EXTERNAL AND INTERNAL LABOR FLEXIBILITY IN SPAIN: A SUBSTITUTE OR COMPLEMENTARY EFFECT ON FIRM PERFORMANCE?

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ABSTRACT

The contingent perspective in strategic human resource management maintains that it is necessary to observe the interaction between human resource practices by encouraging external and internal labor flexibility. An issue still to be resolved is whether this fit leads to a complementary or substitute effect on firm performance. In order to contribute to this debate, in this study we examine how the relationship between external labor flexibility and firm performance is moderated by the degree of internal labor flexibility. To do this, we use the Survey on Business Strategies of the Ministry of Industry, Tourism and Trade on a sample of 1,403 Spanish industrial firms. The results show the existence of a substitute effect between the two types of labor flexibility. Using them simultaneously does not lead to greater benefits for firms.

Keywords Labor flexibility; strategic human resource management; internal fit; firm performance

1. INTRODUCTION

Since the '90s, greater international competition, the speed of technological change and more volatile and segmented markets in Europe have contributed to the demand by business people for greater labor flexibility. In this context, research interest has been aimed at analyzing human resource practices, increasing employees' skills and promoting their commitment as the real causes of greater labor flexibility. This approach focuses on the human capital existing in the firm, that is, in the knowledge and skills of the current employees, as the best means to achieve labor flexibility (Frenkel and Kuruvilla, 2002; Groot and Van Den Brink, 2000; Huang and Cullen, 2001). It involves high levels of skills and a collaborative approach to work, and uses high-quality labor. In accordance with this approach, human resource practices associated with functional flexibility are encouraged, including the selection of employees with a high level of education, extensive training and the use of self-managed teams or job rotation (Atkinson, 1984; Groot and Van Den Brink, 2000; Kalleberg, 2001; Michie and Sheehan, 2001,2005). This approach has been called internal labor flexibility. However, reality shows us that not all firms have faith in this approach. An important proportion of firms have adopted human resource practices based on temporary contracts and part-time work as the predominant approach in fostering competitiveness through labor flexibility. This second approach comprises human resource practices seeking numerical flexibility (Atkinson, 1984; Michie and Sheehan, 2001,2005; McIlroy, *et al.,* 2004; Valverde *et al.,* 2000). This is a market-focused approach, in which flexibility is the result of external movement of employees. This approach has been called external labor flexibility.

Concerning the two approaches, in the last few years recourse to external labor flexibility has become the central core around which employment policy – seeking a solution for unemployment – in the European Union has been based (Albert *et al.,* 2005; EC,

2005,2004). In particular, in Spain, firms have developed external labor flexibility largely through temporary contracts, rather than through other practices such as part-time work or subcontracting (EC, 2005,2004; Sánchez and Toharia, 2000; Ruiz-Santos *et al.,* 2003). The generalization of this type of contract in Spain has led to the so-called "temporary contract culture" (Toharia, 2005). As a result, much of the empirical research in the Spanish sphere focuses on characterizing temporary jobs (e.g. Alba-Ramirez, 1994; Lloréns-Montes *et al.,* 2004; Toharia, 2005) and identifying the reasons why they are intensively used (e.g. Amuedo-Dorantes, 2001; Bentolila and Dolado, 1994; Ruiz-Santos, *et al.,* 2003). However, in Spain, as well as in other countries, the empirical literature analyzing the effect of temporary contracts, as the predominant form of external labor flexibility, on firm performance is still scarce (Forrier and Sels, 2003; Lepak *et al.,* 2003).

At the same time, although both labor flexibility approaches are conceptually different, the issue of whether they are mutually exclusive in business practice has still not been resolved. However there is a degree of agreement on the fact that the different human resource management practices and policies must be inter-related (Baird and Meshoulam, 1988; Becker and Gerhart, 1996; Huselid, 1995; MacDuffie, 1995). These inter-relationships mean that the effect of a practice on firm performance can vary significantly depending on the implementation of another series of practices. The existence of this internal fit is included in the contingent view of strategic human resource management (Becker and Gerhart, 1996; Delery and Doty, 1996). In accordance with the contingent approach, and in the particular subject of the study of labor flexibility, some researchers (e.g., Capelli and Neumark, 2004; Kalleberg, 2001; Lepak and Snell, 2002; Lepak *et al.,* 2003; Tüselmann, 1996) state that external and internal labor flexibility are interdependent approaches and call for research on strategic human resource management to consider the effect of this fit on firm performance.

In this respect, there are two alternative hypotheses explaining the nature of the effect of fit on firm performance. While authors such as Appelbaum *et al.*, (2000) and Tüselmann (1996) maintain the existence of a "substitute effect" between the two labor flexibility approaches, Kalleberg (2001) and Lepak *et al.,* (2003), by contrast, postulate the existence of a "complementary effect". The key question is whether the two approaches to achieving labor flexibility are compatible. The scarcity of empirical evidence makes it difficult to recognize which of the two effects predominates (Capelli and Neumark, 2004; Kalleberg, 2001). The purpose of this study is precisely to examine this issue. Given the generalization of temporary contracts among Spanish firms, we analyze the effect of external labor flexibility (represented by the use of temporary contracts) on firm performance, depending on the level of internal labor flexibility.

We then present an overview of the literature on labor flexibility, the different types of labor flexibility and their particular implementation in Spain. Following this, we explain the importance of considering the fit between the different human resource practices and policies, focusing our attention on the interaction that exists between external and internal labor flexibility and formulating our research hypotheses. In the empirical section, we describe the sample, the measurements used to define the variables and the statistical procedure developed for examining the proposed hypotheses. Deriving from this analysis, the results obtained are presented and interpreted. Finally, we explain the conclusions of the study, its theoretical and practical implications for business management and future lines of research stemming from this study.

2. THEORY AND HYPOTHESES

2.1 Two approaches to achieving labor flexibility: the Spanish model

Faced with the incessant increase in competition and uncertainty, organizations need the capacity to adapt quickly to market fluctuations and changes in their environment to maintain their competitiveness and survive. This requirement for flexibility has appeared in various organizational aspects, affecting competitive strategies, production methods, the design of organizational structures and human resource management (Atkinson, 1984; MacDuffie, 1995; Michie and Sheehan, 2001.2005; Roca-Puig *et al.,* 2005; Youndt *et al.,* 1996). In this last aspect, capacity for adaptation is defined as labor flexibility. This concept covers very different kinds of human resource management policies and practices, which have been grouped into two basic categories:[1] internal or functional flexibility and external or numerical flexibility (Atkinson, 1984; Kalleberg, 2001; McIlroy, *et al.,* 2004). These two types of labor flexibility are linked, respectively, with the typical "soft" and "hard" models (Truss *et al.,* 1997) established in the literature on strategic human resource management. The first emphasizes employees' commitment to the organization and, therefore, internal flexibility, while the second emphasizes control of employees and cost reduction (Bacon and Blyton, 2001; Blyton and Morris, 1992; Cappelli and Neumark, 2004; Kalleberg, 2001).

Looise *et al.,* (1998) and Michie and Sheehan (2001) relate the concept of ***internal labor flexibility*** with employee functional flexibility, understood as the ease with which people can move between tasks and jobs in the organization. Internal flexibility refers to the effort made by the firm to incorporate and develop workers' competences and skills, so that a worker can be assigned to other jobs or departments within the firm. From this perspective, it is believed that labor flexibility is determined according to the extent of employee knowledge and skills. Organizations can adopt various human resource management practices in order to improve internal flexibility. These efforts may be directed towards hiring employees with a high level of education, who have greater skills and knowledge, and improving the

capabilities of employees already hired by the firm through continuous training (Delaney and Huselid, 1996; Smith *et al.,* 2005; Way, 2002). The firm's efforts to select employees with a high level of education and investment in training are of great importance in this context because the human capital generated by these two elements is critical to the development of internal flexibility (Frenkel and Kuruvilla, 2002; Huang and Cullen, 2001). Employees with higher levels of education are likely to be more receptive to new ideas and change (Smith *et al.,* 2005). In addition, selection and training are interdependent practices (Delaney and Huselid, 1996; MacDuffie, 1995; Youndt et al; 1996). These two practices interact with each other to produce greater employability. A higher level of education and greater investment in training raises the level of employability of employees, encouraging mobility between jobs within a firm (Groot and Van Den Brink, 2000). This improved employability means that employees can adapt better to their work and to technical, economic and production changes, thus fostering their internal flexibility.

External labor flexibility concerns the capacity to change the number of workers hired in order to quickly and efficiently adapt the volume of work to changes in demand. The benefits associated with this policy are focused on a greater capacity to adapt and on the lower fixed labor costs incurred (Matusik and Hill, 1998). At the same time, this policy can be counterproductive if its use works against the firm's commitment to hiring, developing and retaining the most skilled workers (Appelbaum *et al.,* 2000). Although this kind of labor flexibility can take the form of subcontracting or part-time working, in Spain it is normally achieved through temporary contracts (Ruiz-Santos *et al.,* 2003; Toharia, 2005). The two basic reasons for the use of temporary contracts are to shield regular employees from unemployment when the employer's demand is temporarily reduced and to have the power to deal with greater variability in production volume without the need to increase the size of the fixed workforce (Gramm and Schnell, 2001; Valverde *et al.,* 2000).

The generalized use of temporary contracts in Spain needs to be understood in its own socioeconomic context. It is necessary to locate issues of flexibility more securely within both existing national regulatory and institutional frameworks (Blyton and Martínez-Lucio, 1995; Kalleberg, 2001). The serious unemployment situation in the '80s in Spain led to temporary contracts becoming generally permitted (Toharia, 2005) without the need to give reasons. Consequently, even after the regulation reforms of 1994, 1997 and 2001, completely recovering the principle of causality and restricting the use of temporary contracts, according to the EC (2005), Spain is still the European country with the highest use of this kind of contracts. These high levels of temporary employment are resistant, partly due to the extremely high dismissal costs entailed by a permanent contract in Spain, the use of trade unions to constrain employers' discretion over issues such as the movement of workers through jobs and the use of some types of temporary contracts to hire workers without bearing the cost of dismissals (Blyton and Martínez-Lucio, 1995; Toharia, 2005). In addition to these economic reasons, Spanish employers have become so used to temporary contracting that a temporary culture has been created, that to a certain extent, has fostered its own overuse. Temporary contracts are used because everybody uses them (Toharia, 2005). The growing interest aroused among researchers in examining the use of temporary contracts as a practice representing external labor flexibility is therefore understandable (e.g. Albert *et al.,* 2005; Amuedo-Dorantes, 2001; Lloréns-Montes *et al.,* 2004; Ruiz-Santos, *et al.,* 2003). However, little empirical evidence can yet be found about the business benefits and disadvantages associated with the use of temporary contracts. Although studies have been conducted at aggregate labor market level (e.g. Toharia, 2005) and at employee level (e.g. Valverde *et al.,* 2000), studies at firm level complementing these two are required (Kalleberg, 2001).

In the Spanish case, at firm level the studies by Sánchez and Toharia (2000) and Díaz-Mayans and Sánchez (2004) should be highlighted. Sánchez and Toharia (2000) use the

Survey on Business Strategies -Encuesta Sobre Estrategias Empresariales (ESEE)- by the Ministry of Industry, Tourism and Trade for a sample of 962 firms during the period 1990 to 1994, and show that temporary contracts have a negative effect on labor productivity. In the same way, Díaz-Mayans and Sánchez (2004), using a sample of 180 firms from the ESEE from 1999 to 2001, show that temporary contracts have a negative effect on the technical efficiency of Spanish industrial firms. According to these authors, an increase in the proportion of temporary contracts has a negative effect on the firm's workers' average level of effort. The main reason for this negative effect can be found in the fact that this temporary contract policy breaks the stability of relations between workers and the firm, affecting the overall level of involvement of the workers with the firm and their commitment to it. The low level of qualification of temporary employees and the short period of time they remain with the firm are also factors aggravating the situation.

2.2 The contingent view of strategic human resource management

Despite the unquestionable value of isolated analyses of internal and external labor flexibility, human resource management should be observed holistically, considering the inter-relationships between human resource management practices linked to labor flexibility. This leads us to strategic human resource management. Wright and McMahan (1992) define strategic human resource management as the system of human resource management policies and practices developed to achieve organizational objectives. Its two basic features are implicit in this definition.

Firstly, human resource management must be observed as a system – an integrated whole – in which the different practices are inter-related (Baird and Meshoulam, 1988; Becker and Gerhart, 1996; Huselid, 1995; MacDuffie, 1995). The focus of attention is the set or combination of the various practices, and studying any of them independently is meaningless. In addition, it is also important to examine the inter-relationships between

human resource management practices and other organizational characteristics, such as firm strategy (Baird and Meshoulam, 1988; Delery and Doty 1996). The underlying logic is the general assumption that the congruence between various human resource practices (internal fit) and between these practices and other contextual factors (external fit) will improve firm performance. The contingent approach has been the most common one in the empirical studies of strategic human resource management (e.g. Lepak *et al.,* 2003; MacDuffie, 1995; Youndt *et al.,* 1996).

Secondly, the objective of strategic human resource management is to contribute to the improvement in firm performance, the basic objective of any organization (Becker and Gerhart, 1996). Many studies have tried to demonstrate its effect on firm performance as a means of justifying its importance for competitiveness (e.g. Huselid, 1995; Delery and Doty 1996). In this respect, the contingent perspective maintains that a certain human resource management practice produces an effect on firm performance of a different intensity, depending on the use of other practices, organizational characteristics or contextual factors (Roca-Puig *et al.,* 2005). The implementation of contradictory practices will make negative synergies appear, reducing the contribution of the human resource management system considered as part of business performance as a whole (MacDuffie, 1995; Marchington and Grugulis, 2000). On the other hand, the implementation of complementary practices will make positive synergies appear, increasing the contribution of the human resource management system to firm performance. Transferring the contributions of the contingent approach to our research, our focus of interest is the study of external flexibility and its effect on business performance, analyzing the degree to which internal flexibility acts as a variable moderating this effect.

2.3. The effect of the fit between external and internal labor flexibility on firm performance

The application of the contingent approach to labor flexibility has a solid technical and empirical basis, as the different human resource practices associated with flexibility are inter-related. In this respect, it must firstly be highlighted that many studies have demonstrated the existence of a positive inter-relationship between the two basic policies linked to internal flexibility – level of education and the training received by employees (De Saá-Pérez and García-Falcón, 2002; Delaney and Huselid, 1996; Groot and Van Den Brink, 2000). Both the use of selection procedures providing a firm with a group of qualified employees and the emphasis on continuous training lead to high skill levels. Secondly, concerning the relationship between the different types of flexibility practice, Ruiz *et al.,* (2003) and Forrier and Sels (2003) show that there is a negative inter-relationship between the use of temporary contracts and investment in training by the firm. In other words, firms with high external flexibility show less interest in training their employees. However, Osterman (2000) and Bacon and Blyton (2001) indicate the existence of a positive inter-relationship between both types of labor flexibility. According to these authors, nowadays firms try to combine practices associated with both types of labor flexibility, given that firms with a high level of external flexibility are, at the same time, those which invest most in and are most concerned with training their employees.

These studies reveal the importance of understanding human resource management, considering all labor flexibility practices as a whole, and examining the interdependence between external and internal types of flexibility (Cappelli and Neumark, 2004; Kalleberg, 2001, Lepak and Snell, 2002). However, these studies have focused on analyzing the inter-relationships between both types of flexibility without dealing with their influence on results. Despite the consensus among the researchers about the existence of a fit between the different practices associated with labor flexibility, agreement does not yet exist on how this interaction affects firm performance. This issue is extended by the scarcity of empirical evidence at

organizational level (see Lepak *et al.*, 2003 as an exception). Basically, arguments exist for two alternative effects: substitute and complementary effects (Cappelli and Neumark, 2004; Lepak *et al.,* 2003).

The substitute effect between external and internal flexibility maintains the existence of a series of costs and compensations associated with trying to improve a particular kind of labor flexibility (Tüselmann, 1996). This incompatibility has been a recurring idea in the literature, with authors examining the effectiveness of the simultaneous implementation of the "soft" and "hard" models in human resource management (e.g. Becker and Gerhart, 1996; MacDuffie, 1995; Huselid, 1995). According to these authors, in a firm context like the one described by Osterman (2000) and Bacon and Blyton (2001), characterized by high levels of both external and internal labor flexibility, it is unlikely that the firm will achieve very good performance. The incongruence between the simultaneous use of "soft" practices – emphasis on training employees – and "hard" practices – temporary contracts – leads to the appearance of a negative interaction between them, which will reduce firm performance. Highly skilled employees and job security are basic requirements for the soft human resource management model. Because of this, the greater the job insecurity generated by temporary contracts, the lower workers' commitment to the firm, and labor productivity and firm profitability will therefore be reduced.

In addition, as in the Spanish case, because the majority of temporary employees contracted by firms are characterized by a low educational level, low wages, and the firms that invest most in training are the ones that least use temporary contracts (Albert et al., 2005), it is difficult to implement the soft model (Diaz-Mayans and Sánchez, 2004). Moreover, in the Spanish context there are unresolved shortcomings in training provision and employee qualifications that continue to hinder the development of internal flexibility. In these labor market conditions, it is problematic for managers to employ people on precarious (and often

poorly paid) contracts and, at the same time, seek employee commitment and high quality output (Blyton and Morris, 1992). As a result, there is a conflict between the use of external flexibility and the practices associated with the "soft" model (Michie and Sheehan, 2001). The goal of promoting external flexibility is not compatible with the aim of enhancing employees' ability to perform a variety of jobs through the acquisition of skills (Arulampalam and Booth, 1998). In addition, Appelbaum et al., (2000), Arnone et al., (2005) and Arulampalam and Booth, (1998) declare that greater firm investment in training workers will be more efficient when the firm follows a policy of permanent employment contracts, because the firm can amortize its investment.

Ultimately, a high level of external flexibility does not provide a favorable business context for benefiting from the promotion of internal flexibility, and vice-versa. A firm will probably choose an employment context in which only one of these types of flexibility will predominate. Their antagonism means that, the greater a firm's internal flexibility, the smaller the positive effect of external flexibility on performance, which could even turn out to be negative. At the same time, the lower a firm's internal flexibility, the greater the positive effect of external flexibility on performance. The final result of the appearance of this substitute effect would be the existence of a significant difference in the effect of external flexibility on firm performance, depending on the level of internal flexibility, so that:

Hypothesis 1. When internal flexibility is low, external flexibility exercises a greater positive effect on firm performance than in a situation with a high level of internal flexibility (substitute effect).

Another series of authors maintain the existence of a complementary effect between the external and internal types of labor flexibility (e.g. Davis-Blake and Uzzi, 1993; Jiang and Cheng, 2004; Kalleberg 2001; Lepak *et al.,* 2003; Matusik and Hill, 1988). According to these authors, the business context described by Osterman (2000) and Bacon and Blyton

(2001) would be the most beneficial one. The original idea of this effective combination is the core *vs*. peripheral employee model put forward by Atkinson (1984) and Atkinson and Meager (1986), in which a firm can make both types of flexibility compatible by making an explicit distinction between these two categories of workers. So, while the firm would concentrate its efforts on training and developing its core employees, providing the firm with internal flexibility, temporary contracting would be concentrated on peripheral workers, providing the firm with external flexibility. In this way, firms can take advantage of both types of labor flexibility, maximizing their benefits (Kalleberg, 2001; Lepak *et al.,* 2003). In addition, it may be that job security is not a necessary condition for workers' commitment to the firm, which would make it possible for the benefits of both types of labor flexibility not to be mutually exclusive (Cappelli and Neumark, 2004).

Given that, at firm level, there is very little evidence of the appearance of this complementary effect, we will detail two recent empirical studies which support this proposition, if only partially. Firstly, for a sample of 148 large North American firms, Lepak *et al.,* (2003) obtain moderate empirical evidence that economic performance is better for firms that simultaneously use external and internal flexibility. These authors conclude that there is compatibility between both types of labor flexibility. On the other hand, based on a sample of 114 industrial Chinese firms, Jiang and Cheng (2004) obtain similar results when they examine the effect of both types of labor flexibility on employee performance. However, when they use an economic performance indicator, they conclude that the most profitable combination appears when high internal flexibility is combined with low external flexibility. Given the divergence of results depending on the performance indicator used, they also provide moderate empirical evidence on the potential usefulness of combining both types of labor flexibility.

Ultimately, the identification of a complementary effect means that, the greater a firm's internal flexibility, the greater the positive effect of external flexibility on performance. A firm must establish a labor context in which there is a high level of both types of flexibility. Firm performance will be better in organizations with high external and internal flexibility than in other organizations that emphasize only one of these types of labor flexibility. The final result of the appearance of this complementary effect would be the existence of a significant difference in the effect of external flexibility on firm performance, depending on the level of internal flexibility, so that:

Hypothesis 2. When internal flexibility is high, external flexibility exercises a greater positive effect on firm performance than in a situation with a lower level of internal flexibility (complementary effect).

3. METHODOLOGY

3.1. Sample

To empirically test the theoretical hypotheses put forward, we used the Survey on Business Strategies (ESEE)[2] carried out by the Ministry of Industry, Tourism and Trade. The reference population for the ESEE is made up of firms with 10 or more workers in manufacturing industry, excluding industrial activities related to oil refining and the treatment of fuels. The geographical area includes Spanish territory, and all the variables are measured with an annual time reference. In our study, we use data from 2002, which is the last period when the survey was carried out. From the original sample of firms (1,635 firms), cases with missing data for any of the variables included in the study were eliminated (90 firms), together with cases with coding errors (125 firms) and non-standard cases (17 firms) that could devalue the information provided for that year, such as firms affected by takeover, merger or separation processes. The final sample used in this study was 1,403 firms.

Distribution by sector of activity can be seen in Table 1, both through the Standard Industrial Classification system (SIC) and the Spanish National Classification of Economic Activities – Clasificación Nacional de Actividades Económicas (CNAE)-.

Insert Table 1

3.2. Measurements

Control variables. Following the example of studies by Huselid (1995), Lepak *et al.,* (2003) and Way (2002), six control variables were selected: age of the organization, its size, its degree of dependency, its sector of activity, the labor intensiveness of the firm and its innovation intensiveness. Age was calculated as the number of years between the establishment of the firm and the date the survey was compiled. Size is defined by the number of employees. The level of dependency of the firm is defined as the percentage of the firm's capital held by another firm. For the industrial sector, the CNAE classification was adopted, distinguishing 13 sectors of activity. As this is a categorical variable, it is necessary to identify a reference category, which will not be included in the regression analysis. In our case, we chose the metalwork and metal products manufacturing sector. The other categories in the industrial sector are introduced as dummy variables, taking the value of 1 when the firm belongs to the corresponding sector and 0 otherwise (see Table 2). The labor intensiveness variable was calculated as the ratio between staff costs and total net assets. Finally, the innovative inclination of the firm was calculated as the percentage coefficient between R+D spending and the firm's sales.

Independent variables. In this study, there are three independent variables, each related to an external or internal labor flexibility practice. Thus, temporary contracting (TEMPOR) is calculated as the ratio between employees with temporary contracts – number

of casual workers- and the total number of employees at the firm. Concerning the two practices representing internal labor flexibility, we have calculated the educational level of the employees (EDUC) using the ratio between the number of workers with a high –engineers and graduates- or intermediate –experts, qualified assistants and middle level engineers-educational level and the total number of employees in the firm. Investment in training (TRNING) is calculated as the ratio between spending on training and the total number of employees at the firm.

Dependent variables. Following the indications of Dyer and Reeves (1995) and Way (2002), we identified three different levels for measuring firm performance: employee performance, organizational performance and economic performance. To measure employee performance we consider the level of absenteeism of employees (ABSENT), measured by the number of hours not worked per year (because of industrial dispute, occasional days off work, etc.) per person employed by the firm. Concerning organizational performance, we follow Way (2002) in choosing labor productivity (PRODUCTV), measured as the logarithm of the ratio between sales and staff costs. Finally, concerning economic performance, we chose return on sales (ROS). Table 2 shows all these variables – control, independent and dependent variables – and their respective descriptive statistics. Table 3 shows the correlation coefficients between the variables.

Insert Table 2

Insert Table 3

3.3. Statistical procedure

The contingent view of strategic human resource management maintains that there is an interactive relationship between human resource management practices (Becker and Gerhart, 1996; Delery and Doty 1996), and it is appropriate to use moderated regression analysis to study this (Venkatraman, 1989). To examine the theoretical hypotheses put forward, we follow the recommendations made by Aiken and West (1991). So, the independent variables were centered to prevent multicolinearity problems between the interaction terms and the variables making them up. Model 1 is limited to examining the direct and individual effect of the control variables and the human resource management variables on firm performance. The 17 control variables considered and the 3 independent variables – TEMP, TRNING and EDUC – appear in Model 1. In Model 2, similarly to previous studies (e.g. Huselid, 1995; Lepak *et al.,* 2003), possible second-order interactions between the different external and internal labor flexibility practices were added, forming three interaction terms in our study -TEMPxTRNING, TEMPxEDUC and TRNINGxEDUC.

To empirically check the contingent hypotheses formulated in this study, we take Model 2 as our base and calculate the simple regression lines of the external flexibility effect (principal variable) on firm performance (dependent variable) depending on the level of internal flexibility (moderating variable). This involves dichotomizing the two internal labor flexibility variables, choosing a standard deviation above and below the corresponding mean values for investment in training and the educational level of employees. The high-high combination in both variables (TRNING: 185.827; EDUC: 0.146) provides us with a high internal labor flexibility scenario. By contrast, the low-low combination provides us with a low internal labor flexibility scenario (TRNING: -185.827; EDUC: -0.146). Calculating the simple regression lines makes it possible to recognize the effect of external flexibility on business performance in each of the two scenarios. The direction of the effect will be given by the sign of the regression coefficient (slope). The intensity of the effect will be given by the

absolute value of the regression coefficient and its significance will show us whether it is statistically different from zero (Aiken and West, 1991). Likewise, the joint effect of both types of flexibility on firm performance will be analyzed, based on the graphic representation of the simple regression lines.

Finally, the two hypotheses put forward in the theoretical section are tested, based on the *t*-test of the difference between the regression coefficient (slope) between a pair of simple regression lines. This test enables us to detect whether the slopes of a pair of simple regression lines differ from one another (Aiken and West, 1991). Hypothesis 1 will be confirmed if the slope of the simple regression line for the effect of external flexibility on firm performance is more positive in the low internal flexibility scenario than in the high internal flexibility scenario. Hypothesis 2 will be confirmed if the slope of the simple regression line for the effect of external flexibility on business development is more positive in the high internal flexibility scenario than in the low internal flexibility scenario.

4. RESULTS

Table 4 shows the results of the regression analysis carried out for the three firm performance indicators considered in our study. For each model constructed, its determination coefficient (R^2), the significance test (F) and the respective regression coefficients for the variables introduced are presented. The analysis of Model 2 provides empirical evidence that supports the basic premise of the contingent perspective: there is significant interaction between the different human resource management practices. This is the central reason for the importance of examining these practices in an integrated way, introducing their joint effect and not limiting ourselves to analyzing their direct effects, which in our case would correspond to the examination of Model 1. The conclusion can be very diverse. For example, if we were to examine the effect of temporary contracts on return on sales, considering only

Model 1 we would reach the conclusion that external flexibility (0.014) does not affect financial results. By contrast, if we introduce the interaction between temporary contracts and the other two internal flexibility practices, we can show that the three interactions (TEMPxTRNING: -0.069; TEMPxEDUC: -0.052; TRNINGxEDUC: 0.052) have a significant effect on financial results. Consequently, external flexibility has a clear effect on financial results, although moderated by the internal flexibility variables.

Insert Table 4

The next step is to calculate the simple regression lines for the effect of external flexibility on firm performance, depending on high and low levels of internal labor flexibility. The results of this analysis are shown in Table 5. Concerning employee performance, it is demonstrated that in a high internal flexibility scenario, external flexibility does not significantly affect employee absenteeism. By contrast, external flexibility has a significant, negative effect (-16.383) on employee absenteeism in a low internal flexibility scenario. Concerning organizational performance, although a change in the direction of the effect of external flexibility on labor productivity can be seen, depending on the level of internal flexibility, it is not significant in either of the two scenarios. Concerning financial performance, external flexibility has a significant effect on return on sales: negatively (-0.179) in a high internal flexibility scenario and positively (0.126) in a low internal flexibility business context. Ultimately, in a firm with a high level of internal labor flexibility, an increase in external flexibility significantly reduces return on sales; while in a firm with a low level of internal labor flexibility, an increase in external flexibility reduces absenteeism and increases return on sales.

Insert Table 5

The hypotheses put forward are tested using the statistical values of the t statistic of the difference between a pair of simple regression lines shown in Table 6. These hypotheses require a comparative analysis of the two contexts – high and low internal labor flexibility. In addition, we also need to remember the values of the regression coefficients shown in Table 4. The necessary condition for the confirmation of Hypothesis 1 is for the regression coefficient in the low internal flexibility scenario to be positive and significantly greater than for the high internal flexibility scenario. As can be seen in Table 5, this first requirement is met for the three firm performance indicators. The sufficient condition is that there is a significant difference between the values of the regression coefficients for the two types of labor flexibility. This second condition (see Table 6) is met only in the labor productivity (2.144) and return on sales (4.290) indices. Consequently, Hypothesis 1 is confirmed when the dependent variables are the indicators for organizational and financial performance. In these cases, a substitute effect can be seen between the two types of labor flexibility. The necessary condition for the confirmation of Hypothesis 2 is for the regression coefficient in the high internal flexibility scenario to be positive and greater than for the low internal flexibility scenario. As can be seen in Table 5, this first requirement is not met for any of the three firm performance indicators. Therefore, as the first requirement is not verified, we must conclude that Hypothesis 2 is not confirmed. There is no complementary effect between the two types of labor flexibility. Ultimately, the results appear to strongly support the existence of a substitute effect between external and internal flexibility.

Insert Table 6

From a descriptive point of view, the graphic representation of the simple regression lines allows us to identify the most beneficial and the most damaging combinations of the two types of labor flexibility for an organization. This joint effect of internal and external labor flexibility is explained below for each of the firm performance indicators. The firm performance indices shown in these figures were calculated from the high and low values for labor flexibility, defined respectively by a standard deviation above (0.199) and below (-0.199) their mean value (see Table 1).

Figure 1 shows how the combination that produces least absenteeism (1.551) – the most beneficial – appears when there is high external flexibility together with low internal flexibility. On the other hand, the highest level of absenteeism (8.071) is suffered by the most inflexible firms, where there is low labor flexibility, both external and internal. In turn, flexible firms – those which simultaneously pursue both external and internal flexibility – show an intermediate level of absenteeism (5.454). In addition, the presence of a turning point in the effect of temporary contracts on employee absenteeism appears. The simple regression lines for high and low internal flexibility cross when external flexibility reaches the value of -0.069. Up to this level of external flexibility, the worst firm performance (greatest absenteeism) is found in firms with low internal flexibility, while, once this level has been exceeded, it is the firms with high internal flexibility that suffer a greater absenteeism rate. Firms with low internal flexibility therefore show the highest and lowest absenteeism indices. In a low internal flexibility scenario, temporary contracts are shown to be a highly effective practice concerning the level of employee absenteeism.

Insert Figure 1

Figure 2 shows how the combination that produces the lowest level of labor productivity (1.210) is shown when low levels of both types of labor flexibility are present. In other words, the least flexible firms show the lowest productivity indices. By contrast, the highest level of labor productivity (1.495) is enjoyed by firms with high internal flexibility and low external flexibility. Flexible firms, meanwhile, show an intermediate value for labor productivity (1.373). This graph does not show a turning point, as the two regression lines do not cross within the range of external flexibility values. It provides evidence that, for any level of external flexibility, a business context characterized by high internal flexibility always leads to greater labor productivity than a low internal flexibility scenario. The greatest difference in labor productivity – 0.285 – between the two internal flexibility scenarios is observed at a low level of external flexibility. This disparity decreases with the increase in external flexibility, until it reaches a minimum difference of 0.083. Ultimately, it is observed that labor productivity depends, above all, on the degree of internal flexibility and not so much on the degree of external flexibility. There is a strong positive association between internal flexibility and labor productivity.

Insert Figure 2

Figure 3 shows how the combination of high levels of both types of labor flexibility produces the lowest return on sales (0.050). In other words, flexible firms have the poorest financial performance. However, a very similar result (0.051) is also obtained by the more inflexible firms. The most beneficial combinations appear in hybrid scenarios, especially when a high internal flexibility business context is combined with low external flexibility (0.122). This diagram shows the presence of a turning point in the effect of temporary contracts on financial performance. The simple regression lines for high and low internal

flexibility cross when external flexibility reaches the value of 0.032. Up to this level of external flexibility, the best financial performance is shown in a business context with high internal flexibility, while, once this level is exceeded, it is the business context with low internal flexibility that obtains better performance. Therefore, firms with high internal flexibility show the highest and lowest return on sales ratios. In a high internal flexibility scenario, external flexibility appears as a strongly counterproductive decision.

Insert Figure 3

In general, it must be highlighted that although flexible firms – those simultaneously showing both types of labor flexibility – are not the most effective, and even obtain the worst financial performance; at the same time it is shown that the most inflexible firms – those which do not implement either of these two types of labor flexibility – obtain the highest absenteeism index, the lowest labor productivity index and a very mediocre return on sales ratio, similar to the worst of those obtained by flexible firms. These results indicate the need for labor flexibility in our times as a mechanism for improving firm performance.

5. CONCLUSION

The intensive use of temporary contracts as an external labor flexibility practice is a representative feature of the Spanish labor market. Its institutionalization in the Spanish business context makes the examination of its effect on business competitiveness a priority. In this paper, we have approached the study of external labor flexibility from the contingent perspective of strategic human resource management. This leads us to introduce the fit between the two types of labor flexibility: external and internal. This integrated view of human resource management allows us to recognize whether bringing the two types of labor

flexibility together in an organization produces a complementary effect on business performance or whether, by contrast, a substitute effect appears. In this study, the appearance of these effects has been examined exhaustively, based on the use of three business performance indicators: the level of employee absenteeism, labor productivity and return on sales. Hence, the results of this allow us to determine whether the two types of labor flexibility are compatible, and to identify the most appropriate fit and combination between external and internal labor flexibility. This is a key issue in human resource management.

In this respect, internal flexibility is shown to moderate the effect of external flexibility on firm performance. Specifically, it is confirmed that, in a business context of high internal flexibility, an increase in external flexibility produces a negative effect on the financial return on sales ratio. On the other hand, a positive effect appears in a business context of low internal flexibility, because an increase in external flexibility reduces the level of worker absenteeism and increases the return on sales ratio. In addition, a substantial difference between these negative and positive effects is shown. Thus, it is demonstrated that the effect of external flexibility on the level of labor productivity is significantly different to that on return on sales. Bringing these two characteristics (direction and intensity) together corroborates the hypothesis of the substitute effect. This proposition maintains that in a business context of low internal flexibility, external flexibility has a greater positive effect on business performance than in a business context characterized by high internal flexibility. In addition, through descriptive analysis, it is shown that the simultaneous combination of both types of labor flexibility is not the most beneficial combination. A firm must choose between prioritizing one or other type of labor flexibility. All these results provide sufficient empirical evidence on the incompatibility between the two types of labor flexibility.

In summary, the degree of internal labor flexibility affects the relationship between external labor flexibility and firm performance. Internal labor flexibility acts as a moderating

variable on this relationship, significantly altering both its direction and its intensity. We must therefore highlight the fact that claims of the type "The job security provided by fixed contracts increases the commitment of workers to the firm and, therefore, labor productivity and firm profitability" may be valid, while contradictory claims of the type "The greater capacity for adaptation and efficiency provided by temporary contracts increases labor productivity and firm profitability" may also be valid. The legitimacy of these claims will depend on the degree of internal labor flexibility implemented in a firm. The first assertion is more likely to be true in a business context with high internal flexibility, while the second assertion is more likely to be confirmed in a business context with low internal flexibility. These findings are especially relevant in the Spanish context, where due to the institutional context and the difficulties of reducing temporary employment levels, there is certain concern about the negative effects that temporary work may have for the firm's outcomes (e.g. Sánchez and Toharia, 2000; Toharia, 2005). Our results suggest that the effect of external labor flexibility strategies on organizational outcomes cannot be examined in isolation, but rather should take into account the relative level of internal flexibility promoted by the firm through actions such as employee development or the promotion of greater employee polyvalence.

This study has several theoretical implications. Firstly, the confirmation of the interaction between the two types of labor flexibility could explain the divergent results of previous studies which have examined only the direct effect of external flexibility on firm performance. One of the possible causes of this disparity is the different degree of internal flexibility of the samples of firms examined. Secondly, our results do not coincide with those of Lepak *et al.,* (2003), who revealed that the mixed combination of high external and internal labor flexibility obtains the best results in a sample of large American firms. Their study shows that an increase in temporary contracts has a positive effect on firm performance, both

in a high and low internal labor flexibility scenario. The different socioeconomic context and their selection of only large firms could condition the different results of the two both studies (Ruiz-Santos *et al.,* 2003; Tüselmann, 1996). In Spain, our results warn of the need to take an eclectic position concerning the consequences of the use of temporary contracts. An increase in external flexibility can cause both a negative and a positive effect on firm performance, depending on the level of internal flexibility.

These theoretical deductions lead to important consequences for business practice. Faced with the decision on whether to increase external flexibility, managers should assess the level of internal flexibility in their organization. This decision can have very different results. Thus, for example, in firms with low internal labor flexibility – that is, those with little investment in training and employees with a low level of education – it could be beneficial to increase the number of employees with temporary contracts. On the contrary, for firms with high internal flexibility, an increase in external flexibility would be damaging, with a significant fall in their level of economic performance. However, it should be highlighted that, although the most beneficial combination appears in a labor context characterized by high internal flexibility and low external flexibility, another alternative with very good firm performance results from a labor context characterized by low internal flexibility and high external flexibility. Both combinations are viable alternatives for firms. However, managers must note the difficulty of implementing both types of labor flexibility in an organization at the same time. The results show that they are not compatible. As Blyton and Morris (1992) point out, in European countries such as Spain that pay more attention to those aspects of labor flexibility relating to the volume of labor and reducing labor costs (low wages) than to longer-term investment in training and qualifications, the simultaneous development of internal and external labor flexibility is not possible. These authors argue that the two types of flexibility are only sustainable in systems that operate with high wages, legislated

employment protection, and the acceptance of the interests existing within the workplace, to acknowledge the employee influence.

Having reached this point, possible future research should be proposed, going beyond the limitations of this study. This research follows the approach recommended by Roehling *et al.,* (2005) for future studies in SHRM. These authors recommended analyzing the interactions between specific features of human resource management systems, rather than looking at a fit between generic and multiple HR practices. However, a limitation on these studies is that they necessarily fail to consider another series of human resource practices. In addition, in this study we have not analyzed external fit in human resource management. Future research could consider the interaction between human resource management practices and other elements of the organization, such as firms' competitive strategies or production systems. Secondly, this study is transversal, carried out at a single moment in time. Future research could apply a longitudinal design, using panel data to provide an understanding of the dynamic interaction between internal and external flexibility. Finally, we should underline that the empirical results are limited to industrial firms. Human resource management, in particular the fit between external and internal labor flexibility is different in other sectors of activity, such as the service sector (Cappelli and Neumark, 2004). Greater seasonality and variability in demand in service firms could alter the effect of this fit on firm performance. Future empirical research could approach this possibility, thereby enriching the interesting field of labor flexibility.

Footnotes:

[1] Very diverse classifications have broken down these two types into different subcategories (e.g. Lepak and Snell, 2002; Ruiz-Santos *et al.,* 2003; Valverde *et al.,* 2000), and have even identified other types of secondary flexibility, such as financial flexibility (Atkinson, 1984; Atkinson and Meager,

1986). However, a common feature of all these studies is their emphasis and continuous reference to these two essential types.

[2] More detailed information on the Survey on Business Strategies –Encuesta sobre Estrategias Empresariales (ESEE)- characteristics can be consulted at http://www.funep.es/esee/ing/i_esee.asp.

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Table 1. Distribution of the number of firms between sectors of activity ($N = 1,403$)

SIC	CNAE	Number	Percentage
20 and 21	DA. Food, drink and tobacco industry	187	13.33%
22 and 23	DB. Textile and clothes industry	133	9.48%
31	DC. Leather and shoe industry	37	2.64%
24 and 25	DD. Timber and cork industry	51	3.64%
26 and 27	DE. Paper industry; publishing, graphic arts and reproduction of engravings	119	8.48%
28	DG. Chemical industry	81	5.77%
30	DH. Rubber transformation and plastic materials industry	85	6.06%
32	DI. Other mineral, non-metallic product industries	101	7.20%
33 and 34	DJ. Metalworking and manufacture of metal products (reference category)	216	15.40%
35 and 36	DK. Machinery and electrical equipment construction industry	106	7.56%
38	DL. Electrical, electronic and optical materials and equipment industry	100	7.13%
37	DM. Manufacturing of transport material	88	6.27%
39	DN. Various manufacturing industries	99	7.06%

Table 2. Definition and descriptive statistics of variables introduced into the regression analysis

Variable	Definition	Mean	s.d.
AGE	Number of years since the firm was set up	24.583	20.734
SIZE	Number of employees	200.939	355.288
DEPEND	Percentage share in capital held by other firms	34.627	44.668
DA	1 if food, drink and tobacco industry; 0 for any other category	0.133	0.340
DB	1 if textile and clothes industry; 0 for any other category	0.094	0.293
DC	1 if leather and shoe industry; 0 for any other category	0.026	0.160
DD	1 if timber and cork industry; 0 for any other category	0.036	0.187
DE	1 if paper industry; publishing, graphic arts and reproduction of engravings; 0 for any other category	0.084	0.278
DG	1 if chemical industry; 0 for any other category	0.057	0.233
DH	1 if rubber transformation and plastic materials industry; 0 for any other category	0.060	0.238
DI	1 if other mineral non-metallic products; 0 for any other category	0.072	0.258
DK	1 if machinery and electrical equipment construction industry; 0 for any other category	0.075	0.264
DL	1 if electrical, electronic and optical materials and equipment industry; 0 for any other category	0.071	0.257
DM	1 if manufacturing of transport material industry; 0 for any other category	0.062	0.242
DN	1 if various manufacturing industries; 0 for any other category	0.070	0.256
LABORINT	Labor intensiveness	4.888	58.788
IDVTAS	Innovation intensiveness	0.599	1.661
TEMP	Proportion of workers with temporary contracts (casual labor)	0.160	0.199
TRNING	Spending on training per employee	75.119	185.827
EDUC	Proportion of workers with high or middle level of education	0.120	0.146
ABSENT	Hours not worked per year (because of industrial disputes, absence from work etc.) per employee	8.129	30.218
PRODUCTV	Labor productivity	1.470	0.591
ROS	Return on sales	0.122	0.186

Table 3. Correlations between the variables[a]

Variables	1	2	3	4	5	6	7	8	9	10	11
1. AGE	1										
2. SIZE	0.267**	1									
3. DEPEND	0.226**	0.371**	1								
4. LABORINT	-0.024	-0.019	-0.022	1							
5. IDVTAS	0.107**	0.060*	0.129**	0.024	1						
6. TEMP	-0.234**	-0.073**	-0.204**	-0.021	-0.097**	1					
7. TRNING	0.209**	0.218**	0.280**	-0.018	0.172**	-0.114**	1				
8. EDUC	0.137**	0.134**	0.239**	0.015	0.184**	-0.116**	0.261**	1			
9. ABSENT	0.062*	0.125**	0.132**	-0.014	0.047	-0.091**	0.049	0.025	1		
10. PRODUCTV	0.074*	0.137**	0.237**	-0.039	-0.042	-0.030	0.134**	0.142**	-0.036	1	
11. ROS	0.139**	0.451**	0.228**	-0.022	-0.005	-0.039	0.167**	0.131**	0.020	0.335**	1

Notes: [a] The dichotomic variables for the industrial sectors are omitted.   ** $p < 0.01$; * $p < 0.05$; (bilateral significance)

Table 4. Results of the hierarchical regression analysis ($N = 1,403$)

Variables	Absenteeism		Labor productivity		Return on sales	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
AGE	0.081^{**}	0.084^{**}	0.041	0.042	-0.001	-0.001
SIZE	0.005	0.004	-0.009	-0.011	0.414^{**}	0.411^{**}
DEPEND	0.089^{**}	0.084^{**}	0.199^{**}	0.192^{**}	0.040	0.041
DA	-0.051	-0.047	0.182^{**}	0.183^{**}	0.007	0.001
DB	-0.002	0.003	-0.074^{*}	-0.072^{*}	-0.040^{+}	-0.048
DC	-0.004	-0.001	0.079^{**}	0.080^{**}	-0.017	-0.022
DD	0.015	0.016	0.065^{*}	0.066^{*}	-0.033	-0.034
DE	-0.064^{*}	-0.060^{+}	-0.016	-0.014	0.013	0.008
DG	0.005	0.022	0.073^{*}	0.079^{*}	0.059^{*}	0.034
DH	-0.059^{+}	-0.058^{+}	0.016	0.019	0.024	0.025
DI	-0.012	-0.009	-0.002	0.001	0.020	0.017
DK	-0.026	-0.023	-0.090^{**}	-0.088^{**}	0.011	0.007
DL	0.002	0.005	-0.042	-0.040	0.015	0.013
DM	0.023	0.023	-0.003	0.000	-0.004	-0.002
DN	-0.047	-0.043	-0.047	-0.044	-0.019	-0.023
LABORINT	-0.014	-0.016	-0.034	-0.035	-0.015	-0.013
IDVTAS	0.013	0.015	-0.070^{**}	-0.070^{**}	-0.062^{*}	-0.064^{*}
TEMP	-0.073^{**}	-0.060^{*}	0.003	-0.018	0.014	-0.028
TRNING	-0.013	0.032	0.047^{+}	0.069^{*}	0.046^{+}	-0.011
EDUC	-0.017	-0.015	0.087^{**}	0.086^{**}	0.040	0.037
TEMP x TRNING		0.027		-0.024		-0.069^{**}
TEMP x EDUC		0.007		-0.045^{+}		-0.052^{**}
TRNING x EDUC		-0.061^{+}		-0.056^{+}		0.052^{+}
R^2; F	0.040; 2.856^{**}	0.043; 2.670^{**}	0.151; 12.268^{**}	0.155; 10.973^{**}	0.224; 19.948^{**}	0.233; 18.238^{**}

Notes: Standardized regression coefficients $** \ p < 0.01$; $* \ p < 0.05$; $+ \ p < 0.10$ (bilateral significance)

Table 5. Simple regression lines of the effect of external flexibility (X)) on firm performance (Y) depending on the level of internal flexibility

Performance	High internal flexibility	Low internal flexibility
Absenteeism	$Y = 5.823 - 1.854\ X$ (10.638)	$Y = 4.811 - 16.383\ X^{*}$ (7.285)
Labor productivity	$Y = 1.434 - 0.307\ X$ (0.196)	$Y = 1.250 + 0.202\ X$ (0.134)
Return on sales	$Y = 0.086 - 0.179\ X^{**}$ (0.059)	$Y = 0.076 + 0.126\ X^{**}$ (0.040)

Notes: standard error in brackets. ** $p < 0.01$; * $p < 0.05$; + $p < 0.10$ (bilateral significance)

Table 6. Values of the t statistic for the difference between high and low internal flexibility scenarios

Firm performance	t-test
Absenteeism	$t = 1.126$
Labor productivity	$t = 2.144^{*}$
Return on sales	$t = 4.290^{**}$

Notes: ** $p < 0.01$; * $p < 0.05$; + $p < 0.10$ (bilateral significance)

Figure 1. Effect of external flexibility on employee absenteeism, depending on the level of internal flexibility
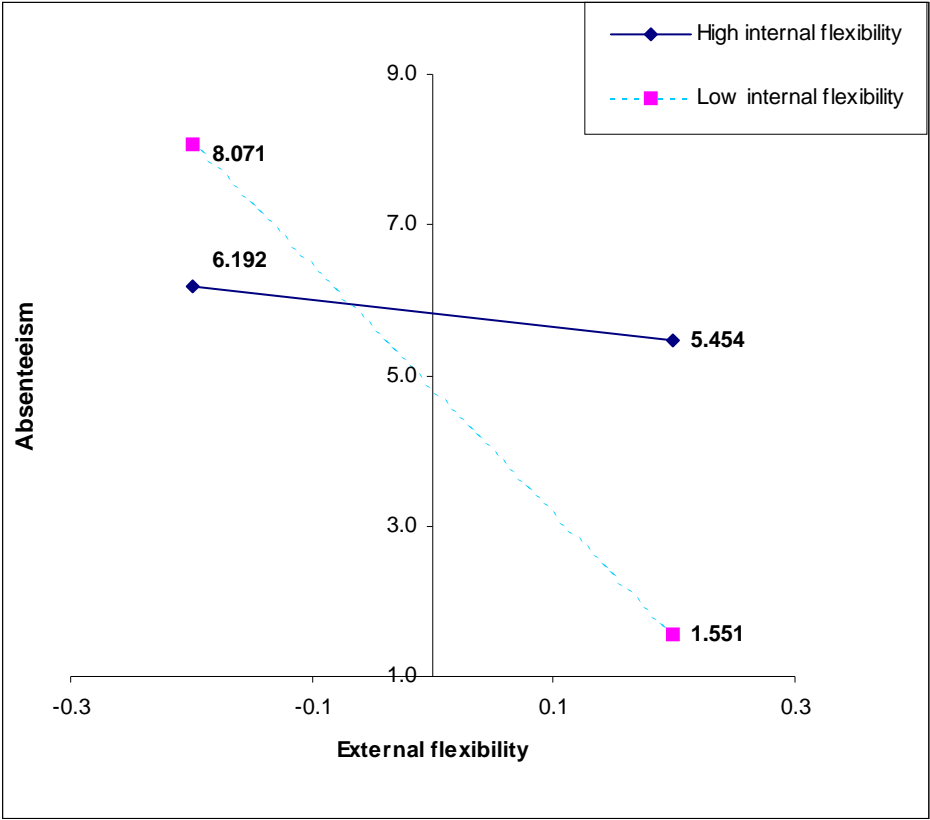
Figure 2. Effect of external flexibility on labor productivity depending on the level of internal flexibility
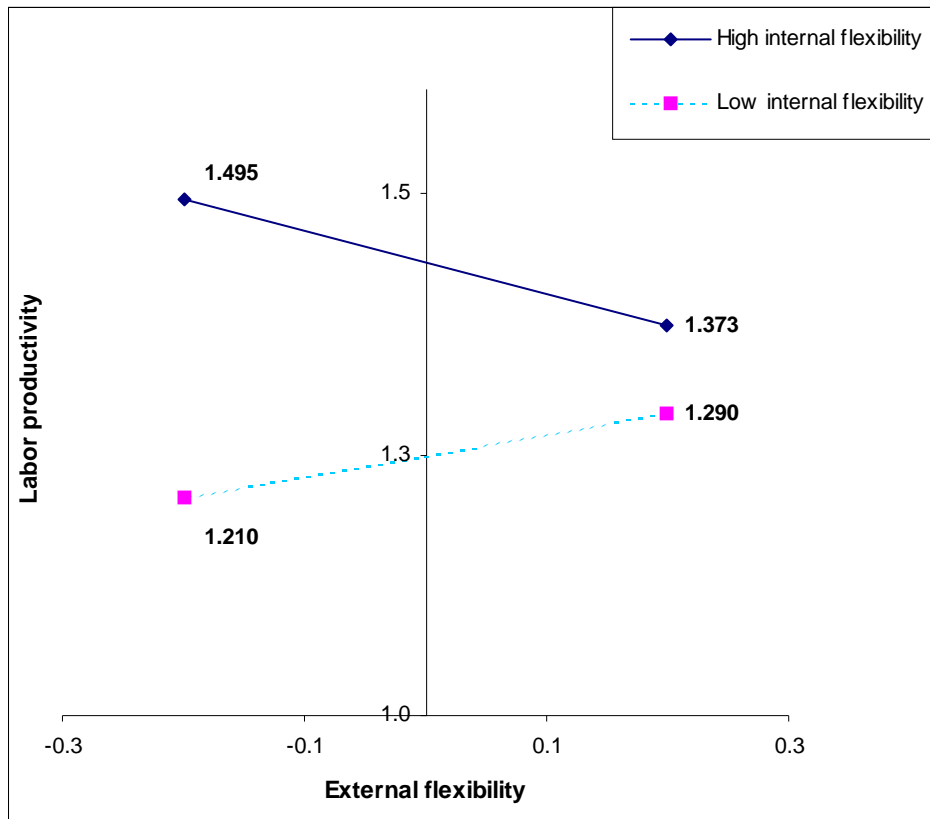
Figure 3. Effect of external flexibility on return on sales depending on the level of internal flexibility