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Contributions to an economic theory of human resource management

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Abstract

In this article, it is argued that the firm-specificity of employee competences and the measurability of their individual productivity require different human resource management practices with regard to planning and acquisition, compensation, and control of such resources. On this basis, elements that can be building blocks in a future normative economic theory of human resource management are presented in the form of empirically testable propositions about variations in firms' management of human resources, under the assumption that economic rationality is sought after. Finally, critical aspects of the logic of the presentation are discussed.

Keywords: Economic analysis of HRM; Governance systems

1. Introduction

In this article, I will raise and discuss the question of how firms manage their different human resources when seeking to act in an economically rational way. The question has not been systematically dealt with in neoclassical economics, apart from human capital research that has been preoccupied with the education and training of employees (e.g., Akerlof & Yellen, 1986; Becker, 1964; Freeman, 1977; Mincer, 1962, 1994). However, the institutionally oriented literature on the functioning of labor markets contains many studies of human resource management practices with regard to the interests of firms and

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employees respectively as to the application of principles of promotion and job security in the case of firm-internal labor markets (Althauser, 1989; Doeringer, 1986; Doeringer & Piore, 1971; Farkas & England, 1988; Osterman, 2000). Yet, not all firms have such internal labor markets and, moreover, those that do may not have internal labor markets that comprise all employees in the firm. They may thus have dissimilar human resource management practices for different groups of employees. As a supplement to the much studied issues of why firm-internal labor markets emerge and how they function, one may hence ask under which conditions it is likely that firms apply selective human resource management practices that are deliberately designed to discriminate between employees on economic grounds. In order to address this question, it is necessary to trace characteristics of employees that contribute to determining the rationality of various forms of human resource management, that is, dimensions that specify under which conditions such forms are likely to vary. The purpose of the paper is thus to suggest a normative economic theory of human resource management in firms. My point of departure is a conception that the substance of human resource management is contingent on the character of such resources and their outcome. The theory builds on Williamson's (1975, 1981, 1985) classification of internal governance structures, which are defined by combinations of human asset specificity (firm-specificity) and measurability of individual labor productivity. Normative propositions about how firms manage their human resources when seeking economic rationality will be presented and discussed.

Human resource management is viewed as including planning and acquisition, reward, and control of employees. The terms human resources and human competence, which are used interchangeably, are synonymous with work-related knowledge, skills, and aptitudes embodied in employees.

2. Asset specificity and output measurability

Firms have two fundamental needs that are assumed to determine their management of human resources: the need to fit these resources with work tasks in order to achieve productivity and the need to measure or estimate the productivity of human resources in order to be able to reward employees in a rational way.

Fitting individuals and job tasks is largely a question of the *type of competencies* involved. Human capital theory offers the useful distinction between general and specific competence (Becker, 1964). Similarly, in transaction cost theory, there is a distinction between specific (idiosyncratic) and nonspecific knowledge and skills (Nordhaug, 1994; Rao, 2002; Williamson, 1985, 1992; Williamson & Masten, 1999). Whereas general skills and knowledge can be sold in external labor markets, firm-specific competences are valuable in one firm only. Because the latter are held to exhibit increasing returns to scale, they cannot be generated or utilized efficiently through the spot-market. Once generated, the marginal cost of utilizing firm-specific competence is smaller compared to the training cost of forming it (cf. Aoki, 1986, p. 25). Consequently, both the firm and the employees having the specific knowledge and skills will be interested in an extended contractual relationship.

The need to measure productivity is related to the need to reward employees in a rational way. Substantial uncertainty is involved because, basically, companies obtain "crude labor"—not work *performance*. Hence, it is not productivity but *potential* performance that is bought in the first place. In other words, it is not principally work results that are obtained, but the employee's presence or time. The transformation of human time and competence into work performance still remains. The concept of the “incomplete labor contract” has been used to characterize this way of reasoning (Blau & Scott, 1963; Braverman 1974; Coase, 1937; Williamson, 1985). Because within the contractual relationship between firm and employees, it is difficult or impossible to specify in detail exactly what the employees shall do and how they shall perform, the management faces a governance problem concerning how to utilize available human competence efficiently. Expressed differently, the legal employment contract has to be supplemented by organizational and personnel-related measures that ensure cooperation from employees. However, the difficulties are not confined to getting the best possible work performance from the available competence. The problem lies equally as much in evaluating or metering the performances because individual productivity is often impossible or very difficult to isolate from the productivity of other employees working in the same team.

3. Internal governance structures

By combining the dimensions of firm-specificity and measurability, four different internal governance structures for human resources are defined (cf. Williamson, 1985, p. 247). This is illustrated in Fig. 1.

A brief overview is now to be presented of the four governance structures to provide a background for the subsequent discussion.

3.1. Internal spot-market

If the human competence that is applied is general and its output easily measurable, there is an *internal spot-market* where transactions between employer and worker occur frequently. The employer can evaluate individual productivity and the employee has a general or uniform competence, which can be sold to several companies. Therefore, none of the parties has any particular interest in extending the mutual relationship. Employees are highly mobile across employers without risking reductions in their productivity and employers can substitute labor without having to train new workers. Consequently, it is not necessary to maintain relations over longer periods of time. The internal spot-market is thus in a

		MEASURABILITY OF INDIVIDUAL PRODUCTIVITY	
		HIGH	LOW
FIRM-SPECIFICITY OF HUMAN RESOURCES	LOW	I	II
	HIGH	III	IV

Fig. 1. Combinations of degrees of firm-specificity and measurability of individual productivity.

sense closer to renting competence through external transactions than to labor organization characterized by employment contracts of longer duration. The governance structure is not believed to be very widespread but the temporary employment of ad hoc workers in shops, potato-pickers, and fruit-pickers can serve as examples.

3.2. Primitive team

If the competence is general and individual productivity is intricate to evaluate, we face a primitive team in which there are no requirements for idiosyncratic competence and where individual performances are very difficult to separate and identify. However, collective performance may still be measured. Alchian and Demsetz (1972, p. 779) have maintained that companies emerge when work tasks are technically inseparable from each other. "The output is yielded by a team, by definition, and it is not a *sum* of separable outputs of each of its members". Hence, there is a separability problem that in turn leads to a metering problem. Simple assembly line production, autonomous work groups with general competence, and work groups that carry out a collective assignment through internal specialization (e.g., construction workers, movers, roofers, or unloading workers) are illustrative of type.

3.3. Obligational market

An obligational market is characterized by employment relations where the competence is firm-specific and the individual productivity is easy to evaluate. Consequently, both employers and employees have an interest in maintaining the mutual relationship over an extended period of time. As the individual competence in this context is firm-specific, it does not have any value in external labor markets. At the same time, performances are easily measurable so that rewards can be allocated on the basis of individual productivity. Jobs that are composed of easily separable tasks and in which technology (equipment or procedures) is applied that is unique to the firm can illustrate this.

3.4. Relational team

Relational teams are characterized by a combination of firm-specific human competence and low measurability of individual performances. In the same way as in an obligational market, both employers and employees have an interest in maintaining the contractual relationship because competences are highly firm-specific. Concurrently, the individual productivity is difficult or impossible to meter, because the collective performance cannot easily be subdivided into individual contributions.

According to Williamson (1981, 1985), this type of team corresponds to Ouchi's (1980) "clan organization", which is characterized by tight relations between employees and indirect governance through use of values, norms, and symbols in order to create identification and commitment.

4. Propositions

In the following, elements are suggested that can become building blocks in a future theory of how human resources in firms will be managed contingent on the dissimilar types of internal governance structures outlined above. This will be done through the formulation of propositions about how different combinations of the human resources' degree of specificity and the measurability of their productivity will affect human resource management. It is asserted that the four internal governance structures make dissimilar demands on firms' planning and acquisition, retainment and maintenance, development, reward, and control of their human resources. Furthermore, these demands are assumed to determine the design and contents of each of these elements.

4.1. Planning and acquisition

In internal spot-markets, human resource planning occurs in an ad hoc fashion and is furthermore characterized by a short-term orientation, because transactions between the parties are frequent and there is no need to set up contractual arrangements. Recruitment of employees also occurs ad hoc and there is little or no need to pursue human resource development in the form of training or job rotation.

Within primitive teams the planning is not very systematic and is, moreover, pursued on a short-term basis given that labor is easily substitutable. Assuming there is no scarcity of relevant labor in external labor markets, it would not be rational to use substantial amounts of resources to plan and obtain competence through recruitment and training. However, it becomes relevant to search for employees in possession of cooperative skills who are in addition not inclined to shirk because of the lower probability of being revealed due to low measurability of individual productivity. More resources will therefore be used on selection and recruitment than in internal spot-markets.

In obligational markets, personnel planning is more systematic and long-term oriented. Because of high firm-specificity and due to the fact that the short-term substitutability of labor is therefore low, the firm is more vulnerable to changes in the labor force. It will thus plan the future supply of human resources thoroughly on the basis of information about factors such as the demographic structure of the work force, turnover, absenteeism, the composition of the internal labor market, and development trends in external labor markets. Besides, substantial resources have to be used on facilitation of learning and training in order to maintain and develop firm-specific skills.

In the case of relational teams, both personnel planning and recruitment are systematic and long-term oriented due to the fact that employees possess firm-specific competences that are both time-consuming and costly to develop. This implies that human resource forecasting, personnel inventory systems, career planning, and surveillance of external labor markets are relevant elements. The need to develop firm-specific competences also implies that in the selection and recruitment process it is rational to screen potential employees on the basis of their estimated trainability. Whereas in internal spot-markets and primitive teams individuals are usually equipped with the necessary general qualifications when they enter the transactional relationship, in obligational markets and relational teams further training and other forms of learning are indispensable parts of the human resource management system.

Moreover, since the measurability of individual performances is low and because there is usually a long-term employment relationship, it is rational to search for employees with a certain minimum ability and willingness to cooperate with others in a team. The selection process thus becomes highly important. Consequently, substantial resources will be used to attract and select employees that are expected to be suitable given this type of internal governance structure.

We are then left with the following propositions:

Proposition 1. *In internal spot-markets and primitive teams, unsystematic, short-term human resource planning will be the rule.*

Proposition 2. *In obligational markets and relational teams, systematic, long-term human resource planning will be the rule.*

Proposition 3. *In obligational markets and relational teams, recruitment and selection will be given higher priority and be more thoroughly pursued than in internal spot-markets and primitive teams.*

4.2. Compensation and incentives

When one can easily measure individual performance and the competence is general, the reward or compensation system will be limited to wages based on individual productivity. There is no need to offer additional rewards in order to make the firm attractive to employees because the relationship is of a short duration.

In primitive teams, it is more intricate to find rational criteria for compensation, because individual productivities are either impossible or very costly to measure. Use of seniority principles in the distribution of rewards will in this situation be irrelevant. Experience has little value inasmuch as the competence required is general. However, if the performance of the team can be estimated, a rational solution to the problem is to give all employees that have identical jobs the same wage, based upon the collective performances they have contributed to generating. From the management's side, it is then assumed that individual productivities are approximately equal for all employees involved. Hence, costs related to measurement of individual work results are eliminated. A possible problem related to equal compensation is, however, that other costs may arise as the result of individual shirking or free-riding caused by the fact that the rewards of each individual employee are not influenced directly by the work performance of that single employee. The result is dependent upon the performance of all employees but not on the performance of any one employee. At the same time, rewards based on collective performance will, as a rule, promote within the group a mutual control with individual work efforts and contributions, because everyone's compensation depends upon the level of collective performance. However, if such performance cannot be estimated with reasonable accuracy, it is rational to distribute rewards on the basis of seniority in the firm.

In regard to obligational markets and relational teams, it will often be rational to supplement wages with other extrinsic rewards, such as different types of perquisites and fringe benefits. Incentives in the form of favorable pension schemes, gain sharing, profit sharing, and employee stock-ownership represent other possible extensions of monetary extrinsic reward systems as such incentives may contribute to creating higher identification, commitment, motivation, and work efforts.

Moreover, within obligational markets and relational teams, it is rational also to attempt to influence employees' intrinsic rewards because such rewards are assumed to be important for the prospects of long-term retainment. Such retainment is essential because the marginal cost of utilizing firm-specific competence is assumed to be smaller than the cost of developing it. Even though intrinsic rewards lie outside the company's direct control, they may be indirectly influenced through measures such as improvement of the work environment, decentralization of decision-making authority, increased employee involvement and participation, health programs, welfare programs, and job design.

Proposition 4. *In internal spot-markets and obligational markets, rewards will tend to be distributed on the basis of individual performance.*

Proposition 5. *In primitive teams and relational teams, rewards will tend to be distributed on the basis of group-performance in primitive teams and relational teams to the extent that such performance can be estimated.*

Proposition 6. *In primitive teams and relational teams, rewards will be distributed on the basis of individual seniority in the firm.*

Proposition 7. *In internal spot-markets and primitive teams, extrinsic rewards will be limited to wages.*

Proposition 8. *In obligational markets and relational teams, extrinsic rewards will not be limited to wages.*

Proposition 9. *In internal spot-markets and primitive teams, indirect influence on employees' intrinsic rewards will not be sought after.*

Proposition 10. *In obligational markets and relational teams, indirect influence on employees' intrinsic rewards will be sought after.*

4.3. Control

In internal spot-markets and obligational markets, it is easy to measure or evaluate individual productivity. Thus, the control can be carried out through evaluation of individual work results. This type of control is past-oriented in that it is based upon information about earlier performances. However, the degree of firm-specificity creates a difference between the two governance structures. In obligational markets, where retainment of labor is important, the firm will benefit from adding control through socialization if the employees are inclined to take the risk of changing employer despite the fact that their competence is firm-specific. In such a situation, socialization through the generation of identification and commitment constitutes a crucial part of the control system.

In the case of relational teams, employers and employees are tightly interrelated. The fact that employee competences are firm-specific and the lack of clarity concerning the individual employee's actual performance create a need for management to integrate the employee more strongly into the firm and beyond the degree of integration that can normally be accomplished by the use of extrinsic rewards. In addition to the managerial means mentioned under obligational markets, this need may be covered through development of common values and norms with the aim of inducing a maximum number of employees to perform so as to promote the firm's goals. Socialization with the aim of developing commitment through information about the company's goals, strategies, and policies is thus accentuated (Van Maanen & Schein, 1979). This is a future-oriented form of control. It is not based upon what employees have done but rather on what they are predicted or anticipated to do in the future.

Proposition 11. *In internal spot-markets, evaluation of information about past individual performances will be the dominant control mode.*

Proposition 12. *In primitive teams and obligational markets, a combination of evaluation of information about past individual performances and socialization will be the dominant control mode.*

Proposition 13. *In relational teams, socialization will be the dominant control mode.*

ELEMENTS IN HUMAN RESOURCE RESOURCE MANAGEMENT	INTERNAL GOVERNANCE STRUCTURES			
	INTERNAL SPOT-MARKET	PRIMITIVE TEAM	OBLIGATIONAL MARKET	RELATIONAL TEAM
PLANNING AND ACQUISITION	Unsystematic systematic	Not very systematic	Relatively	Systematic
	Short-term perspective	Short-term perspective	Long-term perspective	Long-term perspective
	Little or no HRD	Little or no HRD	Comprehensive HRD	Comprehensive HRD
COMPENSATION	Individually oriented	Group-oriented and	Individually oriented	Group-oriented
	Extrinsic	Extrinsic	Extrinsic & intrinsic	Extrinsic & intrinsic
CONTROL	Direct and indirect	Socialization indirect	Direct and surveillance	Socialization surveillance
	Past-oriented	Future-oriented	Past-oriented	Future-oriented

Fig. 2. Summary of propositions.

An overview of the propositions is provided in Fig. 2.

5. Discussion

The intention of this article was to propose a normative theory of human resource management in firms, which at the same time renders itself to empirical testing. Thus, the goodness of the theory compared to other theory that might evolve can be evaluated through future empirical study. Although no such empirical research has been pursued thus far, we shall in the following discuss the most critical assumptions and arguments inherent in the theory that has been proposed above. This will be done by confronting theory with institutional realities that have been empirically documented.

One possible line of criticism relates to the fact that the influence of labor unions and labor regulations were virtually ignored. Institutional conditions such as minimum-wage agreements, legal protection against arbitrary dismissal, and closed-shop or union-shop arrangements may alter or distort the assumed managerial consequences of the four governance structures, particularly with regard to internal spot-markets and primitive teams. In his discussion, Williamson (1981) tries to get around this type of objection by stating that: "The foregoing discussion of internal governance structures refers mainly to staff rather than production-level employees". In spite of this, three of his four illustrating examples refer to occupations located on the "production level" (manual freight loaders, migrant farm workers, and custodial employees). Furthermore, administrative personnel may also be members of unions or professional organizations with similar functions.

It is of course essential to note that the logic outlined in the previous discussion may be modified or changed when taking into account institutional arrangements and political conditions in firms. Their importance resides in the fact that they may alter the context of rationality by involving potential costs related to *conflict* between employer and employees. However, to discuss this in depth would carry beyond the limits of this paper. The purpose was not to attempt to grasp the institutional complexity of human resource management. On the contrary, I have deliberately simplified the picture by focusing on fundamental dimensions in an attempt to clarify parts of the *basics* of the field.

As pointed out in the introduction, many firms comprise dissimilar internal governance structures transactions related to human resources. According to the theory previously suggested, it would then seem rational to pursue discriminatory human resource management practices simultaneously. This may be the case to the degree that the different governance structures are enclosed in separate administrative units having their own human resource management function. However, if this is not the case, it can be argued that it may be more rational to apply uniform practices throughout the organization regardless of the human asset specificity and the measurability of work performance. If the firm is to design and pursue different practices tailored to the four types of internal governance structures, transaction costs related to segregating human resource management are incurred that may exceed the cost reductions achieved by applying discriminatory practices. Expressed differently, potential gains of standardization are lost, implying that there is a trade-off in this context that must be taken into account. However, although no exact empirical evidence is at hand, many firms apply varying practices for dissimilar groups of employees. The actual degree to which they actually do this on the basis outlined in this paper or on the basis of other criteria remains open to empirical research.

A particularly vulnerable part of our reasoning relates to the assumption that workers with general competences are perfectly mobile and hence have no interest in a long-term contract with the employer. This implies that risk attitudes among buyers and vendors of labor are symmetrical, which is a highly debatable assumption. In his work on the cooperative game theory of the firm, Aoki (1986, pp. 17–18) has argued that "...because of the limitation of human learning capacity and the present institution of a fixed work day in the business firm, it is neither wise nor possible for suppliers of labour services to diversify their investment in human capital and to hold several jobs simultaneously. As a result, individuals in their capacity as suppliers of labour services are likely to be more risk-aversive than communities of many small shareholders. The asymmetry of risk-attitudes between the employees and the employers is a natural consequence of the ingenious social contrivance of the corporate institution."

If we extend this argument to the present context, some of the workers in internal spot-markets would be interested in getting a long-term employment contract with the firm and such markets might be reduced. However, some workers will probably still appreciate the flexibility of internal spot-markets due to, for example, family obligations, a preference for working only periodically, or an appreciation of the freedom to change employer swiftly. Thus, although the arguments for asymmetrical risk-attitudes may be valid, the existence of internal spot-markets is not incompatible with such asymmetry. Moreover, as long as there is no scarcity of labor, the firm will have no interest in changing from a market relationship to a contractual relationship.

The ultimate test of any social science theory is the degree to which it is able to explain empirical phenomena in a reasonably adequate way. Thus, it may be held against the theory proposed here that realities in some fields are different than what is suggested. For example, some firms have skill-based pay systems regardless of the firm-specificity of employees' competences and the degree to which individual productivity can actually be measured. Other firms use seniority-based compensation systems. Although such single examples can be found, they cannot be generalized without systematic empirical evidence. And yet, even if it is demonstrated that the normative predictions that were launched to some extent deviate from realities as empirically documented, the question still remains whether any other theory of human resource management enables us to make more accurate predictions than the present theory.

At present, to this author's knowledge, no alternative proposals of systematic theories of human resource management have been reported. However, although not having been brought together in order to create coherent theories of human resource management as such, many fragments that could contribute to such theories exist, primarily in the vast sociological literature on labor markets (e.g., Berg, 1981; Castells, 2000; Doeringer, 1986; Farkas & England, 1988; Granovetter, 1994; Hakim, 1998; Kalleberg & Sorensen, 1979; Osterman, 2000). On the basis of these fragments and other insights into factors that contribute to influencing firms' managing of human resources, an institutionalist theory of human resource management could be constructed and confronted with the normative economic logic outlined in this article. One option would be to assert that human resource management practices vary more according to the organization's position in its life cycle or according to the type of strategy that is being followed than according to the firm-specificity and the measurability of individual productivity. Such theory development would contribute to adding needed academic strength to human resource management as a research field, hence reducing the practical and prescriptive biases that prevail in major parts of the literature.

6. Concluding comments

Most of the human resource management literature focuses on applied matters and practical concerns. Thus there is a strong need for development and application of basic concepts and theories that can contribute to advancing the field academically. In order to supplement the comprehensive psychologically oriented literature it is, moreover, paramount to link the field more closely to organization theory and institutional economics. Knowledge from these disciplines may contribute to advancing the understanding of human resource management by relating it to basic needs, structures, and processes from which it emerges in organizations.

The concept of internal governance structures establishes a link between institutional economics and the research field of human resource management. It has a clear potential with regard to development of increased insight into economic aspects of organizational behavior concerning human resources. The intention of this paper was to propose one possible direction of theoretical development on this basis.

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