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Human Capital Measurement, Ambiguity, and Opportunism: Actors between Menace and Opportunity**

Under the growing influence of economic normative thoughts (as for example the spread of shareholder value philosophy in the 1990s) and therefore under pressure to justify themselves, human resource management professionals are searching for concepts to measure the effects of their decisions and activities on business objectives. Especially, the concepts of human capital measurement attract far-reaching attention. However, that performance measurement of human resource management faces considerable methodical problems leading to the distinctive ambiguity of human capital information. In the face of this ambiguity, the paper points out that human capital measurement tends to promote opportunistic patterns of behavior by offering opportunities to evade personal responsibility. Referring to the model of organizational anarchy, the paper shows that human capital measurement is in danger to evoke a dilution of responsibilities in organizations. But a comprehensive institutionalization and a deliberate "framing" of human capital measurement can contribute to the limitation of opportunism.

Key words: **Human Capital Measurement, Opportunism, Organizational Anarchy, Value Based Management**

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1. Introduction

In the last two decades, human resource management became under pressure to ensure its economic legitimation. After a long period of progressive institutionalization and centralization of the personnel function in German companies, personnel departments had to conform to demands on less bureaucracy and rationalization in the 1980s (Krulis-Randa 1994, 189; Scherm 2004, 66; Wunderer 1992). In the 1990s, shareholder value management spread over Europe. From this shareholder value perspective, the primary companies' goal is to create shareholder value by ensuring its owners a higher financial return than they can get elsewhere. So, every business activity in a company has to prove its impact on shareholder value (Scherm/Pietsch 2005, 44-45). Accordingly, human resource management professionals look for concepts to identify their own contributions to business success, too. For that purpose, human resource management needs to take reference to some objectified methods measuring its effects on (financial) business success (Bahnmüller/Fisecker o. J., 70; Eigler 1999, 232). On that background, human resource professionals pay attention to performance measurement methods and especially to value-based concepts (e.g., DGFP 2004; Weinberg 2004, 15).

The discussion about the concepts of human capital measurement takes place controversially. Management consultants as well as many business professionals associate great expectations with the methods of human capital measurement. But simultaneously, there are critical voices which emphasize significant methodical deficits (e.g., Bahnmüller/Fisecker o. J., 71; Eigler 1999; Gertz 2004; Wolf/Zwick 2003). This technical discussion is important because it clarifies methodical limitations of human capital measurement. In the face of those methodical limitations, the resulting human capital information proves to be ambiguous and difficult to interpret. The difficulties in interpreting human capital information arouse consequences for the behavior of involved actors. As for example, the deduction of concrete managerial consequences from human capital information is complicated. Not least, this gets intensified by conflicting interests of involved actors.

On this background, it is the aim of the paper to contribute to the understanding of behavioral consequences of human capital measurement coming from the ambiguity and multifaceted interpretability of generated information. Especially, it shall be shown that the ambiguity of human capital information can promote opportunistic interpretation. Moreover, some clues for the limitation of those opportunistic interpretation strategies shall be given.

For that purpose, basic properties of (value based) human capital measurement will be sketched, initially. In these remarks, the focus lies on "value based" human capital measurement because the underlying shareholder value perspective makes a great deal of the economic pressure imposed on human resource departments and, therewith, contributes strongly to the growing interest in human capital measurement nowadays (Becker et al. 1997; Pfeffer 1997, 358). The second step will be to work out important methodical objections that can be raised against value based human capital measurement. In the face of those objections, the specific ambiguous character of generated human capital information will be sketched. In order to analyze the behavioral consequences coming from ambiguous human capital information, the paper, then, takes reference to the theoretical approach of organizational anarchy. On the basis of this theoretical background, it will be worked out that human capital measurement can foster opportunistic behavior. Using the manifold interpretability of ambiguous human capital information, opportunistic actors pursue strategies to reduce their own uncertainty even if this raises the uncertainty of organizational goal attainment. Because the personal uncertainty of individual actors is narrowly linked to their responsibility, it will be shown that human capital measurement is in danger to evoke a dilution of responsibilities in organizations. However, a comprehensive institutionalization and a deliberate "framing" of human capital measurement help to integrate the interests of a plurality of stakeholders and to ensure their commitment. So, it will be pointed out finally, that institutionalization and framing can limit opportunistic interpretation strategies and the weakening of responsibility structures.

2. Value based human capital measurement

Human capital measurement aims at taking strategic control of human resources on the ground of metric-based information. The value based human capital measurement is geared in order to raise the economic value of human capital and, therewith, the shareholder value finally. This rests on the assumption, that human resource management evolves sustainable effects on the financial performance of an enterprise. Although those effects on financial performance are difficult to operationalize (e.g., the empirical studies of Huselid 1995; Liouville/Bayad 1998; Schuster 1986), value based human resource management needs to measure and evaluate the value contributions of human resource activities obligatory. This shall enable an economic analysis and a shareholder-oriented reflection about personnel decisions.

On the one hand, the concepts of value based human resource management aim at the evaluation of the activities of specialized personnel departments (e.g., DGFP 2004), while, on the other hand, they attend to the comprehensive analysis of a companies' human capital (e.g., Wucknitz 2002). Thereby, human capital is regarded as the accumulated human achievement potential of a specific enterprise which is one part of its intangible assets among others such as the established clientele, reputation, or organizational knowledge (Schellinger 2004, 221). From the view of shareholder value perspective, the activities of specialized personnel departments only indirectly affect shareholder value by altering the value of human capital (Ackermann 2003, 49; Wucknitz 2002, 9). Hence, there is a fluent transition between the value based evaluation of personnel departments and the appraisal of human capital. So far, there exists no generally accepted practice of measuring human capital and its value contributions (Schellinger 2004, 209). A comprehensive overview is given by Scholz/Stein/Bechtel (2006). They distinguish between market value based, accounting-oriented, indicator based, value-added, and revenue-oriented approaches for measuring human capital (Scholz/Stein/Bechtel 2006, 51-210). But those measurement approaches, listed by Scholz/Stein/Bechtel, partly deal with the evaluation of the "intellectual capital" (e.g., Bukowitz/Williams 1999, 222), which is broader in comparison to human capital, or they don't always take reference to shareholder value philosophy. Among the value based approaches of human capital measurement rank the following concepts, which are not presentable in detail here (DGFP 2004, 12-22; Schellinger 2004, 209-251).

- The shareholder-value-oriented concept of an indicator based personnel management introduced by Bühner (1997) which is constitutive for the German speaking space,
- the measurement approach of Huber (1998) based on firm valuation methods,
- some approaches grounded on the balanced scorecard perspective as for example the Human-Capital-ROI introduced by Fitz-enz (2000) or the HR Scorecard by Becker et al. (1997) respectively Becker/Huselid/Ulrich (2001),
- the „Workonomics™" concept of the Boston Consulting Group (e.g., Strack/ Franke/Dertnig 2000),
- the human resource valuation by Wucknitz (2002, 196-200; Wucknitz/Barlet 2004, 39) which explicitly includes the possibility to focus on shareholder value, and
- the value-based approach for the evaluation of specialized human resource departments represented by the DGFP (2004).

Three basic properties characterize the concepts of value based human capital measurement:

- The reference to the final goal of creating shareholder value,
- the development of a scheme of human resource value drivers (HR value drivers) as an indicator based operationalization of shareholder value principles for human resource management, and
- the holistic orientation of the measurement concept.

The final goal of *creating shareholder value* serves as the central bench mark for value based human resource management. It can be concretized by different basic indicators. Besides the current market value in the case of quoted firms (= stock market price * number of shares), different fundamental values can be calculated on the basis of methods such as the Discounted Cash flow concepts (e.g., the wacc-approach) or the Value added concepts (e.g., Economic Value Added EVA® or Cash Value Added CVA) (e.g., Ewert/Wagenhofer 2000; Günther 1997; Weber et al. 2004). Only a few concepts of value based human capital measurement take reference to specific indicators operationalizing the goal of shareholder value creation (e.g., the Workonomics™ concept), while others offer only a linguistic and sometimes rather vague reference to the goal of value creation. Sometimes, the latter approaches only claim for a statistic analysis of correlations between the alteration of human capital indicators and the development of the firm value (DGFP 2004, 28).

The operationalization of value based human resource management mostly takes place indicator based with the help of a value driver model (e.g., Bühner 1997; DGFP 2004; Heidecker 2003; Strack/Franke/Dertnig 2000; Wucknitz/Barlet 2004). Thereby, the value drivers are seen as the link between HR management decisions and shareholder value. Those *HR value driver models* are fundamentally influenced by the basic ideas of Rappaport's shareholder value framework (1998, 56), which identifies five important and generally active value drivers emanating from the financial sphere exclusively (sales growth, operating profit margin, income tax rate, working and fixed capital investment, and finally the cost of capital ascertained on the ground of the CAPM). The value drivers are interpreted as the central control variables for the creation of value. Accordingly, they give starting points for strategic analysis (Schellinger 2004, 131). On the basis of some fundamental cause and effect hypotheses, the financial macro value drivers, mentioned in the shareholder value framework, are connected with „key micro value drivers" (Rappaport 1998, 171), which are then specifically influenced by human resource management (e.g., for the retail industry Gomez/Weber 1989, 54). The latter are seen as indicators for the creation or the destruction of shareholder value caused by human resource management. As HR micro value drivers come into play, on the one hand, financial indicators as for example the cash flow per employee, the value creation per employee, the HR cost per employee or the average cost per employee, and, on the other hand, non-financial indicators as work overtime per employee, the number of high performers, the number of internal staffing, or the number of staff away sick, and so on (e.g., Brandl 2002, 46; Bühner 1997, 711-712; Jochmann 2003, 30; Strack/Franke/Dertnig 2000, 285; Strack/Villis/Klose 2003, 27; Wucknitz/Barlet 2004, 39). Thereby, it follows some basic ideas of the "multi-dimensional approach" (Modell 2004, 39; Piber/Pietsch 2006) of performance measurement which focuses not only on financial respectively accounting based indicators and takes other quantitative, but non-monetary indicators into consideration additionally. Based on the deep understanding of causal relationships between the different indicators, this multidimensional view is supposed to make a comprehensive control of the whole organization possible. But in light of humans' limited cognitive capabilities, the underlying assumptions about value creation chains between the (partly non-financial) HR indicators and the final shareholder value goal can only be rudimentarily expressed (Pfaff/Kunze/Pfeiffer 2000).

Furthermore, the value based human resource management is stamped by a pronounced *holistic view* which aims at taking the whole organization into consideration (alike DGFP 2004, 64-65; Schellinger 2004, 213; Scholz/Stein/Bechtel 2006, 38-40). Ideally, a strictly goal-directed and top-down-related connection between the overall end of value creation, further strategic objectives and operative goals, targets of employees and performance indicators is aspired. In such holistic system of goals and indicators, human capital measurement takes an important role identifying value generating chains between human resource activities and shareholder value. Therefore, value based management refers to some basic ideas of synoptic strategic management assuming implicitly the possibility of a strictly goal-orientated, rational, and holistic concept of organizational control which strongly combines strategic planning and implementation with the operative management of day-to-day-business and the performance evaluation of employees (Schreyögg 1984, 133-135). In that sense, the holistic concept of value management aims at a comprehensive indicator based control of the whole company which includes performance-based pay for managers (e.g., stock options). Thereby, the inclusion of human capital management is deemed to be indispensable because in many big enterprises the size of personnel costs exceeds the amount of real capital a good many times (Strack/Franke/Dertnig 2000, 284). Moreover, human capital is seen as an important part of the intangible assets and, therefore, can't be excluded in value based management. Nevertheless in scientific literature, there is a critical discussion about the underlying concept of synoptic management control and much doubt whether it is really working in practice (Braybrooke/Lindblom 1963; Lindblom 1959; Mintzberg 1978; Quinn 1980).

3. Methodical limitations of human capital measurement

Human capital measurement is met by many methodical objections (similar Eigler 1999, 238; Schütte 2005, 21-22). Those objections refer to problems of measurement, prognosis, and attribution. The measurement problem results from the difficulties to detect the human achievement potential in a whole organization and to identify the actual financial return produced by these human intangible assets. So, the measurement of the HR capital base turns out to be very difficult in view of both the quantum and the value component. Using the number of employees (full-time equivalents) as indicator for the HR capital base (as for example in the indicator "value added per person" in the Workonomics™ concept; see Strack/Franke/Dertnig 2000) proves to be deficient, because it neglects the value component which, for example, is always eminently influenced by divergent motivation and competencies of the employees. In the case of tangible assets, no one would try to measure the capital base without taking the divergent value of different assets into account. But in the case of human capital, there are manifold barriers to ascertain the value component of the HR capital base in an intersubjectively verifiable manner. The valuation of full-time equivalents with average wages seems to be only a doubtful compromise. Likewise, nearly insuperable obstacles come up in trying to measure financial values resulting distinctly from the use of the HR capital base. Those obstacles lie in our generally bounded knowledge about the cause-and-effect-relations between HR activities and resulting influences on human capital as well as on shareholder value, finally. For this reason, the value driver models serving to identify important value levers of human resource management are only insufficiently explained. In spite of a great number of empirical studies concerning the effects of human resource management on business success (e.g., Delery/Doty 1996; Huselid 1995; Wright et al. 2003; Youndt et al. 1996 and for an overview Gerhart 2005; Gmür/Schwerdt 2005; Wall/Wood 2005), the underlying causal mechanisms aren't sufficiently explored (Delery 1998, 289; Purcell et al. 2003, Wall/Wood 2005, 454). Consequently, we can't qualify any concrete amount of financial profits as an outcome of strategic HR activities or attribute it to decisions of responsible HR professionals. Furthermore, the lack of necessary information about important causal relationships makes it impossible to forecast the development of human capital or value contributions subject to HR activities, which is not least essential for making strategic decisions. Moreover, even if we knew much about cause-and-effect-relations, we still can't assume the dynamic or intercultural stability of identified causal relations over time (Horgan/Mühlau 2005, 255-256; Kim/Hong 2005, 267).

In view of this general criticism, every judgement about the value of human capital or its contributions to the creation of shareholder value has to be relativized promptly. More than that, human capital information is always ambiguous and, therefore, leaves many interpretations open. So, any participant in an organizational discourse about measured human capital can choose between many possible interpretations or different stories in order to explain the generated human capital information (see Weick 1995, 24-30 on retrospective sensemaking). Indeed, there can be as many interpretations as there are interpreters. For example, there is always the possibility to doubt the significance of calculated human capital information, while otherwise the information can be treated as absolutely correct serving – actually or only apparently – the shareholder value goal. So, in the course of the creation, discussion, and utilization of human capital information, we find many characteristics of pronounced ambiguity as for example low understanding of cause-effect relationships, loosely coupled actions and outcomes, vague responsibilities for the development of the measured human capital stock, multiple goals, partly inconsistent objectives (e.g., between financial and human resource goals), and so on. In organization theory, especially the approach of organizational anarchy deals with problems of ambiguity in organizations. That approach is just appropriate to analyze activities of HR management and in particular the organizational practice of human capital measurement, which are prevailingly pervaded by ambiguous situations. Ambiguity frequently occurs not only because of the complexity and uncertainty of HR decisions but also because of the plurality of influential stakeholders spread over the whole organization and beyond (e.g., top managers, financial managers, line managers, HR specialists, employees, works councils, shareholders, employers' associations, trade unions, financial analysts, rating agencies, and sometimes even the state or the public in general; see for example Garavan 1995; Loof/Müller 2004, 22). Moreover, the HR function is distributed among many individuals, groups, and departments so that, according to basic assumptions of organizational anarchy approach, many decision arenas with a multitude of participants frequently appear simultaneously on HR topics such as human capital measurement. In that sense, organizational anarchy approach gives light on central behavioral effects of ambiguous human capital information in organizations.

4. Human capital information and organizational anarchy

The organizational anarchy approach expresses a fundamental critique on rational models of organizations (Cohen/March/Olsen 1972, 2; Olsen 1979, 82-93; alike Ansell 2001, 5883; Türk 1989, 26). In this spirit, organizations do not pass through a rational and systematic decision making process, in which, at first, problems become identified, aims are then defined, action alternatives are subsequently generated, followed by the choice of the optimal solution and the implementation supported comprehensively by the dedication of every person involved. Quite the contrary, the organizational anarchy approach assumes that modern organizations are confronted with complex and ambiguous situations, which detach the classical systematic of rational decision making processes. Moreover, uncertainty and ambiguity characterize the usual situations in many organizations (March/Olsen 1979b, 12).

The fundament of organizational anarchy approach is given by the garbage can model developed by Cohen/March/Olsen (1972; also March/Olsen 1979a). This model strictly separates the basic elements of systematic decision making processes from each other. Deviating from traditional decision theory, problems, solutions, participants, and choice opportunities appear just only in a loosely coupled and nonsystematic manner (Daft 1988, 373-376). In a somehow metaphorical argumentation, organizational decisions prove to be the result of some largely independent streams of events (Cohen/March/Olsen 1972, 3). In organizational decision processes, problems, solutions, and participants fall apart in those different streams which non-systematically flow together in organizational decision arenas. Those decision arenas or choice opportunities constitute another stream of events and each of them is metaphorically interpreted as a "garbage can" which absorbs the streams of problems, solutions, and participants. Problems, solutions, and participants lead lives of their own and become flexibly combined in a garbage can. Far from always, this combination brings effective solutions to discussed problems. Frequently, not until important problems are dropped or escape to other choice opportunities, decisions become possible (Cohen/March/Olsen 1972, 2-3).

Human capital information and underlying measurement concepts appear in such decision processes of organizational anarchy. Thereby, human capital information comes up in different roles and, therefore, proves to be part of different streams of events. Especially, measured human capital information can appear, on the one hand, as a decision arena (or garbage can) itself and, on the other hand, as a problem or as part of a solution in the context of a decision arena with mainly another topic:

- Human capital measurement usually emerges as the *main topic of organizational decision arenas* during the processes of its introduction and implementation. As long as human capital measurement hasn't become taken-for-granted (Scott 1992, 118), very fundamental discussions are still possible and may lead to the opening of a controversial decision arena on human capital measurement as a whole, debating its necessity or its needlessness. But beyond those fundamental discussions about human capital measurement as main topic of a discrete decision arena, rather concrete human capital information may also appear in those organizational decision arenas. Mainly, this takes place in the following two manifestations of human capital measurement in organizational anarchy.
- Additionally, human capital measurement and especially concrete human capital information may appear *as a solution* or (more accurately formulated) as part of a solution discussed in a decision arena with main topics others than human capital measurement. In that case, the information about human capital or about some determining factors serves as support for some solutions and counteracts other solutions which emerge in this decision arena. According to their individual interests, participants use human capital information in order to legitimize their own position or to delegitimize the position of opponents.
- Finally, the information about human capital may appear *in a decision arenas' stream of problems*. In that case, the ambiguous character of human capital information itself becomes the problem in the discourse. Due to their individual interests, the participants draw different conclusions from available information about human capital. Then, in the context of the given decision arena, another arena occurs. The latter refers to the manifold interpretability of available human capital information. This (interpretation) arena is about bargaining on the "correct" economic

meaning and adequate managerial consequences of human capital information (similar Bechtel 2006, 266).

But it is insufficient to characterize merely the streams of events, in which human capital information occurs in organizational anarchy. In this way, the analysis would stop at the level of organizational processes and wouldn't take the individuals as participants in different decision arenas into account. For this reason, the following remarks focus on the individuals being exposed to human capital measurement.

5. Human capital information and opportunism in organizational anarchy

5.1 Organizational anarchy bounded by human capital measurement?

The organizational anarchy approach contributes to a deeper understanding of the interaction process between rational individual actors leading to some kind of irrational results on the organizational level. Thereby, it is assumed that the individual in an organization and the organization itself constitute different levels of emergence (March/Olsen 1975, 152). On the ground of this assumption, important differences between the rationality of individuals and the character respectively the results of organizational decision making processes become apparent. In the context of the organization, the individual may consequently and strategically pursue his own goals interacting with other people, which are doing the same. But, the (bounded) rationality of individual decision making doesn't lead deterministically to a rational outcome of the organizations' decisions (Olsen 1979, 82-83).

At first sight, human capital measurement seems to be a little bit strange in the context of organizational anarchy because it assumes a concept of organizational rationality similar to that of individuals. Especially, the value based form of human capital measurement tries to design a consistent and multidimensional system of indicators basically stamped by the overall end of shareholder value and – in spite of all informational deficits – going down strictly hierarchical to the much more specific goals of HR management. In this spirit, human capital measurement seems to border organizational anarchy aiming at a strict reference to the overall goal of shareholder value and trying to link the manifold decision arenas tightly with the help of indicators. But it will be shown that the ambiguity of human capital information opens always free space for the breakthrough of organizational anarchy.

5.2 Human capital information as menace and opportunity for individual actors

The individual actors in organizational anarchy are confronted with the high ambiguity of organizational situations and therefore with high uncertainty about the effects of their own decisions, too. For this reason, they always have to take eventualities of unexpected organizational developments respectively unexpected effects of their decisions into account (Weick/Suttcliffe 2001) and will search for possibilities to reduce their risks. But also with respect to this motivation, human capital information becomes ambiguous for the actors because human capital information implies, on the one hand, a potential menace and, on the other hand, it offers opportunities.

In the first instance, human capital measurement tends to increase uncertainty or even menace perceived by actors in organizational anarchy. Especially, the managerial focus of human capital measurement remains rather vague so that the resulting effects can hardly be anticipated. In attributing businesses surpluses to contributions of the companies' human resources respectively to the HR function and, thereby, mostly referring to figures of the past, (value based) human capital measurement shows, on the one hand, properties of control-oriented methods serving to supervise HR activities on all management levels, but, on the other hand, it isn't really appropriate to realize an effective supervision so far. The incomplete control effects of human capital information are not only due to the ambiguous character of resulting output information, but also to the absence of a clear control input owing to frequently missing target values and the insufficient fulfilment of the controllability principle (Pfeffer 1997, 362; basically Rick/Demski 1988). For that reason, human capital measurement hasn't reached high acceptability and credibility in the view of many managers (Boudreou/ Ramstad 1997, 343; Brandl/Welpe 2006). Nevertheless, the impetus for the implementation of human capital measurement is mostly seen in duties to give top managers, shareholders or other stakeholders account for the establishment of "good" human resource management. In that sense, human capital measurement appears as a matter of duty referring to multiple responsibilities of HR activities towards internal and external stakeholders. On different management levels, this may arouse feelings of menace and psychological reactance (Brehm 1966).

Especially, this is of great importance, when there are insufficient organizational routines for the interpretation of human capital information or when existing interpretation routines are increasingly putted into question by any reason. Reversely, the uncertainty about the handling of human capital information diminishes, if routines or conventions for the measurement and interpretation of that information exist. In that case, some kind of "uncertainty absorption" happens as worked out by March/Simon (1958, 165; similar Carruthers 1995, 322): "Uncertainty absorption takes place when inferences are drawn from a body of evidence and the inferences, instead of the evidence itself, are then communicated." In the case of human capital measurement, the body of evidence is given by a common belief in the appropriateness of underlying measurement and interpretation routines (similar Bechtel 2006, 266-267). On the ground of this evidence, only the resulting human capital information is communicated in organizational decision arenas and, moreover, the effects of human capital measurement become increasingly predictable.

As soon as those routines are established, human capital information incrementally looses its menacing character while simultaneously opportunities to reduce uncertainty arise. From the view of the individual actor, an opportunity for reducing uncertainty occurs, if human capital information – based on taken-for-granted and (seemingly) objectified routines of measurement and interpretation – is useable for legitimating ones' own behavior or for supporting preferred solutions in organizational decision arenas. Looking at the discussion about human capital measurement, this function of reducing uncertainty in decision arenas emerges systematically in terms of recommendations for human resource professionals to use the legitimating effects of human capital information (e.g., Wucknitz/Barlet 2004, 32; Schütte 2005, 18).

5.3 Opportunistic strategies for the interpretation of human capital information and consequences for the allocation of responsibility

Opportunism and the ambivalence of human capital information

In the context of organizational anarchy characterized by ambiguity and uncertainty, one can assume that the actors try to reduce uncertainty for their own situation primarily. If this constitutes an important behavioral orientation for actors in organizational anarchy, it may arouse conflicts with the interests of the whole organization (alike Brunsson 1986, 53-55). Therewith, similarities to the analysis of economic theory and, in particular, to institutional economics become obvious. Especially, economic theory demonstrates that individual and collective rationality systematically fall apart by reason of deficient incentives and, not least, by reason of opportunistic behaviour (e.g., Eggertsson 1990). While opportunism causes serious problems concerning the collective rationality of human behavior, it is mostly seen as rational from the perspective of an individual actor. Following the economic point of view, it is opportunism which particularly leads to inefficient and collectively irrational outcomes of organizational decisions.

Williamson (1985, 47 and 1996, 378) defines opportunism as self-interest seeking with guile respectively more clearly as lying, stealing, cheating, and more subtle forms of deceit. In that way, opportunism is about a strictly selfish behavior of individuals even if this happens at the expense of other people or, which shall be discussed here, the achievement of organizational goals. Frequently, opportunism is considered as a phenomenon widespread in modern organizations and work life situations (e.g., Scholz 2003). Following the organizational anarchy approach, one can see opportunistic behavior as an expression of the systems of goals which actually work in organizations. Those goal systems have a widely ill-defined and inconsistent character bearing manifold discrepancies and conflicts over the different levels of emergence (especially individual vs. organization) (March/Olsen 1975, 148) and opening space for opportunistic behavior. Such conflicts and discrepancies are directly incorporated in the behavioral concept of opportunism which points out systematic differences between individual behavior and organizational goal attainment. Therefore, opportunistic behavior expresses the loosely coupled nature of individual and organizational decision making modelled by the organizational anarchy approach.

At first sight, human capital measurement seems to reduce opportunism because it helps to clarify the goal system of an organization. In order to clarify this system and to measure its achievement, human capital measurement uses many HR indicators and sometimes integrates them in an overall HR value driver model. In that sense, human capital information would restrict the free space for opportunistic behavior. But this argumentation neglects the ambiguity of human capital information itself. It is the specific ambivalent character of human capital information which makes it susceptible for opportunistic (ab-)use. This ambivalent character rests on the combination of ambiguity and evidence incorporated in human capital information simultaneously. While the ambiguity of human capital information comes from our bounded knowledge about important causal relationships and basic methodical deficits, the evidence is a result of the taken-for-grantedness of basic organizational routines for measuring and interpreting human capital information.

In that sense, human capital information leaves or even increases free space for opportunistic behavior. The ambivalence of human capital information offers opportunities for a flexible interpretation of organizational reality. According to their self-interest in each situation, opportunistic actors accentuate the ambiguity or the evidence of human capital information and, therewith, try to get control of the organizational appraisal of their (human resource) activities. These tendencies to opportunism in dealing with human capital measurement get reinforced by its relatively low acceptance in management practice (Brandl/Welpe 2006) and the widespread scepticism about human capital management and, in particular, the term "human capital" in the German public (e.g., the election of the word "human capital" as "misnomer of the year 2004" carried out by linguists).

Human capital information and opportunistic strategies for responsibility evasion

Taking the context of high ambiguity in organizational anarchies into account, (opportunistic) actors prefer to reduce their own personal uncertainty and this is narrowly linked with their personal responsibility. A far-reaching responsibility tends to increase the perceived personal uncertainty. For an actor, a lower level of responsibility means that consequences of decisions or actions are attributed to him on a smaller scale and this diminishes his uncertainty. Under circumstances of highly ambiguous situations, this is of great importance because the effects of one's own decisions and actions are very difficult to control. Following that argumentation, an opportunistic use of human capital information aims at denying personal responsibility and transferring it to others or the whole organization.

This (only seemingly) theoretical argumentation proves to be of the utmost significance for human capital measurement. The multiple responsibilities of human resource management form a main topic of the discussion about human capital measurement (e.g., DGfP 2004, 11-12; Herding/Stumpfhaus 2003, 57). Responsibilities of HR departments, HR managers or the HR activities of line managers spreading over the whole organization are extremely manifold and difficult to bear for the involved actors. Those partly inconsistent responsibilities concern the expected contributions to financial performance and a truthful reportage about it as well as the labor situation of the employees and their further development, the observance of moral expectations and compliance with legal norms, the expectations for independent ethical reflections and so on (e.g., Barrett 1999; Pool/Jenkins 1997). Likewise, manifold groups and, in particular, anyone of the plurality of potential stakeholders of HR management demand for taking on these responsibilities ranging from shareholders and financial analysts over employees representations and trade unions up to the legislator or the public in general. Not least, the informational support provided by human capital measurement shall help to cope with those complex structures of responsibility within and outside the company (e.g., DGfP 2004, 9-10; Schellinger 2004; 1-2; Schmeisser 2007). In this perspective, human capital measurement and the responsibility structure of human resource management are closely related.

On that background, it isn't astonishing that (ambiguous) human capital information also offers opportunities to reduce responsibility opportunistically. At first, the rather vague managerial focus of human capital information sketched above isn't very suitable to intensify managerial responsibility (similar Gertz 2004). The methodical limitations of human capital measurement don't permit to attribute value variations of human capital to concrete decisions, managers, or departments. For this reason, mostly no one tries to integrate human capital information in the determination base for performance-based pay. In the face of those attribution problems, human capital information doesn't lead directly to an increase in managerial responsibility.

Besides, managers in the organizational anarchy can intentionally use human capital information in order to reduce personal responsibility. As mentioned above, human capital information may appear with different roles in a given decision arena. But always we have to suppose that there are participants who are motivated to place human capital information in the debates of a decision arena. A central motivation comes from the interest in reducing one's own responsibility. Opportunistic strategies for reducing responsibility utilize the ambivalent character of human capital information emphasizing its ambiguity or its evidence, just as appropriate. So, the situational opportunistic interpretation of human capital information alternates between the basic two roles in which human capital information can emerge in organizational decision arenas.

Firstly, participants can place human capital information as part of a discussed solution in a decision arena. Thereby, they refer to the body of evidence given by the common belief in the appropriateness of underlying measurement and interpretation routines and leave the ambiguity systematically out of sight. Opportunistic participants do this, when they expect support for their preferred solutions, their own power position, or for legitimating their decisions (similar Pfeffer 1997, 363; on topic "ex post rationalization" see Carruthers 1995, 323). As for example, if indicators show an increase in human capital and finally in shareholder value, human resource professionals are interested in this information in order to legitimate their activities or to gain further resources. Likewise, the chief financial officer may be in favour to use such information because this demonstrates the rightness of some HR investments approved by him. Putting human capital information as (part of) a solution in a decision arena allows for transferring responsibility to impersonal routines of measurement and interpretation. This becomes obvious in the case management failures. Then, participants can pick up appropriate human capital information in order to evade responsibility for their failure arguing that it was the right decision in the face of originally available information. In that case, the ambiguous human capital information is used to prove that management failures are within the limits of normal risk-taking (similar Brunsson 1986, 51). In extreme cases, managers may decide proactively against their own intuition and in accordance with human capital information in order to avoid responsibility and discredit for possible failures.

Secondly, participants can place human capital information as part of the stream of problems into a given decision arena. Then, they refer to the ambiguity of human capital information emphasizing its methodical limitations and problems of interpretation. Accordingly in this case, they leave the evidence of human capital information, grounded in a common belief system, unconsidered. If that belief system is supported by a powerful coalition in an organization, this strategy may be risky, but sometimes also seen as necessary. As for example, HR professionals will tend to pick up methodical objections against human capital measurement, if generated information indicates a negative development of HR contributions to shareholder value. Likewise, if personnel layoff is substantiated also with human capital information, worker representatives may be in favour of querying the information base. Especially, this strategy proves to be helpful to avoid responsibility, if it's the human capital information itself which gives reason for thinking about managerial performance. In extreme cases, opportunistic agents may initially decide in accordance with human capital information in order to limit their responsibility for subsequently possible managerial failures, while denying the relevance of human capital information later in order to increase personal credit for ultimately resulting managerial success.

The opportunistic utilization of human capital information makes it fairly easy to evade personal responsibility and to gain personal credit, frequently. Especially, the flexible interpretation of human capital information over time, space, and, not least, over different decision arenas, which sometimes emphasizes its ambiguity and its evidence at some other time, seems to be promising. But what differentiates the opportunistic utilization from others? At first, opportunistic interpretations are frequently directed to the allocation of responsibility. Opportunistic agents aim at evading responsibility or relocating it to others respectively the whole organization. Secondly, opportunistic interpretations prefer a fairly one-sided accentuation of human capital information. They either emphasize the ambiguity or the evidence of human capital information, while there is little willingness to see both, ambiguity and social evidence, in common.

6. The role of institutionalization and framing

Only some short remarks can be made here concerning the limitation of opportunistic interpretation strategies in dealing with human capital information. Thereby, the following consideration brings a twofold argumentation to the fore. Coping with scepticism, psychological reactance, and opportunism towards human capital measurement requires, on the one hand, a comprehensive institutionalization of measurement and interpretation procedures and, on the other hand, a framing of human capital measurement which is appropriate to promote the commitment of involved actors.

Institutionalization relieves the human capital measurements' ambivalent character between ambiguity and evidence. Especially, institutionalization considerably amplifies evidence and simultaneously reduces ambiguity. Berger/Luckmann (1966) showed that institutions construct social reality and, moreover, in spite of being still a purely human product, they appear as an externally given and objectified reality which determines how things are done. Not least, because of the lack of institutionalization, the ambiguity of human capital measurement becomes immediately obvious. Looking back to the beginning of financial accounting, we find a similar situation of imperfect and ambiguous information developing to greater (actual or socially perceived) exactness through methodical improvement and, in particular, through processes of institutionalization (Boudreau/Ramstad 1997; McSweeney 1997). In order to promote a comprehensive institutionalization of human capital measurement, organizations can refer to the three major pillars of institutions worked out by Scott (1995, XIII-XIX; 2001, 47-61): the normative, the regulative, and the cognitive pillar. In the case of human capital measurement, those pillars can effectively work together in order to limit opportunistic interpretation strategies. Therefore, the main question is how the institutionalization process of human capital measurement can be initiated comprehensively, that is, in reference to all of three pillars of institutions.

The first pillar regards *institutions as normative systems*. Concerning human capital measurement, an important normative rule is the obligation for quoted companies (according to IAS/IFRS) to report about their intangible assets including human capital in their financial statements (e.g., Schmeisser 2007). But in order to utilize human capital measurement for internal managerial control, it has to be grounded on a wide normative base which integrates the perspectives of different involved groups. Frequently, it is emphasized that human capital measurement focuses on connecting financial and HR perspectives (e.g., Fitz-enz 2000; Schellinger 2004, 143; Scholz/Stein/Bechtel 2006, 27-28). In that sense, human resources shall be dignified economically as a critical factor for business success balanced with the demands of financial capital. This broader normative basis is compatible with the shareholder value goal as well as with humanistic principles (e.g., Fitz-enz 2000, XIII; Schütte 2005). So it can bring different groups and interests together, as for example top managers, finance director, HR managers, divisional or departmental managers, employees, and members of the works council as well as actors from the outside as for example management consultants, trade or employer associations, or trade unions.

Such a wider normative base can support the identification of groups involved with human capital measurement, but this alone isn't sufficient for tackling with opportunistic interpretation strategies. Thereto, human capital measurement must be integrated in an institutional framework which realizes regulative effects on interpretation behavior. This *regulative institutional framework* must be aligned to (moderately) restrict the scope of interpretation of human capital information in the diverse decision arenas of organizational anarchy. In that sense, effective human capital measurement needs a goal-oriented setting of interpretation rules which determines the border between acceptable and unacceptable interpretation of human capital information. Especially, those patterns of interpretation have to be scotched which are conspicuously restrictive and one-sided emphasizing only the ambiguity or the evidence of human capital information. As mentioned above, those interpretation patterns frequently advert to an underlying opportunistic orientation. In that sense, the interpretation rules of human capital information have to focus on a proper utilization and further development of human capital management concentrating on the understanding of the key linkages between HR activities and valued outcomes. But, the setting of those interpretation rules needs the commitment of the members of a companies' "dominant coalition" (Cyert/March 1963; Duncan/Weiss 1979, 78). The dominant coalition is comprised by a group of persons in an organization which are participants in many organizational decision arenas and, on a formal or informal base, have the power to substantially influence the discussion processes taking place in these arenas. Because the members of the dominant coalition come from different departments and hierarchical levels, the sketched wide normative base integrating financial and HR perspectives is of great importance for bringing them together to support the institutionalization of human capital measurement.

The third pillar of institutions is the cognitive one. Understanding *institutions as cognitive systems* rests upon the idea that institutional rules are socially constructed deriving from social interactions. In social interactions, the reciprocal tuning of behavior between persons creates interpretive schemes as assignments of common social meanings to any perceived occurrences. Those shared meanings are embedded in institutionalized rules. Over time, they become increasingly independent from the individuals in a social context leading to a far-reaching taken-for-grantedness and a widely unconscious activation of institutionalized behaviour finally. Likewise, the interpretation behavior in dealing with human capital information can refer to basic shared meanings and utilize the taken-for-grantedness of already existing accounting institutions in order to reduce reactance and limit opportunistic interpretation. In that sense, methods of human capital measurement which systematically integrate well-accepted and familiar financial measures are more likely to limit opportunistic interpretation. A good example for human capital measurement taking reference to well-accepted cognitive systems is given by Workonomics™ concept. This concept refers not only to influential normative ideas of shareholder value management, but also explicitly to well-known basic shareholder value indicators (EVA® or CVA) in order to deduce the key HR indicator "value added per person" (Heidecker 2003, 150-151; Strack/Villis/Klose 2003, 26). Moreover, this concept adopts basic ideas of Rappaport's shareholder value framework (1998, 56) for pursuing a more sophisticated analysis of the linkages between HR activities and economic outcomes finally. Herewith, the Workonomics™ concept appeals to cognitive elements of established (financial) accounting institutions which are frequently taken-for-granted in big enterprises and familiar to managers in those companies.

Moreover, promoting the institutionalization process of human capital measurement in organizations proves to be, not least, a matter of framing. As abovementioned, institutionalized rules work on the ground of embedded social meanings shared in a social context. In this respect, *Framing* is about how human capital measurement gets contextualized in relation to basic social meanings actually working in today's organizations. It offers clues for adding meaning to the measurement and interpretation processes dealing with human capital information and, therefore, helps to make sense of them and to achieve behavioral orientation (Bateson 1954 and 1972; Goffman 1974; Weick 1995). Following this view, human capital measurement needs an adequate framing in order to overcome scepticism, reactance, and opportunism.

In part, different methods of human capital measurement offer different frames influencing how human capital management is perceived by the actors in an organization. As sketched above, value based human capital measurement follows the paradigm of surplus allocation to human resources respectively to human resource management. This surplus allocation frame is closely related to notions of supervision, responsibility, external control, or the necessity to legitimate HR investments (e.g., Ackermann 2003, 49; Armstrong 1989; Becker 2005, 51-52; Schellinger 2004, 1). Then, human capital measurement likely appears as an irritating chore and as something that restricts scopes of action fostering psychological reactance and opportunism. An alternative frame is given by the "saarbruecken formula" of human capital measurement (Scholz/Stein/Bechtel 2006, 221-232 und 2007). Beyond the partly critical discussion about its methodical base and problems (Becker/Labucay/Rieger 2007; Scholz 2007b; Schütte 2005, 25), the saarbruecken formula introduces not only a different concept of measurement, but offers also an alternative basic frame for the organizational communication about human capital management and the interpretation of human capital information. In contrary to value based human capital measurement, the proponents of the saarbruecken formula don't emphasize the paradigm of surplus allocation, but aim at measuring the yield potential of human resources and, in the first instance, carry out this evaluation widely independent from the concrete business situation of the company (Scholz 2007a, 25-26). This yield potential paradigm can be used in order to dispense human capital measurement largely from problematic connotations of supervision, external control or duties of justification and legitimating requirements. Supervision, external control and justification may be implicitly included in the yield potential paradigm too, but moreover it is possible to bring a visionary reconciliation of interests to the fore, thereby, still holding a clear reference to underlying measurement procedures. In that sense, the yield potential frame enables to highlight the development of the employees' achievement potential. The yield potential of the staff ascertained by human capital measurement may be, then, an expression of the companies' mission to support employees refining their abilities and dedication to their own *and* to the companies' advantage. The yield potential frame for measuring human capital can be helpful to emphasize common goals of the company and the individual actors involved. By now, not enough attention is paid to the utilization of framing for the establishment of human capital measurement, even though different methods sometimes go along with different frames influencing organizational communication.

7. Conclusions

The paper worked out some leading behavioral tendencies in the exposure to human capital measurement. For this purpose, it resorts to the model of organizational anarchy and the assumption of selfish actors, which are searching to benefit from human capital measurement. This proves to be the result of an isolated abstraction. In reality, there are others than selfish motivations (e.g., Pietsch 2005, 16-19) and, by no means, all organizational occurrences correspond to the properties of organizational anarchy (Ansell 2001). But this doesn't detract from the help these assumptions offer to segregate essential behavioral tendencies in the exposure to human capital measurement. Moreover, it has been shown that, in the face of the plurality of stakeholders, the organizational anarchy approach is just appropriate to describe the organizational context of HR activities and, in particular, to analyze the behavioral effects of human capital measurement.

The analysis of those behavioral effects has to take the ambiguity of human capital information into account. Its ambiguous and characteristically ambivalent character makes human capital information prone to opportunistic patterns of interpretation. Referring to the model of organizational anarchy, it is assumed that opportunistic actors try to reduce their uncertainty and, therefore, evade personal responsibility, partly regardless of the attainment of organizational goals. From this perspective, the ambivalent character of human capital measurement offers those actors opportunities for the evasion of personal responsibility. Such behavioral consequences and especially the opportunistic utilization aren't sufficiently considered in the discussion about human capital measurement, so far.

Moreover, the paper worked out the closely interdependent relationship between human capital measurement and the multiple responsibilities of HR management which hasn't yet been recognized sufficiently in literature. In that sense, human capital measurement serves not only to cope with the multitude of responsibilities of HR management, but is also in danger to evoke a dilution of responsibility structures. Human capital measurement may really offer more knowledge about human resources, but, because of its ambiguous and ambivalent character, it simultaneously opens new gaps of management control, which then have to be closed by the organizational interaction processes of involved actors. Not least, this organizational process is about weighting, interpreting and changing responsibilities of HR decision makers on diverse management levels.

Therefore, the implementation and application of human capital measurement has to take the organizational context into account. Especially, human capital measurement is far from to be a purely technical system. It gets into operation only because of its "social embeddedness" (Granovetter 1985; alike Munro 1995, 438; Kappler 2006, 117-121) and it requires an organizational belief system about the appropriateness of accomplished measurement and interpretation practices (for belief systems in organizational anarchy see March/Olsen 1979c, 60-66; alike McSweeney 1997, 708). In order to cope with scepticism, psychological reactance, and opportunism, clues for a comprehensive institutionalization of human capital measurement (incorporating the normative, regulative and cognitive pillar) were worked out. Moreover, a deliberate framing of human capital measurement is needed in order to promote the commitment of involved actors. So, the paper showed finally that different methods of human capital measurement sometimes offer different frames for organizational communication about generated information. As well as the normative, regulative, and cognitive institutionalization of human capital measurement, that topic needs more attention from literature.

References

Ackermann, Karl-Friedrich (2003): Den Wert des Humankapitals bestimmen. In: Personalwirtschaft, 30 (9), 46-49.

Ansell, Christopher K. (2001): The Garbage Can Model of Behavior. In: Smelser, N. J. / Bates, Paul (Eds.): International Encyclopedia of the Social and Behavioral Sciences. Oxford, 5883-5886

Antle, Rick / Demski, Joel S. (1988): The Controllability Principle in Responsibility Accounting. In: The Accounting Review, 63, 700-718.

Armstrong, Peter (1989): Limits and Possibilities for HRM in an Age of Managmenet Accounting. In: Storey, John (Ed.): New Perspectives on Human Resource Management. London, 154-166.

Bahnmüller, Reinhard / Fisecker, Christiane (o. J.): Dezentralisierung, Vermarktlichung und Shareholderorientierung im Personalwesen. Folgen für die Stellung und das Selbstverständnis des Personalwesens und die Interaktionsmuster mit dem Betriebsrat. Ein Literaturbericht. FATK Forschungsinstitut für Arbeit, Technik und Kultur e.V. an der Universität Tübingen.

Barrett, Edward (1999): Justice in the Workplace? Normative Ethics and the Critique of Human Resource Management. In: Personnel Review, 28, 307-318.

Bateson, Gregory (1954): A Theory of Play and Fantasy. In: Psychiatric Research Reports, 2, 39-51.

Bateson, Gregory (1972): Steps to an Ecology of Mind. New York.

Bechtel, Roman (2006): Humankapitalberechnung zwischen Markt- und Ressourcenorientierung. Eine axiomatische Integration. München et al.

Becker, Brian E. / Huselid, Mark A. / Pickus, Peter S. / Spratt, Michael F. (1997): HR as a Source of Shareholder Value: Research and Recommendations. In: Human Resource Management, 38, 39-47.

Becker, Brian E. / Huselid, Mark A. / Ulrich, Dave (2001): The HR Scorecard. Linking People, Strategy and Performance. Boston / MA.

Becker, Fred G. (2005): Den Return on Development messen: Möglichkeiten und Grenzen der Evaluation. In: Personalführung, 38 (4), 48-53.

Becker, Manfred / Labucay, Inéz / Rieger, Caroline (2007): Erfassung und Bewertung von Humankapital – Kritische Anmerkungen zur Saarbrücker Formel, in: Betriebswirtschaftliche Forschung und Praxis, 59, 38-58.

Berger, Peter L. / Luckmann, Thomas (1966): The Social Construction of Reality. A Treatise in the Sociology of Knowledge. New York.

Boudreau, John W. / Ramstad, Peter M. (1997): Measuring Intellectual Capital: Learning from Financial History, In: Human Resource Management, 36, 343-356.

Brandl, Julia (2002): Die Problematik der Kennzahlen in Personalinformationssystemen. In: Personalführung, 35 (9), 42-47.

Brandl, Julia / Welpe, Isabell (2006): Ursachen der Ablehnung von Human Capital Management seitens der Unternehmensführung. In: Die Betriebswirtschaft, 66, 542-560

Braybrooke, David / Lindblom, Charles E. (1963): A Strategy of Decision: Policy Evolution as a Social Process. New York.

Brehm, Jack Williams (1966): A Theory of Psychological Reactance. New York, London.

Brunsson, Nils (1986): The Irrational Organization. Irrationality as a Basis for Organizational Action and Change. Chichester et al.

Bühner, Rolf (1997): Increasing Shareholder Value through Human Asset Management. In: Long Range Planning, 30, 710-717.

Bukowitz, Wendi R. / Williams, Ruth L. (1999): The Knowledge Management Fieldbook. London.

Carruthers, Bruce G. (1995): Accounting, Ambiguity, and the New Institutionalism. In: Accounting, Organizations and Society, 20, 313-328.

Cohen, Michael D. / March, James G. / Olsen, Johan P. (1972): A Garbage Can Model of Organizational Choice. In: Administrative Science Quarterly, 17, 1-25.

Cyert, Richard M. / March, James G. (1963): A Behavioral Theory of the Firm. Englewood Cliffs.

Daft, Richard L. (1988): Organization Theory and Design. 3rd ed. St. Paul et al.

Delery, John E. (1998): Issues of Fit in Strategic Human Resource Management. Implications for Research. In: Human Resource Management Review, 37, 289-309.

Delery, John E. / Doty, D. Harold (1996): Modes of Theorizing in Strategic Human Resource Management: Tests of Universalistic, Contingency and Configurational Performance Predictions. In: Academy of Management Journal, 39, 802-835.

DGFP Deutsche Gesellschaft für Personalführung e. V. (2004): Wertorientiertes Personalmanagement – ein Beitrag zum Unternehmenserfolg. Konzeption, Durchführung, Unternehmensbeispiele. Bielefeld.

Duncan, Robert B. / Weiss, Andrew (1979): Organizational Learning: Implications for Organizational Design. In: Staw, Berry M. (Ed.): Research in Organizational Behavior. Greenwich / Conn., 75-123.

Eggertsson, Thráinn (1990): Economic Behavior and Institutions. Cambridge.

Eigler, Joachim (1999): Bedeutung und Implikationen des Shareholder Value-Ansatzes für das Personalmanagement. In: Zeitschrift für Planung, 10, 231-254.

Ewert, Ralf / Wagenhofer, Alfred (2000): Rechnungslegung und Kennzahlen für das wertorientierte Management. In: Wagenhofer, Alfred / Hrebicek, Gerhard (Eds.): Wertorientiertes Management. Konzepte und Umsetzungen zur Unternehmenswertsteigerung. Stuttgart, 3-64.

Fitz-enz, Jac (2000): The ROI of Human Capital. New York.

Garavan, Thomas N. (1995): Stakeholders and Strategic Human Resource Development. In: Journal of European Industrial Training, 19 (10), 11-16.

Gerhart, Barry (2005): Human Resources and Business Performance: Findings, Unanswered Questions, and an Alternative Approach. In: Management Revue, 16, 174-185.

Gertz, Winfried (2004): Kennzahlenberge ohne Relevanz. In: Personalmagazin, 6 (12), 13.

Gmür, Markus / Schwerdt, Boris (2005): Der Beitrag des Personalmanagements zum Unternehmenserfolg. Eine Metaanalyse nach 20 Jahren Erfolgsfaktorenforschung. In: Zeitschrift für Personalforschung, 19, 221-251.

Goffman, Erving (1974): Frame Analysis: An Essay on the Organization of Experience. New York.

Gomez, Peter / Weber, Bruno (1989): Akquisitionsstrategie. Wertsteigerung durch Übernahme von Unternehmungen. Stuttgart and Zürich.

Granovetter, Mark (1985): Economic Action and Social Structure: The Problem of Embeddedness. In: American Journal of Sociology, 91, 481-510.

Günther, Thomas (1997): Unternehmenswertorientiertes Controlling. München.

Heidecker, Michael (2003): Wertorientiertes Human Capital Management. Zur Steigerung des Unternehmenswertes durch die Personalarbeit. Wiesbaden.

Herding, Klaus / Stumpfhaus, Bernhard (2003): Humankapital nicht bewerten, sondern entfalten. In: Personalwirtschaft, 30 (5), 55-58.

Horgan, Justine / Mühlau, Peter (2005): Human Resource Management and Performance: A Comparative Study of Ireland and the Netherlands. In: Management Revue, 16, 242-258.

Huber, Matthias (1998): Bewertung von Dienstleistungsunternehmen. Das Human Capital als wertbestimmender Faktor in Theorie and Praxis. Bern et al.

Huselid, Mark A. (1995): The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance. In: Academy of Management Journal, 38, 635-672.

Jochmann, Walter (2003): Die neue Aufmerksamkeit für das Personalmanagement. In: Personalwirtschaft, 31 (7), 28-33.

Kappler, Ekkehard (2006): Controlling. Eine Einführung für Bildungseinrichtungen und andere Dienstleistungsorganisationen. Münster et al.

Kim, Seong-Kook / Hong, Ji-Sook (2005): The Relationship between Salesperson Competencies and Performance in Korean Pharmaceutical Industry. In: Management Revue, 16, 259-271.

Krulis-Randa, Jan S. (1994): Personalbedarf und Personalausstattung der Personalabteilung. In: Ackermann, Karl-Friedrich (Hg.): Reorganisation der Personalabteilung. Dezentralisierung, Divisionalisierung, Profit-Center-Organisation der Personalarbeit in Unternehmen. Stuttgart, 187-200.

Lindblom, Charles E. (1959): The Science of the “Muddling Through”. In: Public Administration Review, 19, 79-88.

Liouville, Jacques / Bayad, Mohamed (1998): Human Resource Management and Performances. Proposition and Test of a Causal Model. In: Zeitschrift für Personalforschung, 12, 337-351.

Loof, Uwe / Müller, Dominik (2004): Harte Fakten zu weichen Faktoren. In: Personalmagazin, 6 (12), 22-24.

March, James G. / Olsen, Johan P. (1975): The Uncertainty of the Past: Organizational Learning under Ambiguity. In: European Journal of Political Research, 3, 147-171.

March, James G. / Olsen, Johan P. (1979a) (Eds.): Ambiguity and Choice in Organizations. 2nd ed. Bergen et al.

March, James G. / Olsen, Johan P. (1979b): Organizational Choice under Ambiguity. In: March, James G. / Olsen, Johan P. (Eds.): Ambiguity and Choice in Organizations. 2nd ed. Bergen et al., 10-23.

March, James G. / Olsen, Johan P. (1979c): Organizational Learning and the Ambiguity of the Past. In: March, James G. / Olsen, Johan P. (Eds.): Ambiguity and Choice in Organizations. 2nd ed. Bergen et al., 54-81.

March, James G. / Simon, Herbert A. (1958): Organizations. New York.

McSweeney, Brendan (1997): The Unbearable Ambiguity of Accounting. In: Accounting, Organizations and Society, 22, 691-712.

Mintzberg, Henry (1978): Patterns in Strategy Formation. In: Management Science, 24, 934-948.

Modell, Sven (2004): Performance Measurement Myths in the Public Sector: A Research Note. In: Financial Accountability & Management, 20, 39-55.

Munro, Rolland (1995): Managing by Ambiguity: An Archaeology of the Social in the Absence of Management Accounting. In: Critical Perspectives on Accounting, 6, 433-482.

Olsen, Johan P. (1979): Choice in an Organized Anarchy. In: March, James G. / Olsen, Johan P. (Eds.): Ambiguity and Choice in Organizations, 2nd ed. Bergen et al., 82-139.

Pfaff, Dieter / Kunz, Alexis / Pfeiffer, Thomas (2000): Balanced Scorecard als Bemessungsgrundlage finanzieller Anreizsysteme – Eine theorie- und empiriegeleitete Analyse der resultierenden Grundprobleme. In: Betriebswirtschaftliche Forschung und Praxis, 52, 36-55.

Pfeffer, Jeffrey (1997): Pitfalls on the Road to Measurement: The Dangerous Liaison of Human Resources with the Ideas of Accounting and Finance. In: Human Resource Management, 36, 357-365.

Piber, Martin / Pietsch, Gotthard (2006): Performance Measurement in Universities: The Case of Knowledge Balance Sheets Analyzed from a New Institutionalist Perspective. In: Epstein, Marc J. / Manzoni, Jean-Francois (Eds.): Performance Measurement and Management Control: Improving Organizations and Society. Studies in Managerial and Financial Accounting, 16, Amsterdam et al., 379-401.

Pietsch, Gotthard (2005): Institutionenökonomik jenseits des Opportunismus. In: Schauenberg, Bernd / Schreyögg, Georg / Sydow, Jörg (Hg.): Institutionenökonomik als Managementlehre, Managementforschung 15, Wiesbaden, 1-44.

Pool, Michael / Jenkins, Glenville (1997): Responsibilities for Human Resource Management Practices in the Modern Enterprise. Evidence from Britain. In: Personnel Review, 26, 333-356.

Purcell, John / Hutchinson, Sue / Kinnie, Nick / Rayton, Bruce / Swart, Juani (2003): Understanding the Pay and Performance Link: Unlocking the Black Box, London.

Quinn, James B. (1980): Strategies for Change. Logical Incrementalism. Homewood / Ill.

Rappaport, Alfred (1998): Creating Shareholder Value. A Guide for Managers and Investors. 2nd ed. New York and London.

Roehl, Heiko (2002): Organisationen des Wissens. Stuttgart.

Schellinger, Jochen (2004): Konzeption eines wertorientierten strategischen Personalmanagements. Frankfurt am Main.

Scherm, Ewald (2004): Drei Irrtümer der Personalarbeit. In: Personal-Magazin, 6 (3), 66-68.

Scherm, Ewald / Pietsch, Gotthard (2005): Erfolgsmessung im Personalcontrolling – Reflexionsinput oder Rationalitätsmythos? In: Betriebswirtschaftliche Forschung und Praxis, 57, 43-57.

Schmeisser, Wilhelm (2007): Zur Ansatz- und Bewertungsproblematik von Humankapital nach IFRS. In: Betriebswirtschaftliche Forschung und Praxis, 59, 1-19.

Scholz, Christian (2003): Spieler ohne Stammplatzgarantie. Darwiportunismus in der neuen Arbeitswelt. Weinheim.

Scholz, Christian (2007a): Ökonomische Humankapitalbewertung – Eine betriebswirtschaftliche Annäherung an das Konstrukt Humankapital. In: Betriebswirtschaftliche Forschung und Praxis, 59, 20-37.

Scholz, Christian (2007b): Es zieht ein Herr Becker durchs Land … noch immer – Replik zur Kritik am Artikel zur Saarbrücker Formel. In: Betriebswirtschaftliche Forschung und Praxis, 59, 59-65.

Scholz, Christian / Stein, Volker / Bechtel, Roman (2006): Human Capital Management. Wege aus der Unverbindlichkeit. 2nd ed. München.

Scholz, Christian / Stein, Volker / Bechtel, Roman (2007): Human Capital Management. The Saarbruecken Formula – A Brief Introduction, Onlinedokument:
https://www.saarbruecker-formel.net/artikel.html#aformula, abgerufen am 08.0.6.2007

Schreyögg, Georg (1984): Unternehmensstrategie. Grundfragen einer Theorie strategischer Unternehmensführung. Berlin and New York.

Schuster, Frederick E. (1986): The Schuster Report: The Proven Connection between People and Profits. New York.

Schütte, Martin (2005): Humankapital messen oder bewerten: Sisyphusarbeit oder Gebot der Stunde? In: Personalführung, 38 (4), 18-28.

Scott, W. Richard (1992): Organizations: Rational, Natural and Open Systems. 3rd ed. Englewood Cliffs.

Scott, W. Richard (1995): Introduction: Institutional Theory and Organizations. In: Scott W. Richard / Christensen, Søren (Eds.): The Institutional Construction of Organizations. International and Longitudinal Studies. Thousand Oaks et al., XI-XXIII.

Scott, W. Richard (2001): Institutions and Organizations. 2nd. ed. Thousand Oaks et al.

Strack, Rainer / Franke, Jutta / Dertnig, Stephan (2000): WorkonomicsTM: Der Faktor Mensch im Mittelpunkt. In: Zeitschrift Führung + Organisation, 69, 283-288.

Strack, Rainer / Villis, Ulrich / Klose, Frank (2003): Wertsteigerung durch den Mitarbeiter. In: Personalwirtschaft, 30 (12), 23-27.

Türk, Klaus (1989): Neuere Entwicklungen in der Organisationsforschung. Ein Trend Report. Stuttgart.

Wall, Toby D. / Wood, Stephen J. (2005): The Romance of Human Resource Management and Business Performance, and the Case for Big Science. In: Human Relations, 58, 429-462.

Weick, Karl E. (1995): Sensemaking in Organizations. Thousand Oaks.

Weick, Karl E. / Suttcliffe, Kathleen M. (2001): Managing the Unexpected. Assuring High Performance in an Age of Complexity. San Francisco.

Weinberg, Jakob (2004): Kompetenz für das rechte Maß. In: Personalwirtschaft, 31 (10), 15-18.

Williamson, Oliver E. (1985): The Economic Institutions of Capitalism. New York.

Williamson, Oliver E. (1996): The Mechanisms of Governance. New York and Oxford.

Wolf, Elke / Zwick, Thomas (2003) Höhere Produktivität durch modernes Personalmanagement? In: Personalführung, 36 (3), 54-58.

Wright, Patrick M. / Gardner, Timothy M. / Moynihan, Lisa M. (2003): The Impact of HR Practices on the Performance of Business Units. In: Human Resource Management Journal, 13, 21-36.

Wucknitz, Uwe D. (2002): Handbuch Personalbewertung. Messgrößen – Anwendungsfelder – Fallstudien. Stuttgart.

Wucknitz, Uwe D. / Barlet, Stephan (2004): Den Wert der Personalarbeit messen und bewerten. In: Personalführung, 37 (6, 33-42.

Wunderer, Rolf (1992): Von der Personaladministration zum Wertschöpfungs-Center. In: Die Betriebswirtschaft, 52, 201-215.

Youndt, Mark A. / Snell, Scott A. / Dean, James E. / Lepak, David P. (1996): Human Resource Management, Manufacturing Strategy, and Firm Performance. In: Academy of Management Journal, 39, 836-865.