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THE VALUE OF AN ORGANISATION'S
HUMAN CAPITAL IN STUDENTS'
PERCEPTION

Introduction

The objective of this article is presenting the value of an organisation's human capital in students' perception.

Bearing in mind methodological shortcomings of estimating the value of an organisation's human capital and, even more importantly, the uncommonness of applying human capital evaluation methods in economic operations, the value of an organisation's human capital in students' perception seems an interesting issue, worth empirical examination.

The analysis of the value of an organisation's human capital was based on semester assignments submitted by students of the University of Economics in Katowice, Poland, who had attended lectures on *Intellectual Capital in Accountancy* and *Management of Quality and Value of an Organisation's Human Capital* in the academic year 2010/2011 (winter semester). Out of 40 assignments received, related to a report on the state of an organisation's human capital, 22 were selected, basing on the empirical criterion, i.e. all which contained reports quoting current data from organisations operating within the boundaries of Katowice Voivodeship.

'Report on an Organisation's Human Capital' was one of the five semester assignment topics presented to students for individual selection. Their task was to prepare a provisional report on the state of the value of human capital of the organisation for which they were working, while availing themselves of appropriate reference books as well as examples of economic operations.

The underlying research question of this paper is: What type of difficulties do students face with the subject of human capital evaluation and which connected issues do not pose problems to them?

The following research hypotheses were formulated to the question above:

- **H 1:** Majority of students understand the need for evaluating human capital through the prism of strategy (par. 1 below).
- **H 2:** Majority of students realise the need of evaluating human capital while taking into account the temporal aspect (par. 2 below).
- **H 3:** When evaluating human capital students take into account measures concerning the numbers and structure as well as personnel processes (par. 2 below).

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See A. Lipka, M. Król, S. Waszczak, M. Satoła: Wartościowanie kapitalu ludzkiego. Problemy metodyczne i próby ich rozwiązywania. University of Economics, Katowice 2008.

- **H 4:** Students are capable of using monetary evaluation of human capital (par. 3 below).
- **H** 5: When evaluating human capital, students consider effectiveness of human capital investment (par. 4 below).
- **H 6:** Students see the necessity to take into consideration additional information about human capital when evaluating it (par. 5 below).
- **H** 7: Based on reports and participant observation in organisations, students are capable of performing a subjective assessment of human capital value (par. 6 below).

The analysis of the reports on economic operations quoted above (related to a variety of business lines, where 72% were service-oriented companies, inclusive of 18,5% being financial sector organisations, 13,64% – production plants; 13,64% – government organisations) was performed while taking into account the evaluation of human capital in monetary units and by means of particular measures. Moreover, the study shows opinions of the students tested, concerning their assessment of the value of human capital of the organisation in which they were working.

The analysis was performed on the basis of reference books covering the subject of human capital management and company evaluation.

1. The importance of strategic context of human capital management during evaluation

Sixteen out of twenty two reports prepared by students contained a description of an organisation strategy and its immediate connection with the strategy of human capital management, as well as the immediate connection between personnel strategy and operations concerning the quality and value of human capital. Table 1 shows selected sample descriptions of the above mentioned strategies.

Table 1

Organisation strategy and human capital management strategy
– sample cases selected from semester assignments submitted
by students covered by the project

Type of an organisation	Description of an organisation strategy	Description of the strategy of human capital management
Commune Office (Local government unit)	Ensuring high quality of living for inhabitants, using European Union Funds	Increase in the quality and value of human capital of the Office by means of: investment in training (in acquiring funds, subsidy ac- counting); motivating employees
Secondary School Complex	Leading role of the educational and cultural centre in the area, despite unfavourable demographic situation (a decreased number of students)	Retention (no dismissals) of very well-educated staff, e.g. by delegating selected teachers to other organisa- tions/ branches for one school year, granting sick leaves or unpaid leaves on demand, financing postgraduate studies, enabling teaching of more than one subject
Production plant	Highest technological quality output	Staff development by implementa- tion of own solutions in construction and technology, inclusive of the innovative ones which have been patented. Management cooperates with a number of external experts (e.g. from a university, institute)
Electric power provider	Building of value for present and future shareholders.	Personnel strategy focuses on work- force reduction by cutting full time positions in particular units or closing down entire departments as well as development of human capital according to the provisions of Integrated Quality Management System
Trade journal publishing house	Major role in the sector of trade publishing in Poland and adjusting company structures to external conditions such as competition, high expectations of clients	Personnel strategy consists in the development of employees in the field of marketing, client service and negotiation techniques

Source: Based on reports on organisations' human capital, prepared by: M. Czader, A. Porębska, M. Raj, E. Twardzik, M. Wąś, A. Marczewska, as semester assignments in the courses in "Intellectual Capital in Accountancy", "Management of Quality and Value of an Organisation's Human Capital", run by the author of this article.

Thus, most students understand the need to examine evaluation through the prism of strategy.

2. Students' perception of the state, structure, development and usage of an organisation's human capital

Majority of students gave a time perspective in their reports, including real data concerning an organisation's human capital from the following periods: three years (11 reports), one year (4 reports), two years (3 reports), four years (2 reports). Two reports failed to quote any time perspective. In majority of cases students used the widely available data from recent years (2007-2010).

Table 2

The data concerning the state and structure of an organisation's human capital, quoted in the students' reports

Area	Measure	Information included in the analysed reports		Comments (data from 2010)
		Yes	No	(data from 2010)
1	2	3	4	5
	Number of employees	19	3	10-49 employees: 3 50-249 employees: 8 250 and more employees: 8 The smallest number: 18 The largest number: 6231
State and structure of human capital	Structure of staff according to their education background	16	6	Measurement units used: person, %. In 8 organisations (education, accounting, finance, publishing, trade and services, employment agencies) degree level qualifications in the structure take the highest value. In one case (public utility company) almost 48% of employees have only basic vocational education, with degree level qualifications at the level of 6%
State a	Structure of staff according to their age range	17	5	In 8 reports the structure assumed reflected the following age ranges: 18-24, 25-35, 36-50, >50. In the remaining 9 the age ranges account for the current age of the employees (example: in a service sector company, where 65% of the staff have the work experience of less than 4 years the age ranges assumed were as follows: <25, 26-30, 31-35, >36)

cont. Table 2

1	2	3	4	5
tate and ucture of human capital	Average number of years in the organisation	14	8	The lowest number : 4 The highest number: 22,4
State structu hum capi	Average age of employees	13	9	The lowest: 33 years The highest: 52,2 years

Source: Based on reports on organisations' human capital prepared by: Burda M., Czader M., Czogala K., Gorczyca J., Grabińska-Szarawara B., Kolodziej A., Marczewska A., Nowak E., Ochmanek I., Oleksiuk Sz., Orszulik M., Ożga A., Porębska A., Raj M., Raszczyk J., Rożek M., Saferna M., Samotyj M., Targosz K., Twardzik E., Wąś M., Zielińska A., as semester assignments on the courses in "Intellectual Capital in Accountancy" and "Management of Quality and Value of an Organisation's Human Capital", run by the author of this article.

As shown in Table 2, majority of students included basic information concerning the state and structure of an organisation's human capital in their reports.

Another field of analysis of students' perception refers to the measures of personnel processes, such as recruitment, training, remuneration, dismissal and resignations.

Table 3

Data referring to personnel processes, covered by students' reports

Area	Measurement	Information included in the analysed reports		Comments (data from 2010)
1	2.	Yes 3	No 4	5
1	Number of employees recruited in 2010	14	8	3 <10 persons: 8 11- 20 persons: 1 21-30 persons: 2 > 30 persons: 3 The lowest: 1 (production plant)
Recruitment	Estimated recruitment costs (in PLN)	7	15	The highest: 1257 (bank) (!) only 7 reports included the information about recruitment costs, only 3 of which contained the methodology of their calculation. The lowest cost:
				125,54 PLN (education) The highest cost: 37700 PLN (banking)
Training	Number of training courses run	16	6	The lowest: 3 The highest: 239
Traii	Number of employees trained	18	4	The lowest: 9 The highest: 3786

cont. Table 3

1	2	3	4	5
	Percentage of trained staff in the total num- ber of employees	17	5	The lowest: 10% (accounting services) The highest: 90.03% (a bank, where special emphasis is put on e-learning)
Training	Overall training costs	15	7	The lowest: 13 000 PLN (public utility company) The highest: 589 019,5 PLN (electric power provider)
	Training costs per one person trained	15	7	The lowest: 124 PLN (bank) The highest: 1454 PLN (production plant)
	Training costs per employee	14	8	The lowest: 75,34 PLN (bank) The highest: 969 PLN (production plant)
Remuneration	Gross remuneration of staff in total	13	9	Below average monthly remuneration in the Polish economy (3289,59 PLN): 6 organisations 3289,59 PLN: 7 organisations The lowest: 2000 PLN (pub-
Re	Average monthly gross remuneration per employee			lishing house) The highest: 4565 PLN (bank)
	Total number of days on sick leave	13	9	In the public sector employees are sick more frequently than in the public sector
ions	Average number of days on sick leave per one employee	13	9	The lowest: 0,34 (bank) The highest: 22,7 (employment agency), 21,55 (commune office)
Dismissals and resignations	Costs born in relation to employee sickness (remuneration paid for periods of absence at work)	11	11	The lowest: 527,95 PLN The highest: 7727720 PLN
	Number of employees dismissed	15	7	In 2010 in 10 organisations employees were dismissed, in 5 there was no derecruitment
	Personnel turnover ratio	14	8	<1%: 4 organisations 2-5%: 5 organisations 6-10%: 3 organisations >11%: 2 organisations (finan- cial sector companies

Source: Ibid.

As Table 3 shows clearly, students failed to include cost data. They did not present the reasons why this happened, either. Whether this was due to difficulty in accessing this type of data or due to the lack of calculation methodology, or perhaps lack of data related to this topic in a particular database, is hard to define. Students may not have obtained the data, yet they may also not have realized that they were essential.

Only 7 reports prepared by the students include estimated recruitment costs, and 50% include the costs of employee absence.

What is noticeable are relatively large discrepancies between the organisations analysed in costs covering all human resources areas: recruitment, training, remuneration, dismissals and resignations. Among other reasons, 'cost asymmetry' is determined by the line of business and the size (and consequently by the number of people employed in the organisation).

It was merely in three reports that estimated recruitment cost calculation methodologies were presented:

- 1. 'The number of recruited employees was multiplied by the average number of interviews within one recruitment process and the average length of a single interview. The result of this operation is a number of hours spent on interviews during the whole year. The number of hours was then multiplied by an average number of employees taking part in the interview and an hourly rate received by the employees. The result was increased by the value of press advertising costs related to employee search'².
- 2. 'The product of an average hourly rate cost in the Department of Recruitment and Training (about 74,39 PLN/1 working hour), estimated time spent on recruiting 1 employee (about 2,46 working hour) and a number of newly recruited employees'³.

The students tested did not have a problem accessing information concerning training costs. Advanced technology companies (electric power distribution, production) have the highest expenditure. With a view to lowering costs, one of the banks introduced an e-learning system as well as training run by internal coaches, where the highest number of employees trained was achieved at the lowest training cost per one employee. Only one report presented the methodology of training cost calculation, where combined expenditure in that area covers

A. Porębska, A. Marczewska in: Semester assignments: Raport o stanie kapitalu ludzkiego organizacji X, 2011; G. Łukasiewicz: Kapital ludzki organizacji. Pomiar i sprawozdawczość. Wydawnictwo Naukowe PWN, Warszawa 2009, p. 185.

³ K. Czogała in: Semester assignment..., op. cit.

'(...) training costs, travel expenses to and from the place of training, as well as full board and lodging'⁴.

In five reports there was also quality information regarding training (e.g. types, topics and addressees). The most common types of training in organisations are the ones developing the skills essential at a given position in a company (e.g. product training, equipment operation training). An interesting example is a division into three types of training in one company: award training for very good working results and involvement, language training and correction and development training⁵.

The analysed reports contained only information concerning training investments, however, one must remember that increasing the value of human capital is a result of not only training but also of a wide variety of investments, e.g. investment in programs entitled work-and – life, retention programs, searching for and developing investments, which may result from the fact that in running economic activity there is a shortage of knowledge and awareness of other value-adding personnel processes and their positive influence on the quality and value of human capital. The students tested did not realise the importance of other investments in human capital.

3. Attempts of monetary evaluation of human capital by students

Only 10 students attempted to estimate the value of an organisation's human capital. The value of human capital was calculated by applying the income approach, where human capital value is a discounted value of expected income (remuneration).

The computing was based on a mathematical formula:

$$V_r = \sum_{t=r}^{T} \frac{I(t)}{(1+i)^{t-r}}$$

where:

 V_r – human capital value at the age of r,

 I_t – annual remuneration of a person until their retirement,

t – retirement age,

i – discount rate⁶.

⁴ J. Raszczyk in: Semester assignment..., op. cit.

⁵ M. Rożek in: ibid.

⁶ G. Łukasiewicz: Op. cit., p. 186.

The computing methodology applied by students was based on examples found in a book by G. Łukasiewicz⁷. Upon analysing organisation structure, age ranges, average gross annual remuneration at particular organisation levels, they presented the appraisal of human capital value of an organisation at discount rates of 5%, 8%, 10%. In several cases students indicated the highest and the lowest values of human capital, while taking into account the age and organisation level.

Students were clearly aware that the real value of human capital may differ significantly from their computations, which was partly due to the fact that in their organisations human capital value is not calculated and the assumed data were 'largely generalised'⁸.

4. Incorporating effectiveness of investment in human capital

Only 10 students presented in their reports the amounts of profit computed by way of the following formulas:

- human capital value added = revenues (costs salaries and benefits) / number of employees calculated as full time equivalent;
- return on investment in human capital = revenues (costs salaries and benefits)/ salaries and benefits⁹.

Table 4

Data on effectiveness of investment in human capital, included in students reports

		T.C.	. 1 1 1	
		Informatio	n included	
Area	Measure	in the analy	sed reports	Comments
		Yes	No	
	Human capital	10	12	Average profit per one employee without
	value added			taking into account the cost of remuneration
of tal				
ness of nent capital				The lowest: 2800 PLN
ene fine				The highest: 145950'06 PLN
Effectiveness investment n human cap	Return	10	12	Amount of profit received from 1 PLN
fe in hu	on investment			invested in human capital.
ii.	in human capital			
				The lowest: 0'08 PLN
				The highest: 4'71 PLN

Source: Ibid.

⁷ Ibid., pp. 126-146.

⁸ B. Grabińska-Szarawara in: Semester assignment..., op. cit.

⁹ G. Łukasiewicz: Op. cit., p. 186.

One student included in his report the information concerning Value Added Intellectual Coefficient (VAIC), where one of the components refers to human capital value added coefficient (VAHU), where VAHU = VA / HC (VA – value added, HC – human capital, i.e. expenditure on workforce (remuneration and inwork benefits) from the profit and loss account). In the analysed organisation the effectiveness of human capital use was at a high level as a result of value added growth dynamics accompanied by relatively slow human capital growth¹⁰.

In certain organisations there was no attempt to compute effectiveness, which was due to their specific activity. An example of such an organisation is Secondary School Complex: 'It is difficult to present the effectiveness of the investment, similar to that calculated in business enterprises. Teachers are a professional group, whose retirement age is achieved after a shorter period of working life than in other labour groups, and whose salaries depend on the acquired level of professional advancement which undergoes changes, and therefore further research is not feasible'¹¹.

5. Perception of the necessity to integrate additional information concerning human capital during the evaluation process

In the analysed reports on the state of human capital students included additional information concerning its quality and value (see Table 5). As an example, in one of the banks staff development is largely based on e-learning – hence several measures in that area, in a school the employment structure takes into consideration individual teaching positions, and in a company reducing its workforce there were numerical data related to employees covered by the restructuring scheme.

Table 5 Additional measures appraising human capital, included in students' reports

Additional measures appraising human capital, included in students' reports		
1	2	
Detailed measures	- structure of employment according to departments,	
related to the state	- structure of employees according to positions: manual workers and office workers,	
and structure of	- structure of employees according to positions: teachers, administrative staff and client	
human capital	service workers,	

¹⁰ Sz. Oleksiuk in: Semester assignment..., op. cit.

¹¹ M. Raj in: ibid

cont. Table 5

1	2
Detailed measures	- structure of employees according to employment groups: member of the board,
related to the state	director, deputy director, (2) administrative unit manager, chief engineer, alternate
and structure of	director, (3) specialist, (section, project) manager, (4) foreman, (5) other employees,
human capital	- structure according to the degree qualifications: graduate, postgraduate,
numan capitai	- structure of teaching staff according to the level of professional advancement: trainee,
	contractual teacher, nominated teacher,
	- structure of employment according to gender,
	- structure of employment according to types of contract,
	- number of temporary employees,
	- managerial position rate,
Additional	- costs of postgraduate studies resulting from professional development of employees,
measures	 number of employees studying at postgraduate courses,
of HR processes	 percentage of training costs in the overall costs of a company,
	- percentage of training costs in labour costs,
	- training costs according to the type of training (1 – management and organisation,
	2 – it training, 3 – language training, 4 – vocational training, 5 – security training,
	6 – educational upgrading courses,
	- ratio of training expenses and personal remuneration,
	- number of training days per one employee,
	- number of e-learning training courses run in an organisation,
	- number of employees participating in e-learning sessions,
	percentage of employees participating in e-learning sessions in the general number
	of employees,
	- internal labour mobility ratio or number of employees promoted to a higher category,
	- number of employees taking part in projects,
	- average monthly remuneration of managerial staff,
	- employment stability,
	- recruitment ratio.
	- number of employees connected with employment restructuring scheme,
	- labour mobility ratio,
	- remuneration to revenues ratio,
	- remuneration to operational costs ratio,
2.5	- number of resignations (e.g. voluntary, retirement/ sickness benefit, trainees)
Measures of effects	- net assets against human capital value
of investment in	
human capital /	
Human capital value	
Other information	- consolidated results of banking operations,
exceeding HR data	- consolidated net profit,
	- bank solvency ratio,
	- sales of banking products,
	- revenue ratio,
	– cost ratio,
	- income ratio,
	– profit and loss account (extract),
	- number of complaints

Source: Ibid.

As shown in Table 5 students realise the necessity of taking into account additional information concerning human capital during the evaluation process. Students – employees of the analysed organisations – and concurrently internal stakeholders, presented other, additional measures – which in their view were

relevant in connection with the specific activity of the line of business/organisation where they were working. Therefore they confirmed that reporting on an organisation's human capital may depend on particular information needs (e.g. of internal and external stakeholders) and may be determined by the company policy of human capital management.

6. Integrating the subjective assessment of organisation's human capital value in students' reports

Several report authors made their own assessment of the human capital value of the organisation, where they were working (so called participant observation). The most interesting, selected comments/cases are presented below:

'Protected' value of human capital

'The value of human capital is substantial. (...) The strength of our company is not the equipment or new technologies but the people and their expertise, and the guarantee is the powerful ties of friendship which we have grown over all these years' 12. The author of the report draws attention to the confidence the boss puts in the employees and vice versa, building strong interpersonal ties as well as boss's concern about the employees. Currently, the owner of a paint shop together with his staff take all the measures to keep professional secret and not pass the details of the coating process to its main client – a production plant, which intends to open its own paint shop in the nearest future and, consequently, resign from the services of the analysed company.

The need to monitor quality and human capital value on a continuous basis

In her report, one of the students signals the need to monitor quality and human capital value on a continuous basis: 'From the perspective of organisation management it should become essential to prepare systematic reports on the state of human capital, which allows for current monitoring the state of human capital, its quality and efficiency, simultaneously enabling just-in-time corrections and improvement of areas where it is most needed, 13.

A. Kołodziej in: ibid.I. Ochmanek in: ibid.

The investment in human capital as a value-creating factor

The author of a report related to a bank, where the personnel strategy implies continuous improvement of staff with a view to achieving particular objectives set by the company, notices an increase in the amount of training, as well as the increase in the number of products sold: consumer loans, deposits, credit cards, accounts, which she comments upon as follows: 'the better trained the employee, the better the sales' 14.

Relevant intangible assets

In one of the papers the essence of intangible assets has been defined: 'I have been observing the development of our company for many years and, admittedly, the metamorphosis we have undergone seems rather imposing. We have grown from a tiny family firm into a part of an enormous corporation. Yet, this has not happened by itself! Undeniably, it is people who trigger the changes, cause them, work on them and on their implementation. It is the company values that have a great impact, the values which the company imprints consistently on the employee conscience from the first moments at work. For a bank the most important values are customer care, self-drive, passion, co-operation, responsibility and friendliness' 15.

The assessment of human capital value from another perspective

Apart from the evaluation of human capital basing on the report, students' own assessment has also been attempted, e.g.: 'To sum up, I would be able to assess our company using the scale of 1 to 6. One grade would be awarded for the initiative of the managing board in our company, which has provided us with very good working environment, we are not looking for anything else, or at least most of us are not, we feel closely connected to our work, and frequently we feel proud about where we work. (...) Another grade would be awarded to the human capital of our company, that is to my colleagues and myself, and the grade is definitely a strong A. We are very well educated (thanks to our own ambitions, because the level of our education was our own asset, which we have brought into the company) and trained, this in turn being the result of the efforts on the part of our employer, who provides us with all the necessary conditions. The fact that we are good at what we are doing and that it is also so easy for me to give us a top grade is also reflected in numerous examples of positive appraisal we get from our employer and great satisfaction of our clients from the level and quality of the service we provide¹⁶.

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¹⁴ A. Ożga in: ibid.

¹⁵ A. Zielińska in: ibid.

¹⁶ M. Rożek in: ibid.

Negative effects of operations ignoring the value of human capital

An example of the above approach is a merchandising services provider, where the boss's motto was 'profit without costs', and the author of the report witnessed the bankruptcy of the company, in which costs were continuously minimised (including those related to human capital). The most important employees, having failed to receive the boss's recognition, left the company, and the new ones who replaced them, were unable to achieve the expected results (despite the rise in the recruitment costs and remuneration). Long term clients started to resign from their services – there was a fall in the profits and a rise in expenditure. 'The main conclusion is the fact that human capital, interpersonal skills, contacts, everything that is an inherent part of an individual, what they take with them when leaving, has an essential impact on the company operations, where the final result is not a product, a tangible object, but a service and contact with the client may have significant impact on further activity of the company (...) Employees, when leaving the company, take everything they have achieved with them, and their employer is not only deprived of the relations with the clients, as they are destroyed in the months to follow by untrained new emplovees, but he also loses the company itself, as it soon disappears from the market'17.

Conclusions

To summarize, students obtained the information concerning human capital of organisations useful during the process of their evaluation. As an example they obtained data related to the field of remuneration costs, recruitment, useful during the evaluation of human capital by way of a cost approach, and also to the data from the field of training, which provide information related to the issue of increasing human capital value. In the analysed reports the relationship between the value-creating role of personnel processes and their effectiveness is depicted.

On the basis of accessible data, students made an individual attempt to compute the estimated value of an organisation's human capital (by income approach). During the evaluation process, students had difficulty in accessing the cost-related data within the scope of personnel processes.

The above seems to confirm general beliefs concerning this issue, according to which evaluation of human capital causes a lot of problems and so we should

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¹⁷ E. Nowak in: ibid.

be talking about assessment rather than evaluation of human capital¹⁸. 'Considering all the difficulty connected with evaluation of human capital and low reliability of such estimates, it is far more common to assess these resources on the basis of quantity and quality ratios'¹⁹. It turns out that in practice, methods of human capital evaluation have mainly cognitive value²⁰.

Nevertheless, the fact that students indicated the need to prepare reports on human capital and saw the necessity to attempt its evaluation seems very optimistic.

The hereby study enabled a positive verification of all research hypotheses: students realise the need to evaluate human capital through the prism of strategy and with a system of measures of state and structure, HR processes and effectiveness of investments in human capital. They also realized the need to evaluate human capital in time perspective. Less than half of the students made an attempt to evaluate human capital by means of an income approach. Part of them included additional information in their reports or presented their subjective assessment of human capital value of an organisation for which they were working. Undoubtedly, the analysis of students' reports was an interesting research experience within the scope of measuring an organisation's human capital.

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¹⁸ M. Marcinkowska: Metody wyceny i oceny kapitału ludzkiego. In: Zarządzanie wartością kapitału ludzkiego organizacji. Ed. A. Lipka, S. Waszczak. University of Economics, Katowice 2007, p. 70.

¹⁹ Ibid., p. 77.

P. Bochniarz, K. Gugała: Budowanie i pomiar kapitału ludzkiego w firmie. Poltext, Warszawa 2005, p. 27.