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Defining Human Resources "Bundles" and Its' Correlation with Companies' Financial Performances

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***Abstract*—**Although human resources are recognized as the crucial companies' resources and their positive influence on companies' performances has been confirmed through different researches, scientists are still debating it. In order to contribute this debate, this paper firstly discusses the most important human resource management elements and practices and its influence on companies' success. Afterwards it defines human resource "bundles" – interrelated and internally consistent human resource practices, complementary to each other, or the most important human resource practices and elements regarding Croatian companies and its human resource management activities. Finally, the paper provides empirical results; more precisely it reveals the relation of the level of development of human resource management function ("bundles") and companies' financial performances (using profitability ratios, liquidity ratios, solvency ratios and a group of additional ratios related to employees' indicators).

***Keywords*—**Companies' performances, human resource bundles, multivariate statistical analysis.

I. Introduction

HUMAN resources are recognized as the most important companies' resource, which influences companies' success and creates sustainable competitive advantage in changing, dynamic and unpredictable environment.

In the last decades, the influence of human resource function on companies' performances represents one of the main research topics in the area of human resource management (HRM). Many scientists and researchers have analyzed and confirmed that HRM and human resource (HR) practices have considerable influence on companies' performances. However, there is still ongoing debate among respectable scientists about stated relationship, but there has been made almost general consensus that HRM practices should be an important variable influencing company's performances [1].

This influence is stronger and more direct if the HR practices are not observed as separated and unrelated fields of practice or activity, but as the sets of combined HR activities, commonly called "bundles". Many researchers have confirmed that when HR practices are considered and practiced as "bundles", those provide more direct and stronger synergic effects on companies' performances [2], [3].

The aim of this study is to research relationship between the level (quality) of HR function developed in Croatian enterprises and the impact that might have on enterprises' (financial) performance. Two separate researches were conducted for this study. The first research included written survey distributed to all Croatian public companies listed on Croatian Stock Exchange Market. The survey was generally designated to the HR managers, investigating their subjective opinions on the level of development of HR activities within their company. The other part of the research provided data on financial performances of companies participating in the survey. The two sets of data were paired and analyzed using multivariate statistical analysis. Comprehensive analysis of the results provided very interesting insights into overall level of HR activities development in Croatian enterprises and the impact it has on companies' (financial) results.

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II. Theoretical Background

A. Human Resource Practices

Unpredictable and always changing environment requires companies' continual development in order to succeed in business. Despite possible similarities among companies in terms of structure of their human resources - educational level, age structure, sex structure or working experience - every company has its unique set of human resources. Those are valuable, exceptional and very difficult to imitate according to their specificities as knowledge, working experience, skills, abilities, culture, emotional and social intelligence, etc. The fact that human resources are present in a company does not guarantee company's success, but the success can be accomplished only by proper management, development, control or motivation of employees.

Those and similar understandings have changed traditional economy to modern one, recognizing now HR as investment in future business and as the key factor in creating sustainable business performances instead of understanding them solely as business costs. Companies sharing these beliefs, invest efforts in order to improve company's policies and practices in the field of HRM, aiming eventually the increase of companies' performances.

Reputable authors have provided more precise explanations on the relationship between HR practices and companies' performances, investigating empirical evidence regarding mentioned relationship. Many HR practices became popularized and accepted by employers although there was no empirical evidence about that. In order to empirically prove influence of particular HR practices on company's performances, many researchers were investigating individual human resource practices, such as: compensation, selection, training, employment and others.

Lately, researches have reached other dimension in relationship between HR practices and company's performances, starting from the presumption that company's performances will be more remarkable if influence of HR practices is not observed as single and isolated variable but as a synergic effect of combined practices, popularly called "bundles". "Bundles" should represent combinations of interrelated and internally consistent HR practices, complementary to each other. Integration of practices exhibits greater and more direct influence on company's competitive advantage and organizational performances [2]-[4]. Many researches were carried out trying to identify relationship between HR practices and company's performances through aggregated and interrelated elements of human resource practices [5].

Human resource "bundles", elements of integrated HR practices, fortify each other and create multiplicative effect on company's performances. Additionally, studies that are investigating only isolated human resource practices can cause inaccurate conclusions, such as attributing to one practice all benefits of the whole business system [3].

B. Organization's Performances

Different authors relate an organization's performances (its productivity, profitability, or in the public service levels of service delivery) to the ownership or location, culture, organizational learning, top management compensation, labor force quality, team building, management control systems or balanced scorecards. Different stakeholders use different indicators of organizational performances, for example accountants are likely to see performances through return on investment, analysts are likely to interpret share prices or earnings per share as the key performance indicator, operations managers might look at the efficiency of key processes, while HR specialists look for evidence of improved behaviors in the line with organization's culture and values [6].

Despite the fact that relevant literature lately argues about the usage of subjective organizational measures (mostly nonfinancial measures) instead of financial measures exclusively, as well as upholding some contemporary measurement systems (balance scorecard, six sigma business scorecard or business excellence model), financial indicators are still predominantly used and the most precise indicators. Some authors consider financial indicators as not enough reliable in more complex and volatile business surroundings as well as in the world of greater competition and modern organizational strategies. However, financial measures are derived from financial statements that are obligatory by accounting law, are precise and mostly understood by any stakeholder and can be easily collected. Nonfinancial measures usually require more effort (in the sense of money and time) to collect them, investments in information systems and databases, and on the other side, they are firm-specific, what makes them difficult to compare and unreliable in certain circumstances. Moreover, usage of subjective and nonfinancial measures usually requires companies' relative assessment in comparison to their competitors, while financial measures include absolute and widely comparable measures [7], [8].

Still, mostly used indicators are financial ones, used in order to compare risk and/or return within certain company and generally in order to facilitate stakeholders' business decisions. Stakeholders have different interests: starting from bankers with short term loans and their interest in companies' liquidity, creditors with long term loans and their interest in companies' long term solvency, revenues and business effectiveness, or shareholders and their interest in share prices and log term profitability. Moreover, companies' management generally uses financial indicators in order to create their internal reports, make business decisions or make positive relations with creditors and owners. Additionally, there are external stakeholders who demand financial indicators in order to assess liquidity, business effectiveness, profitability, or management performances [9], [10]. Majority of authors use similar spectrum of financial indicators, where the most common are: liquidity ratios, leverage ratios, activity ratios, solvency ratios, profitability ratios or investment ratios.

III. Research Methodology and Results

A. Methodology

Empirical part of this research consists of two separate researches, primary and secondary one. Primary research included written survey, designated to the HR managers (or general managers if company does not have organized HR department) investigating their subjective opinions on the level of development of HR activities within their company. Questions were divided into two categories: (1) general company's data, (2) data regarding HR department activities (questions aiming to gather personal insight regarding main HR department activities within company as well as their personal opinion about the level of development of particular aspects of HR activities).

Secondary research included collection of financial data from companies that participated in the first round of the research. Data were taken from the companies' balance sheets and income statements available on the Zagreb Stock Exchange Market.

After having created data base for the research, data from the first and second round of the research were paired and analyzed using multivariate statistical analysis (SPSS v. 18.0).

B. Sample

The survey was distributed (mailed) to all Croatian enterprises (232) listed on the Zagreb Stock Exchange Market, and it was integral part of a major research [11]. In the second phase, phone contact to human resource or general managers of the companies and additional distribution of survey (using mail, electronic mail or fax) followed. Total response was 76 responses what made response rate of 32.76%. Research regarding human resource department included responses of all 76 companies, but after pairing data from both researches, certain companies were eliminated from the further research analysis. Companies from the financial sector were excluded due to their specificities regarding financial indicators and different classification of their indicators from all other companies. One company was excluded from further research, due to the problems to acquire its financial data. Finally, the complete size of the sample consisted of 69 companies.

C. Results

Companies were grouped into 12 groups regarding their main activity field as follows: (1) hotels and restaurants 32.9%, (2) bank and insurance companies 7.9%, (3) production of food and beverages 7.9%, (4) wholesale and retail sale 11.8%, (5) agriculture and hunting 6.6%, (6) chemical industry 2.6%, (7) production of electronic devices, machinery, appliances and metal 6.6%, (8) textile and close industry 2.6%, (9) production of wood and furniture 2.6%, (10) other manufacturing industry 5.3%, (11) transportation 3.9% and (12) other 9.2%.

Based on geographic location, companies were grouped into 6 regions as follows: (1) Zagreb and surroundings 26.3%, (2) North Croatia 7.9%, (3) Central Croatia 1.3%, (4) Slavonia 9.2%, (5) Dalmatia 30.3% and (6) Istria, Primorje and Gorski kotar 25%.

Proportion of large enterprises in the sample was 52.9%, followed by medium sized enterprises (42.6%), and small enterprises (4.4%). Companies were distributed by the size observing only the number of employees within the company, as one aspect of company size defined by Croatian Accounting Act. According to this act small companies are those employing up to 50 employees, medium size companies are those employing up to 250 employees, while large companies are those employing more than 250 employees.

Analyzing data regarding HR Departments, it was evident that 97.4% of the sample has organized HR department within its organizational structure. The number of employees within HR department ranges from 2 to 47, while the average number of employees in this department is 5.32. The largest proportion of the employees working in HR department has secondary education – on average 2.62 employees.

The level of development of HRM function was assessed using two questions. The first one is the one measuring (based on personal opinions of respondents) development of HRM function relative to the companies' main competitors. The other question was estimating the average group grade relating to the level of development of HRM function based on estimation of particular HR activities (again, based on personal respondents' opinion). Estimation of the average group grade of HRM function included 9 particular grades according to 9 particular activities (elements): job analysis, planning, recruitment and selection, training and career development, motivation, performance appraisal, compensations, safety and health work and human resource information system (HRIS).

Respondents mostly (67.6%) assessed the level of development of their HR department comparing to their main competitors as average.

Estimating the level of development of HR department based to the level of development of particular elements, respondents gave an average mark of 3.54 (scale 1-5). The highest particular grade was assigned to safety and health at work (4.07), while the lowest grade was assigned to motivation (3.06).

Regarding theoretical background and specificities of Croatian enterprises, selection of the following financial ratios was made, which were used in further analyses: *profitability ratios* (return on sales (ROS) – gross, net and operating, return on asset (ROA), and return on equity (ROE)), *liquidity ratios* (current ratios (CR), quick ratio (QR), and working capital (WC)), *solvency ratios* (debt ratio (DR), interest cover ratio (ICR), and financial strength (FS)). A group of additional ratios related to employees' indicators was also used, such as: value added (VA), new value (NV), human capital return on investments (HCROI), revenue per employee (REV), profit before tax per employee (PRF), cost of hires per employee (CST).

Testing the correlation between the level of development of HRM function and different indicators of financial performances was done using the Pearson's correlation coefficient. In the following tables results indicating only statistically significant correlations are provided.

Table I shows statistically significant correlations between the level of HRM function and financial performances comparing development relative to the one of their main competitors. All correlations are positive and weak ($r < 0.5$).

These tests confirm the existence of some influence of the level of development of HRM function on financial results. Main indicators of financial results: ROS (net), ROS (gross), ROS (operating), ROA, FS and HCROI will be higher in the companies that have HRM function better developed than their competitors.

TABLE I
STATISTICALLY SIGNIFICANT CORRELATIONS BETWEEN HRM FUNCTION AND FINANCIAL PERFORMANCES (RELATIVE TO COMPETITORS)

	ROS Net	*ROS Gross*	*ROS Operating*	*ROA*	*FS*	*HCROI*
Pearson Correlation	0.404[a]	0.410[a]	0.331[a]	0.305[b]	0.372[a]	0.301[b]
p-value	0.001	0.001	0.007	0.012	0.002	0.015

[a]Correlation is significant at the 0.01 level (2-tailed)
[b]Correlation is significant at the 0.05 level (2-tailed)

Table II displays statistically significant correlations between the level of HRM function and financial performances regarding particular activities (elements) of HRM function. All correlations are positive but weak ($r < 0.5$).

TABLE II
STATISTICALLY SIGNIFICANT CORRELATIONS BETWEEN HRM FUNCTION AND FINANCIAL PERFORMANCES (AVERAGE GRADE ACCORDING TO PARTICULAR HR ACTIVITIES)

	ROS Net	*ROS Gross*	*ROS Operating*	*ROA*	*HCROI*
Pearson Correlation	0.429[a]	0.435[a]	0.434[a]	0.332[a]	0.283[b]
p-value	<0.001	<0.001	<0.001	0.006	0.021

[a]Correlation is significant at the 0.01 level (2-tailed)
[b]Correlation is significant at the 0.05 level (2-tailed)

This test indicates the influence of the level of development of HRM function on the financial results represented by ROS (net), ROS (gross), ROS (operating), ROA and HCROI.

These results confirm the rationing that, besides direct effects of better workforce, investment in human resource management has much wider impact on company results. If a company is willing to invest in its human resources (reinforcing all aspects of HR activities and increasing the level of its development) employees will be aware of the concern that company provides for them. Also, they will be conscious about their importance for the company as integral elements of the system as well as the importance of involvement of human resource department in the process of creating company's strategy. If employees are provided with the feelings of their importance, reliability, safety and belongings, they will be motivated and more eager to provide better individual and group results that will eventually lead to the increase of financial performances and overall companies' results.

In order to specify what integral elements or HR activities are the most important in the above mentioned relationship, factor analysis (principal component method) has been conducted in order to create "bundles". Two main criteria for conducting factor analysis (Kaiser – Meyer – Olkin test and Bartletts test) were provided (Table III) and confirmed (KMO ≥ 0.5 and p-value < 0.05).

TABLE III
KAISER – MEYER – OLKIN AND BARTLETT TEST

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.770
Bartlett's Test of Sphericity: Approx. Chi-Square	1914.928
p-value	<0.001

Further factor analysis has provided 7 different factors (different combinations of particular HR activities – "bundles") and was continued by the use of Spearman's correlation coefficient in order to test correlation between "bundles" and financial performances. Three different factors ("bundles") provided statistically positive correlation with financial performances (factor 2, factor 5 and factor 6). However, for the purposes of this paper only factor 2 (factor providing the greatest number of correlations with financial indicators – 11 correlations) will be analyzed in more details.

Factor 2 consisted of the following elements (different tasks important for providing particular human resource activity): motivation – financial bonuses; motivation – nonfinancial bonuses; performance appraisal – objective indicators; performance appraisal – feedback; performance appraisal – usage of the results; performance appraisal – used for all levels of employees; compensation – incentives and compensation – profit sharing. The first element of the pair represents HR activity, while the other element represents task within particular HR activity. In this research, there were 9 different HR activities with 4 particular tasks specified within each activity. Above, there are represented 7 different pairs of HR activities and corresponding tasks, creating factor 2, for the purpose of the further research. Analysis provided correlation with 11 different financial performance indicators, which are presented in the Table IV.

TABLE IV
STATISTICALLY SIGNIFICANT CORRELATIONS BETWEEN FACTOR 2 AND FINANCIAL PERFORMANCES

Financial indicators	*Correlation coefficient*	*p-value*
ROS (net)	0.363[a]	0.006
ROS (gross)	0.369[a]	0.005
ROS (operating)	0.318[b]	0.018
ROA	0.308[b]	0.021
ROE	0.381[a]	0.004
ICR	0.331[b]	0.016
FS	0.279[b]	0.037
NV	0.293[b]	0.028
HCROI	0.360[a]	0.007
PRF	0.360[a]	0.006
CST	0.327[b]	0.014

[a]Correlation is significant at the 0.01 level (2-tailed)
[b]Correlation is significant at the 0.05 level (2-tailed)

All the above correlations confirm weak to medium positive correlation. Correlation between particular tasks of HRM function (forming factor 2) and financial indicators has also been tested. This testing was conducted in order to reveal validity of specified "bundle" in relation to particular HR tasks. 88 different combinations (between particular tasks and each financial indicator) have been provided.

Observing these combinations there has been noticed that 45 particular HR tasks do not provide any statistical significant correlation regarding financial measures. On the other hand, 43 different combinations provided statistically significant correlation. Furthermore, there has been analyzed strength of the correlation (correlation of particular task regarding to financial measures) related to correlations between "bundles" and financial measures (provided in Table IV). The results were quite similar; 22 particular tasks provided correlation weaker than "bundle", while 21 particular tasks provided correlation stronger than "bundle".

These tests confirmed validity of observing (and developing) HR "bundles" instead of using particular elements of HR tasks and activities within HRM function. Better results (positive correlations) are noticed among the "bundles" that are created of particular elements that are in order of sequence, more precisely that are interrelated or are supplementing each other. Particular elements that are creating factor 2 are integral elements of three HR activities: motivation, performance appraisal, and compensation. Proper motivation techniques and motivation factors will be understood as incentives for employees' effort and work, resulting with positive performing results registered through the process of performance appraisal. Better individual performers are awarded with more attractive compensation packages, what is working as strong motivation incentive, and the cycle motivation – performance appraisal – compensation is closed and initiates again.

IV. Conclusion

Efforts put lately in development of HRM function have resulted with improved business results perceived through sustainable competitive advantage and overall organizational success. Human resources are finally perceived as the crucial element in establishing future existence and growth. Different elements or HRM activities (with its particular tasks) are considered as the most important for individual company, but the greatest effects have been realized through creation of interrelated and integrated HR elements, called "bundles".

The results of this research confirmed positive and statistically significant correlation between HRM activities and companies' financial performances, strengthening that with the fact that correlation is more significant if those elements are observed as "bundles". Proper decision about combination of particular HR tasks is idiosyncratic for each individual organization, according to its proper needs and aspirations. Devotion to proper HR tasks and activities as well as to human resources at all, will generate productive, satisfied, secure, reliable employees, willing to strive for organizational overall success.

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