

RAPORTY Z BADAŃ

In Search of Relevance of Human Capital Measurement – Theoretical Assumptions and Empirical Evidence

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The article presents theoretical assumptions of the relevance of measuring human capital in an enterprise, from a strategic perspective – the importance of the creation of value and an operational perspective – the importance in making personnel decisions. It also presents the main results of an empirical study on the information needs and tools currently used by companies for the measurement of human capital, carried out in the framework of the project “Human capital as part of the company’s value.” The study covered 600 enterprises of different sizes (micro, small, medium and large), representing various industries. Fragment of the study presented in the article focuses on the motivations of companies to make the analysis and measurement of human capital and the perceived benefits of this activity.

Keywords: human capital, measurement, human resources management.

1. Introduction

The growing importance of human capital measurement is often declared by the management of organizations as an argument for the proper management of those important assets being at the disposal of the company. As declared it is not only important for the current or on-going human capital management processes, but also because the human capital is an element of company’s value. However, despite those declarations the importance of human resources has not found a rightful place as an animator and creator of company’s value (Sajkiewicz, 2001). The need for efficient use of the organization’s resources, including human capital, encourages companies to develop measurement systems consistent with their strategic objectives, allowing for the maximization of the benefits

from the use of this most important asset. The tendency to seek more and more complex ways of measuring human capital, both of quantitative and qualitative nature is often seen as a sign of the growing importance of this resource to the organization.

The basic premise behind the concept of *intellectual capital* is the generation of value for the company by facilitating the flow and transformation of knowledge into the form of relationship, human and structural capital (Allee, 2007). Creation of those core capabilities of a company requires the creation of the adequate information systems – also those allowing for the human capital analysis and measurement. In practice the measurement of human capital (as well as measurement of effectiveness of HRM) serves mainly evidencing of the importance of the HR function, thus having only an supportive and – at best operational significance. Thus the aim of this article is to analyse – both from theoretical and empirical perspective – the relevance of human capital measurement for the corporate decision-making processes from a strategic point of view – the importance of the creation of value and an operational point of view – the importance in making personnel decisions.

2. Relevance of human capital measurement – theoretical assumptions

Although the measurement of the strategic value-drivers of intellectual capital has always been a challenge in the decision-making process, the development of knowledge economy has placed many companies in front of an even more demanding and tedious task of valuation of intellectual capital and strategic value management (Bose & Oh, 2004). There is a growing body of theoretical and empirical evidence of value-relevance of intellectual and human capital information in publicly available reports and disclosures (Wyatt, 2008). Result of this research shows that the intellectual capital disclosures are positively associated with the market price of companies (Vafaei et al., 2011). Also the human capital information was found value-relevant, especially the information on qualification and competence issues being positively associated with the firm value (Gamerschlag, 2013).

An important contribution to the understanding of the economic logic of human capital and human resources management investments have been made in a stream of research called *personnel economics*. Especially influential were the contributions of E.P. Lazear (Lazear, 2000; Lazear & Gibbs, 2009; Rulliere & Villeval, 2003). Personnel economics aims at modelling firms' use of optimal management practices that form the backbone on human resources management

from the economic perspectives of maximization, equilibrium, efficiency and econometric modelling (Lazear & Shaw, 2007). These efforts have not only helped to understand how the economical perspectives influence HRM decision-making processes, but also, as stated by Lazear and Shaw (2007) “enabled the economists to further the understanding of human resources management”.

As such, also the HR is challenged by the need to deliver value, with the growing sensitivity to the real costs of HR as compared to the less tangible benefits from this function (Wright & Snell, 2005). As noted by Wright & Snell (2005), this value must be expressed both quantitatively and qualitatively. Recent efforts to develop comprehensive measures of HR are an example of the importance attached to the provision of quantitative data to demonstrate the value of HR. However, regardless of the extent of these indicators and regardless of their usefulness for internal evaluation and decision-making by HR, still they are not sufficiently compelling to non-HR. Thus, the criticism of human resources measurement stems largely from the fact that such measurements are based on “soft” measures rather than objective, auditable numbers (Alvarez-Dardet et al., 2000).

However, as noted by W. Cascio and J. Boudreau (2008), it can also be a symptom and consequence of the perception of the HRM function as an ancillary activity, servitude to other functions of the organization. In this case, the main purpose and reason to create systems for measuring and reporting of human capital and to analyse the effectiveness of HR function itself is the need to constantly prove the validity of the expenditure, or even the very existence of this functional area. The argument confirming these observations is, according to the authors cited above, the mere fact that in spite of more and more complex databases, complex systems of analysis and reporting of data on human capital, the measurements made rarely reflect real strategic change.

Certainly one of the main causes of these problems is the focus on easily measurable factors (e.g. measures based on an analysis of costs, or the ratio between the number of HRM specialists to the number of staff). A simple analysis of these factors, does not allow to capture strategy-dependent key performance drivers (indicators). Hubbard (2010) defines measurement as “a quantitatively expressed reduction of uncertainty based on one or more observations”. He argues, that the fact that some amount of error is unavoidable does not negate the measurement, as the improvement on prior knowledge is the most important aim of such exercises. Moreover, one can perceive the measurement as a type of information, which benefits from a “rigorous theoretical construct”. As Hubbard notes “measurement does not have to eliminate uncertainty after all. A mere *reduction* in uncertainty counts as a measurement and possibly can be worth much more than the cost of the measurement”.

As noted by Alvarez-Dardet (2000) already in 1967 Lickert suggested that human resources contain useful information for managerial decision-making process. However only more recently Roslender and Dyson (1992) found the need for a shift in paradigm from an economic (accounting) point of view, as characterising most previous studies, towards a more strategic-focused one. Thus, a number of authors argue that HR needs to develop better metrics and analytics in order to become “a true strategic partner” in a company (Lawler et. al., 2004). As stated by Lawler (2004) Boudreau and Ramstad (2003) distinguish between providing more HR measures (not a strategic contribution) and providing better logic and analytics for making decisions about talent (a strategic contribution). Boudreau & Ramstad (2003) argue that organizations can collect three different kinds of metrics in order to better understand and evaluate the impact of HR activities and to influence business strategy and business performance: efficiency, effectiveness and impact. As noted by W. Cascio & J. Budreau (2008) the greatest opportunity of HR measurement lies in the possibility of improving the decisions that are made outside of the HR function.

Lawler et al., (2004) analyse the survey findings of medium and large corporations, which have interest in HR measurement. This research finding indicated, that the presence of two metrics showed a relationship to the role of HR as a strategic partner: (1) organizations using metrics that analyse the business impact of HR practices report to be much more likely to be perceived as strategic partners than those organizations that do not have such data; (2) organizations that can measure the impact and effectiveness of their HR practices on the workforce are more likely to become strategic partners than those that cannot.

Stemming from these observations is the fact that the role of the human capital measurement is twofold:

1. Rationalising personnel decision-making process – thus strengthening the role of the of personnel function as HR partners,
2. Informing the strategic decision-making at an enterprise level – thus strengthening the role of personnel function as strategic business partners.

However, there is very little empirical evidence of the use and relevance of human capital measurement in the decision-making process.

3. Relevance of human capital measurement – empirical evidence

Analysis of motives of undertaking activities related to the measurement of human capital was one of the purposes of **empirical research on the information needs and tools currently used by companies for the measurement of**

human capital realized in the framework of the project “Human capital as a part of company’s value”¹. The key aim of the project is to change the perspective of employers on the profits of in-company human capital investments through the creation of human capital measurement tool fit for the needs of micro, small, medium and large companies. The human capital measurement tool (NKL) will be tested in enterprises and widely disseminated.

Therefore, the main aim of the empirical study in Polish enterprises of different sizes (micro and small, medium and large) was to gather information about:

- the experience of Polish entrepreneurs in the use of existing tools to measure human capital,
- the scope of information that is considered by Polish entrepreneurs in the measurement of human capital,
- factors that enable effective implementation and proper use of tools to measure human capital.

The study was quantitative in nature and was conducted using CATI (computer-assisted telephone interview) technique. The research was conducted on a sample of 600 companies. Due to the high differentiation of the general population, sampling for the study was based on **stratified sampling**. To increase the representativeness of the sample and to reduce the sample error, the whole population was divided into strata according to:

1. Company size:
 - a) micro-small enterprises employing 1 to 49 people,
 - b) medium-sized enterprises, employing between 50 and 249 people,
 - c) Large enterprises employing at least 250 people.
2. Sector of activity according to Polish Classification of Activities (PKD 2007 – which is in line with NACE Rev2.)
3. Ownership structure:
 - a) private sector companies,
 - b) public sector companies.

During the research 600 complete interviews have been conducted (400 in micro-small companies, 150 in medium-sized and 50 in large enterprises)².

¹ This project (No. POKL.02.01.03-00-036/11) is an innovative systemic project carried out by the Polish Agency for Enterprise Development (project leader) and the Warsaw School of Economics (Partner), and is co-funded by the European Social Fund under the Human Capital Operational Programme – Priority II Development of human resources and potential of enterprises and improving the health of working people, Sub-action 2.1.3 System support for increasing the adaptability of workers and enterprises.

² The survey was conducted by research company Biostat Sp. z o.o. on behalf of the Warsaw School of Economics between July and September 2013, with the empirical research completed on 12/08/2013.

Enterprises participating in the research operated in various industries. The detailed structure of the survey sample is presented in Table 1.

Table 1. Detailed structure of the sample

Area of activity according to the Polish Classification of Activities (PKD)	Size of the enterprise		
	Micro-small	Medium	Large
B – Mining and quarrying	24	10	5
C – Manufacturing	30	10	5
D – Electricity, gas, steam, and air conditioning supply	16	10	1
E – Water supply; sewerage, waste management and remediation activities	15	5	0
F – Construction	25	22	3
G – Wholesale and retail trade; repair of motor vehicles and motorcycles	21	7	4
H – Transportation and warehousing	21	8	3
I – Services related to accommodation and alimentation	25	3	3
J – Information and communication	25	7	3
K – Financial service activities and insurance	20	11	5
L – Activities related to real estate	24	10	2
M – Professional, scientific and technical activity	22	6	4
N – Services related to business administration and supporting services	25	2	0
P – Education	24	13	3
Q – Health care and social services	22	6	5
R – Cultural activities, entertainment and recreation	24	8	4
S – Other services	37	12	0
Total according to size (micro-small, medium and large):	400	150	50
TOTAL:	600		

Source: Final survey report prepared by R.Piszczek, E. Tkocz-Piszczek and Z. Wolny (Biostat research company).

Survey respondents were managers and HR directors in a company (31.5% of all respondents), the owners of a company (22.7%), human resources professionals (17.8%) and employees occupying other positions in the HR department (13.5%). The response rate amounted to 60% for the entire study (evenly distributed between strata, with statistically insignificant variations in each group). The

study, therefore, is not affected by errors arising from the unequal distribution of response rate between the groups.

The interviews with managers and professionals allowed for the analysis of answers to the following questions:

1. Whether and why the analyses / measurements of human capital in the organization are being undertaken?
2. What data on human capital and by what methods are collected?
3. What are the main types of indicators / measures of human capital used in the organization?
4. Where (in which the organizational unit) and who in the organization is responsible for activities related to the measurement of human capital (collection / data entry, data analysis, recommendations / strategies)? Who should be assigned with these responsibilities?
5. What investment of time is necessary (and what is earmarked) for activities related to the measurement of human capital?
6. What are the benefits of human capital measurement? What benefits could be expected for the company deciding to implement the human capital measurement tools?
7. What conditions should be met by the tool to be practically useful, relevant and widely used?
8. What conditions inside and outside the organization should be met for this tool to be implemented properly and widely used?

This article presents a part of the research findings focusing on the incidence of human capital measurement, its key aims as well as benefits to the company from such analyses.

One of the first issues analysed in the study was the **incidence of human capital measurement in the company** (Table 2). In general sample more than a half of the enterprises perform human capital measurements, but the frequency of such analyses is far from regular. Only less than 15% of the companies undertake human capital measurement on a regular basis. By far the least measurements of human capital presents are being performed at micro-small enterprises (employing less than 49 employees). More than half of these companies do not perform analyses on the measurement of human capital, and only 12% of these organizations carry out measurements / analysis on a regular basis. As can be seen from the table below, the situation is only slightly better at medium-sized and large organizations.

Respondents who reported that their organizations perform measurement and analysis of human capital were asked to indicate **the purpose for which measurements are being made in their companies** (Table 3). It turned out

that the main intention of the measurement was an opportunity to make better personnel decisions regarding promotion, training, etc. This key reason was indicated by nearly 80% of respondents, more than half of them in a decisive manner. A similar representation of the respondents indicated the intentions to reduce personnel costs. Other, less frequently indicated aims for the measurement were the top-down decisions of the Management Board, better analysis of return of investments in human capital, expectations of owners/investors as well as actions undertaken by competition.

Table 2. Incidence of human capital measurement in analysed companies [in %]

Size of the company	Measurement of human capital					
	Yes, on an on-going basis	Yes, more than once a year	Yes, less frequently than once a year	Yes, but occasionally	We do not measure	Don't know
Micro-small	12.0	16.5	9.0	10.5	50.5	1.5
Medium	21.3	24.0	14.0	12.7	26.0	2.0
Large	18.0	20.0	16.0	8.0	36.0	2.0
Total	14.8	18.7	10.8	10.8	43.2	1.7

Source: own study. Analysis of responses to the question: "Are the analyses/measurements of human capital performed at your organization?"

Table 3. Aims of human capital measurements/analyses [%]

Aim of measurement	Definitely yes	Rather yes	Rather not	Definitely not	Don't know
Thanks to the analysis of human capital we can make better personnel decisions (e.g. on promotion, training, etc.)	43.81	35.95	12.08	5.14	3.02
In order to reduce personnel costs	38.97	41.99	7.85	7.85	3.32
Because it is a top-down decision of the Board that we have no influence on	33.23	28.70	17.52	17.22	3.32
Because we want to make sure that human capital investments yield an appropriate return	20.24	50.15	17.52	9.97	2.11
Human capital measurement is expected by owners/investors	16.62	41.09	16.31	22.66	3.32
Because other firms (competition) do it	5.44	31.72	31.12	22.36	9.37
Other factors were decisive	19.03	30.51	19.34	19.03	12.08

Source: own study. Analysis of responses to the question: "What are the main aims of human capital analyses/measurements in your organization?"

The **main benefits of human capital measurement** performed by a company have also been analysed in the survey (Table 4). 62.5% of all companies participating in the survey indicated that the measurement of human capital brings the benefits to the company (with 27.7% answering “definitely yes”). Noticeable is the tendency of the growing conviction of the positive influence of the measurement with the size of the firm – larger companies tend to answer more positively to this question.

Table 4. Benefits of human capital measurement to the company [%]

Benefits of measurement to the company	Definitely yes	Rather yes	Rather not	Definitely not	Don't know
Micro-small	24.25	32.0	9.0	22.25	12.5
Medium	32.67	41.33	6.67	8.00	11.33
Large	40.0	38.0	6.0	4.0	12.0
Total	27.67	34.83	8.17	17.17	12.17

Source: own study. Analysis of responses to the question: “Does the measurement of human capital bring the benefits to the company?”

Respondents were also asked to indicate the **kind of benefits from the measurement of human capital** (Table 5). The majority of all companies (69.82%) believe, that the measurement of HC allows for a better control of personnel costs. It may indicate that the main focus of the measurement is the cost-based perspective of human capital. What is interesting is that this perspective is characteristic especially to large companies (81.25%) and medium-sized enterprises (71.01%) and less so in small-sized firms (67.52% of respondents). Another important aspect of human capital measurement is the facilitation of the processes of the employee development planning and decision making in this area (68.61% of all companies). This process is equally important for large and medium-sized organizations, and less so for smaller enterprises. What is also noticeable is that large firms more often than others, point to the fact that the measurement of human capital helps to prevent the best employees from quitting the company.

Table 5. Perceived benefits of human capital measurement by kind [%]

Kind of perceived benefits	Micro-small	Medium	Large	Total
Allows for a better control of personnel costs	67.52	71.01	81.25	69.82
Makes planning and decision making on employee development easier	60.45	81.88	83.33	68.61

Kind of perceived benefits	Micro-small	Medium	Large	Total
Provides information on management areas that require improvement	46.03	57.25	64.58	51.11
Allows for a more effective use of company's human capital	43.09	54.35	52.08	47.08
Prevents the best employees from quitting the company	30.55	45.65	64.58	38.03
Makes personnel department work easier	24.76	31.16	45.83	28.57
Influences the growth of importance of personnel department/function in company	20.9	32.61	47.92	26.76

Source: own study. Analysis of responses to the question: "What are (or might be) the benefits from human capital measurement?"

4. Conclusions

In practice, according to the study, a selective approach to the measurement and reporting of human capital is dominative, focused primarily on the analysis of the costs to human capital, without trying to balance the analysis of the side of other effects and results obtained in this process. This is mainly due to the fact that no single method of human capital measurement fully meets the requirements of: objectivity, universality, taking into account internal factors (structural, cultural and strategic), linkage with personnel decision-making process, and efficiency (Lipka, 2010).

It is therefore necessary to develop tools for measuring and reporting of human capital of a company, which are universal, reliable and easy to interpret for specific audiences. A method of measurement and reporting of HC developed within project *Human capital as a part of company value* is characterised by such a complexity at the same time being adapted to the specificities of the Polish market. This allows HR professionals to gain powerful support in support of its role as a strategic business partner in the creation of business value as presented in the first part of the article.

The key difference between the tools currently available and those being developed within the project is its comprehensive nature, taking into account the whole range of measures of human capital, including: cost-based indicators, time-quantitative indicators, performance indicators / efficiency ratios, financial indicators as well as qualitative measures of human capital. This will allow for a better understanding of the various dimensions of human capital and to make

in-depth analysis in the context of relationships between investments and results. Another distinguishing feature is the need for the tools to be adjusted for enterprises of different sizes: micro, small, medium and large. As indicated in the study, they differ in their perspective on human capital measurement, and thus need to have appropriate tools fit for their business needs. Current solutions are generally universal, and are not tailored to the needs of companies of different sizes. Therefore, the new developments need to be better suited to the needs of business than currently used measurement systems.

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Резюме

В поисках сущности измерения человеческого капитала – теоретические положения и результаты эмпирических исследований

В статье представлены теоретические положения сущности измерения человеческого капитала на предприятии, со стратегической точки зрения – значения в создании ценности, а также операционной – значения в принятии кадровых решений. Представлены также новейшие результаты проведенного в рамках проекта „Человеческий капитал как элемент ценности предприятия” эмпирического исследования, касающегося информационных потребностей и применяемых в настоящее время предприятиями инструментов измерения человеческого капитала. Исследованием были охвачены 600 предприятий разной величины (микро – малые, средние и больше), представляющих различные отрасли экономики. Демонстрируемая в статье часть результатов исследования касается мотивации предприятий к проведению анализов и измерений человеческого капитала, а также замечаемых выгод от такой деятельности.

Ключевые слова: человеческий капитал, измерение, управление человеческими ресурсами.

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