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The organizational implications of human resources managers’ perception of teleworking

Manuela Pérez Pérez, Angel Martínez Sánchez and María Pilar de Luis Carnicer
University of Zaragoza, Zaragoza, Spain

Keywords Human resource management, Teleworking, Change management

Abstract Human resource managers are prime decision-makers in the adoption of teleworking. This paper shows the results of an empirical study of the perceptions of HR managers about the feasibility of teleworking within their organizations. Teleworking feasibility is significantly explained by the percentage of tasks suitable to teleworking, the employees' involvement in task design and programming, the percentage of salespeople in the workforce, the degree of work-location sharing for teleworking, the use of information and communication technologies, and the degree of innovation. HR managers in small companies perceive a greater feasibility than HR managers in large companies.

Introduction
Teleworking is a way of flexible working that enables workers to get access to their labour activities from different locations by the use of information and communication technologies. In earlier years teleworking (and the closely analogous term telecommuting, used particularly in north America) tended to be restricted to home-based working, made possible by information technologies and telecommunications links. In more recent years, however, the definition has been stretched to include those working remotely in neighbourhood telecentres or community telecottages, and mobile workers (for example, those who operate from their cars or from touch-down office facilities). For some, teleworking can stretch still further to include jobs relocated to remote back offices, offshore data processing centres and even call centres. The central idea behind teleworking, however, is based on two features: that of work which has been relocated, because of the opportunities inherent in technology.

Teleworking has attracted a great deal of attention from both academics and practitioners because of its multifaceted implications for individuals, organizations and society to work anywhere and anytime. But in spite of

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this attention, many studies have covered teleworking issues rather broadly. Most of the empirical studies are exploratory in nature and mostly case or field studies that often employed free, non-structured interviews or questionnaires (Chapman et al., 1995). Many non-empirical studies depended on anecdotal discussion of teleworking motivations, factors, advantages, disadvantages, and barriers (Gillespie et al., 1995; Kurland and Bailey, 1999; Konradt et al., 2000). Although generalities may have provided a better view of teleworking implications, the lack of focus in many studies has resulted in a paucity of research rigor. A lack of theoretical support can be seen besides in most teleworking research to uncover the causal processes in its adoption (Shin et al., 2000). Additionally, the literature shows some opposite views on personnel implications of teleworking: for example, home-based teleworking is taken as a better way to balance work and family but also as a source of work anxiety and stress (Mirchandani, 2000). Baruch (2001) states that the phenomenon of teleworking can and should be studied from a variety of theoretical perspectives and frameworks.

More recently, scholars have started to use organizational theories to develop research frameworks to study teleworking adoption and implementation (Daniels et al., 2001). But very few authors still have used these theories to test empirically the impact of teleworking in organizations (Gray, 1995; Ruppel and Harrington, 1995; Tomaskovic-Debey and Risman, 1993). The purpose of this paper is to explain the perceptions of human resources (HR) managers about teleworking adoption. The contribution of the paper is to develop a research framework based on organizational theories in order to identify variables that could influence HR manager’s perception about teleworking adoption. Managerial perceptions and attitudes may be an important indicator of a teleworking program success (Shin et al., 2000). The role of management as an effective influence for organizational change has been found in other studies (Rogers, 1983; Gray et al., 1993). Management is the one force that can abolish existing structural inertia and direct organizational resources toward an implementation effort.

An important influence on the HR manager’s perceptions about teleworking may come from the own country’s organizational culture. Most empirical studies about teleworking have been carried out in Anglo-Saxon countries (e.g. USA and UK). The available statistics indicate that the diffusion of teleworking in southern European countries like Spain is much lower than in the US, the UK or the northern European countries. For example, the results from the ECaTT (European Electronic Commerce and Telework Trends) project (European Commission, 2000) found that the percentage of teleworkers in the workforce was 2.8 percent in Spain, but 7.6 percent in the UK and a higher percentage in the US. The latest estimations by the UK Institute of Employment Studies (Hotopp, 2002) indicate that the percentage of the workforce that could potentially telework is 22.6 percent in the UK and 13.5 percent in Spain. These
differences can be explained by the occupations considered suited to teleworking in each country (Huws et al., 2001), but they also may be linked to a number of factors, including affordable access to the technology, the national type of welfare regime, the regulatory climate, the prevailing workplace culture and the degree of urbanisation (Huws et al., 1999). Ellen and Hempstead (2002) found that teleworking is not modifying the urban localization of employees, and suggested that this resistance to move could be influenced by cultural factors. For example, employees in many Spanish cities live near their work. The International Telework Association and Council (ITAC) also includes cultural factors to explain the differences in teleworking behaviour. The workers in southern Europe are more used to socialize in the workplace, and managers prefer to control their employees’ work directly (Europublic, 2001). In the refusal to adopt teleworking formulas there are also other important factors, like available space in private housing and, above all, the quality of the technological infrastructure. European governments are starting to stimulate initiatives dedicated to reducing these differences, as they understand that teleworking is a formula that allows a reduction in unemployment and an increase in productivity.

Given these differences, the purpose of the research reported here is to show the influence that variables based on organizational theories have on teleworking adoption in a southern European country such as Spain, where the barriers to teleworking are greater than in the rest of Europe (Empirica, 2000). The paper is structured in the following way. The next section establishes the issues to be analysed with HR managers and the propositions to be tested. Then the empirical study shows the results on which organizational variables explain the Spanish HR managers’ perceptions about teleworking adoption. Finally, the paper discusses the managerial implications of the results and concludes with limitations and recommended future research.

**Organizational drivers of teleworking adoption**

*Research framework*

Figure 1 shows the research framework of our analysis. The HR managers’ perception about the feasibility of teleworking adoption is influenced by different organizational drivers. The theoretical support of these drivers are based on organizational theories. Three main theories are the background for the hypotheses proposed within this research framework: the resource-based view of the firm, the institutional theory, and the agency theory. These organizational theories have several implications for HR management and, as a consequence, they may influence different drivers related to teleworking adoption and implementation. The next paragraphs outline each one of these theories and their relevance to personnel management and teleworking, before developing a set of testable hypotheses.
First, the resource-based view developed around the internal competencies of the firm (Wernerfelt, 1984; Prahalad and Hamel, 1990). According to this view, competitive advantage is based on the internal resources of the firm, and in particular the human capital (Pfeffer, 1994, 1996; Russo and Foults, 1997). Resources can be defined as “those assets that are tied semi-permanently to the firm” (Barney, 1991, p. 173). Resources which are rare, valuable, inimitable, and non-substitutable can provide sources of sustainable competitive advantages (Barney, 1991). Within this framework, resources such as the employees tacit knowledge or the information and communication technologies, which are needed to implement teleworking in any case, may explain the company’s adoption of teleworking and competitiveness.

The resource-based view has become by far, the theory most often used within the HR management, both in the development of theory and the rationale for empirical research (Wright et al., 2001). Huselid (1995) argued at a general level that HR practices could help create a source of competitive advantage, particularly if they are aligned with the firm’s competitive strategy. His study revealed a relationship between high performance work systems and employee turnover, and gross rate of return on assets. Koch and McGrath (1996) took a similar logic in their study of the relationship between HR planning, recruitment, and staffing practices and labour productivity. They found that firms that develop effective routines for acquiring human assets, develop a stock of talent that cannot be easily imitated. In another example, Richard (2001) used resource-based logic to examine the impact of racial diversity on firm performance, and found that diversity was positively related to productivity, return on equity, and market performance. With its emphasis on internal firm resources as sources of competitive advantage, the resource-based view seems very appropriate to study teleworking, owing to the focus of teleworking on organizational and HR issues. HR managers may
use teleworking as a work organization to recruit and retain their most valued employees who are in need of time and space flexibility.

Second, the institutional theory is concerned with the spread of organizational practices within the social framework of norms, values, and taken-for-granted assumptions. Central to institutional theory is the concept that organizational actors such as HR managers seek to get legitimacy for their organizations by adopting those strategies, structures and processes that are socially approved by stakeholders external to organizational decision making processes (Meyer and Rowan, 1977). Legitimacy confers greater ability to obtain resources or overcome barriers within the organizational field (DiMaggio and Powell, 1983). Institutional theory has been used successfully to predict the incidence of HR management practices in general (Goodeham et al., 1999), and more specifically in the related field of family-friendly management (Wood, 1999).

The institutional perspective is useful to explain the influence of HR managers on teleworking adoption because teleworking is a HR management innovation which is then subject to many of the same normative and cultural influences as other HR management practices (Tregaskis, 2000; Daniels et al., 2001). Huws et al. (1990) suggest that teleworking may be a comparative rarity because of management resistance and the strength of organizational culture. Deep-rooted shared assumptions and attitudes about the relations among individuals and social units (i.e. managers, labour unions, etc.) constitute task and institutional pressures operating within each organizational field, the apprehension of which is necessary to understanding teleworking adoption (Daniels et al., 2001). For example, working long hours at the office may be considered part of the company’s culture for career advancement. But home-based teleworking constitute a deviation from the institutional rule and a loss of legitimacy that may provoke a negative perception towards its adoption by the employees and HR managers (out of sight, out of mind).

Thus, cultural factors may trigger some differences in behaviour towards teleworking. The workers in southern European countries like Spain resist dispensing with personal contact, and managers prefer to control their employees’ work directly. An American guru, Gil E. Gordon, says that “if we make it easier for both fathers and mothers to be in the home a few more hours each day, their children will have better lives”. “No”, says Lucio Toninelli, HR Manager of IBM Italy, “our teleworkers are clamouring to come back to the office. They find that teleworking interferes with family life, and they miss the companionship of their fellows...” (Europublic, 2001). Teleworkers do not get away from organizational politics. Most corporate leaders still value “face time” and tend to reward those who directly interact with them. For example, face time is an important cultural issue in several Asian countries, which explains why teleworking has been more difficult to implement there. Less than 1 percent of companies in Singapore allow employees to telework, and most of
those are US firms. IBM successfully launched teleworking in Singapore by
taking drastic actions. It got rid of personal desks so employees have less space
at the office. IBM also trained managers to think about employee performance
in terms of output, not visibility (Prystay, 1999). Other cultural barriers have
lost influence owing to the globalization of business. For example, only about
10 percent of Spanish employees take a siesta nowadays because Spanish
employees in large cities have to commute to work and have to communicate
throughout the day with business people in neighbouring countries. Thus, this
cultural factor may be less important than it used to be to explain work
organization in Spain (Boudreaux, 2000).

Third, agency theory emphasizes the need for measurability of performance
and for performance criteria that employees can influence (Eisenhardt, 1988).
Agency theory (Jensen and Meckling, 1976; Fama and Jensen, 1983) is directed
at a particular type of organizing problem, the so-called agency problem. The
focus is on determining the optimal contract that governs the relationship
between a principal (employer or supervisor) and an agent (employee). The
objective of both parties, agent and principal, is to maximize utility (Jensen and
Meckling, 1976; Eisenhardt, 1989). When the principal knows what an agent
does, a contract based on behaviour is most efficient since the principal is
buying the agent’s behaviour. But if the principal does not know what the
agent has done, the principal has two options: to discover the agent’s behaviour
by investing in information, or to contract, at least partially, on the basis of the
outcomes of the agent’s behaviour. Outcome-based contracts may be more
useful to teleworking because there is no direct supervision of the agent and the
teleworker has full autonomy to program and control their work.

Each of these three organizational theories has the capacity to explain the
manager’s ability to influence the company’s adoption of teleworking. The
decision to adopt teleworking is mostly associated with senior managers
(Daniels et al., 2001; Karnowski and White, 2002). The extent that these
decision-makers have political and technical capabilities will influence the
company’s adoption of teleworking. Within organizations, we might expect to
find resistance to the introduction of teleworking where managers may
perceive that teleworking may change traditional managerial roles and
practices, where teleworking is thought to bring more individual costs than
benefits, or where there is lack of suitable technological and HR for
teleworking. The next paragraphs develop the research model depicted in
Figure 1 by proposing research hypotheses to explain the HR managers’
perceptions on the feasibility of teleworking adoption.

The first hypothesis deals with one of the most important inhibitors of
teleworking, that is is the lack of suitable tasks for teleworking (Daniels et al.,
2001). Teleworking is rarely found among manufacturing jobs but it is more
frequent in service industries and in jobs that contain information-based tasks
than can be dispersed geographically and performed asynchronously (Huws
et al., 1990; European Commision, 2000; McGrath and Houlihan, 1998). HR managers have a responsibility to identify jobs having such characteristics. Similarly, HR managers are better able to identify which teleworking jobs may be difficult to manage and hence decrease performance. Middle managers may even oppose the introduction of teleworking if they perceive that teleworking threaten their identity (Weisenfeld et al., 1999). Given that managers in southern Europe prefer to control their employees’ work directly, Spanish HR managers may be less willing to adopt teleworking when there are unsuitable tasks owing to the managers low unwillingness to control employees’ work remotely (Empirica, 2000). Therefore, we propose the following hypothesis:

**H1.** HR managers who perceive fewer suitable jobs to be performed by teleworking, perceive a lower teleworking feasibility in their companies.

The sales function is one of the most frequently performed remotely in industrial and service companies (European Commision, 2000). The sales force uses information and communication technologies and works remotely full or part-time from several locations. HR managers may perceive that salespeople may facilitate the adoption of teleworking. Agency theory suggests that there arise conflicts between employers and employees as they seek to achieve different goals from work, and that teleworking might be more prevalent among jobs where performance can be measured easily (Van Ommeren, 2000). The sales force performance can be more easily evaluated by its results than other employees. Then, Spanish HR managers may find less institutional resistance to teleworking adoption in companies where their employees are more used to work remotely and be managed by results. Thus, we propose:

**H2.** HR managers perceive a greater feasibility of teleworking in companies with large percentage of salespeople in the workforce.

Competitive advantage is based on the internal resources of the firm, and in particular the human capital (Russo and Foults, 1997). To recruit and retain the most valued employees, companies offer several incentives like “on-the-job” training. Investment in human capital leads to increases in worker productivity which are, in turn, rewarded in the form of increased earnings to the worker (Becker, 1975; Bartel, 1995; Farber and Gibbons, 1996). The adoption of technical and organizational innovations may initially decrease productivity. Training is often necessary to overcome cultural resistance to adopt innovations. Spanish HR managers might perceive greater teleworking feasibility if their employees are more trained to use new technologies and face other teleworking requirements.

**H3.** HR managers perceive a greater teleworking feasibility if the employees receive “on-the-job” training.
HR managers are also responsible for the employees’ compensation system. From an agency perspective, the choice between fixed or variable compensation depends on whether the employee’s behaviour can be readily evaluated (Eisenhardt, 1988). Given that people are hired to perform behaviours, if behaviours can be evaluated, it makes sense for companies to pay directly for those behaviours via salaries (fixed compensation). On the other hand, if behaviours cannot be readily evaluated, variable compensation is attractive because they align the goals of employees with those of the company in which they work, even though their actual behaviours are not well evaluated by managers. Since employers are not able to observe teleworkers directly, teleworking might be more prevalent among jobs where performance can be measured easily (Van Ommeren, 2000) or where performance is aligned with the company’s goals via compensation. Thus, Spanish HR managers might perceive that the application of variable compensation facilitates the introduction of teleworking because job performance can be evaluated independently of the type of job, and the employee’s behaviour is not in need of manager’s control. Thus:

\[ H4. \] HR managers perceive a greater feasibility of teleworking in companies with large variable compensation system to employees.

Defined activities and objectives are prerequisites to successful teleworking (Raghuran et al., 2001). More generally, teleworking is associated with jobs that contain information-based tasks that can be performed asynchronously, and that the information needed to co-ordinate tasks be embedded within shared understandings or be coded explicitly in the form of manuals (McGrath and Houlihan, 1998; Daniels et al., 2001). The involvement of employees in their tasks design and programming increases the understanding of information to co-ordinate tasks. Consistent with the institutional perspective is the idea that processes tend to become rigid and people conform to taken-for-granted ways of doing things to avoid potential claims of negligence if something goes wrong (Meyer and Rowan, 1977). Spanish HR managers may consider that employees who are involved in tasks design and programming will be more able to perform teleworking tasks because they have greater knowledge of those tasks and they know how to organize themselves with more independence from normative values. Thus, the manager’s reluctance to control employees’ work remotely may be overcome. We propose the following hypothesis:

\[ H5. \] HR managers perceive greater feasibility of teleworking if their employees are involved in tasks design and programming.

Most empirical studies found a decrease in contacts, characteristic social isolation owing to teleworking (Konradt et al., 2000), especially in home-based teleworking. Social isolation is often cited as one of the main factors inhibiting the success of home-based teleworking (Huws et al., 1990; Hopkinson et al.,
Teleworkers are most likely to perceive they are professionally isolated when they telework frequently (Kurland and Cooper, 2002). Combining different work locations – home-based, organization’s central office, client’s site – can enhance performance (Chapman et al., 1995). Thus, HR managers may encourage teleworkers to share working locations. Besides, teleworking often requires a change in management style. Face-to-face interaction and direct supervision should be totally or partially replaced by coordination based on mutual trust and “management by objectives” (Illegems et al., 2001).

Kurland and Cooper (2002) found that managers’ fear that they lose control when employees telework appears unfounded because they maintain control through various behaviours and output strategies. The implementation of teleworking in Spanish companies can be facilitated if managers, for example, keep control of their employees by combining work locations. Thus:

**H6.** HR managers perceive greater teleworking feasibility if teleworkers are encouraged to share work locations.

Some studies indicate that “family-friendly” HR policies are mainly adopted in organizations with large percentages of female employees (Goodstein, 1994; Ingram and Simons, 1995; Osterman, 1995; Frone and Yardley, 1996) although organizational values supporting work-family balance have important work and personal consequences for men as well (Burke, 2000). Other studies found that while there may be no general relationship between the gender composition of the workforce and family-friendly management, the relationship is mediated by whether or not management perceives family problems as relevant, that is whether they are conscious of these as potential factors to which they have to respond (Wood, 1999). To the extent that traditional, gender-based roles still prevail in Spain, female employees would highly appreciate flexibility to combine their work and household responsibilities. Because one of the main characteristics of teleworking is that it allows a smoother adaptation to business needs as well as personal or family needs, Spanish HR managers may perceive that this work form may be preferred by female workforces.

**H7.** HR managers perceive greater teleworking feasibility with larger percentages of female employees in the workforce.

Besides HR, technological resources are also a source of competitive advantage. But information technologies alone do not produce sustainable performance advantages, unless they leverage complementary human and business resources (Powell and Dent-Micallef, 1997). From an agency perspective, the principal can use information and communication technologies to control the agent’s behaviour. Then, Spanish HR managers may perceive that the introduction of teleworking is easier if the company is already using these technologies because the employees will have more technical knowledge to use.
and support their performance. For example, e-mail usage is widespread in Spain, regardless of whether or not a company takes part in teleworking, but it is those companies that use teleworking where e-mail is predominant (Empirica, 2000).

**H8.** HR managers perceive greater teleworking feasibility, the greater the use of information and communication technologies in the company.

Nevertheless, the use of information technologies in the company does not guarantee that they will be adapted for teleworking as an organizational goal (Premkumar *et al.*, 1994). But, companies developing more innovative products by using new technologies are incorporating more frequently organizational and technical changes developed from those innovations (Rochford and Rudelius, 1992). Organizational change, in itself, may trigger the introduction of teleworking practices (Daniels *et al.*, 2001). Innovative companies are more used to work in a turbulent environment and are more aware of the challenges aroused by an organizational change like teleworking. Innovation expenditures in Spain have increased significantly more during the last few years than even R&D expenditures in comparison to other European countries[1], and companies perceive the need to adopt organizational innovations to compete through the use of information and communication technologies. Thus, Spanish HR managers may perceive less opposition to teleworking in innovative companies.

**H9.** HR managers perceive greater feasibility if the company is more intensive in innovation.

**Empirical study**

**Methodology**

In order to study which organizational variables influence on the positive perceptions of senior managers about teleworking adoption, a mail survey was carried out in the second half of the year 2000 to Spanish companies. The questionnaire was addressed to the HR managers of 747 companies with more than 25 employees and located in the Spanish region of Aragón. Smaller companies were excluded from the study because the probability of them having suitable jobs for teleworking was low, and because 25 employees is the minimum number required to establish some of the company’s organizational forms. HR managers were chosen to participate in the study because they are the most concerned and frequently involved in the decision to initiate teleworking (Daniels *et al.*, 2001). For example, in a US study of teleworking adoption (Karnowski and White, 2002), 66 percent of senior management and 30 percent of HR management were involved in the decision to adopt teleworking. We addressed the survey to the HR manager because we needed his/her perception about the implications of teleworking for the company’s
work force and organization. Nevertheless we asked the HR managers to consult also other executive managers in order to have the company’s top management attitude towards teleworking adoption.

The questionnaire was pretested with managers of four companies to obtain feedback about the clarity of instructions and terminology. The survey included quantitative questions about the company (i.e. number of employees) and qualitative questions about the benefits, barriers and other topics of teleworking. According to location, two forms of teleworking were included in the survey: home-based teleworking and mobile-based teleworking. We did not distinguish other typology of teleworking (i.e. Daniels et al., 2001, p. 1,155) such as the level of knowledge intensity or intra-organizational contact.

Of the 747 questionnaires distributed, 157 questionnaires were returned. The response rate of 21 percent may be considered acceptable for a company level questionnaire, since it is greater than most Spanish mail surveys (Grande, 1996). The statistical distribution of the sample on company’s sector and size does not show any significant difference with the objective population – 49.7 percent are small companies (less than 50 employees), 40.1 percent are medium-sized companies (between 50 and 250 employees) and 10.2 percent are large companies (more than 250 employees). Averagely, the company size in the sample is 181 employees, the company’s age is 28 years old and the employees have an average tenure of 10.5 years in their companies.

Table I defines the variables included in the statistical analysis and Table II shows the descriptive statistics and correlations of these variables. We used company size and employees’ age as control variables. Large companies have more resources than small companies, but large companies sometimes lack flexibility to adopt organizational innovations like teleworking (Tomaskovic-Debey and Risman, 1993). Regarding employees’ age, HR managers could perceive that some employees are more in need of flexibility for childcare, eldercare, spouse relocation and so on, which teleworking would help

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
</tr>
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<tbody>
<tr>
<td>Tasks</td>
<td>Percentage of tasks that can be teleworked</td>
</tr>
<tr>
<td>Involvement</td>
<td>Employees involvement in their jobs and tasks programming</td>
</tr>
<tr>
<td>Sales</td>
<td>Percentage of sales persons in the workforce</td>
</tr>
<tr>
<td>Combine</td>
<td>Weekly days of mobile-based teleworking</td>
</tr>
<tr>
<td>Gender</td>
<td>Percentage of female employees in the workforce</td>
</tr>
<tr>
<td>Compensation</td>
<td>Percentage of variable compensation</td>
</tr>
<tr>
<td>Training</td>
<td>Employees receive training courses in the company</td>
</tr>
<tr>
<td>Technology</td>
<td>Number of information and communication technologies used in the company (between 0 and 17 different technologies)</td>
</tr>
<tr>
<td>Innovation</td>
<td>Percentage of sales from products with three years or less in the market</td>
</tr>
<tr>
<td>Size</td>
<td>Log of total employees (control variable)</td>
</tr>
<tr>
<td>Age</td>
<td>Percentage of employees in the workforce that are between 35 and 55 years old</td>
</tr>
</tbody>
</table>

Table I. Definition of variables
<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>s.d.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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</thead>
<tbody>
<tr>
<td>1. Innovation</td>
<td>22.2</td>
<td>37.2</td>
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<td></td>
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<tr>
<td>2. Involvement</td>
<td>0.6</td>
<td>0.4</td>
<td>-0.021</td>
<td></td>
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<td></td>
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<tr>
<td>3. Compensation</td>
<td>9.3</td>
<td>10.2</td>
<td>0.064</td>
<td>0.087</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. Tasks</td>
<td>5.6</td>
<td>9.5</td>
<td>0.248**</td>
<td>0.044</td>
<td>0.115</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5. Combine</td>
<td>1.8</td>
<td>1.8</td>
<td>0.176*</td>
<td>0.059</td>
<td>0.025</td>
<td>0.199*</td>
<td></td>
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<tr>
<td>6. Training</td>
<td>0.7</td>
<td>0.4</td>
<td>-0.116</td>
<td>0.174*</td>
<td>0.225*</td>
<td>-0.088</td>
<td>0.068</td>
<td></td>
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<tr>
<td>7. Gender</td>
<td>27.0</td>
<td>26.7</td>
<td>0.094</td>
<td>0.113</td>
<td>-0.020</td>
<td>0.053</td>
<td>-0.073</td>
<td>-0.041</td>
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<td>8. Salespeople</td>
<td>7.9</td>
<td>13.1</td>
<td>-0.015</td>
<td>0.127</td>
<td>0.162*</td>
<td>0.249**</td>
<td>0.015</td>
<td>0.038</td>
<td>0.007</td>
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<tr>
<td>9. Age</td>
<td>40.0</td>
<td>22.9</td>
<td>-0.220**</td>
<td>-0.137</td>
<td>0.082</td>
<td>0.083</td>
<td>-0.039</td>
<td>0.011</td>
<td>-0.281**</td>
<td>0.141</td>
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<tr>
<td>10. Technology</td>
<td>6.5</td>
<td>3.5</td>
<td>-0.087</td>
<td>0.110</td>
<td>0.121</td>
<td>0.218**</td>
<td>-0.023</td>
<td>0.232**</td>
<td>0.035</td>
<td>0.224**</td>
<td>0.125</td>
<td></td>
</tr>
<tr>
<td>11.Size</td>
<td>1.8</td>
<td>0.5</td>
<td>-0.098</td>
<td>0.042</td>
<td>0.130</td>
<td>-0.045</td>
<td>-0.051</td>
<td>0.358**</td>
<td>0.088</td>
<td>0.183*</td>
<td>0.137</td>
<td>0.376**</td>
</tr>
</tbody>
</table>

Notes: Significance: ** \( p < 0.01 \); * \( p < 0.05 \)
to accomplish. Deal and Kennedy (1992) found that older employees may have less experience and knowledge than younger employees in the use of information and communication technologies and be more reluctant to changes in their work organization.

Results

Tables III and IV show the perception values of company managers on teleworking benefits and barriers. According to the results, the HR managers perceived that teleworking would benefit more to the employees than to the company. The most important benefit regarding to the company is the productivity increase, followed by the fixed costs saving and labour organisation flexibility; the most important perceived benefits for the employees are a more flexible labour time and less commuting. On the other hand, the most important perceived barriers to teleworking adoption are the resistance to change job procedures and the little knowledge about this practice. Finally, the most important perceived barrier to teleworking implementation is the management of teleworkers.

Table V shows the results of the two statistical multivariate analysis. Model I is a logistic regression and model II is a linear regression to explain the

<table>
<thead>
<tr>
<th>Benefits for the company</th>
<th>Benefits for the employee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Productivity increase</td>
<td>Labour time flexibility</td>
</tr>
<tr>
<td>Fixed cost reduction</td>
<td>Less commuting to work</td>
</tr>
<tr>
<td>Work organisation flexibility</td>
<td>Autonomy</td>
</tr>
<tr>
<td></td>
<td>Easier work life</td>
</tr>
</tbody>
</table>

*Note: The importance of each benefit was measured on a Likert scale from 1 = no importance to 4 = very important.*

<table>
<thead>
<tr>
<th>Barriers to teleworking adoption</th>
<th>Barriers to teleworking implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance to change job procedures</td>
<td>Teleworkers management</td>
</tr>
<tr>
<td>Little teleworking knowledge</td>
<td>Work and job control</td>
</tr>
<tr>
<td>Computer and communication costs</td>
<td>Customer direct contact</td>
</tr>
<tr>
<td>Teleworking introduction costs</td>
<td>Labor activity management</td>
</tr>
<tr>
<td>Managers resistance</td>
<td>Information security</td>
</tr>
<tr>
<td>Access to telecommunication equipment</td>
<td>Communication difficulties</td>
</tr>
<tr>
<td>Employees opposition</td>
<td>Teleworkers isolation</td>
</tr>
<tr>
<td>Unions reluctance</td>
<td>Loss of corporate identity</td>
</tr>
<tr>
<td>Health and security</td>
<td>Teleworkers selection</td>
</tr>
</tbody>
</table>

*Note: The barriers to teleworking adoption and implementation were measured on a Likert scale from 1 = no importance to 4 = very important. N = 157*
percentage of tasks that could be feasibly performed by teleworking. The Spanish HR managers’ perception of teleworking feasibility is explained by the percentage of tasks suitable to teleworking, the employees’ involvement in task design and programming, the percentage of salespeople in the workforce, the degree of work-location sharing for teleworking, the use of information and communication technologies, and the degree of innovation. The control for employees age and company size indicates that HR managers do not perceive any difference regarding teleworking feasibility according to age, but that HR managers in small companies perceive more feasibility than HR managers in large companies.

**Discussion**

The results of this paper have several managerial implications. First, Spanish HR managers perceive a greater teleworking feasibility if their employees are more involved in task design and programming. This result supports other studies which found that the most discerning feature of recruitment programmes for teleworkers is the focus on self-management skills. Individuals are frequently required to demonstrate their capacity to organize their schedules, set priorities, meet deadlines and assess their own performance (Chapman *et al*., 1995). HR managers who wish to initiate a teleworking program should seek those groups of employees being more involved in design and programming their own tasks.

One of these groups of employees is the sales force. Spanish HR managers also perceive that teleworking feasibility is explained by the percentage of salespeople in the workforce. Both results indicate the teleworking’s challenge...
to HR managers owing to control their employees’ performance. But Spanish HR managers perceived that salespeople will respond rather positively to their job and job-related experiences in a teleworking environment. Spanish employers are the most unaware in Europe about the implications of teleworking (Empirica, 2000). Thus, HR managers may be unaware of teleworking benefits beyond such jobs like sales but they could use the positive experiences of the sales force, after introducing teleworking, to diffuse it further to other functions in the company.

The use of information and communication technologies is positively related to the Spanish HR manager’s perception of teleworking feasibility. Teleworking levels seem to be higher in countries where people make more use of electronic communication (Illegems et al., 2001), and have a different approach to working outside the office. In Spain, there is a low use of information and communication technologies. According to the ECaTT study (Empirica, 2000), only 13 percent of Spanish teleworkers use remote access and 20 percent use online connections, while in the UK these percentages are 58 percent and 64 percent respectively, figures that prove Spain to be a great distance from the usage levels of other European nations (average levels of 55 and 59 per cent). The research reported here indicates that HR managers perceive the use of information and communication technologies as a favourable factor to adopt teleworking which could be explained by the lower level of technological infrastructure in the country.

On the other hand, some authors indicate that a shift in management culture is needed in the UK and other countries to introduce teleworking (Maitland, 2000). In Spain, Belzunegui (2002) also found in a sample of mobile teleworkers that managers did not easily identify teleworking time with employee’s autonomy. While employee commitment is measured according to the length of hours spent in the office, and while this is used as a criterion for salary increases and promotion, there will be few changes to patterns of work, including working from home. However, the rise of e-commerce might provide opportunities for more autonomous “virtual” working. This result suggests that Spanish HR managers view these technologies as control and communication mechanisms to manage teleworkers in a virtual organization. The unfamiliarity with new management skills was exactly one of the arguments given by Spanish employers as a reason for not implementing teleworking (Empirica, 2000). Besides, HR managers may consider that availability of underutilized resources can help bear the cost of purchasing technology for teleworking (Shin et al., 2000) which may help lower a substantial hurdle to successful teleworking (Illegems et al., 2001).

The company innovativeness also explained positively the HR manager’s perception of teleworking feasibility. If an organization is endeavouring to introduce and encourage a teleworking initiative, an innovative culture that
stimulates and fosters change would make its adoption easier. From an institutional perspective, organizations more sensible to innovation opportunities may have a higher aspiration level with regard to the exploitation of new technologies and may suffer less from the culture of “non-invented here”. This result is relevant because according to the European statistics[2] Spain is a country where innovation effort has increased significantly during the last years which means, among other things, that traditional cultural barriers to innovation (“let others invent”) have began to fall, and companies are more aware of the need to adopt organizational changes to compete successfully in the global marketplace.

Combining work locations is a teleworking strategy that Spanish HR managers perceive positively with the introduction of teleworking. This result suggests that HR managers view sharing locations as a management practice which could help overcome the employees’ resistance to teleworking. This result is supported by the empirical evidence in other countries. In the UK, many teleworkers work only one or two days a week at home (Huws, 1996). Other UK report published by the Trades Union Congress in 2001 highlighted recent statistics showing that employed teleworkers who usually work at home account for less than one in ten of all teleworkers and only 0.5 percent of all employees. Baruch and Nicholson (1997) found that the best output comes from teleworking if it is done on a part-time basis because it can prevent or significantly reduce the social isolation of teleworkers. This result is also found in other Spanish studies about teleworking (Belzunegui, 2002). But sharing work locations has implications for the development of teleworking programmes. HR managers need to find tasks suitable to teleworking under such conditions. This implication has also been supported by our empirical study since the existence of tasks suitable to teleworking is the most significant variable to explain teleworking adoption (model I in Table V). Besides, sharing locations is a working characteristic of the sales force, and salespeople are viewed by HR managers as prime contenders for teleworking. Thus, HR managers should analyse which jobs are more favourable to be performed remotely by teleworking. According to our results, HR managers would perceive that employees used to program their own tasks and share work locations, they would increase the feasibility of teleworking adoption. Hopkinson et al. (2002) in an study at British Telecom found that though teleworking employees meet less often, when they did meet they really took the time to talk to one another about main work themes.

Nevertheless, there are three variables that did not explain the HR manager’s perception of teleworking feasibility: employees’ gender, training, and variable compensation. The result about gender supports other studies that indicate that while some women adopt homeworking for childcare reasons, a significant amount of women do not like a dual career and would rather stay at work than at home (Hochschild, 1997). Women are found to be motivated by other
considerations such as work flexibility, convenience and increased personal freedom (Hakim, 1995; O’Connor, 2001). Thus, HR managers would not have to take into account gender issues when planning a teleworking programme. The factors related to the job seem to be more important than those related to the employee.

According to Empirica, who carried out the ECaTT survey, despite making up 46 percent of the total EU workforce, women make up only 19 percent of “regular” teleworkers and 38 percent of “supplementary” teleworkers. “Supplementary” teleworkers are defined in the survey as those who work from home less than one day per week, while “regular” teleworkers comprise three overlapping categories: home-based teleworkers, mobile teleworkers, and telework by self-employed people in SoHos.[3]

This over-representation of men among teleworkers is echoed in the results of the UK Labour Force Survey which, in 2001, found that men made up 67 percent of teleworkers, although they constitute only 53 percent of the total workforce. The breakdown of the UK teleworking workforce by gender and occupation, suggests that occupational segregation may provide the explanation for this: the occupations in which teleworking is most likely to be found are managerial, technical and professional ones, and they are also likely to be male-dominated. Similar results can be found in other countries (Huws, 2000).

A study in the Spanish districts of Castilla and León found that in a context of fairly low uptake of information and communication technologies, the majority of new home-based activities were carried out by the self-employed. Teleworking women fell into two groups: a limited group which was relatively highly educated and high-earning, working in new ICT sectors, including both employees and the self-employed, and a much larger group of low-paid self-employed women in more traditional occupations such as clerical work, translation and journalism. (Forem, 2000). These results suggest that women teleworkers are more likely to be in socially isolated situations than male teleworker in both Spain and the UK (Huws, 2000). The lack of significance of gender to explain the HR manager’s perceptions about teleworking adoption also suggests that gender roles have less importance than other factors such as the unbalance of teleworking jobs between men and women. This factor is even more acute in Spain since women have higher percentages of unemployment and lower activity rates than men, in comparison to the rest of Europe.

The lack of statistical significance about the employees’ training suggests that Spanish HR managers may underestimate ex-ante the importance of training for a teleworking program success. This result supports other empirical findings about the little knowledge of Spanish employers on the implications of teleworking in comparison to other European countries like the UK (Empirica, 2000). However, typically the training of teleworkers falls short of necessary requirements both in terms of professional development and
preparation for the work arrangement itself (Chapman et al., 1995). In general, the occupational profile of teleworkers is biased towards professional, technical and managerial occupations and, in accordance with this profile, to be highly educated. For example, while only 27 percent of the total UK workforce has achieved a graduate degree, 47 percent of teleworkers are graduates, while 11 percent have postgraduate degrees, compared with only 5 percent of all those in employment (Huws, 2000). Because of this profile, it is tempting to regard all teleworkers as privileged, and therefore not requiring training and protection. This would be a mistake: the UK evidence suggests that occupations in which women are concentrated are also those which are most likely to be characterised by lack of employee status (which is in turn associated with precariousness, lower pay and a lack of access to training and benefits), while those in which men form the majority typically carry employee status and full integration into the corporate culture, and the benefits which accompany this.

Similarly, Spanish HR managers do not perceive teleworking feasibility to be related to the employees’ variable compensation. A managerial implication is that for HR managers, *ex-ante* factors such as job characteristics seem to be more important to teleworking feasibility than *ex-post* factors like training and compensation. Analysis of the legal framework of conditions and collective agreements regulating teleworking in 16 European countries shows a very varied picture (Weiβbach, 2000). The concept of teleworking has not been incorporated into legislation, nor is there a standard transnational definition of it. Instead, the countries manifest major cultural differences. For example, we find relatively “new” systems of collective bargaining in Spain, either associated with strong tendencies to deregulate the labour market, which also affect teleworking (Spain), or in which teleworking is not yet an important subject. In the UK, collective bargaining mechanisms have been weakened to such an extent that, given the widespread nature of teleworking, they play only a minor part, except in some areas of the financial services sector. Here, the individual contract predominates, but this too has its advantages (e.g. a high level of precision as regards regulation of working hours, and reimbursement of costs). It can be said that countries with a very strong culture of collective bargaining have mainly ignored the problem of teleworking, while that of part-time work is frequently widely discussed. In contrast, countries where the tradition of collective bargaining systems is less strong have often progressed further down this path. Unlike traditional industrial relations problems, the problems of social openness of teleworking infrastructures, of gaps in qualifications and equal opportunities in access to teleworking have hardly been addressed by traditional bargaining systems.

Finally, the control for company size indicates that managers in small companies perceive more teleworking feasibility than managers in large companies. This finding is supported by other studies (Ruppel and Harrington, 1995). Small companies have weaker departmental boundaries than large
companies, and although clearly defined activities and objectives are prerequisites to successful teleworking, the concept of “department” may be largely abandoned in teleworking: individuals may no longer identify with a departmental group, which may be an advantage for smaller companies because of their weaker departmental boundaries.

**Conclusion**

This study did not consider all the factors that might explain the HR managers’ perception of teleworking adoption, but it did make several contributions. These include taking a more conceptual, and thus more generalizable approach, that has been used previously in other studies. The implication is that a theoretical view of teleworking adoption across several organizational perspectives is possible. The study has been carried out in a southern European country (Spain) where teleworking barriers are higher than in other countries, and where cultural factors influence on teleworking because employees are used to socialize at work and managers value “face time” at the workplace.

The results show that the HR manager’s perception of teleworking adoption is positively influenced by the percentage of suitable tasks to teleworking, the employees involvement in task programming, the percentage of salespeople in the workforce, the combined use of teleworking locations, the use of information and communication technologies, and the company’s innovativeness. These results may be moderated by the cultura setting of the sample but they have managerial implications for teleworking management in other European countries. For example, the set-up of a teleworking programme would require the involvement of those employees more used to designing and programming their own tasks. Another implication is that the positive experiences of teleworking among some groups of employees such as the sales force, may be used by HR managers to diffuse teleworking within other company’s functions.

The article has several limitations. First, the data for the study are cross-sectional and therefore it is not possible to find causal relationships among the variables. Second, the results could be different according to the level of teleworking since our study did not differentiate between organizations with little or large levels of teleworking. Third, this study has focused on a limited set of organizational variables owing to data availability and research design. Further empirical studies are needed to test the organizational drivers of teleworking adoption. Future research should include additional measures to operationalize and test more hypotheses about the influence of HR managers on the organizational implications of teleworking. A line of research that develops from this study is the influence of individual managers’ biases and management skills in the implementation of teleworking among organizations.
Notes
1. www.cordis.lu/scoreboard; www.ine.es
2. www.cordis.lu/scoreboard
3. Statistics found in the ECaTT Website: www.ecatt.com

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