Labor Flexibility and Firm Performance

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The aim of this paper is to add to the labor flexibility debate by exploring the relationship between different forms of flexible working practices and the performance of the firm. Although there is a strong argument that labor flexibility can lead to greater financial success through the reduction in labor costs and the ability to use labor resources more efficiently, little empirical evidence has been provided to demonstrate the existence of such a relationship. This paper reviews the existing literature, puts forward a number of research propositions, and tests them by using data drawn from the Cranet-E International Survey of Strategic Human Resource Management. Only one form of numerical flexibility is found to have a positive relationship with firm performance. Proposals for further research are suggested. (JEL D21)

Introduction: The Concept of Flexibility

Against a background of increasing competition, diminishing operating profits, redundancies, business closures and mergers, and an ever higher degree of uncertainty, organizations need to have the ability to adapt to fluctuations in demand and to changes in their environment in order to be successful or even in order to survive. This pressing need to adapt has led organizations to be flexible in as many aspects as possible, including the search for flexibility in their production methods, their access to and availability of financial resources, the design and organization of work, and so on [Albizu, 1997, p. 11]. Specifically in the labor aspects, this ability to adapt is achieved through different forms of what is broadly defined as labor flexibility. These include practices of a very different nature and can generally be classified into numerical, functional, and financial flexibility, according to the so-called managerialist stream of theoretical work on flexibility typified by the work of Atkinson [1984, 1985a, 1985b, 1987].

The organizational use of such flexible working practices has been the subject of much debate, especially those forms of flexibility which represent changes in the nature of the employment relationship, moving away from the traditional full-time, permanent job. The debate has not remained in the academic environment but has crossed over to the national and European policy level [Commission of the European Communities, 1993, 1997]. Some of the topics of study have been associated with the relationship between flexibility and levels of employment, individual and national skill levels, the discretion or choice debates, equality issues, and the like.

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Although there is strong argument that labor flexibility can lead to greater financial success through a reduction in labor costs and the ability to use labor resources more efficiently, little empirical evidence has been provided to demonstrate the existence of such a relationship [Caudron, 1994], especially at the national and aggregate levels. At the company level, some studies in the U.S. have aimed to determine the costs of temporary employment and compare them to the costs of full-time, permanent employment [Nollen, 1996; Nollen and Axel, 1996], with mixed and inconclusive results [Delsen, 1995]. The areas of functional and financial flexibility have been considered only at the case-study level (for example, see Hutchinson and Brewster [1995]).

Objectives

The aim of this paper is to add to the labor flexibility debate by exploring the relationship between different forms of flexible working practices and the performance of the firm. To approach the topic at hand, this paper will first outline the main forms of labor flexibility. Second, the existing literature dealing with the relationship between different forms of flexibility and organizational performance will be reviewed, noting an important gap especially with regard to empirically based research to support some widely accepted contentions. Third, a series of research propositions are put forward with respect to the nature of the link between labor flexibility and organizational success. Finally, these research propositions will be contrasted empirically with data obtained from the Cranet-E International Survey of Strategic Human Resource Management, the main database on human resource management practices in Europe. The data analysis will be used to test the validity of the research propositions. Proposals for further measures, indicators, and topics of research will be put forward.

A Typology of Labor Flexibility

The concept of labor flexibility, defined as a business objective to respond rapidly and effectively to the changing demands of the environment, can be achieved through different routes normally called flexible working practices. This generic term includes a range of organizational practices of a different nature.

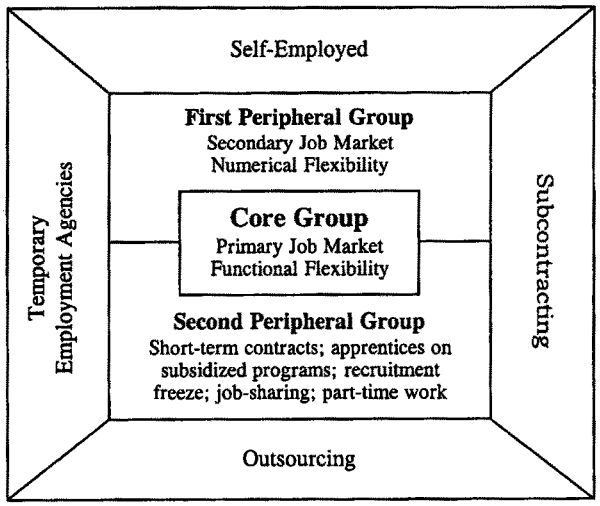
The best-known model of the types of work flexibility is that proposed by Atkinson [1984]. His concept of the flexible firm was developed and based on observations and empirical data from British companies. According to Atkinson, firms look for three types of flexibility:

1) With functional flexibility, employees are able to perform different tasks and functions within the same company. It requires a workforce trained in different areas and with in-depth knowledge of the company, its processes, and its prevailing culture. This is a practice that tends to benefit both the employee (represented in terms of job enhancement) and the organization, which avails a multiskilled workforce ready to face rapid changes.

2) With numerical flexibility, a company can easily increase and decrease its total number of workers in the short term to accurately achieve an exact coincidence between the needed workforce and that effectively employed. It is normally achieved through the use of different types of contracts and variations in the distribution of working time.
3) Financial flexibility attempts to get wages and labor costs, in general, to reflect the performance of employees and the company in terms of profits and losses. This type of flexibility is mainly achieved through different variable pay policies, profit-sharing policies, and the like.

Given these needs, Atkinson [1984] proposes that the typical hierarchical structure in which many firms are viewed becomes instead a series of concentric parts (shown in Figure 1). A different set of contract and human resource management policies can be applied to each of these parts.

FIGURE 1
Atkinson's Flexible Firm



Source: Atkinson [1984].

According to his model, the centermost part of the firm consists of a group of key employees to whom the company offers a long-term commitment and career development plans in return for their versatility and ability to perform different functions and roles within the company's main business activities, that is, for contributing to functional flexibility. These employees are usually managers, designers, or technicians.

Moving toward the outside, the two more peripheral groups have a looser bond with the company. The first peripheral group could consist of full-time employees but they would perform more specific jobs and are not expected to develop their skills in order to move horizontally or vertically within the firm. The second peripheral group consists

of workers with fixed-term, part-time contracts, coming from employment training programs (apprentices and work-experience contracts) or job-sharing. This second group gives the company numerical and, to a certain extent, functional flexibility.

The outermost part consists of people who work for the company but do not have a contractual bond with it, such as those who come from temporary work agencies, subcontracting, or outsourcing. Through these methods, the firm can use specialists in activities where the firm itself lacks expertise and need not worry about tasks which are necessary but do not form part of its main business (cleaning, transporting, facility maintenance, and the like).

Atkinson's model was proposed as an explanatory and descriptive (what it is like) tool of observed firm practices. However, in many cases, his model has been interpreted in prescriptive (what it should be like) terms. In other words, the model has been used as a recommended formula to be followed so that companies can become flexible. On one hand, this has led to harsh criticism of the model from the academic community (for example, Pollert [1988, 1991]). On the other hand, the model has been misinterpreted in order to indiscriminately apply it to firms, which is even more worrying. It should be obvious that the cultural conditions of each system or country, its economic structure, and legal framework will clearly play a key role in determining how necessary or even desirable certain types of flexibility are and how feasible such measures can be. Other factors, such as the economic sector and company size, will also determine the suitability of the specific practices to be implemented.

Perceived Advantages and Limitations of Flexible Working Practices: The Missing Direct Link to Firm Performance

This section outlines some of the main factors that accompany the use of different types of labor flexibility and which have been identified in literature as contributors to help or hinder the performance of the firm. The effects of flexibility on the individual employee, on employment issues, and on society at large are not central to this discussion and therefore are only considered when they may affect firm performance directly or indirectly. Major emphasis will be placed on the analysis of numerical flexibility as it is the type that will be contrasted empirically.

Functional Flexibility

The main perceived argument for using functional flexibility is based on the greater ability of employees to perform multiple tasks through training and skill enhancement [O'Reilly, 1994]. This means that employees are better able to perform their own job as well as others' by developing a wider set of competencies, and they are better able to cope with change. Therefore, the firm has a greater capacity to adapt to both unforeseen everyday situations and changes in the environment. Functional flexibility can bring about improvements in motivation that can be achieved through job rotation and enrichment. Thus, jobs may provide broader tasks, more autonomy and responsibility, and less routine. Albizu [1997] argues that functional flexibility also allows for the reduction of some hierarchical levels, achieving more agile communication and a better

ability to react quickly. Also, the decrease in the numbers of line management (supervision) implies less cost and less administrative burden. On the down side, functional flexibility requires important investments in training and development as well as a continuing relationship between employer and employee so that the investment in training can be recouped. Finally, some experiences have proved that there may be resistance from employees or trade unions to expand the scope of jobs.

Financial Flexibility

The main argument for financial flexibility through variable pay is that it can reflect on the performance of the firm and its groups and even on its individual employees and their added value. If the variable payment schemes are adequately designed, they can have a direct impact on the motivation of employees and their individual and group productivity. These policies can provide an increased control over pay costs by allowing pay levels and structures to fluctuate according to the firm's needs. Thus, pay strategy can follow business strategy rather than being dictated by external forms of regulation [White, 1996]. Variable pay, however, can be cumbersome to administrate since it requires other advanced management systems (for example, performance appraisal systems) and makes labor cost budgeting more difficult and less exact. Also, variable pay may not have any significant effect on performance unless it represents a large proportion of the employees' wages. Finally, some trade unions also resist these types of schemes for fear of a negative impact on the minimum wage of their represented employees.

Numerical Flexibility

Aparicio-Valverde et al. [1997, p. 597] states:

> "There seems to be little doubt that employers believe that the increased use of different forms of flexible working time and contractual arrangements is a major development in the drive to be more competitive....However, flexibility is not necessarily a panacea for management, but it comes with built-in costs and problems. The potential increases in competitiveness that a more flexible work arrangement may give may be undermined if these problems are not resolved."

Therefore, a more in-depth reflection is necessary in order to highlight the many possible positive and negative consequences of these practices. It can also help to enhance organizational profits through a reduction in labor costs, partly due to the lower hourly rates often received by nonpermanent employees. However, the reduction of direct labor costs is not the only motivator for using nonpermanent workers [Heather et al., 1996]. Instead, the greater saving is gained as a result of not having to give nonpermanent employees the same, if any, fringe benefits, such as pension contributions or sick benefits. It is also much easier and less costly to terminate the contracts of nonpermanent employees than those of permanent employees [Bielenski et al., 1992; Curson, 1986]. Profitability can not only be increased as nonpermanent contracts, particularly temporary contracts, but also offers employers greater flexibility to deal with fluctuation in customer demands, assimilating a part of labor costs more as variable costs than fixed costs [Nollen, 1996]. Thus, flexible patterns enable managers to match work provision closely to work demands [Brewster et al., 1994]. Using fixed-term contracts is particularly beneficial for organizations that have specific work projects, which they know in advance

will only last a given period of time. Fixed-term contracts allow the firm to meet its work demand without the added expense of terminating the contract when the work comes to an end [Brewster et al., 1997]. Nonpermanent workers can also be moved around in an organization, meeting differing demands at different points in time. As Brewster et al. [1994, p. 171] states:

> "Workers on nonstandard contracts are often more productive as, for example, part-time workers suffer less end-of-the-day fatigue and short-term employees can work under high pressure knowing that it will be for a limited period....There are also potential advantages in the capacity of flexible work to attract or retain skilled and trained personnel who otherwise—through family commitments for example—would be unable to join the workforce."

However, when nonpermanent contracts are used for hiring workers who will carry out highly specialized functions which are important but are required less frequently (for example, highly qualified specialists such as computer programmers), these specialists can demand high pay rates. These increase the wage bill, albeit temporarily, and may create resentment among permanent employees, producing a negative effect on organizational profits [Brewster et al., 1997]. Nonpermanent work can also create costly disruptions in work programs if such workers change organizational allegiance midcontract [Hunter et al., 1993]. Important issues of difficult communications between managerial and nonmanagerial employees have also been noted [Hunter and McInnes, 1992]. Low commitment by nonpermanent employees can be a problem for organizations as it can lead to undesired high staff turnover, thus increasing recruitment costs and the time needed to establish a new person in the job. As Aparicio-Valverde et al. [1997, p. 598] states:

> "Arguably, in a more competitive environment, organizations will have to rely more on the enthusiasm, innovation, customer-orientation and reliability of their employees. When an organization makes only a limited commitment to an individual, it cannot automatically expect to receive full commitment in return. Disaffected or disinterested workers can create substantial competitiveness problems for employers."

There are also concerns about the health and safety of temporary workers as they have little time to learn the job and learn its safety aspects. Empirical research shows the higher incidence of work accidents among temporary employees [François, 1991; Aparicio-Valverde and Masip, 1996]. This may mean high costs for sick payments and compensation for damages. Flexibility can also be used as a cloak for poor management practices (for example, high turnover of short-term workers covering managerial inability to target and motivate them).

In general, "the requirements of flexible working often forces management to establish clearer performance targets and undertake closer and more realistic performance monitoring" [Brewster et al., 1994, p. 168]. That is, the focus will be placed more on the work to be done rather than on the jobs to be filled.

However, the wider diversity of formats of contracts, time distribution, measurement and implementation of variable pay, and so on makes the management of flexible

workforces "administratively more complicated and raises important issues concerning the challenge to managerial skills and assumptions about such issues as recruitment, pay systems, training and work organization" [Brewster et al., 1994, pp. 171-2].

Research Propositions

Many employers, like some economists, believe that flexibility is cheaper or more cost-effective. However, research in the U.S. [Nollen, 1992] concludes that the costs of flexible working may be underestimated and the benefits assumed rather than measured.

The link to performance, therefore, has not been addressed directly. This lack of empirical evidence can be considered normal up to a point since the direct measuring of performance itself presents a number of difficulties [Harper, 1984] and mainly because of the problems associated with determining how much of the performance is explained by flexible working practices. This paper will concentrate on observing relationships between numerical flexibility and firm performance, testing the following proposition.

Proposition: It is expected that the greater the proportion of an organization's workforce employed on numerical flexibility contracts, the more likely the organization is to report turnover in excess of profits.

The data set from which this study will obtain the empirical information includes a wide spectrum of companies across Europe as well as a large number of variables per company. Since previous studies have noted the significant impact of the variables of organizational size, industry sector, and country of origin in most analyses [Brewster et al., 1996; Tregaskis, 1997], we included two secondary propositions to account for the effect of these variables on organizational performance.

Proposition: Organizational size: The larger the organization, the more likely it is to report turnover in excess of profits.

Proposition: Industry sector and country of origin: There will be significant differences in firm performance across industry sectors and countries, reflecting divergent industry and national business markets.

Methodology

To examine the propositions set out in this paper, data will be drawn from the Cranet-E International Survey of Strategic Human Resource Management. Cranet-E is a network of 20 European business schools who have been conducting a collaborative empirical research study of organizational human resource management practice spanning more than 20,000 organizations in 20 European countries. The data is collected from senior personnel specialists using a postal survey. Responses are returned to each national research group for checking and initial coding and then forwarded to Cranfield University for joint coding. Data has been collected on four occasions since 1989.[1]

This paper draws on the most recent Cranet-E data from 1995 and includes 3,730 private sector manufacturing and service organizations employing 100 or more people.

The data covers 12 countries: United Kingdom (825), France (358), Germany (eastern, 170 and western, 370), Sweden (237), Spain (210), Denmark (431), Netherlands (181), Switzerland (177), Ireland (244), Finland (186), and Belgium (341).

Operationalization of Concepts

As a first attempt to study the relationship between firm performance and numerical flexibility, we used the reported gross revenue as a proportion of costs as a measure of firm performance. Five types of numerical flexibility were examined, namely part-time contracts, temporary or casual contracts, fixed-term contracts, subcontracting, and annual hours. Each of these forms of numerical flexibility was measured in terms of the proportion of the workforce employed on such contracts.

Organizational size, sector, and country of operation were used as controls. This enabled us to assess the impact of numerical flexibility on firm performance above and beyond other influential organizational factors. Since the samples did not consist of matched organizations, it is not possible to draw any conclusions regarding the links between firm performance and organizational sector or country. For the purposes of this study, these two factors serve to highlight their effect on firm performance. A more sophisticated measure of firm performance and matched samples would be needed to gain a deeper understanding of this complex relationship. Table 1 shows the operationalization of the variables used in this study.

TABLE 1
Measurement of Variables

Variables	Measurements
Numerical Flexibility: Part-time contracts Temporary/causal contracts Fixed-term contracts Subcontracting Annualized hours	Proportion of the workforce employed on each numerical flexibility contract: 1 = <1 percent 2 = 1 to 5 percent 3 = 6 to 10 percent 4 = 11 to 20 percent 5 = >20 percent 0 = not used
Firm Performance	1 = well in excess of costs 2 = sufficient to make a small profit 3 = enough to break even 4 = insufficient to cover costs 5 = so low as to produce losses
Organizational Size	1 = 100 to 199 2 = 200 to 499 3 = 500 to 599 4 = more than 1,000

TABLE 1 (CONT.)

Variables	Measurements	
Industry Sector (Dummy)	NACE:	
	Energy and water	Banking and finance
	Chemical products	Personal and domestic
	Metal manufacturing*	Transport and communication
	Other manufacturing	Building and civil engineering
	Retail and distribution	Other services
Country (Dummy)	United Kingdom*	Denmark
	France	Netherlands
	Germany, Western	Switzerland
	Germany, Eastern	Ireland
	Sweden	Belgium
	Spain	

Notes: * denotes reference category. NACE denotes (in English) General Industry Classification of Economic Activities Within the European Communities.

Data Analysis

Regression analysis was used to test the significance and strength of the impact of numerical flexibility on firm performance. Table 2 outlines the results of this regression, showing the effect of numerical flexibility, organizational size, industry sector, and country on firm performance.

TABLE 2
Regression Results Showing the Effects of the Variables on Firm Performance

Variables	β	T
Numerical Flexibility		
Part-time contracts	-.0102	.622
Temporary/causal contracts	-.0408	2.551*
Fixed-term contracts	-.0152	.996
Subcontracting	.006	.600
Annualized hours	.004	.256

TABLE 2 (CONT.)

Variables	β	T
Organizational Size	-.103	5.491*
Sector		
Energy and water	-.455	4.842*
Chemical manufacturing	-.340	4.346*
Other manufacturing	-.288	5.300*
Building and civil engineering	-.013	.153
Retail and distribution	-.285	3.797*
Transport and communication	.066	.806
Banking and finance	-.712	6.546*
Personal and domestic	-.272	1.520
Other services	.180	1.701
Country		
France	.247	3.411*
Germany, Western	.217	2.936*
Sweden	-.030	-.365
Spain	.505	5.471*
Denmark	.024	.344
Netherlands	.048	.499
Switzerland	.122	1.337
Ireland	-.134	1.565*
Finland	.402	4.249*
Germany, Eastern	1.078	10.876*
Belgium	.143	1.937

Notes: * denotes $p < 0.05$. $R^2 = .10291$.

The results indicate that only one form of numerical flexibility significantly impacts firm performance. That is, the greater the proportions of temporary workers present in an organization's workforce, the more likely the organization is to report a profit in excess of turnover.

No statistically significant relationship was found between performance and the proportion of part-time contracts, fixed-term contracts, subcontracting, or annualized hours. However, the fact that these forms of flexibility are less used than temporary work in absolute terms makes them more difficult to appear as key variables affecting firm performance.

Organizational size, sector, and country effects were also found. Larger organizations were more likely to report profits. As mentioned earlier, this confirms the work of other studies.

There were significant differences between metal manufacturing organizations and other manufacturing (that is, energy and water, chemical manufacturing, and other manufacturing) and service firms (retail and distribution, banking and finance) on firm performance. In all cases, the manufacturing and service sector organizations reported greater profits compared with metal manufacturing organizations. Country differences were also apparent, with German (western and eastern), Finnish, Spanish, and French organizations reporting less profits compared with United Kingdom-based organizations. As discussed earlier, these results reflect the divergence in national and industry business patterns. No significant differences in firm performance were found between United Kingdom-based organizations and Swedish, Danish, Dutch, Swiss, Irish, or Belgian organizations.

Discussion and Further Research

The evidence shown by the regression analysis in this study revealed a positive relationship between levels of temporary workers and firm performance, measured by reported gross revenue as a proportion of costs. This would support the argument that temporary workers and firm performance are linked.

However, one of the limitations of this work is that we are uncertain of the direction of this relationship. Specifically, does the use of temporary workers increase organizational performance as a consequence of allowing fluctuation in manufacturing or allowing service demands to be met? Does this ensure a more efficient and effective use of labor? Alternatively, do profitable companies institute the use of temporary workers to meet increased customer demands arising from their successful performance? The causal nature of this relationship warrants further investigation.

The evidence also found that part-time, fixed-term, subcontracting, and annualized hours usage do not affect firm performance. These results are likely to reflect the complex nature of the link between flexibility and financial outcomes, making it unreasonable to assume direct correlational relationships. It could be argued that numerical flexibility is a value-added activity which indirectly impacts firm performance, whereby its effects are mediated by other organizational contingencies. For example, how it is introduced and managed, salary saving versus lower employee commitment?

The short-term versus long-term effects of numerical flexibility raises the question of whether flexible working practices are used as an *ad hoc* immediate response to market conditions or as the result of a strategic approach to personnel management. As such, the

introduction of numerical flexibility needs to be considered as a strategic approach to personnel issues [Piore and Sabel, 1985]. Otherwise, there is a danger that the side effects, which may be negative, will be overlooked, thus making the use of numerical flexibility a cost as opposed to a benefit. For example, it has been argued that nonpermanent employees are often marginalized in terms of training and development opportunities. Reduced employment security may also create problems in terms of how employers can encourage employee commitment and job satisfaction. These are factors often linked to employee performance. Lack of job security also has wider societal implications linked to public funding of pensions and social security. Differing national labor legislation and policy reflect how these issues are perceived and handled across Europe. Consequently, using flexible work becomes not only an issue of management preference, but social acceptability.

Further research is therefore needed in the following areas:

1) operationalization of measures of firm performance;
2) measurement of functional and financial flexibility;
3) real financial costs and benefits of each form of flexibility;
4) search for tools to study the contingencies where using different types of flexibility is convenient for the firm and the individual employees; and
5) reactiveness or proactiveness in current flexible working practices.

Footnotes

1. For further details on this international survey, see Brewster et al. [1996] and Brewster and Hegewisch [1994].

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