle time in the typical job; the extent to which the management of materials and work in progress was delegated to shopfloor staff; the amount of responsibility operators had for dealing the technology, including minor breakdowns, routine maintenance and machine set-up; and the discretion they had for deciding on when to take breaks and for the methods used to complete their work. Using this information, complemented by documentary (e.g., job descriptions) and observational evidence (e.g., shopfloor behaviour and comments), researchers rated the degree of job enrichment on the following dimensions: the extent of skill flexibility of shopfloor workers, the extent of job variety, and the degree of job responsibility. Scoring was on an appropriately worded 7-point scale running, for example, from very low (1) to very high (7). Cronbach's  $\alpha$  for job enrichment was 0.84.

#### **Control measures**

Control measures included were firm size and company productivity. Firm size was represented by the logarithm (to compensate for skewness) of total employment. Following prior work (Pritchard, 1992, Huselid, 1995), productivity was measured by the logarithm of sales per employee.

Table 1. Correlations among all measures calculated at the individual level ( $n = 4708$ ) and at the company level ( $n = 48$ )

	1	2	3	4	5	6	7
1. Teamwork	1.00	0.02	0.01	0.50 <sup>‡</sup>	−0.25*	−0.18	0.26*
2. Size	−0.17 <sup>‡</sup>	1.00	0.11	−0.03	0.09	0.10	0.07
3. Profit	0.11 <sup>‡</sup>	0.37 <sup>‡</sup>	1.00	0.25*	0.07	0.38 <sup>†</sup>	0.20
4. Job enrichment	0.55 <sup>‡</sup>	−0.21 <sup>‡</sup>	0.21 <sup>‡</sup>	1.00	0.01	0.14	0.50 <sup>‡</sup>
5. Supervisor support	−0.10 <sup>‡</sup>	−0.02	−0.07 <sup>†</sup>	−0.01	1.00	0.34 <sup>†</sup>	0.01
6. Satisfaction	−0.05 <sup>†</sup>	0.07 <sup>†</sup>	0.10 <sup>†</sup>	0.04 <sup>†</sup>	0.56 <sup>‡</sup>	1.00	0.34 <sup>†</sup>
7. Autonomy	0.08 <sup>‡</sup>	0.02	0.04 <sup>†</sup>	0.15 <sup>‡</sup>	0.22 <sup>‡</sup>	0.32 <sup>‡</sup>	1.00

\* $p < 0.05$ ; <sup>†</sup> $p < 0.01$ ; <sup>‡</sup> $p < 0.001$ .

Note: Individual level correlations below the diagonal, aggregate level correlation above the diagonal. Individual level correlations computed by disaggregating company level measures to each individual in the company and company level correlations computed by aggregating individual measures within companies.

Correlations among the variables at both the individual and the aggregate level are reported in Table 1.

## Analysis

Hypotheses involving satisfaction at the individual level required a cross-level analysis in which organizational characteristics moderate relationships among individual perceptions (Rousseau, 1985; Hofmann *et al.*, 2000). The hypotheses were assessed using hierarchical linear models (HLM, Bryk and Raudenbush, 1992). The HLM procedure is an appropriate procedure for linking company level measures and individual measures when the dependent variable is assessed at the individual level of analysis. The HLM procedure is a two stage strategy that, in the first stage, estimates within-company parameters separately for each of the companies using the individual level variables. Specifically, individual job satisfaction was regressed on supervisor support within each of the 48 companies. This analysis provides estimates of the intercept and slope parameters across all companies. The average slope of satisfaction regressed on supervisor support estimates the overall link between these two individual measures (Hypothesis 1). The variance in the intercept term represents mean differences in job satisfaction across companies after controlling for individual perceptions of supervisor support. Across all companies, the variance in the slope of satisfaction regressed on supervisor support estimates the degree to which the relationship between supervisor support and satisfaction varies across companies (Hypothesis 2). The second stage of the analysis investigates company level predictors of the variance in the intercept and slope. If there is significant variation in the link between supervisor support and satisfaction, the second stage of the analysis tests whether company level measure of teamwork predicts variation in the relationship among the individual variables (Hypothesis 3). The second stage of the analysis also tests whether variation in the intercept is predicted by the company level measures of profitability and company size (Hypotheses 4 and 5).

Structural equation modeling (SEM) was used to test the mediational model incorporating job satisfaction at the company level of analysis. LISREL VIII (Joreskog and Sorbom, 1993) was used to estimate the paths depicted in Figure 2 and to estimate the overall fit of the hypothesized model. Because of the relatively small sample size at this level, scale scores were used to assess each construct (Bentler and Chou, 1988). For measures based on aggregated individual scores, the measurement error was estimated as being equal to the variance of the scale multiplied by one minus the reliability of the scale (Anderson and Gerbing, 1988). The measures of teamwork and job enrichment were assumed to have a reliability of 0.9 and company profit and size were assumed to have no measurement error.



## Results

The first step in the HLM analysis estimated the impact of supervisory support on satisfaction within companies. Table 2 reports the results for this analysis. The pooled value for the effect of supervisory support was significantly positive, indicating that supervisory support had an overall positive impact on satisfaction across all companies ( $\beta = 0.91$ ,  $p < 0.001$ ). The results of the HLM analysis also estimated variance of 0.15 in the parameter estimates around the pooled estimate of 0.91 indicating that the impact of supervisory support was positive across all 48 companies, supporting Hypothesis 1.

Table 2 also shows the variance in this pooled estimate together with a chi-square test of the statistical significance of the variation. The intercept value represents the mean level of satisfaction across the 48 companies after controlling for supervisory support (Hofmann *et al.*, 2000). The variation in the intercept term describes the differences across companies in mean levels of satisfaction. The HLM results show that there was significant variation in mean satisfaction across organizations ( $\chi^2(47) = 692.14$ ,  $p < 0.001$ ) and significant variation in the slope of satisfaction when regressed on supervisory support perceptions in each organization ( $\chi^2(47) = 390.10$ ,  $p < 0.001$ ). The latter result supports Hypothesis 2 which proposed there would be significant variation in the relationship between supervisory support and job satisfaction across companies.

The next step in the HLM analysis was to introduce company level predictors of the variation across companies. The extent of teamwork, company size, and company profitability were entered as predictors of variation in mean levels of satisfaction (intercept), and variation in the slope of satisfaction regressed on leadership. Table 3 summarizes the results of this stage of the HLM analysis. In support of Hypothesis 3, the extent of teamwork was a significant predictor of the variation in the slope of satisfaction regressed on leadership ( $\theta = -0.147$ ,  $p < 0.05$ ). The direction of the result indicated that the impact of leadership on job satisfaction was weaker when organizations reported higher levels of teamwork.

The results in Table 3 also show that profitability was positively associated with average levels of satisfaction across companies ( $\theta = 0.238$ ,  $p < 0.01$ ). Supporting Hypothesis 4, Companies with higher profit levels reported higher levels of job satisfaction. Company size was not related to variation in any of the within-company measures. Therefore, Hypothesis 5 was not supported.

The results of the HLM analysis supported the proposition that supervisory support is a less important source of individual job satisfaction when there was greater use of teams within a company. Although supervisory support had less impact on satisfaction, the results also indicated that supervisory support remained a significant influence on job satisfaction. Therefore, when teams were used to a greater extent, leadership became less important but not unimportant.

Table 2. Results of HLM analysis including individual level measures of job satisfaction and supervisor support

Predictor	Pooled parameter estimate	T-value	Parameter variance	Chi-square value
Intercept	4.45	84.47*	0.12	692.14*
Supervisor support	0.91	14.23*	0.15	390.10*

\* $p < 0.001$ .

Table 3. Results of HLM analyses incorporating company level predictors

Predictor	Parameter estimate	T-value
Prediction of intercept		
Teamwork	-0.059	-1.11
Size	-0.003	-0.04
Profitability	0.238	2.41 <sup>†</sup>
Prediction of relationship between supervisory support and satisfaction		
Teamwork	-0.147	-2.14*
Size	-0.067	0.79
Profitability	-0.080	-0.68

\* $p < 0.05$ ; <sup>†</sup> $p < 0.01$ .

The next part of the study explored implications of the mediational processes linking teamwork, supervisory support, and job satisfaction. The analysis tested the hypothetical model depicted in Figure 2. The SEM model provided a very good fit to the data ( $\chi^2(3) = 3.22$ ,  $p > 0.05$ , GFI = 0.98). The fit of the model suggested that additional paths were not necessary to explain the covariation among the measures. The final estimates for each path are presented in Figure 2. The sign and statistical significance of the paths supported the hypothetical model. The extent of teamwork in organizations was negatively related to perceptions of supervisory support ( $\beta = -0.42$ ,  $p < 0.05$ ) and was not related to perceptions of job autonomy ( $\beta = 0.04$ , n.s.). Job enrichment was positively related to job autonomy ( $\beta = 0.60$ ,  $p < 0.01$ ) but was not significantly related to perceptions of supervisory support ( $\beta = 0.23$ , n.s.). Both job autonomy and supervisory support were significant predictors of job satisfaction ( $\beta = 0.31$ ,  $p < 0.01$  and  $\beta = 0.36$ ,  $p < 0.01$  respectively). The control variable of company profit was entered in the model as a predictor of all other measures. The results indicated that profit was significantly and directly related only to job satisfaction ( $\beta = 0.30$ ,  $p < 0.05$ ).

The results of the SEM analysis support the proposition that teamwork can have a complex impact on job satisfaction because of the different ways that teamwork relates to job autonomy and supervisory support. While both autonomy and supervisory support were important positive influences on job satisfaction, the positive association of teamwork on job autonomy was explained by job enrichment that accompanied teamwork and could not be attributed to teamwork itself.

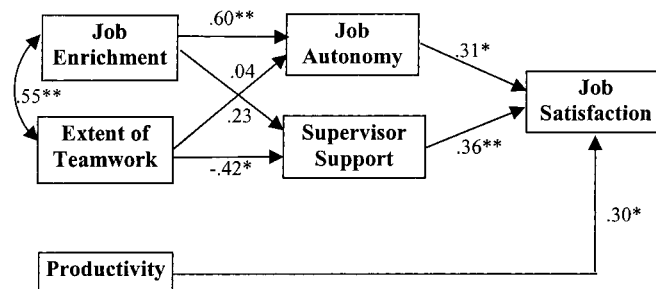


Figure 3. Final path estimates from SEM analysis

## Discussion

The implementation of teamwork has potential benefits for employee outcomes in organizations and is likely to continue as a major element of work redesign (Lawler *et al.*, 1992; Parker and Wall, 1998; Tjosvold, 1995). However, greater use of teams is associated with changes to the function of leadership in organizations that can also influence employee satisfaction. The present study explored the role of supervisory support in explaining the link between teamwork and satisfaction.

In the first part of the study, greater use of teams resulted in a weaker link between individuals' perceptions of supervisory support and their levels of job satisfaction. The implementation of teams typically involves changes to supervision roles but little empirical research has assessed the way leadership functions when teams are introduced. The study, therefore, provides evidence for the implicit assumption that supervisory support has less impact on employees when teams are introduced. Even though supervisory support was less important in companies where there was greater use of teams, this support was still positively related to satisfaction. Therefore, it is not appropriate to conclude that supervisory support was unimportant when there was greater use of teams.

The second part of the study explored further implications for the role of supervisor support by testing mediational processes linking teamwork to job satisfaction. The extent of teamwork in a company had a negative impact on overall levels of supervisory support. Companies that reported higher use of teamwork also had employees who reported lower levels of supervisory support. At the same time, supervisory support displayed a strong relationship with job satisfaction. Therefore, the impact of teamwork itself can have a negative impact on overall job satisfaction because of the central role of supervisory support.

The link between teamwork and satisfaction was partly explained by job enrichment associated with teamwork. Job enrichment practices in the work place were associated with increased levels of employee perceptions of job autonomy. Increased autonomy was, in turn, associated with higher levels of job satisfaction. However, on its own, teamwork was associated with a reduction in supervisory support. The result suggests that the positive benefits of job enrichment associated with teamwork may be partially offset by the reduction in levels of supervisory support experienced by employees. In this way, the introduction of teamwork can have mixed effects on employee job satisfaction.

The extent of teamwork was not uniquely related to higher levels of job autonomy. Rather, autonomy was explained by the degree to which employee jobs were enriched by increased skill flexibility, responsibility, and work variety. This result clearly demonstrates the importance of identifying the process through which the introduction of teamwork is expected to enhance employee outcomes. The introduction of teams without reference to specific job enrichment practices is unlikely to influence employee perceptions about the quality of their work environment. Furthermore, teamwork itself can be expected to decrease the degree to which supervisors can be supportive.

Some implications can also be derived by the relationships which were *not* observed in the aggregated mediational model. Job enrichment practices reported by managers were not uniquely related to average levels of supervisory support across the organizations. It was noted above that leaders play a particularly important role when organizations increase their use of teams (Tjosvold, 1995). It is possible for changes in work structures to be implemented in ways that capitalize on the potential for supervisors and leaders to support and develop new working roles in the organization. For example, increased job variety may be implemented in an organization where team leaders, supervisor, and managers encourage and support skill development of employees. Furthermore, supervisors can play a

significant part in enhancing the motivational characteristics of the work environment such as job autonomy. Effective leaders provide feedback about roles and tasks that increase employees' positive experience of autonomy.

The present study was based on a large scale survey of employees across multiple organizations together with in-depth management interviews. The scope and multiple methods provide a strong basis for exploring the implications of teamwork for job satisfaction. Some limitations of the study also raise cautions when interpreting the results. First, the cross-sectional nature of the study limits the ability to draw causal inferences from the hypothetical model of relationships among the constructs. For example, the relative ordering of job satisfaction and supervisory support could not be tested in the current sample. Second, despite the scale of the study, there was a relatively small number of organizational units for conducting the aggregate-level analysis. Structural equation modelling procedures typically use larger samples than were available in the current study. Nevertheless, relatively few parameters were assessed and specific hypothetical paths were tested. Third, the extent of teamwork was assessed by a single item which limits assessment of the measure's reliability. However, responses to the item were obtained as part of a comprehensive interview procedure with detailed explanation, and single-item measures of practices have been used in major empirical studies in the field of human resource management and corporate performance (e.g., Huselid, 1995, Ichniowski *et al.*, 1997).

Future research should further investigate the processes through which supervisor behavior influences satisfaction in teams. The type of supervisor behaviors that are most supportive may be different in a team environment compared to an individual based task environment. The most effective supervisor behaviors may also depend on individual differences among team members within the team. Further understanding of how supervisors provide support within teams will have practical benefits for designing and managing teamwork. Future research should also investigate the characteristics of job design and teamwork that enhance the role that supervisors play in a team environment as well as characteristics of supervisors that lead to higher levels of supportiveness in teamwork.

Overall, the results demonstrated that the extent of teamwork reduces the level of supervisor support in the organization and, to some extent, the importance of supervisory support for individuals. However, the perception of supervisory support remained a substantial predictor of job satisfaction for individuals and for the organization as a whole. The results of the study suggest it is important to understand job redesign strategies that not only increase experiences such as autonomy, but also enhance the effectiveness of supervisor roles.

## Author biographies

**Mark A. Griffin** is Principal Research Fellow at the School of Management, Queensland University of Technology, Australia. He received his PhD in Industrial/Organizational Psychology from the Pennsylvania State University. His primary research interest concerns the link between workplace characteristics and both individual well-being and performance. His research addresses the methodological and practical implications of questions such as the impact of organizational climate on individual affect, and the impact of individual performance on workplace safety outcomes.

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**Michael West** is Professor of Organizational Psychology at the University of Aston Business School. He has been a member of the Corporate Performance Programme of the Centre for Economic Performance at the London School of Economics since 1991. He is a Fellow of the British Psychological Society, the American Psychological Association, the APA Society for Industrial/Organizational Psychology and the Royal Society for Arts, Manufactures and Commerce. His areas of research interest are team and organizational innovation and effectiveness, in health service and private sector settings. His first degree was from the University of Wales in Psychology and Statistics and his PhD from the University of Wales on the Psychology of Meditation.

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