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ORIGINAL ARTICLE

The Role of Human Capital Investments in Business Excellence of Croatian Companies

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Abstract

The paper analyses human capital investments and their relation to company performance in Croatia. Human capital represents an inevitable element in recognising and measuring an organisation's values and supporting its business excellence. The results obtained show that training and extra bonuses or salaries are positively correlated with company excellence, as well as show a significant difference in the mean of salaries per employee between high and moderate intensive intellectual capital companies. The differences in company excellence, when human capital expenditures are capitalized in a company's balance sheet rather than recognized as expenses in the company's profit and loss account, is confirmed. Companies should pay attention to managing human resources and realizing their importance for business excellence, as well as the importance of appropriate recognition and measurement of human capital in financial statements.

Keywords: Intellectual capital, Human resource management, Human resource accounting, Company performance

JEL classification: M12, M41

Introduction and theoretical background

Standing out in today's competitive market, being successful and developing further represent crucial factors of contemporary organisations. Their main importance is to be recognised and distinguished among major competitors, as well as among customers or clients by detecting own attributes, which are noticed, recognised and valued. Companies' human resources represent their most valuable asset (Hafeez & Abdelmeguid, 2003; Sara et al., 2021), which makes them, as previously stated, noticed, recognised and valued in the market. Although, company A and company B can employ a similar employee structure regarding their gender, age, education (level and type of formal and informal education) or experience, these represent a unique and the most valuable asset for each employer. The crucial benefit is the fact that human resources and their potentials are exceptional for each company and very difficult to imitate due to their specificities (Belak et al., 2009), such as knowledge (explicit and tacit), special experience (professional and life), skills, abilities or emotional intelligence. The key element for each organisational success is recognised within human resources (Young & Thyil, 2009) and their potentials in terms of competences, creativity, innovation, attitudes and motivation, or more precisely, within its' human capital.

Human resources and human capital are the factors of future organisational success and development (Kazlauskaité & Bučiūnienė, 2008; Zink, 2008). Consequently, the fundamental need of each company and its human resource management (HRM) is investment in employees in order to highlight the value of their human capital. Different human resource expenditures, undertaken in order to provide an organisationally competitive compensation system, provide educational and training possibilities, manage performances by recognising and relating results with an adequate reward system, or

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offer attractive and secure working conditions. In addition, they should not be valued solely as costs, but more importantly, as main organisational investments. Investments in developing its people can make a crucial difference between the above mentioned company A and company B, generating future individual and organisational gains (Bassi & Mcmurrer, 2005). The mutual, individual and organisational benefits arise from human capital investments, the individual benefits arise in terms of upgrading, improving and developing employee career, and the personal competitive advantage and organisational benefits arise in terms of developing the overall organisational success, achieving strategic goals and creating a competitive advantage.

In order to introduce and recognise the importance of human capital and human capital investments as crucial elements of this research, it is important to explain and classify the term of intellectual capital. The term was introduced in 1969 by Galbraith (Bellucci et al., 2020), but the growth of the research, as well as of literature publications, rapidly increased in the 1990s, with primary focus on its organisational value and development of classifications models (Marr et al., 2003). There are many researches specifying different dimensions of intellectual capital. However, the majority of authors suggest its' three crucial dimensions, which are the human, structural and relational capital (Andreeva & Garanina, 2016; Belak et al., 2003; Chen & Lin, 2004; Drenkovska & Redek, 2015; Dzinkowski, 2000; Lalović & Koman, 2018; Sokolov & Zavyalova, 2021; Sonnier, 2008; Stewart, 2010), whereas human capital represents a part of the intellectual capital, which is based on human resources (Nerdrum & Erikson, 2001). *Human capital* can be observed as an important feature in intellectual capital (Lim et al., 2010), because it includes all knowledge built in minds of employees and is crucial in operating all other components of intellectual capital and organisational resources. Its great importance is recognised in the fact that no company can own human capital, meaning if an employee leaves the organisation, the organisation is exposed to a great loss, due to the loss of human capital (Sokolov & Zavyalova, 2021). Human capital includes skills, abilities and expertise important in creating additional value for each organisation (Belak et al., 2009). In contrast to human capital, *structural capital* is owned by organisations and is kept within, when employees leave the organisation. It can be identified as mechanisms and structures of an organisation (such as management processes, policies, routines, cooperation, corporate culture, patents, trademarks or licences), which can support employees in creation of the overall business performance (Chen et al., 2004; Drenkovska & Redek, 2015; Dzinkowski, 2000; Lalović & Koman, 2018). Finally, *relation capital* includes any of the connections that people outside the organisation have with it (Belak et al., 2009). It is visible through the company image, customer loyalty or different stakeholders' (customers, suppliers, distributors, investors) satisfaction (Lalović & Koman, 2018; Sonnier, 2008).

Due to the specificities of human capital and its major characteristic as being irreplaceable organisational capital, it represents the focus of this paper. Consequently, the main research question is: "How important are human capital investments in business excellence of Croatian companies?". Nowadays, both scholars and practitioners are trying to incorporate human value in the balance sheet, which leads to the occurrence of human resource accounting (HRA) as a set of acceptable metrics applicable to employees in order to determine their value. HRA, being an information system, considers human resources invested in business as assets and places their monetary values in books of accounts, providing valuable information relating to human resources to all interested parties (Kumar Das, 2018). "It has the potential to provide an alternative solution helpful to management decision making, especially regarding the adequacy of human resources when viewed within a financial health framework" (Arkan, 2016, p. 173). Additionally, it is important to note that traditional financial statements used in decision-making processes do not provide completely relevant information to understand how intangible resources are to create value for the company in the future (Mouritsen et al., 2004). Moreover, they fail to measure and present "the most significant building blocks of business" (Seetharaman et al., 2002), one of which is the human capital, mainly due to the inappropriate or insufficient quantification. Also, Osemeke (2017) noticed that in most cases the HRA information is given in the form of supplementary information attached to financial statements, instead of recording and disclosing it in the books of accounts or financial statements.

This paper provides a significant contribution to the area of the HRM and HRA practices in the post-transition economies. The obtained results raise awareness about the importance of human capital investments in those countries, where HRM and HRA were lesser-known topics until the transition from a centrally planned economy to a market one. Today, they still differ from the capital market-oriented economies, because they are influenced by a variety of economic, social and political factors, like the legal system, stage of economic growth and development, enterprise ownership, activities of

enterprises, etc., and should for this reason be explored separately.

1 Human capital and organisational success

Human capital, as an intangible asset or a knowledge related resource (Bogner & Bansal, 2007), is more likely to contribute to attaining the main organisational goals, strategy and outcome than other organisation assets. Even if human capital information is often deficient, it is important to identify and disclose them in order to attain set goals. Moreover, it is expected that disclosure of human resources leads to greater utility of accounting information, reflecting innovation capacity and competitiveness and satisfying the social responsibility requirement (Alvarez Dominguez, 2011). Different stakeholders seek human capital information disclosure and its impact on organisation's activities (Alvarez, 2015).

Organisational success can be measured in many ways and it often includes different financial measures such as liquidity, financial leverage, profitability, activity, or turnover, as well as nonfinancial measures like quality or social responsibility. Each of these ratios evaluates a portion of company performance only, while companies have to improve simultaneously and continuously in order to be competitive and successful. Thus, both the researchers and stakeholders seek for the yardstick that captures various dimensions of a company's success simultaneously, which is enabled by using business excellence models. According to Adebanjo and Mann (2011), business excellence can be defined as excellence in strategies, business practices, and stakeholder-related performance results that have been validated by assessments using proven business excellence models. Business excellence models are used by organisations to assess and improve their work practices and performance (Mohammad et al., 2011), and guide them towards sustainable world-class business results and are based on business principles that have been proven to work (Adebanjo & Mann, 2011).

Alvarez Dominguez (2011) conducted a research on Spanish companies, listed on the Madrid Stock Exchange, observing an index of disclosures on human resources in annual corporate reports (as the independent variable) and good reputation (as the dependent variable, consisting of six variables on the first level, and subdivided into three other variables on the second level). The research fortified that human resources disclosure is positively and significantly related to corporate reputation. Importance of the human capital information disclosure was also the issue of an Australian research, investigating its influence on investors' share investment intentions. The results revealed that information disclosure affects investors' intention to hold on to stocks to avoid regretting selling winners too early (Mariappanadar & Kairouz, 2017).

Since it is not only the previously mentioned researches that highlight the importance of human capital disclosure from the perspective of external stakeholders, so they can properly evaluate companies' potential (Curado et al., 2011), it is extremely important to disclose the information from the internal stakeholders' concern, shaping a better understanding between the employer and employees (Myer et al., 2004). Accordingly, different researchers were investigating the relevance of the human capital information disclosure to company performance, outflowing its value and importance. Acquiring and maintaining key employees, as well as developing their talents with the purpose of facilitating organisational human capital is a necessity for improving organisational performance (Huselid, 1995). Research of Belak et al. (2009) confirmed the importance of human capital investments for the organisational performance based on Croatian high-tech companies. Research results suggest that companies which invest more in training and additional education of their employees, as well as in extra salaries (results of greater employee knowledge, skills and abilities derived from training and education) realise better financial results. Moreover, among different approaches to identifying and disclosing company human capital, Lin et al. (2012) considered 40 different human capital related keywords (e.g. advanced training, employee behaviour or employee welfare) from annual reports of Taiwanese companies. The human capital disclosure information was related to organisational performance, more precisely the market to book ratio and return on asset (ROA), confirming a statistically positive relation and suggesting the importance of human capital as an organisational hidden value.

As human capital investments are important for the performance of large enterprises, they are also a subject of interest for small and medium-size enterprises. Findings are supported by a Chinese research conducted within private high-tech and traditional companies. The research revealed a relationship between human capital and organisational performance measured in terms of innovative and operational growth (Jin et al., 2010). For high-tech companies, the study found a statistically positive relationship between technical and managerial trainings that were undertaken before the venture

(1), technical and managerial trainings that were undertaken after the venture (2), entrepreneur's learning capability (3) and the innovative growth performance. Also, for the same group of companies, the study found a statistically positive relationship between the level of education acquired before venture (1), the level of education acquired after the venture (2), technical and managerial trainings undertaken after the venture (3) and operational growth performance. On the other hand, for traditional companies, the statistically positive relationship supports the relationship between the technical and managerial trainings undertaken after the venture and innovative growth performance. Also, for traditional companies statistically positive relationships were supported between the level of education obtained after the venture (1), entrepreneur's learning capability (2) and operational growth companies (Jin et al., 2010). The research supported the importance of human capital for company growth, however, establishing more positive relationships within high-tech companies. This is not a surprising moment, understanding that high-tech companies require specific talents, the one with a substantial level of knowledge, eager for the long-life learning process, and responsible for creative, innovative work and sustainable development. In the light of the importance and influence of human resource practices and human capital for job performance, an interesting research was conducted within the service sector, as one of the fast-growing sectors in Sultanate of Oman, confirming its significant and positive effects (Imran & Atiya, 2020). Consequently, organisations focusing on investing in their human capital and developing it will gain greater performance of their employees (Chadwick, 2017) and inevitably greater overall organisational performance.

Thus, the research hypothesis assumes that company performance is associated with human resource investments and furthermore that a financial statement analysis, especially in high intensive intellectual capital companies, provides a truer and fairer view of company performance, if human capital expenditures are capitalized in the balance sheet rather than recognized as expenses in the profit and loss (P/L) account. Namely, it is assumed that companies which are investing more in human resources (by providing training and paying extra bonuses or salaries to employees) will obtain better financial results than the companies that are investing less in human resources. Also, companies with a lot of intellectual capital have a great proportion of unrecorded intellectual capital or intangible assets, so a financial statement analysis based on structural ratios does not provide a true and fair view of the company performance. Namely, structural (financial) ratios play an important part in evaluating the performance and financial condition of an entity and each ratio contains common as well as unique information (Chen & Shimerda, 1981). These are traditionally used to measure different segments of business, comparing a ratio with a certain standard or among companies. However, the basic assumption of a structural analysis is proportionality (Whittington, 1980), which is not met in HIIC (high intensive intellectual capital) companies, because of the great proportion of unrecorded intellectual capital or intangible assets.

2 Data and methodology

In order to test the premises defined previously, the following statistical hypotheses are developed:

H1 … Human capital investments through salaries and bonuses and/or training and education activities are positively related to company excellence.

H2 … Capitalization of human capital expenditures in the balance sheet, rather than recognition as expenses in the profit and loss account, is positively related to company excellence.

The next step was a selection of dependent and independent variables. As we wanted to investigate the impact of different ways in recognizing and measuring human capital expenditures on company performance, the Business Excellence (BEX) index is defined as the dependent variable. In explanation, the BEX index is a predictive statistical ratio model for determining company excellence, capturing simultaneously various dimensions of company performance. Belak and Aljinović Barać (2007) constructed this model based upon Altman's Z-score (Altman, 1968), taking into consideration the characteristics of financial reporting in Croatia and the specificities of the Croatian capital market. Consequently, it is the most appropriate measure of company performance. The BEX model combines four different financial aspects (profitability, value added, liquidity and financial strength) to determine the likelihood of excellence amongst companies. Generally speaking, the greater the index, the better the total excellence of the company. To be more precise, BEX distinguishes between first-class companies (BEX index higher than 6.01), those showing signs of excellent growth (BEX index between 4.01 and 6.00), the very good (BEX index between 2.01 and 4.00) or good ones (BEX index between 1.01 and

2.00), and the borderline investment opportunities (BEX index lower than 1). Negative value of the BEX index indicates companies whose existence is endangered. The BEX index is calculated according to the following formula (1):

$$BEX = 0.388 \times \frac{EBIT}{Total\ Assets} + 0.579 \times \frac{Net\ Operating\ Profit}{Subscribed\ Capital\ \times capital\ price} + 0.153 \times \frac{Net\ Working\ Capital}{Total\ Assets} + 0.316 \times \frac{5 \times (Net\ Profit + Amortization + Depreciation)}{Total\ Debt} \quad (1)$$

In addition, two measures of human capital are selected as the independent variables, in accordance with the criteria posted by Alvarez (2015), Arslan et al. (2013), Barcons-Vilardell et al. (1999) and Bryl (2018), and taking into account the limitations of the available data:

- Annual salary and bonuses per employee exceeding the average annual salary and bonuses for the sector (SAL),
- Cost of professional training and other educational activities per employee (T&E).

These variables are controlled for the industry group, so the companies are assigned to the high intensive intellectual capital (HIIC) sector or moderate intensive intellectual capital (MIIC) sector in accordance with its main activity (NACE classification) as shown in Table 1.

Table 1. NACE divisions HIIC and MIIC sector classification.

HIIC sector (NACE divisions)	MIIC sector (NACE divisions)
19-20 Manufacture of refined petroleum, chemicals	01-09 Agriculture, forestry, fishing, mining and quarrying
26-27 Manufacture of computers and electrical equipment	10-12 Manufacture of food, beverages and tobacco products
58-61 Broadcasting & telecommunications	13-15 Manufacture of textiles, leather and related products
62-63 Information services	16-18 Manufacture of wood and paper products
64-75 Intellectual services (legal, accounting, management, etc.)	22-25 Manufacture of rubber, plastic and metal products
	29-30 Manufacture of transport equipment
	31-33 Other manufacturing
	41-43 Construction
	45-47 Trade
	49-53 Transportation and storage
	55-56 Accommodation and food service activities

Source: Authors (2020).

Tables 2 and 3 show an in-depth analysis of annual salary and bonuses, cost of professional training and other educational activities per employee with regard to the company's main activity.

Descriptive statistics of both human capital investment variables with regard to the intellectual capital intensity is presented in Table 4.

Data presented in Tables 2 and 3 show that the highest salaries per employee are earned in high intensive intellectual capital (HIIC) sectors: manufacture of computer, electronic and optical products and electrical equipment, and intellectual services (i.e. activities of head offices, management consultancy activities, architectural and engineering activities, technical testing and analysis, and scientific research and development industries). The companies in the manufacture of computer, electronic and optical products, and electrical equipment sector also recorded the highest amount of education and training costs per employee in the sample. Contrary, the lowest salaries were provided to employees in manufacture of textiles, apparel, leather and related products, and also in manufacture of wood and paper products industries, which can be tagged as moderate intensive intellectual capital (MIIC) companies. The minimum annual salary of 4110 KN as well as the maximum annual salary of 375,050 KN in the MIIC sector are the result of an unrealistic number of employees, because for statistical purposes only full-time employees are reported, excluding part-time employees, leased employees, subcontractors, etc.

As can be seen from Table 4, on average, MIIC companies also record a lower average annual amount of education and training costs per employee (8027 KN) than HIIC companies (10,035 KN). It is interesting to note that companies in agriculture, forestry and mining industry do not invest in training or education of its employees at all. This can be explained with the fact that the greatest shares of jobs within these industries are physical jobs, according to their description and specification, requiring a lower level of employee education. Usually, employees performing such jobs reach the maximum of their benefit or revenue for their employers at the start of their employment. Consequently, these positions do not require additional investments in the development of employee knowledge, skills and abilities (KSA), due to the fact that these jobs rarely change and the employees' initial level of KSA is in general substantial, because of deficient career development opportunities.

Table 2. Descriptive statistics of annual salary and bonuses per employee with regard to the company's main activity (in thousands of KN).

Industry (NACE divisions)	Group	N	Mean	Std. Dev.	Min.	Max.
01-09 Agriculture, forestry, fishing, mining and quarrying	MIIC	4	142.07	129.18	61.07	335.00
10-12 Manufacture of food, beverages and tobacco products	MIIC	16	118.02	37.93	67.58	190.81
13-15 Manufacture of textiles, leather and related products	MIIC	5	67.16	8.22	57.23	76.27
16-18 Manufacture of wood and paper products	MIIC	3	92.85	16.78	81.39	112.11
22-25 Manufacture of rubber, plastic and metal products	MIIC	4	123.38	29.91	88.94	159.91
29-30 Manufacture of transport equipment	MIIC	4	126.84	28.24	89.19	152.21
31-33 Other manufacturing	MIIC	2	109.42	47.60	75.76	143.08
41-43 Construction	MIIC	4	154.53	81.48	111.88	276.72
45-47 Trade	MIIC	9	134.25	76.04	58.48	309.31
49-53 Transportation and storage	MIIC	11	212.43	100.34	106.21	375.05
55-56 Accommodation and food service activities	MIIC	33	119.37	60.42	4.11	325.80
19-20 Manufacture of refined petroleum, chemicals	HIIC	3	149.51	77.90	89.79	237.64
26-27 Manufacture of computers and electrical equipment	HIIC	4	271.75	120.72	148.35	433.04
58-61 Broadcasting & telecommunications	HIIC	5	175.67	70.55	83.00	270.40
62-63 Information services	HIIC	5	175.97	124.55	64.66	371.11
64-75 Intellectual services (legal, accounting, management, etc.)	HIIC	7	287.29	186.09	109.79	596.48
TOTAL		**119**	**148.72**	**94.42**	**4.11**	**596.48**

Source: Authors (2020).

The research sample was selected from a list of issuers listed on the Zagreb Stock Exchange (ZSE), publicly available at their webpage www.zse.hr. According to the data available on the 31st of December 2018, shares of a total of 132 issuers were listed. Funds, banks, and insurance companies were excluded due to differences in financial statements, and another three companies were excluded from this total due to incomplete or missing financial statements. Thus, a final sample of 119 companies was formed, representing 90% of the population, so the research can be considered relevant and the obtained results reliable for non-financial listed companies. In order to test the hypotheses, different statistical techniques have been used. The OLS regression analysis was applied as the most appropriate methodology for testing the first hypothesis about the impact of human resources investments (by providing training and paying extra bonuses or salaries to employees) on company financial performance and overall business excellence. The Mann–Whitney U test, as the most appropriate for comparing the differences between two independent groups when the dependent variable is continuous but not normally distributed, is applied to determine whether there are any statistically significant differences between the average salaries and bonuses and educational and training costs per employee in companies from the HIIC and MIIC sectors.

To test the second hypothesis about a statistically significant difference in a company's performance measurement, if human capital expenditures are capitalized in the balance sheet, rather than

Table 3. Descriptive statistics of annual training and education costs per employee with regard to the company's main activity (in thousands of KN).

Industry (NACE divisions)	Group	N	Mean	Std. Dev.	Min.	Max.
01-09 Agriculture, forestry, fishing, mining and quarrying	MIIC	4	0.00	0.00	0.00	0.00
10-12 Manufacture of food, beverages and tobacco products	MIIC	16	7.13	5.55	0.00	15.47
13-15 Manufacture of textiles, leather and related products	MIIC	5	6.37	5.76	1.34	16.30
16-18 Manufacture of wood and paper products	MIIC	3	1.85	2.36	0.00	4.51
22-25 Manufacture of rubber, plastic and metal products	MIIC	4	11.51	8.43	0.00	20.22
29-30 Manufacture of transport equipment	MIIC	4	10.48	7.17	0.00	16.23
31-33 Other manufacturing	MIIC	2	12.67	2.19	11.13	14.22
41-43 Construction	MIIC	4	9.54	8.49	2.04	20.75
45-47 Trade	MIIC	9	9.78	11.25	0.00	33.95
49-53 Transportation and storage	MIIC	11	8.57	12.77	0.00	39.52
55-56 Accommodation and food service activities	MIIC	33	8.40	12.36	0.00	64.14
19-20 Manufacture of refined petroleum, chemicals	HIIC	3	18.12	31.38	0.00	54.36
26-27 Manufacture of computers and electrical equipment	HIIC	4	17.98	9.61	5.96	29.31
58-61 Broadcasting & telecommunications	HIIC	5	6.46	8.72	0.00	18.93
62-63 Information services	HIIC	5	12.91	12.79	0.00	28.32
64-75 Intellectual services (legal, accounting, management, etc.)	HIIC	7	2.52	4.95	0.00	13.48
Total		**119**	**8.43**	**10.76**	**0.00**	**64.14**

Source: Authors (2020).

Table 4. Descriptive statistics of human capital investment variables (in thousands of KN).

Variable	Mean	St.deviation	Minimum	Maximum
SAL MIIC	130.45	70.89	4.11	375.05
SAL HIIC	221.03	135.52	64.67	596.48
SAL total	148.73	94.42	4.11	596.48
T&E MIIC	8.03	9.94	0.00	64.14
T&E HIIC	10.04	13.67	0.00	54.36
T&E total	8.43	10.76	0.00	64.14

Source: Authors (2020).

recognized as expenses in the P/L account, t-test for paired samples was used. Applied methodology is based on Barney's (1991) and Chen and Lin's (2004) claims that the skills of employees are a company's assets, so they need to be recorded as intangible assets in the financial statements, just like goodwill, copyright, or franchise. Namely, employees that contribute the most to human capital are much more unique and consequently very difficult to replace. Therefore, companies employing such workers are willing to pay higher salaries and extra bonuses in order to retain them. The amounts exceeding the average for the industry sector can be considered as investments in intangible assets. On the other hand, easily replaceable workers who do not create a significant added value for the company have lower salaries that are recognized as expenses in the P/L account. Based on these assumptions, the scenario method is applied, this way adjusting the financial statements first. Amounts of annual salaries exceeding the average for the industry sector and costs of professional training and other educational activities are removed from the P/L account and added in the balance sheet as intangible assets. Afterwards, the BEX index is recalculated for the "adjusted" financial statements and the differences in the value of the index before and after recalculation are tested.

3 Results and discussion

As described above, the OLS regression analysis was applied to test the hypothesis about the impact of human resources investments (by providing training and paying extra bonuses or salaries to employees) on the company's financial performance and overall business excellence. All model assumptions are met and the overall model fit (R-Square = 0.265) shows that a quarter of the variance in business excellence can be explained from the annual salary and education and training costs per employee, indicating a meaningful strength of association. The p-value of the F-test (F = 4.365; sig = 0.010) indicates that these independents reliably predict the dependent variable in the model. The t-test of each independent variable in the model shows that both variables are found statistically significant at a 90% confidence level, and the VIF values confirm no multicollinearity problems between the independent variables. The obtained results are presented in Table 5.

As can be seen from the above table, both variables are positively correlated with the company's excellence, meaning that greater investment in human capital in the form of extra salaries and bonuses or investment in knowledge of employees, in terms of providing employee training, will increase company excellence measured by the BEX index. Thus, the first hypothesis about the statistically significant difference in the company's performance measurement, if it invests in human resources through salaries & bonuses more than an industry average and/or through training & education activities is accepted. These findings are in compliance with Arslan et al. (2013) research, which confirmed that human capital investments, such as training investments, enhance employees' skills and abilities as well as their potential to work more efficiently and effectively. Consequently, such employees' efforts fortify greater organisational opportunities and contribute to proficient organisational performance. Similarly, Bryl (2018) supported human capital investments in terms of higher salaries, training and additional benefits, sustaining their impact on organisational financial performance, classifying these companies within the top ones on the market, on behalf of the substantial benchmark analysis provided.

Additionally, the Mann–Whitney U test significance value of 0.000 for salaries and bonuses per employee designates significant differences between the average salaries and bonuses per employee in companies from the HIIC and MIIC sectors. On the other hand, the significance value of 0.941 for costs of training and educational activities indicates no significant differences between human resources investments in companies from the HIIC and MIIC sectors. These results can be observed from a strategic human resource management perspective and organisational decision in "buying"

Table 5. OLS regression results.

Model	B	T	Sig.	VIF
Constant	−5.888	−1.444	0.151	
SAL	0.047	2.100	0.038	1.017
T&E	0.350	1.792	0.076	1.017

Dependent variable: BEX
Source: Authors (2020).

or "creating" own talents. According to the results, it can be concluded that Croatian organisations are more prone to "buying" talents, meaning they rather recruit and select talents, attracting them with a substantial compensation system and retaining them by higher salaries and extra bonuses, than recruiting young employees and investing in their further career development. This can especially be noticed in companies from the HIIC sector, highly appreciating talented employees, representing companies' substantial human capital. Due to the fact that companies from the MIIC sector generally require employees with a lower level of educational background, the differences between the average salaries and bonuses per employees are visible among companies from the sample. On the other hand, "buying" instead of "creating" companies' talents show no significant differences between human resources investments in companies from the HIIC and MIIC sectors.

Obtained results of the second hypothesis testing confirmed a statistically significant difference in the company's business excellence, if annual salary and bonuses per employee exceeding the average annual salary and bonuses for the industry sector are capitalized in the balance sheet as intangible assets rather than being recognized as expenses in the P/L account. The paired samples correlation shows that the BEX (mean = 1.08) and BEX_{adj} scores (mean = 4.02) are strong and significantly positively correlated (r = 0.868). On average, BEX scores were 3 points lower than BEX_{adj} scores (95% Confidence Interval of the Difference [−5.09, −0.8]), and these differences are statistically significant ($t_{118} = -2.717$, sig = 0.008). The potential capitalisation within a company's balance sheet would yield a truer and fairer view of that company's performance. Quite similar results were obtained on the sample of Croatian high-tech companies, confirming a statistically significant difference on company performance capitalizing human resource expenditures in the balance sheet rather than recognising these as expenses in the P/L account (Belak et al., 2009). Additionally, Obara (2013) concludes the research with the statement that the discrepancy between book value and market value of the organisation could be reasonably reduced by excluding the human resource asset value from the organisational P/L account and including the human development investment within their balance sheets. Also, Hilorme et al. (2019) appointed a similar problem, more precisely, the problem of the number of indicators of the company's activity, such as qualified personnel, which cannot be identified or shown in the balance sheet.

4 Concluding remarks

The main objective of this paper is to determine the role of human capital investments and their impact on business excellence of the listed companies in Croatia as an example of a post-transition economy. All findings confirm the correlation between good company performance and high level of investment in human capital through salaries & bonuses and/or training & education costs. Both variables are positively correlated with company excellence. Results also confirm the difference in the mean of salaries per employee between HIIC and MIIC companies, as well as the difference in company business excellence when human capital expenditures are capitalized in the balance sheet rather than recognized as expenses in the P/L account.

Summarizing the findings results in an important practical implication: Croatian companies should pay attention to managing human resources and realizing their importance and impact on competitive advantage, and moreover on business excellence. The same is expected from the relevant regulatory authorities who should encourage human capital investments through subsidies or other forms of state aid (e.g. tax exemptions). It is not only human resource investments that are visible as beneficial investments on the micro level, as they are also beneficial on the macro level, or even on the state and regional levels. Investing in human resources, especially in terms of extra bonuses and salaries, leads to greater pension funds, health insurance and income tax and similar deductions, which employees as well as their employers need to provide. Accordingly, it stimulates and enables economy for further investments. Moreover, greater disposable income increases demand and consequently supply, creating a flywheel for the ongoing economic expansion.

However, it is important to point out a potential limitation that may have impacted the results of the empirical research. The data for the research were collected from financial statements of listed companies publicly available on the stock exchange web page. As Croatia belongs to a macro-based accounting system countries with an underdeveloped capital market, the data may contain erroneous or anomalous values which are usually referred to as calculation errors or result from legislative framework specificities (e.g. reported number of employees). This fact does not diminish the contribution of the research, nevertheless, derived conclusions have to be perceived within the context and interpreted with caution.

Future research should aim to explore in more detail the different intellectual capital categories and their impact on financial statements analysis in order to get precise directives for their adequate recognition and measurement in financial statements. Also, a significant effort is required to establish a credible platform for human resource accounting that will be acceptable to both internal and external financial statements users.

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