12

Employee-Driven Innovation and Industrial Relations

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Both industrial relations and innovation are well-established subjects in the current scientific literature. Although research has frequently related the two concepts, it has rarely focused on or considered employee behaviour. This chapter reviews the literature linking Employee-Driven Innovation with two key concepts of the industrial relations field: employee participation through workplace representation and collective bargaining outcomes such as wage and employment regulation. This chapter concludes that direct participation is positive for EDI; indirect participation stimulates direct participation and can positively influence EDI when embedded in optimal company industrial relations. Further, the literature review uncovers a general lack of empirical research on the effects of labour regulation and wages on EDI and related employee behaviour.

Introduction

Innovation is currently seen as the key to sustained economic performance of European nations and firms. Along with traditional innovations rooted in R&D and entrepreneurship, the innovative potential of employees is currently being valued more and more as an important source of innovation. Literature on how to stimulate this 'Employee-Driven Innovation' (EDI) or innovative work behaviour of employees is booming. The context in which

the employee works is an essential factor in explaining employee behaviour, and a crucial aspect of this context is the 'employment relationship' between the employer and the employee, which is formed through and by the industrial relations (IR) in the company. IR determines the conditions in which an employee is engaged and affects the climate at the workplace. Therefore, IR can be rightly considered to affect employee behaviour in the field of innovation. Nonetheless, research only rarely focuses on different aspects of industrial relations and their link with employee behaviour (Van Gyes, 2003). This chapter reviews this limited stream of literature on the subject of industrial relations and innovation in search of indications about how IR affects EDI.

Industrial relations

Industrial relations is the area of study that focuses on 'the governance of the employment relation in its totality, along with its economic, political and social implications' (Sisson, 2008: 45). The 'employment relationship' further is defined as the 'legal creation in which one person (the employee) agrees for a sum of money specified over some time period to provide labour to another person (the employer) and follow the employer's orders and rules regarding the performance of work, at least within limits' (Simon, 1951, in Kaufman, 2004: 51). The employment relationship can hence be divided into two separate, but linked, dimensions. On the one hand, and at its most basic level, the employment relationship is a matter of economics. Individuals offer their skills and abilities to an employer for a price. Economic considerations, such as wages and other benefits, are major

factors in individual and firm decisions to establish the employment relationship (Block *et al.*, 2004). On the other hand, the relationship also has a social dimension, which is about the subordination of the employee and the authority of the employer. Central here is how this hierarchical relation is structured; how control is exercised, managed and organized.

The governance of this employment relationship – industrial relations – in the Western market economies, and in the European social model especially, has gone through a process of democratic institutionalization. Statutory frameworks, trade union recognition and supra-company regulation are key features of the industrial relation systems that developed throughout Europe (Hyman, 2000).

Two institutional features have been central in the development of these systems. The first concerns the *external*, *economic*, *contractual* aspects of the job, such as employment status, wage and working time. The representatives of employees (unions) and employers *negotiate* these aspects of the employment relation in *collective bargaining*. In many European countries relatively centralized and coordinated forms of collective bargaining have been established. The second aspect of the employment relation concerns the *job itself* and how it's supposed to be performed. As already stated, the employee agrees to respect his *subordinate position* and act according to the directions of the employer, while the employer agrees to *inform and consult* the employees and their representatives in relation to the organizational management on a regular basis. This right of information and consultation is sometimes also referred

to as ‘indirect participation in the workplace’. A core feature of this right in European IR systems is the integration of labour into managerial decisions through statutorily recognized structures of employee representation, such as a works council or union shop steward. These bodies have to guarantee the right to information and consultation (cf., at EU level, the directive of 2002).

The IR system, its structure and practice are directly targeted at influencing the crucial employment relation in which the employee is tied to the employer, and vice versa. Participation in managerial decisions by employee representation and collective wage bargaining are key elements of this system, certainly in the European tradition. Although there is a relative absence of studies relating IR to EDI, with the article of Telljohann (2010) as a notable exception, this contribution gives an overview of the existing literature, pinpoints important blanks and concludes with some research opportunities. First the literature which links employee representation and participation with employee behaviour will be examined; next the literature on the main outcomes of collective bargaining – wages and job security – and their effect on EDI.

Innovation, innovative work behaviour and EDI

The terms ‘innovation’ and ‘innovative employee behaviour’ are defined according to West and Farr (1990) as ‘the intentional introduction and application, within a role, group or organization of ideas, processes, products or procedures, new to the relevant unit of adoption, designed to significantly benefit the individual, the group, organization or wider

society'. Innovative work behaviour (IWB) is the behaviour of employees which involves not only the creation of an idea, the discovery of something, but also the introduction and application of that idea with the intention to provide a benefit (de Jong and Den Hartog, 2010). The concept of EDI goes further and refers to the idea that employees are crucial actors for innovation in organizations (Høyrup, 2010). They are central to the implementation phase but also, and more importantly, to the pre-design and design phases of the innovation. Employees frequently face concrete problems that can be solved through workplace innovation and they are in a unique position to assess whether proposed solutions and innovations are practically applicable.

Employee representation, participation and innovation

Workplace social dialogue is an IR process whereby recognized employee representatives are involved in decisions concerning the employment relationship at the workplace (Van Gyes, 2010). Such involvement may be limited to just being informed by management, or may extend to consultation, negotiation or joint participation in decision-making. The basic structure is through union representation / shop steward or a more general works council type. Works councils are legally established representations, elected or appointed by all employees at an establishment, irrespective of their membership in a trade union.

In the literature we find a range of studies linking forms of employee representation with innovation performance of companies. However, the link with IWB or EDI is only rarely made (see Table 12.1). The link

between forms of direct, task-based employee participation and EDI, on the contrary, is strongly established. As a kind of third relationship, we find a large amount of literature linking these forms of direct, task-based participation and employee representation. In the following section, we discuss these (non-)established links in the literature in more detail.

Employee representation

In Tables 12.1 and 12.2 a list of research literature on the relation between employee representation and innovation is given. As already stated, and as an important observation, the innovation-related literature on employee representation mainly makes links with general innovation input or output indicators, without referring to elements of EDI.

When reviewing the literature, furthermore, we notice the following. First, the literature can largely be split into two categories, one that focuses on the effects of unions on innovation and one that looks into the relation between works councils and innovation. Second, the research results concerning the effects of works councils are predominantly based on German observations, with notable exceptions from the UK and the Netherlands. Germany is, of course, the birthplace and host country of a well-established type of works council. The research on the effect of unions is geographically more diverse. Third, the research frequently uses dummy variables for works councils and unions. Research that also measures the activity of works councils, the type of industrial relations climate or attitudes of works council members and management is rare. Fourth, there's

no research that measures the effect of works councils or unions on employee behaviour.

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When we compare the *outcomes*, the inconsistency of the results is striking. Even when we distinguish between union and general employee representation research or split up the research per country, no consistent results emerge. Regarding the *works councils*, both positive and negative relations are found. Two interesting pieces of research can give us a clue about the reasons behind these inconsistent results. Notably, the research of Dilger (2002) 'deepened' the works council variable and observed that active works councils were indeed positively related to innovation. A more recent study by Jirjahn and Smith (2006) distinguished between four situations, depending on the presence/absence of a works council and the attitude of the management towards workers' involvement in companies. They also distinguished between different types of product innovation. The combination of a works council and positive management attitudes had the largest effect on the introduction of products with 'improved quality or additional functions'. According to the researchers, this can primarily be explained by changed employee behaviour. It is not only the presence of works councils that seems to matter; the type of works council, its activity and the industrial relations climate in the company also determine the efficacy of the works council in promoting innovation. It can therefore be concluded that the presence of a works council alone doesn't automatically lead to higher levels of EDI, but an active works council embedded in good

company industrial relations does increase innovative behaviour of employees; just as previous research already found that a cooperative industrial relations climate (Blyton *et al.*, 1987) positively influences organizational commitment and therefore organizational change (Iverson, 1996).

Concerning the effect of *unions* on innovation, most research focuses on the negative, indirect effects of unions through the increased price of labour, decreased profitability and hold-up problems between managers and unions, which would undermine the investment motive and entrepreneurs' capability to innovate (Menezes-Filho and Van Reenen, 2003). Some also point to the possible positive 'voice' effect of unions (Freeman and Medoff, 1984), but this is rarely taken into account. The research results of the literature presented in Table 12.2 are not conclusive. There is research indicating positive, negative and no relations. When positive effects are reported, the research mostly observes that unions reduce employees' anxiety and resistance towards innovations. An active role for the union as a promoter of workplace innovation and employee experimenting is rarely researched, although research shows that union cooperation makes, for example, the introduction of high-involvement human resources management more successful (Cooke, 1994; Gollan and Davis, 2001; Roche and Geary, 2002; Therrien and Leonard, 2003). These studies show that the involvement of unions in the decision-making process increases not only acceptance of the changes but also the efficacy of the innovation, as employee knowledge is mobilized through the unions.

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Direct participation and innovation

In contrast to employee representation in managerial decisions, direct participation in task-based decisions and innovative employee behaviour have been researched more thoroughly. The literature is rather straightforward. Various studies with different methodologies in different countries indicate positive effects of direct participation on innovation, innovative work behaviour and different concepts that are close to the EDI concept. We refer to the literature linking participation with organizational innovation (Dhondt and Vaas, 1996; Guthrie *et al.*, 2002; Kivimaki *et al*., 2000; Laursen, 2000; Laursen and Foss, 2003; Lay, 1997), innovative behaviour of employees (Chen and Aryee, 2007), organizational citizenship behaviours (Bogler and Somech, 2005; Cappelli and Rogovsky, 1998; VanYperen *et al.*, 1999), knowledge-sharing (Han *et al.*, 2010), and even EDI (Telljohann, 2010). We can therefore conclude that direct participation is a successful way of promoting EDI.

Forms of direct participation are a central component of the 'innovative' organization. Direct participation intensifies and enlarges knowledge flows because of better vertical decentralization, horizontal coordination and organizational commitment. Employees have to be given the opportunity to put their knowledge to use in the workplace. Involving employees in decisions that affect day-to-day tasks helps to create a culture of autonomy and responsibility. Employers and managers need to be receptive to feedback and suggestions. In this way direct participation

creates an organization of high involvement that spurs innovative work behaviour of employees.

Direct task-based participation and employee representation

Other research about the interplay of direct and indirect participation has found that they are related. Companies with indirect participation schemes generally have more forms of direct participation (Addison and Belfield, 2003; Sisson, 1993). OECD studies confirmed this and saw that high-involvement human resources strategies that encourage direct participation are more likely in workplaces covered by collective agreements and are related to industrial relations systems that favour cooperation between employers and employees (OECD, 1999). Also Black and Lynch (2004) found that employee voice and involvement produced larger effects in unionized companies than in non-unionized companies.

Employee representation and EDI: conclusion and discussion

To conclude this first section: employee representation in managerial decisions alone does not change the innovativeness of companies and employees, but when embedded in cooperative industrial relations it can produce positive effects. Next, direct participation is positively related to innovative employee behaviour, and a quality employee representation reinforces direct participation. In short, sufficient scientific proof has been established to show that both indirect representation and direct participation can contribute to the promotion of EDI in companies. In Table 12.3 the different ways in which employee participation can affect organizational innovativeness and EDI are listed.

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Returning to our theoretical framework of industrial relations, we observe that the research mostly focuses on the *form* of the participation of employees in companies (direct vs. indirect). The content or the extent of the participation is rarely included in the analysis. Whether the employees are only allowed to discuss the everyday management of the company (operational participation) or can influence the general policy (strategic participation) is never included in the research. However, to fully exploit the impact of employee representation in (strategic) management decisions, these dimensions should be included, for example the attitudes of the management towards employee participation (Jirjahn and Smith, 2006). Further research should thus try to go beyond the analysis of the mere 'form' of the employee representation and investigate much more thoroughly the 'roles' – a set of connected behaviours, rights and obligations as conceptualized by actors in a social situation – this representation plays in developing forms of direct participation and innovative work behaviour. Mixed method methodologies combining both qualitative and quantitative approaches are to be developed.

Collective bargaining and innovation

Next to workplace participation, *collective bargaining* is the second key (institutional) feature by which the employment relation is governed. Here, the representatives of employees and employers negotiate different, mainly economic aspects of the formal employment relation, namely rules

protecting the employment and wage evolutions. As wages are the primary motivator for employees to accept an employment and job security is essential for the overall well-being of employees, we can suspect an effect of both factors on employee innovative work behaviour. Although a rich literature exists about the type of collective bargaining and economic performance (Nadel, 2006), only rarely has the link been made with innovation and innovative work behaviour in particular. In the existing literature we can find only debates about the issue of labour flexibility and about the issue of wage moderation. Both topics relate to the 'output' of collective bargaining and not its process–practice. Linking these issues – labour flexibility and high-wage policies – to the question of innovation performance is anyhow still in its infancy. A brief overview is given in the following section.

The rules of engagement: hiring and firing

An important aspect of labour regulation is settlements concerning how employers can hire and fire their employees. Economists of the OECD related the 'strictness' of this type of regulation to innovative performance of countries; they concluded that strict rules are negatively related or unrelated to innovation, depending on the sector and degree of coordination of the labour relations (Bassanini and Ernst, 2002; Nicoletti *et al*., 2001). This research was criticized for several reasons. Their dependent and independent indicators are far from optimal. They reduce innovation to patent applications and regulation to an oversimplifying index, which is based only on the legal rules in a country. Firm-level research of Storey *et*

al. (2002) adds to this critique, finding that flexible contracts were rarely introduced as a part of a plan to promote innovation; furthermore, the employees who were directly involved in innovative activities were extremely unlikely to have flexible employment relations. This is primarily because a reduced labour mobility positively affects the innovative capacity of employees, as the levels of *tacit knowledge* (which is a path-dependent form of knowledge that emerges from prior experimentation and learning) of the employees will increase. Second, it will increase the level of *commitment* of the employees. As employees have higher levels of job security, they will be more willing to engage in riskful, innovative activities for their company. Research does indeed show that workers with higher levels of job security (permanent workers) have higher levels of commitment (Jacobsen, 2000; Reisel *et al.*, 2010). Commitment is further linked to making suggestions (Parker, 2000) and organizational citizenship behaviour (van Dick *et al.*, 2008; Lavelle *et al*., 2009; Meyer *et al.*, 2002). Moreover, employees with so-called 'contingent' contracts, who are easy to dismiss, tend to show fewer OCBs (Van Dyne and Ang, 1998). Finally, a combination of experimental and survey research by Probst *et al*. (2007) showed that job insecurity is related to poor creativity. Other research, on the other hand, found that job insecurity was positively related to OCBs, as employees tried to work harder and better to obtain more stable contracts (Feather and Rauter, 2004).

In short, the feeling of job insecurity – which is highly dependent on the objective employment status of the employee (Klandermans *et al.*, 2010)

– is generally negatively related to EDI, although some opposite effects might occur. Some research finds negative links, but other research finds that contingent workers have an extra motivation to perform optimally in an attempt to increase their job security. Another strand of this literature stresses the knowledge spill-overs which an innovative economy needs. These spill-overs can only be organized if labour flexibility or job mobility is available. However, in these theoretical considerations, increased labour market flexibility is rather simply linked to the stimulation of knowledge flexibility. Again, company industrial relations and other context variables should be taken into account in further research in order to have a better grasp of the nature of this relation.

Wages and innovation

The second outcome of collective bargaining schemes is a regulated wage evolution as representatives of employees and employers come together to discuss the wage increases. A vast amount of literature exists on the relation between different types of wage bargaining and economic performance of companies and nations, but, to our knowledge, only very limited research has been conducted on the link between wage bargaining and innovation at the national level. In these mainly econometric studies no theoretical or empirical link is made with the concept and practice of EDI. We can, therefore, only speculate about the effects of wage evolutions on innovation and EDI. The Dutch economists Kleinknecht *et al*. (2005; 2006) and Van Schaik (2004) argue that wage moderation will be detrimental to innovation as it leads to lower investments in innovation, a slowdown of the process of

'creative destruction' and lower stimulation of demand-driven innovation. Moreover, research by Pieroni and Pompei (2008) found that wage increases over time were positively related to innovation, both for blue-collar and for white-collar workers. The efficiency wage theory develops the relation between wage and employee behaviour in more detail. The theory states that, in order to motivate employees, firms should pay above market average wages. Hereby, employees will be loyal, motivated and committed to the organization. Research indeed found that efficiency wages were positively linked to employee effort (Goldsmith, Veum, and Darity, 2000), but research linking efficiency wages to EDI is absent. In sum, further research on these questions is needed. The efficiency wage theory can serve as a good starting point here.

Conclusion and discussion

Industrial relations matter, not only generally, but also when trying to promote EDI. This can be presented as a theoretical premise, because industrial relations is about the governance of the employment relationship, which connects this 'yes' or 'no' innovating employee to his/her employer. The literature review we have presented here shows, however, a general lack of academic research linking aspects of industrial relations to innovative work behaviour of employees. Nevertheless, we can conclude that forms of employee representation in (strategic) managerial decision-making can foster EDI if embedded in positive, cooperative industrial relations. A quality employee representation, working in a trustful, cooperative relationship with the employer, can, furthermore, be positively

related to direct participation, which in turn is found to be directly and strongly related to innovative employee behaviour. The effect of the principal outcomes of collective bargaining (employment protection rules and negotiated wage evolutions) is largely unknown. Very few studies have focused on these topics, although they are central to the political and societal debate. This area has enormous potential for valuable research. A more integrative approach should be considered. Specifically, the interplay between the IR climate and the outcomes of collective bargaining and their effect on EDI and employee behaviour should be further researched.

References

Acs, Z.J. and Audretsch, D.B. (1987). 'Innovation, Market Structure, and Firm Size'. *The Review of Economics and Statistics*, 69(4), 567–574.

Addison, J.T. and Belfield, C.R. (2003). 'Union Voice'. *IZA Discussion Paper, 862*.

Addison, J.T. and Schnabel, C. (1996). 'German works councils, profits and innovation'. *KYKLOS*, 49(4), 555–583.

Addison, J., Kraft, K. and, Wagner, J. (1993). 'German Works Councils and Firm Performance'. In *Employee representation: alternatives and future directions*. Industrial Relations Research Association.

Addison, J.T., Schnabel, C. and, Wagner, J. (2001). 'Works councils in Germany: their effects on establishment performance'. *Oxford Economic Papers*, 53(4), 659–694.

Bassanini, A. and Ernst, E. (2002). 'Labour Market Institutions, Product Market Regulation, and Innovation' (p. 316). *OECD Economics Department Working Papers.*

Black, S.E., and Lynch, L.M. (2004). 'What's Driving the New Economy?: the Benefits of Workplace Innovation'. *The Economic Journal*, 114, 97–116.

Block, R.N., Berg, P. and Belman, D. (2004). 'The Economic Dimension of the Employment Relationship'. In Coyle-Shapiro, J., Shore, L., Taylor, S. and Tetrick, L. (Eds) *The Employment Relationship: Examining Psychological and Contextual Perspectives* (pp. 94–117). Oxford University Press.

Blundell, R., Griffith, R. and Van Reenen, J. (1999). 'Market Share, Market Value and Innovation in a Panel of British Manufacturing Firms'. *Review of Economic Studies*, 66, 529–554.

Blyton, P., Dastmalchian, A. and Adamson, R. (1987). 'Developing the Concept of Industrial Relations Climate'. *Journal of Industrial Relations*, 29(2), 207–216.

Bogler, R. and Somech, A. (2005). 'Organizational citizenship behavior in school: How does it relate to participation in decision making?' *Journal of Educational Administration*, 43(5), 420–438.

Cappelli, P. and Rogovsky, N. (1998). 'Employee Involvement and Organizational Citizenship: Implications for Labor Law Reform and "Lean Production"'. *Industrial and Labor Relations Review*, 51(4), 633–653.

Chen, Z.X. and Aryee, S. (2007). 'Delegation and Employee Work Outcomes: An examination of the Cultural Context of Mediating Processes in China'. *Academy of Management Journal*, 50(1), 226.

Cooke, W.N. (1994). 'Employee Participation Programs, Group-Based Incentives, and Company Performance: A Union-Nonunion Comparison'. *Industrial and Labor Relations Review*, 47(4), 594–609.

de Jong, J., & Den Hartog, D. (2010). 'Measuring Innovative Work Behaviour'. *Creativity and Innovation Management*, *19*(1), 23-36.

Dhondt, S. and Vaas, F. (1996). *Innovatie en arbeid: Een onderzoek naar de synergie tussen kwaliteit van de arbeid en het innovatievermogen van bedrijven*.

Dilger, A. (2002). *Ökonomik betrieblicher Mitbestimmung*. Feather, N.T. and Rauter, K.A. (2004). 'Organizational citizenship behaviours in relation to job status, job insecurity, organizational commitment and identification, job satisfaction and work values'. *Journal of Occupational and Organizational Psychology*, 77(1), 81–94.

FitzRoy, F.R. and Kraft, K. (1990). 'Innovation, rent-sharing and the organization of labour in the federal republic of Germany'. *Small Business Economics*, 2(2), 95–103.

Freeman, R. and Medoff, J. (1984). *What do unions do?* New York: Basic Books.

Geroski, P.A. (1990). 'Innovation, Technological Opportunity, and Market Structure'. *Oxford Economic Papers*, New Series, 42(3), 586–602.

Goldsmith, A.H., Veum, J.R. and Darity, J. (2000). 'Working hard for the money? Efficiency wages and worker effort'. *Journal of Economic Psychology*, 21(4), 351–385.

Gollan, P.J. and Davis, E.M. (2001). 'Employee Involvement and Organisational Change: The Diffusion of High Involvement Management in Australian Workplaces'. In *Models of employee participation in a changing global environment* (pp. 56–80). Aldershot: Ashgate.

Guthrie, J.P., Spell, C.S. and Nyamori, R.O. (2002). 'Correlates and consequences of high involvement work practices: the role of competitive strategy'. *The International Journal of Human Resource Management*, 13(1), 183.

Han, T.-S., Chiang, H.-H. and Chang, A. (2010). 'Employee participation in decision making, psychological ownership and knowledge sharing: mediating role of organizational commitment in Taiwanese high-tech organizations'. *The International Journal of Human Resource Management*, 21(12), 2218.

Hirsch, B.T. and Link, A.N. (1987). 'Labor Union Effects On Innovative Activity'. *Journal of Labor Research*, 8(4), 323–332.

Høyrup, S. (2010). 'Employee-driven innovation and workplace learning: basic concepts, approaches and themes'. *Transfer: European Review of Labour and Research*, 16(2), 143–154.

Hübler, O. (2003). Zum Einfluss des Betriebsrates in mittelgrossen Unternehmen auf Investitionen, Löhne, Produktivität und Renten–Empirische Befunde. In N. Goldschmidt (Ed.), *WunderbareWirtschaftsWelt – Die New Economy und ihre Herausforderungen* (pp. 77–94). Baden-Baden: Nomos.

Hyman, R. (2000). '*Social Dialogue in Western Europe: the "State of the Art".*'(No. 1). Social Dialogue Papers (p. 39). Geneva, Switzerland: International Labour Organization.

Iverson, R.D. (1996). 'Employee acceptance of organizational change: the role of organizational commitment'. *International Journal of Human Resource Management*, 7(1), 122–149.

Jacobsen, D.I. (2000). 'Managing increased part-time: does part-time work imply part-time commitment?' *Managing Service Quality*, 10(3), 187–201.

Jirjahn, U. and Smith, S.C. (2006). 'What Factors Lead Management to Support or Oppose Employee Participation—With and Without Works Councils? Hypotheses and Evidence from Germany'. *Industrial Relations*, 45(4), 650–680.

Kaufman, B. (2004). *Theoretical Perspectives on Work and the Employment Relationship*. Industrial Relations Research Association Series. Champaign: Industrial Relations Research Association.

Kivimaki, M., Lansisalmi, H., Elovainio, M., Heikkila, A., Lindstrom, K., Harisalo, R., Sipila, K. Puolimatka, L., (2000). 'Communication as a determinant of organizational innovation'. *R&D Management*, 30(1), 33–42.

Klandermans, B., Hesselink, J.K. and van Vuuren, T. (2010). 'Employment status and job insecurity: On the subjective appraisal of an objective status'. *Economic and Industrial Democracy*, 31(4), 557–577.

Kleinknecht, A. and Naastepad, C.W.M. (2005). 'The Netherlands: Failure of a Neo-classical Policy Agenda'. *European Planning Studies*, 13(8), 1193–1203.

Kleinknecht, A., Oostendorp, R.M., Pradhan, M.P. and Naastepad, C.W.M. (2006). 'Flexible Labour, Firm Performance and the Dutch Job Creation Miracle'. *International Review of Applied Economics*, 20(2), 171–187.

Laursen, K. (2000). 'The importance of sectoral differences in the application of new HRM practices for innovation performance'. *DRUID Working Papers*, 01(11).

Laursen, K. and Foss, N.J. (2003). 'New human resource management practices, complementarities and the impact on innovation performance'. *Cambridge Journal of Economics*, 27(2), 243–263.

Lavelle, J.J., Brockner, J., Konovsky, M.A., Price, K.H., Henley, A.B., Taneja, A. and Vinekar, V. (2009). 'Commitment, procedural fairness, and organizational citizenship behavior: a multifoci analysis'. *Journal of Organizational Behavior*, 30(3), 337–357.

Lay, G. (1997). '*Neue Produktionskonzepte und Beschäftigung'.* (No. 8). Mitteilungen aus der Produktionsinnovationserhebung (p. 16). Karlsruhe, Germany: Fraunhofer ISI.

Machin, S. and Wadhwani, S. (1991). 'The effects of unions on investment and innovation: Evidence from WIRS'. *The Economic Journal*, 101, 324–330.

Menezes-Filho, N. and Van Reenen, J. (2003). 'Unions and Innovation: A Survey of the Theory and Empirical Evidence'. *International Handbook of Trade Unions* (p. 555). Cheltenham: Edward Elgar.

Meyer, J.P., Stanley, D.J., Herscovitch, L. and Topolnytsky, L. (2002). 'Affective, Continuance, and Normative Commitment to the Organization: A Meta-analysis of Antecedents, Correlates, and Consequences'. *Journal of Vocational Behavior*, 61(1), 20–52.

Michie, J. and Sheehan, M. (2003). 'Labour market deregulation, "flexibility" and innovation'. *Cambridge Journal of Economics*, 27(1), 123–143.

Nadel, H. (2006). 'Industrial relations and economic performance: an overview of research results'. *Industrial Relations in Europe 2006*. Brussels: European Commission.

Nicoletti, G., Bassanini, A., Ernst, E., Jean, S., Santiago, P. and Swaim, P. (2001). 'Product and labour markets interactions in OECD countries'. *OECD Economics Department Working Papers*, 312, 110.

OECD (1999). *Managing national innovation systems*. Paris: OECD.

Parker, S. (2000). 'From Passive to Proactive Motivation: The Importance of Flexible Role Orientations and Role Breadth Self-efficacy'. *Applied Psychology*, 49(3), 447–469.

Pieroni, L. and Pompei, F. (2008). 'Evaluating innovation and labour market relationships: the case of Italy'. *Cambridge Journal of Economics*, 32(2), 325–347.

Probst, T.M., Stewart, S.M., Gruys, M.L. and Tierney, B.W. (2007). 'Productivity, counterproductivity and creativity: The ups and downs of job insecurity'. *Journal of Occupational and Organizational Psychology*, 80(3), 479–497.

Reisel, W.D., Probst, T.M., Chia, S.-L., Maloles, C.M. and König, C.J. (2010). 'The Effects of Job Insecurity on Job Satisfaction, Organizational Citizenship Behavior, Deviant Behavior, and Negative Emotions of Employees'. *International Studies of Management and Organisation*, 40(1), 74–91.

Roche, W.K. and Geary, J.F. (2002). 'Advocates, Critics and Union Involvement in Workplace Partnership: Irish Airports'. *British Journal of Industrial Relations*, 40(4), 659–688.

Rogers, M. (1999). '*Innovation in Australian Workplaces: An Empirical Analysis Using AWIRS 1990 and 1995'.* (No. 3). Melbourne Institute Working Paper Series (p. 28). Melbourne: The University of Melbourne.

Schnabel, C. and Wagner, J. (1992). 'Unions and Innovative Activity in Germany'. *Journal of Labor Research*, 13(4), 393–406.

Sisson, K. (1993). 'In Search of HRM'. *British Journal of Industrial Relations*, 31(2), 201–210.

Sisson, K. (2008). '*Putting the record straight: Industrial relations and the employment relationship'.* (No. 88). Warwick Papers in Industrial Relations (p. 57). Coventry: University of Warwick.

Storey, J., Quintas, P., Taylor, P. and Fowle, W. (2002). 'Flexible employment contracts and their implications for product and process innovation'. *The International Journal of Human Resource Management*, 13(1), 1–18.

Telljohann, V. (2010). 'Employee-driven innovation in the context of Italian industrial relations: the case of a public hospital'. *Transfer: European Review of Labour and Research*, 16(2), 227–241.

Therrien, P. and Leonard, A. (2003). '*Empowering employees: A route to innovation'* (No. 8). The Evolving Workplace Series (p. 59). Ottowa: Statistics Canada.

Van Dick, R., van Knippenberg, D., Kerschreiter, R., Hertel, G. and Wieseke, J. (2008). 'Interactive effects of work group and organizational identification on job satisfaction and extra-role behavior'. *Journal of Vocational Behavior*, 72, 388–399.

Van Dyne, L. and Ang, S. (1998). 'Organizational citizenship behavior of contingent workers in Singapore'. *Academy of Management Journal*, 41(6), 692–703.

Van Gyes, G. (2003). '*Industrial relations as a key to strengthening innovation in Europe'*. (No. 36). Innovation Papers. Luxemburg: Directorate-General for Enterprise, European Communities.

Van Gyes, G. (2010). 'Workplace Social Dialogue'. *European Company Survey 2009*. Luxemburg: Eurofound.

Van Schaik, A. (2004). 'Loonmatiging gunstig voor economische groei?' *Economisch Statistische Berichten*, 91(4498), 534–536.

VanYperen, N.W., Berg, A. and Willering, M.C. (1999). 'Towards a better understanding of the link between participation in decision-making and organizational citizenship behaviour: A multilevel analysis'. *Journal of Occupational and Organizational Psychology*, 72(3), 377–392.

West, M.A. and Farr, J.L. (1990). *Innovation and Creativity at Work*. Oxford, England: John Wiley and Sons Ltd.

Wigboldus, J.E., Looise, J.K., Nijhof, A. *et al.* (2008). 'Understanding the Effects of Works Councils on Organizational Performance. A Theoretical Model and Results from Initial Case Studies from the Netherlands'. *management revue. The International Review of Management Studies*, 19(4), 307–323.

Table 12.1: Works councils and innovation

Authors	Sample	Indirect participation	Innovation measurement	Main findings	Country
Addison and Schnabel (1996)	1,025 firms	Dummy and workplace representation index	Introduction of new products or processes (survey)	Insignificant for the dummy, positive for the workplace index for product innovation. Insignificant for process innovation	Germany
Addison *et al*. (2001)	900 firms	Dummy	New processes and products	Insignificant relation	Germany
Addison *et al*. (1993)	50 est.	Dummy	Profitability, value added and investment	Insignificant relation except with investment in physical capital (negative)	Germany
Dilger (2002)	1,716 firms	Dummy	Product innovations	Positive but insignificant relation Positive association when works councils are strongly involved in the decision-making	Germany
FitzRoy and Kraft (1990)	57 metal firms	Union density and WC dummy	Sales of new products of the last five years	Negative and significant	Germany
Hübler (2003)		Dummy	Innovations	Positive and significant	Germany
Schnabel and Wagner (1992)	78 firms	Dummy	Product innovation	Positive but insignificant	Germany
Jirjahn and Smith (2006)	709 firms	Work council and attitude of management	Various types of product innovations	Positive attitudes and council positively related to improved quality and/or additional features Positive attitudes positively related to completely new products Negative attitudes and council negative relation with improved quality but positive with other innovations	Germany
Wigboldus *et al*. (2008)	Three case studies	Dummy	Performance, profitability, innovation	Work councils can be a strategic partner and result in enhanced profitability and performance	Netherlands

Table 12.2: Unions and innovation

Authors	Sample	Indirect participation	Innovation measurement	Main findings	Country
Rogers (1999)	AWIRS (Australian Workplace Industrial Relations Survey)	Union presence Union density	Three categories of innovative companies	No relations	Australia
FitzRoy and Kraft (1990)	57 metal working firms	Union density and work council activity	Sales of new products of the last five years	Negative and significant	Germany
Blundell *et al*. (1999)	Firm-level panel data	Industry union density	Innovation (survey data)	Negative effect	UK
Geroski (1990)	73 industries	Number of workers covered by a collective agreement	Number of technically and commercially successful innovations	Negative but insignificant	UK
Machin and Wadhwani (1991)		Union recognition Presence of a JCC (Joint Consultative Committee)	Investments	Positive and significant Positive and significant	UK
Michie and Sheehan (2003)		Union density, Dummy variable (50%)	Product and process innovation – survey response	Positive and significant	UK
Acs and Audretsch (1987)	247 industries	Union density	Number of innovations	Negative effect	US
Hirsch and Link (1987)	315 firms	Union presence; Dummy (50%)	Response data	Negative effect	US

Table 12.3: Possible effects of employee participation on innovation processes

Direct Participation	**Indirect Participation**
Insight and commitment to business goals	Guidance for employees during processes of change
Autonomy to make suggestions and improvements	Conflict arbitration
Enhancement of knowledge flows	Feedback opportunity for management
Enrichment of management decisions	Driver and defender of innovations (if positive effects achieved on the goals of employee participation)
Culture of commitment and support	