

The Influence of Human Resources Competency Management on the Business Success of Small and Medium Enterprises

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Abstract

The success of the organization is based on the quality of human resources, their competencies, motivation, loyalty, and their business results. The basic aim of this research is to determine whether and to what extent human resources competency management influences the business success of small and medium enterprises (SMEs). The empirical research was conducted in 234 SMEs in the Federation of Bosnia and Herzegovina in January 2021. An original questionnaire was created for the survey, which gathered the opinions of top managers. In the paper, human resources competency management is viewed as a process consisting of: determining the required competencies, determining current competencies and the competency gap and undertaking activities to ensure and develop the necessary competencies. For the business success of SMEs, business performance was researched through four perspectives of the Balanced Scorecard (financial, customer, internal business processes and learning and growth perspective). The research results showed the correlation between the studied variables and the influence of human resources competency management on the business success of SMEs viewed from all four perspectives. The paper includes a comparison with similar research, limitations and recommendations for future research. The originality of this work lies in creating an original model of the connection between human resources competency management and business success (performance) of SMEs as viewed through four perspectives of the BSC, which has been empirically tested. Also, no such research has been conducted in B&H to investigate the influence between the human resources competency management and the business success of SMEs.

Introduction

Studies show that companies that treat people as their most important asset are also the most profitable (Eisenberg, Goodall, & Trethwey, 2009, p. 292). Numerous authors point out that human resources (HR) are a source of competitive advantage in both large enterprises and small and medium enterprises (SMEs). Perhaps, it is more important as a source of competitive advantage for SMEs than for large companies because HR are specific and

SMEs can use it to differentiate from competitors (Jardon & Gonzalez Loureiro, 2013, p. 255). HR is unique because people cannot be separated from their knowledge, skills, or values in the way they can be separated from their financial and physical assets. Starting from the characteristics of today's business environment, human resources management (HRM) should be viewed as a wide set of activities that will contribute to greater commitment and dedication to work, as well as employee loyalty to the organization. HRM observed in this way represents the backbone of achieving the strategic goals of the organization (Klepić, Alfirević, & Rahimić, 2020, p. 219-220).

Today, when companies are looking for a competitive advantage, one of the new ways to transform human resources management is competency based HRM. This new model of HRM is insufficiently researched, i.e. the process of competency management itself is not sufficiently researched in detail. Many authors have focused on only one part of the process, so in this paper an attempt was made to connect all these parts of the process into a single model of competency management in companies.

The basic aim of this research is to determine whether and to what extent human resources competency management influences the business success of small and medium enterprises. The empirical research was conducted in 234 SMEs in the Federation of Bosnia and Herzegovina in January 2021. An original questionnaire was created for the survey. The methodology of data collection (collecting primary data through surveys, and secondary data using the documentation analysis method), data processing (descriptive statistics, structural analysis, Kolmogorov-Smirnov test, Mann-Whitney U test, Kruskal-Wallis test, correlation analysis, factor analysis and hierarchical multiple regression models), and tabular and graphical methods are used to create an empirical part of research and work presentation of the results obtained.

The research results showed the correlation between the studied variables and the influence of human resources competency management on the business success of SMEs viewed from all four perspectives.

The contributions of this paper are reflected in a number of achievements that have made a significant departure from other research on issues of human resources competency management in SMEs and the impact on business performance of enterprises observed through four perspectives of a balanced scorecard.

An original theoretical and empirical model has been formed, the purpose of which is to determine the impact, direction

and intensity of the links between the human resources competency management and business performance of SMEs. A model for measuring the business performance of SMEs has been developed using a balanced scorecard model that includes four perspectives.

The paper is structured in 5 chapters that are interconnected and form one meaningful whole: "Introduction", "Theoretical background", "Methodology of research", "Research results", "Discussion", and "Conclusion". Also, at the end of the paper, an overview of the used literature is given.

Theoretical Background

Competency is a cluster of related knowledge, skills, and abilities that affects a major part of one's job (a role or responsibility), correlates with performance on the job, can be measured against well-accepted standards, and can be improved via training and development (Employment and Training Administration [ETA], 2017, p. 3). Washington and Griffiths (2015, p. 2) concluded that each competency reflects a unique combination of knowledge, skills, abilities, and other factors that are driven and influenced by multiple traits and motivations, ultimately manifesting themselves in skilful behaviour. Competencies, are characteristics that individuals have and use in appropriate, consistent ways in order to achieve desired performance. Competencies form the foundation of competency-based HR management practices (Dubois & Rothwell, 2004, p. 16).

Competencies are now the most prevalent method used to define ideal employees and have become a fundamental part of talent management systems across organizations. In rapidly changing business environments, organizations are recognizing the value of a workforce that is not only highly skilled and technically adept, but more importantly, a workforce that can learn quickly, adapt to change, communicate effectively, and foster interpersonal relationships (Rodriguez et al., 2002, p. 309) (Bücker & Poutsma, 2010, p. 832). In general, SMEs have fewer resources and competences available for them than larger companies, so they need to be more creative and agile in combining their competences in a novel way, or in developing completely new competences, and also be more proactive in anticipating and recognizing new potential business models in a rapidly changing situation (Lampela, Taipale-Erävala & Heilmann, 2017, p. 180-181).

Traditional HR management is focused on the number of people and employee costs, mistakenly assuming that the job and performance in the future will be the same as in the past. It also favours quantitative methods for workforce planning.

The basis of competency-based HR management is: the identification, modelling, and assessment of competencies. The HR function seeks to discover employees who perform their job successfully, have excellent performances, and seeks to configure HR activities around cultivating them. It concentrates on talent and the value HR brings to the organization and does not assume that the future will be like the past or that the same head count is needed to achieve predictable results. This approach stimulates productivity and uses human talent to the best competitive advantage. Exemplary performers are significantly more productive than others and organizations that have more such employees are significantly more productive. A competency-based approach is more appropriate than a traditional one and is focused on talents, their business success and past or future business performance.

There are numerous benefits for a company that uses competency-based HR management. Dubois and Rothwell (2004, p. 34-35) point out that this can be useful for organizations striving to achieve the following goals: enhance competitive advantage, develop better quality in products and services, increase productivity, position the organization for future growth, facilitate culture change and transformation, assist with large-scale organizational change, foster positive outcomes with customers or suppliers, increase financial performance, establish systematic linkages and integration among HR management practices, align HR management practices with the mission, vision, values, or the business strategies or objectives of the organization. Some of the benefits according to Pickett (1998) are: to improve organization performance, increase the ability to be competitive, support culture change, enhance training and development effectiveness, improve processes associated with recruitment and selection, reduce turnover, clarify managerial roles and specialist roles, increase emphasis on business objectives, etc. American Compensation Association (ACA) (1996) points out that research results show that organizational efficiency improves when organizations use competency-based HR systems. High-performance organizations describe the following benefits of effective and automated competency management (Freifeld, 2016): enriched understanding of expected behaviours and performance, improved talent planning, optimized development and mobility strategy, enhanced talent pipeline, improved operational efficiencies, and integrated talent processes.

Each organization needs to develop its own competency model that suits its needs and specifics. Therefore, one unique model that is valid for all cannot be found in the literature, but there are numerous models in organizations. A company's competence model is often aligned with the

organisational strategy and derives its own strategy and goals from it (Kauffeld and Paulsen, 2018; Scholz, 2018) (Karwehl and Kauffeld, 2021, p. 10).

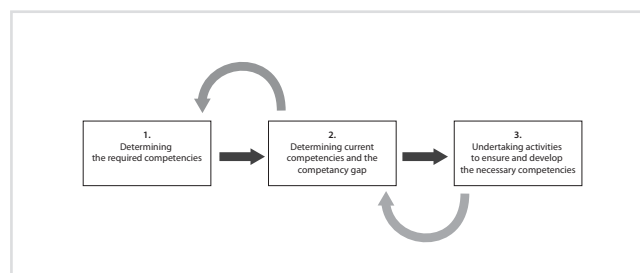
Methodology for achieving competence within the Framework of Project Management Institute progresses through three stages (Project Management Institute, 2001, p. 77): self-assessment; addressing gaps in competence; and consolidation of competence. A three-step process of analysis according to Saks & Haccoun (2016, p. 122) are: (1) defining the desired performance, (2) determining the gap between desired and actual performance and (3) identifying the obstacles to effective performance. Developing a competency model is a complex, comprehensive, systematic and time-consuming process consisting of a series of steps. According to Bahtijarević-Šiber (2014, p. 133) those are: determining the strategic goals of the organization; discovering the different competencies needed to achieve these goals; determining criteria and standard of performance; analysis and identification of current competencies of employees - determining the inventory of competencies; comparing required and current competencies and identifying the gap that shows whether employees have the necessary competencies, and if not, where they should be developed; determining the needs and methods of development and ensuring the necessary competencies; and creating a program for the development of individual competencies.

Based on the existing competency management models for the needs of this paper, a modified model is presented as the most suitable, which is a combination of the previously presented models and which consists of 3 phases (Figure 1):

1. Determining the required competencies;
2. Determining current competencies and determining the competency gap between the required and current competencies;
3. Undertaking activities to ensure and develop the necessary competencies.

Figure 1

The human resources competency management model



Source: Authors

Balanced Scorecard (BSC) is such a methodology that identifies and formalizes the main drivers to the business and provides a quick view of corporation's strategic health. It is focused on uncovering the main non-financial drivers of the business, along with the economics of the business. Balanced Scorecard shows a way to make strategy actionable. As a framework for action, it can be updated and creates a renewable methodology and framework (Nair, 2004, p. 3-6). The Balanced Scorecard concept is a comprehensive tool in which each organizational unit has to adapt its activities to achieve specific aims in relation to defining a business strategy (Zazueta Salido et al., 2019; Slávik & Zagošek, 2018) (Benková et al., 2020, p. 3). The BSC retains traditional financial measures. But financial measures tell the story of the past events, an adequate story for industrial age companies for which investments in long-term capabilities and customer relationships were not critical for success. These financial measures are inadequate, however, for guiding and evaluating the journey that information age companies must make to create future value through investment in customers, suppliers, employees, processes, technology, and innovation (Kaplan & Norton, 1996, p. 7). Andersen, Lawrie and Shulver (2000, p. 3) defined the Balanced Scorecard as a framework that expresses an organization's strategy as a set of measurable goals from the perspectives of owners/investors, other external stakeholders, and the organisation itself. If these goals and associated measures, and targets are well chosen, the BSC will help managers focus on the actions required to achieve them, so helping the organization achieve its overall strategic goals and realise its strategic visions. Schäfer and Teuber (2007, p. 39) defined the BSC as an instrument of strategic corporate management, with the help of which a strategy is translated into concrete, operational measures. As a result, the BSC creates a "common understanding of strategy implementation" and enables stringent communication in the company as well as integration into existing systems. The power of a balanced strategic performance system is to acknowledge both leading and lagging indicators, which allows corporations to balance past results with future drivers of performance. BSC provides also balance between financial and nonfinancial measures. Organizations must incorporate a combination of financial and non-financial goals into their strategic goals and achieve a balance between them (Nair, 2004, p. 16-17). The use of BSC is a measure suitable for understanding the value creation through investigating human resources (Perramon et al., 2016) (Aryani & Setiawan, 2020, p. 72).

This simple methodology translates an organization's strategy into performance objectives, measures, targets, and initiatives in four balanced perspectives: financial, customer, internal business processes and learning and

growth. Improvements in employee learning and growth result in improved internal business processes, which create better products and services and, therefore, higher customer satisfaction and higher market share, leading to enhanced financial results for the organization. Thus, a good balanced scorecard identifies many cause-and-effect relationships within the business and helps employees and managers appreciate the roles of employee and task as well as the importance of each result to the overall corporate effort (Von Bergen & Benco, 2004, p. 3). Within the financial perspective, the question must be answered, which objectives can be derived from the financial expectations of the capital provider. The customer perspective looks at the question of which goals result from customer requirements, the implementation of which in turn favours the achievement of the financial goals. "How do the company's processes have to be designed in order to achieve the market and customer goals and thus the financial goals?" is the key question of the process perspective (Schäfer & Teuber, 2007, p. 41).

Richard Boyatzis, and others used the competency concept in the context of performance improvement (Griffiths & Washington 2015, p. 2). The authors Shet, Patil and Chandawarkar (2019) signify the importance of developing competency-based performance concept in organizations. They explored the relationship between competency-based performance management and organizational effectiveness in their paper. It has been found that human resource practices, which include a number of activities of competency management can positively generate greater company performance when they are properly applied (Wright et al. 2005, p. 435; Sheehan 2014, p. 546). The practice of identifying, defining, and applying competencies helps employees to understand the areas in which their efforts will improve their performance, and this in turn helps the entire organization (Dubois & Rothwell 2004, p. 34-39). Isaković (2010) explored the influence of manager's competencies on the growth of manufacturing SMEs in the Federation of Bosnia and Herzegovina. The authors Evianisa, Sukmawati and Slamet (2021) in their study aimed to identify the competency of human resources and management best practices related to advancing employee performance in a palm oil mill company in Seluma Regency, Bengkulu. The purpose of the paper of the authors Martin, Elg, Gremyr and Wallo (2021) was to introduce a competence-based terminology for describing general competencies of quality management work in organisations and to create a competence framework in order to understand what is needed to be a quality management practitioner. Elizondo Sandoval et al. (2018, p. 92) in their scientific paper graphically presented intervention methodology for the implementation of the profile of managerial competences for SMEs, and through the phases presented

the measurement of optimal performance, then defining the desired performance and determining the gap. The article of authors Karwehl and Kauffeld (2021) provided an overview of established and new ways in competence management, with a focus on the HR Analytics approach.

The primary aim of this research is to determine whether and to what extent human resources competency management influences the business success of small and medium enterprises.

Methodology of Research

Setting hypotheses

Considering the defined problem, the subject of research and the set objectives, an original research model was created for the paper. In the research model, human resources competency management consists of three groups of activities and the business success of small and medium enterprises consists of four dimensions that represent four perspectives for observing business performance. For the purposes of this paper and the research of the connection between the human resources competency management and business performance of SMEs, one main hypothesis and seven auxiliary hypotheses were defined according to the research model:

H1: The Human resources competency management positively influences the business performance of small and medium enterprises.

AH1: Determining the required human resources competencies positively influences the business performance of SMEs.

AH2: Determining current competencies and determining the competency gap between the required and current human resources competencies positively influences the business performance of SMEs.

AH3: Acting to ensure and develop the necessary human resources competencies positively influences the business performance of SMEs.

AH4: Human resources competency management positively influences the business performance from the financial perspective of SMEs.

AH5: Human resources competency management positively influences business performance from the customer perspective of SMEs.

AH6: Human resources competency management positively influences business performance from the internal business processes perspective of SMEs.

AH7: Human resources competency management positively influences business performance from the learning and growth perspective of SMEs.

The scope of the research, methods of collecting and processing data model

Data collected by the conducted empirical research were analyzed using: graphic representations (structural circles or columns); descriptive statistics; structural analysis; Kolmogorov-Smirnov test to check whether the distribution of the analyzed variable satisfies the assumption of "normality"; Mann-Whitney U test for two independent samples for distributions that do not satisfy the "normality" assumption; Kruskal-Wallis test for more than two independent samples for distributions that do not meet the "normality" assumption; correlation analysis; factor analysis; and hierarchical multiple regression models. Within the descriptive statistics for the analyzed variables in total and by groups of companies that differ by activity, legal form or some other classification, the following parameters were calculated: minimum and maximum value of the analyzed variable, average or mean value calculated using the arithmetic mean, standard deviation, as an absolute measure of variability around the average, coefficient of variation, as a relative measure of variability around the average.

To test the hypotheses, set for this research, a survey questionnaire was used as a research instrument in which closed questions with offered limited number of answers were asked, of which for most questions intensity answers with Likert scale from 1 to 5 were offered. The Likert scale was fully used for the second and third parts of the questionnaire. In the first part of the questionnaire, which refers to basic information on the researched companies (e.g. legal form of the company), closed single-answer multiple choice questions were used. The questionnaire was completed by heads of human resources departments, senior managers or employees who are well acquainted with this issue in the company. The questionnaire consists of three parts. The first part refers to basic information on the researched companies, the second part to the competency management in the researched companies and the third part to the business success of the researched companies (data before the appearance of the Covid - 19 virus).

The survey questionnaire was submitted to 234 SMEs in the Federation of Bosnia and Herzegovina (FB&H). Response rate was 100%. The percentage of processed SMEs reflects the real situation according to statistical data on the number of small and the number of medium enterprises in the FB&H. Therefore, 159 small and 75 medium enterprises were researched. When determining the share of small and medium enterprises in the research, the structure of enterprises in FB&H was considered. There was also an even distribution by sectors by cantons, according to official statistics on the structure of SMEs in the FB&H. The number of employees

was taken as the criterion for the size of the company because only that criterion is identical in all laws for measuring the size of the company within B&H and it is identical to the recommendations of the European Union. The classification of small and medium enterprises is taken according to the Federal law on fostering small business development (2006). The research was conducted in January 2021.

Research Results and Discussion

Descriptive research results

Empirical research covers 234 companies in the FB&H, of which 67.55% are small companies with 10 to 49 employees, and 32.05% are medium-sized companies with 50 to 249 employees. The largest share of companies is from Canton Sarajevo (30.77%), Tuzla Canton (21.37%) and West Herzegovina Canton (10.36%). Considering the industry to which the company belongs, the highest share is of those companies engaged in trade (30.34%), manufacturing (23.9%) and construction (11%). Considering the ownership structure, companies with domestic private ownership dominate (75.64%), and given the legal form, 88.46% of companies are limited liability companies. In addition, most

of the observed companies (77.78%) are older than 10 years.

"Determining the required competencies in a company" as a construct was measured by a questionnaire. It equals the average agreement of companies from the sample with 12 statements related to determining the required competencies. All claims were measured on a Likert scale of 1-5 (1 - not at all to 5 - excellent). Cronbach's alpha reliability coefficient, which is a measure of the internal consistency of statements or questions, for 12 statements from the questionnaire that express "the determination of required competencies in the company" is $0.938 > 0.7$, which means that these 12 statements can be aggregated into one variable. As an average of the answers or an assessment of agreement with the statements from the questionnaire related to a given construct, a variable called "determining the required competencies" was calculated. For this construct the average grade is 3.93 with a standard deviation of 0.771. The obtained results are presented in Table 1. The "normality" of the distribution of answers from the sample for all 12 initial statements and for the construct "determination of the required competencies in the company" was also tested. For the initial claims from the questionnaire, "normality" was not satisfied even for the derived variable "determination of required competencies in the company" (p values of KS test are lower than 0.05).

Table 1

Descriptive statistics for the constructs and original variables from the questionnaire

| Descriptive statistics | | | | | | | The Kolmogorov-Smirnov test for "normality" | |
|---|-----|------|------|--------------|--------------------|--------------------------|---|---------|
| Construct, Average | N | Min | Max | Average | Standard deviation | Coefficient of variation | Statistics | P value |
| "determination of required competencies" | 234 | 1.42 | 5.00 | 3.930 | 0.771 | 19.616 | 0.093 | 0.000 |
| "determination of current employee competencies and competence gap" | 234 | 1.92 | 5.00 | 3.797 | 0.769 | 20.241 | 0.069 | 0.009 |
| "undertaking activities to ensure and develop the necessary competencies" | 234 | 1.00 | 5.00 | 3.686 | 0.768 | 20.830 | 0.062 | 0.029 |
| "performance of companies from a financial perspective" | 234 | 1.25 | 4.75 | 3.225 | 0.517 | 16.031 | 0.151 | 0.000 |
| "business performance from a customer perspective" | 234 | 1.00 | 5.00 | 3.487 | 0.753 | 21.601 | 0.160 | 0.000 |
| "performance of companies from the internal business processes perspective" | 234 | 1.00 | 5.00 | 3.371 | 0.604 | 17.918 | 0.165 | 0.000 |
| "performance of companies from a learning and growth perspective" | 234 | 1.00 | 5.00 | 3.453 | 0.758 | 21.940 | 0.157 | 0.000 |

Source: Author's work

"Determining current competencies and determining the competency gap between the required and current competencies in the company" as a construct was measured on the basis of a questionnaire. It was measured as the average agreement of the company from the sample with 12 statements related to determining current competencies and competency gap. All claims were measured on a Likert scale 1-5 (1 - not at all to 5 - excellent). Cronbach's alpha reliability coefficient, which is a measure of the internal consistency of statements or questions, equals $0.928 > 0.7$ for 12 statements from the questionnaire that express "the determination of current employee competencies and the gap in competencies in the company", which means that these 12 statements can be aggregated into one variable. A variable called "determining current competencies and competency gap" was calculated as the average answer or an assessment of agreement with the statements from the questionnaire related to a given construct. For this construct, the average score is 3.797 with a standard deviation of 0.769. The obtained results are presented in Table 1. The "normality" of the distribution of answers from the sample for all 12 initial statements was also checked for the construct "determining current competencies and competency gap in the company". For the initial claims from the questionnaire, "normality" was not satisfied even for the derived variable "determining current competencies and competency gap in the company" (p values of KS test are lower than 0.05).

"Undertaking activities to ensure and develop the necessary competencies in the company" as a construct was measured by a questionnaire which shows the average agreement of the company from the sample with 18 statements related to undertaking activities to ensure and develop the necessary competencies. All claims were measured on a Likert scale 1-5 (1 - not at all to 5 - excellent). Cronbach's alpha reliability coefficient, which is a measure of the internal consistency of statements or questions, for 18 statements from the questionnaire expressing activities to ensure and develop the necessary competencies in the company is $0.943 > 0.7$, which means that these 18 statements can be aggregated into one variable. As an average of the answers or an assessment of agreement with the statements from the questionnaire related to a given construct, a variable called "undertaking activities to ensure and develop the necessary competencies" was calculated. For this construct, the average score is 3.686 with a standard deviation of 0.768. The obtained results are presented in Table 1. The "normality" of the distribution of answers from the sample for all 18 initial statements and for the construct "Undertaking activities to ensure and develop the necessary competencies in the company" was also tested. For the initial claims from the

questionnaire, "normality" was not satisfied even for the derived variable "undertaking activities to ensure and develop the necessary competencies in the company" (p KS test values are lower than 0.05).

Four constructs or dimensions are used to measure *the business success* of an enterprise that is measured through performance measurement from four Balanced scorecard perspectives. These are: financial perspective, customer perspective, internal business processes perspective and learning and growth perspective. The condition refers to the period before the appearance of the Covid 19 virus (past 3 years).

In order to see the *performance of the company from a financial perspective*, the movement of income, costs, operating result (profit or loss) and market share is monitored. In the context of better performance in revenue and profit, grade 1 is associated with a large decline and grade 5 with a large increase. In terms of costs and losses, there is an indirect relationship with performance, so a score of 1 joins a large increase and a score of 5 a large decline. Profit and loss scores derived in this way are combined for the business result. Cronbach's alpha reliability coefficient, which is a measure of the internal consistency of statements or questions, for 3 statements from the questionnaire expressing the movement of income, operating expenses (profit and loss) in the company is $0.584 < 0.7$, which means that these 4 statements are not ideal to aggregate into one variable. Such reliability coefficients in the observed sample (lower than the limit of 0.7) indicate a possible problem with the measurement scales that unite these claims. Such results in the sample do not justify the application of the model of structural equations (SEM) in order to test the hypotheses of the work. This is the reason for the factor analysis to be carried out on the statements and see how they relate to the isolated factors, and by applying hierarchical regression analysis to test the set hypotheses. Another reason for choosing regression analysis in the hypothesis testing process is that it is possible and easy to interpret as needed qualitative dummy variables related to the characteristics of the company in the sample to include in the model. However, as a logical continuation of previous analyses, as an average of responses or an assessment of agreement with these statements from the questionnaire related to a given construct, a variable called "performance from a financial perspective" was calculated. For this construct the average score is 3.225 with a standard deviation of 0.517. The obtained results are presented in Table 1. The "normality" of the distribution of answers from the sample for all 4 starting elements and for the derived construct "performance of the company from the financial

perspective in the company" was also checked. For the initial elements from the questionnaire, "normality" was not satisfied even for the derived variable "performance of the company from the financial perspective in the company" (p values of KS test are lower than 0.05).

To see the performance of the company from *the customer perspective*, market share, retention of existing customers, retrieving new customers and customer satisfaction are monitored. The Cronbach's alpha reliability coefficient, which is a measure of the internal consistency of statements or questions, for the 4 statements in the questionnaire expressing market share, retaining existing customers, retrieving new customers and customer satisfaction is $0.864 > 0.7$, which means that these 4 statements can be aggregated into one variable. As an average of the answers or an assessment of agreement with these statements from the questionnaire related to a given construct, a variable called "performance from a customer perspective" was calculated. For this construct the average score is 3,487 with a standard deviation of 0.753. The obtained results are presented in Table 1. The "normality" of the distribution of answers from the sample for all 4 initial statements was also tested for the construct "Performance of the company from the perspective of customers in the company". For the initial claims from the questionnaire, "normality" was not satisfied even for the derived variable "performance of the company from the perspective of customers in the company" (p values of KS test are lower than 0.05).

To see the performance of the company from *the internal business processes perspective*, the introduction of innovations in the business process, the percentage of mistakes made, compliance with deadlines and after-sales service or services are monitored. The percentage of errors made is indirectly related to performance, so a score of 1 is associated with a large increase and a score of 5 with a large decrease. In the context of better performance in the other three variables, grade 1 is associated with a large decline and grade 5 with a large increase. Cronbach's alpha reliability coefficient, which is a measure of the internal consistency of statements or questions, for 4 statements from the questionnaire expressing the introduction of innovation in the business process, the percentage of errors, deadlines and after-sales service is $0.579 < 0.7$, which means that these 4 claims are not ideally aggregated into a single variable. As an average of the answers or an assessment of agreement with these statements from the questionnaire related to a given construct, a variable called "performance from the internal business processes perspective" was calculated. For this construct the average score is 3,371 with a standard deviation of 0.604. The obtained results are presented in

Table 1. The "normality" of the distribution of answers from the sample for all 4 initial statements was also checked for the derived construct "Performance of the company from the internal business processes perspective in the company". For the initial claims from the questionnaire, "normality" was not satisfied even for the derived variable "performance of the company from the internal business processes perspective in the company" (p values of KS test are lower than 0.05).

To see the performance of the company from *the learning and growth perspective*, investment in training and education of employees, enabling employees to use new technologies, mutual cooperation of employees and knowledge sharing and empowerment and acceptance of employee proposals are monitored. Cronbach's alpha reliability coefficient, which is a measure of the internal consistency of statements or questions, for 4 statements from the questionnaire expressing investment in employee training and education, enabling employees to use new technologies, employee cooperation and knowledge sharing and empowerment and acceptance of employee suggestions is $0.845 > 0.7$, which means that these 4 statements can be aggregated into one variable. A variable called "performance from a learning and growth perspective" was calculated as the average of the answers or the score of agreement with these statements from the questionnaire related to the given construct. For this construct the average score is 3,453 with a standard deviation of 0.758. The obtained results are presented in Table 1. The "normality" of the distribution of answers from the sample for all 4 initial statements was also tested for the construct "performance of the company from the learning and growth perspective in the company". For the initial claims from the questionnaire, "normality" was not satisfied even for the derived variable "performance of the company from the learning and growth perspective in the company" (p values of the KS test are lower than 0.05).

The Man-Whitney non-parametric test was used for testing differences between companies of different sizes according to the number of employees in terms of the level of each of the three phases of human resources competency management and each of the four BSC perspectives. The level of each of the three phases and each of the four perspectives is very similar in small and medium enterprises from the sample, which is confirmed by the results of the MW test (p value of the MW test is higher than 0.05). It follows that the level of each of the three phases of human resources competency management and each of the four BSC perspectives in the company does not depend on the number of employees in the company. The Man-Whitney non-parametric test was also used to test

the differences between companies operating at a profit or loss in terms of the level of each of the three phases of human resources competency management and each of the four BSC perspectives. The first phase of human resources competency management and each of the four BSC perspectives differ for companies that make a profit or a loss, which is confirmed by the results of the MW test (p value of the MW test is lower than 0.05). It follows that the level of the first phase of human resources competency management and each of the four BSC perspectives depends on the business results of the company. The Kruskal-Wallis non-parametric test was used for testing differences between companies, according to different activity of the company, legal form, ownership structure and age of the company, for the level of each of the three phases of human resources competency management and each of the four BSC perspectives. It can be concluded that the level of each of the three phases of human resources competency management and each of the four BSC perspectives depends on the age of the company.

Testing research model hypotheses

The aim of this paper is to examine whether and to what extent the degree of human resources competency management has an impact on the performance of small and medium enterprises. In this way, the main hypothesis of the work is tested. As previously presented, the management of human resources competencies, as an

independent variable, and the business performance of the company, as a dependent variable, were "measured" and aggregated through a series of constructs through a questionnaire.

The testing of the theoretical model was conducted in two ways:

1. Previously elaborated final constructs obtained as sub-construct averages were taken for the constructs that will express the degree of Human resources competency management and business performance of the company
2. For constructs that will express the degree of Human resources competency management and business performance of the company, factors obtained by applying exploratory factor analysis (Principal Axes, the method with "oblique" rotation) to the original statements from the questionnaire related to these constructs. KMO measures and the sphericity test justify the obtained models (KMO > 0.7 and p values of the sphericity test less than 0.05).

Model with constructs obtained as variables averages

Table 2 shows the correlation matrix (partial correlation coefficients, control by excluded independent variables) for the previously described average constructs.

Table 2

The correlation matrix: degree of "Human resources competency management", as an independent variable, and "business performance of SMEs", as a dependent variable (averages)

| The Human resources competency management through | | Business success from | | | |
|---|---------------------------------|-----------------------|----------------------|---|---------------------------------|
| | | financial perspective | customer perspective | internal business processes perspective | learning and growth perspective |
| Determining the required competencies | Partial correlation coefficient | 0.170*** | 0.292*** | 0.284*** | 0.229*** |
| | P value | 0.009 | 0.000 | 0.000 | 0.000 |
| Determining current competencies and competency gap | Partial correlation coefficient | 0.049 | 0.008 | 0.029 | -0.035 |
| | P value | 0.457 | 0.909 | 0.663 | 0.597 |
| Undertaking activities to ensure and develop the necessary competencies | Partial correlation coefficient | 0.018 | 0.068 | 0.049 | 0.249*** |
| | P value | 0.789 | 0.306 | 0.460 | 0.000 |

Notes: (* p < 0.1, ** p < 0.05, *** p < 0.01)

Source: Author's work

When the influence of the other two constructs that monitor the degree of human resources competency management is controlled or excluded, the conclusion follows that:

- there is a significant positive impact of the level of determining the necessary competencies on the business performance of small and medium enterprises.
- there is a significant positive impact of the level of undertaking activities on ensuring and developing the necessary competencies on the business performance of small and medium enterprises from the learning and growth perspective.
- based on the above conclusions, hypothesis AH1 is fully confirmed, hypothesis AH2 has not been confirmed, and hypotheses AH3, AH4, AH5, AH6 and AH7 are partially confirmed.

The constructed averages for the degree of Human resources competency management and business performance of small and medium enterprises obtained in the previously described ways are further modelled by applying hierarchical regression analysis. The control variables included the dummy variable for the size of the company according to the number of employees and the dummy variable for the characteristics of the company, according to which significant differences in mean values for constructs (business and age of the company) were shown in previously performed statistical tests. The dummy business variable had modalities 0 for loss-making firms and 1 for profit-making firms. The dummy variable for company size by the number of employees had modalities 0 for medium enterprises and 1 for small companies. A dummy variable was created for the age of the company, where modality 1 was for companies that were older than 10 years, and 0 for companies up to 10 years old. This was the first block of variables in the hierarchical regression model. In the following blocks, the model, where the constructs for business success are considered as dependent variables, gradually includes independent variables constructs for the degree of human resources competence management. Regression models are significant. The problem of multicollinearity was not present in the obtained models, so it was not necessary to eliminate independent variables. Outliers were also considered. In this way, the final models were reached through hierarchical regressions for business performance of SMEs from each of the perspectives (average), the results of which are presented below.

One outlier is evident (standardized residual $|-3.046| < 3.5$), however this deviation is negligible. "Determining

the necessary competencies" (first phase) has a significant impact on the performance of SMEs from a financial perspective. "Determining current competencies and competency gap" (second phase) does not have a significant impact on the performance of SMEs from a financial perspective. "Undertaking activities to ensure and develop the necessary competencies" (third phase) does not have a significant impact on the performance of SMEs from a financial perspective. Based on the above conclusions, hypothesis AH1 for the financial perspective was confirmed. Hypotheses AH2 and AH3 for the financial perspective have not been confirmed. Hypothesis AH4 is partially confirmed.

One outlier is present (standardized residual $|-3.603| > 3.5$), however this deviation is not significant. First phase has a significant impact on the performance of SMEs from the perspective of customers. Second phase does not have a significant impact on the performance of SMEs from the perspective of customers. Third phase does not have a significant impact on the performance of SMEs from the perspective of customers. Based on the above conclusions, hypothesis AH1 for the customer perspective was confirmed. Hypotheses AH2 and AH3 for the customer perspective have not been confirmed. Hypothesis AH5 is partially confirmed.

One outlier is present (standardized residual $|3.294| < 3.5$), but this deviation is not significant. First phase has a significant impact on the performance of SMEs from the internal business processes perspective. Second phase does not have a significant impact on the performance of SMEs from the internal business processes perspective. Third phase does not have a significant impact on the business performance of SMEs. Based on the above conclusions, hypothesis AH1 for the internal business processes perspective was confirmed. Hypotheses AH2 and AH3 for the internal business processes perspective have not been confirmed. Hypothesis AH6 is partially confirmed.

One outlier (standardized residual $|-3.313| < 3.5$) was recorded, however this deviation is not significant. First phase has a significant impact on the performance of SMEs from a learning and growth perspective. Second phase in the final model does not have a significant impact on SMEs performance from a learning and growth perspective, but it does in the third model. Third phase has a significant impact on the success of SMEs in learning and growth. Based on the above conclusions, hypotheses AH1, AH2 (partially) and AH3 for the learning and growth perspective were confirmed. Hypothesis AH7 has been confirmed.

Model with constructs obtained as variable factors

Table 3 shows the correlation matrix (partial correlation coefficients, control by excluded independent variables) for the previously described construct factors.

When the influence of the other two constructs that monitor the degree of human resources competency management is controlled or excluded, the conclusion follows that:

- there is a significant positive impact of the level of “determining the necessary competencies” on the business performance of small and medium enterprises.
- there is a significant positive impact of the level of “determining current competencies and competency gap” on the performance of small and medium enterprises from the internal business processes perspective.
- there is a significant positive impact of the level of “undertaking activities on ensuring and developing the necessary competencies” on the business performance of small and medium enterprises from the learning and growth perspective.
- based on the above conclusions, hypothesis AH1 is fully confirmed.
- hypotheses AH2, AH3, AH4, AH5, AH6 and AH7 have been partially confirmed.

The constructs obtained in the previously described ways, factors for the degree of Human resources competency management and business success of small and medium enterprises, were further modelled by applying hierarchical regression analysis. The control variables included the dummy variable for the size of the company according to the number of employees and the dummy variable for the characteristics of the company, according to which significant differences in mean values for constructs (business and age of the company) were shown in previously performed statistical tests. The dummy business variable had modalities 0 for loss-making firms and 1 for profit-making firms. The dummy variable for the company size by the number of employees had modalities 0 for medium enterprises and 1 for small companies. A dummy variable was created for the age of the company, where modality 1 was for companies that were older than 10 years, and 0 for companies up to 10 years old. This was the first block of variables in the hierarchical regression model. In the following blocks, the model, in which the constructs for business success are considered as dependent variables, gradually includes independent variables constructs for the degree of human resources competence management. Regression models are significant. The problem of multicollinearity was not present in the obtained models, so it was not necessary to eliminate independent variables. Outliers were also considered. In this way, the final models were

Table 3

The Correlation matrix: degree of “Human resources competency management”, as an independent variable, and “business performance of SMEs”, as a dependent variable (factors)

| The Human resources competency management through | | Business success from | | | |
|---|---------------------------------|-----------------------|----------------------|---|---------------------------------|
| | | financial perspective | customer perspective | internal business processes perspective | learning and growth perspective |
| Determining the required competencies | Partial correlation coefficient | 0.181*** | 0.294*** | 0.262*** | 0.236*** |
| | P value | 0.006 | 0.000 | 0.000 | 0.000 |
| Determining current competencies and competency gap | Partial correlation coefficient | 0.089 | 0.068 | 0.112 | 0.060 |
| | P value | 0.175 | 0.305 | 0.090* | 0.365 |
| Undertaking activities to ensure and develop the necessary competencies | Partial correlation coefficient | 0.011 | -0.025 | -0.019 | 0.167 |
| | P value | 0.871 | 0.709 | 0.779 | 0.011** |

Notes: (* p < 0.1, ** p < 0.05, *** p < 0.01)

Source: Author's work

reached through hierarchical regressions for business performance of SMEs from each of the perspectives (factor), the results of which are presented below.

One outlier is evident (standardized residual $|3.208| < 3.5$), however this deviation is negligible. "Determining the necessary competencies" (first phase) has a significant impact on the performance of SMEs from a financial perspective. "Determining current employee competencies and competency gaps" (second phase) in the final model does not have a significant impact on the performance of SMEs from a financial perspective, but it does in Model 3. "Undertaking activities to ensure and develop the necessary competencies" (third phase) have a significant impact on SMEs performance financial perspectives. Based on the above conclusions, hypothesis AH1 for the financial perspective was confirmed. Hypothesis AH2 for the financial perspective has been partially confirmed. AH3 hypothesis for the financial perspective has not been confirmed. Hypothesis AH4 is partially confirmed.

One outlier is present (standardized residual $|-3.793| > 3.5$), however this deviation is only per object and therefore not significant. First phase has a significant impact on the performance of SMEs from the perspective of customers. Second phase does not have a significant impact on the performance of SMEs from the perspective of customers. Third phase does not have a significant impact on the performance of SMEs from the perspective of customers. Based on the above conclusions, hypothesis AH1 for the customer perspective was confirmed. Hypotheses AH2 and AH3 for the customer perspective have not been confirmed. Hypothesis AH5 is partially confirmed.

There is one outlier (standardized residual $|-3.985| > 3.5$), but this deviation is not significant because it is only one company. First phase has a significant impact on the business performance of SMEs from the internal business processes perspective. Second phase has a significant impact on the performance of SMEs from the internal business processes perspective (with a first-class error of 10%). Third phase does not have a significant impact on the business performance of SMEs. Based on the above conclusions, hypotheses AH1 and AH2 for the internal business processes perspective were confirmed. Hypothesis AH3 for the internal business processes perspective has not been confirmed. Hypothesis AH6 is partially confirmed.

One outlier was recorded (standardized residual $|-3.584| > 3.5$), however this deviation is not significant. First phase has a significant impact on the performance of SMEs from a learning and growth perspective. Second phase in the

final model does not have a significant impact on SMEs performance from a learning and growth perspective, but it does in the third model. Third phase has a significant impact on the success of SMEs in learning and growth. Based on the above conclusions, hypotheses AH1, AH2 (partially) and AH3 for the learning and growth perspective were confirmed. Hypothesis AH7 has been confirmed.

Based on the results obtained by the research, it can be concluded that there is a significant positive impact of the level of "determining the necessary competencies" on the business performance of SMEs, observed both through the model with constructs obtained as variables averages and through the model with constructs obtained as variable factors. Based on the above conclusion, auxiliary hypothesis AH1 is fully confirmed.

Based on the results obtained by the research, it cannot be concluded that there is a significant positive impact of the level of "determining current competencies and competency gap" on the business performance of SMEs, observed through the model with constructs obtained as variables averages. Based on the above conclusion, auxiliary hypothesis AH2 has not been confirmed. On the other side, it can be concluded that there is a significant positive impact of the level of "determining current competencies and competency gap" on the "performance of SMEs" from the internal business processes perspective, observed through the model with constructs obtained as variable factors. Based on the above conclusion, auxiliary hypothesis AH2 has been partially confirmed.

Based on the results obtained by the research, it can be concluded that there is a significant positive impact of the level of "undertaking activities on ensuring and developing the necessary competencies" on the business performance of SMEs from the learning and growth perspective, observed both through the model with constructs obtained as variables averages and through the model with constructs obtained as variable factors. Based on the above conclusion, auxiliary hypothesis AH3 has been partially confirmed.

Based on the results obtained by the research, it can be concluded that there is a significant positive impact of the level of "determining the necessary competencies" on the business performance of SMEs from financial perspective, observed both through the model with constructs obtained as variables averages and through the model with constructs obtained as variable factors. Based on the above conclusion, auxiliary hypothesis AH4 is partially confirmed.

Based on the results obtained by the research, it can be concluded that there is a significant positive impact of the level of “determining the necessary competencies” on the business performance of SMEs from customer perspective, observed both through the model with constructs obtained as variables averages and through the model with constructs obtained as variable factors. Based on the above conclusion, auxiliary hypothesis *AH5 is partially confirmed*.

Based on the results obtained by the research, it can be concluded that there is a significant positive impact of the level of “determining the necessary competencies” on the business performance of SMEs from internal business processes perspective, observed through the model with constructs obtained as variables averages. Based on the above conclusion, auxiliary hypothesis *AH6 is partially confirmed*.

Based on the results obtained by the research, it can be concluded that there is a significant positive impact of the level of “determining the necessary competencies” on the business performance of small and medium enterprises from internal business processes perspective, and there is a significant positive impact of the level of determining current competencies and competency gap on the business performance of small and medium enterprises from internal business processes perspective”, observed through the model with constructs obtained as variable factors.. Based on the above conclusion, *auxiliary hypothesis AH6 is partially confirmed*.

Based on the results obtained by the research, it can be concluded that there is a significant positive impact of the level of “determining the necessary competencies” on the business performance of SMEs from learning and growth perspective, and that there is a significant positive impact of the level of “undertaking activities on ensuring and developing the necessary competencies” on the business performance of SMEs from the learning and growth perspective, observed both through the model with constructs obtained as variables averages and through the model with constructs obtained as variable factors. Based on the above conclusion, auxiliary hypothesis *AH7 is partially confirmed*.

Based on the analysis and testing of hypotheses and models obtained on the basis of data from a sample of 234 companies, it follows that the degree of human resources competency management (in the form of 3 constructs) has a positive and significant effect on the success of small and medium enterprises from four different perspectives. Main hypothesis H1 and auxiliary

hypothesis AH1 are fully confirmed. Auxiliary hypotheses AH2, AH3, AH4, PH5, AH6 and *AH7 are partially confirmed*.

Conclusion

Given that very little research in this area is in the world literature, and that similar research has not been conducted so far, especially in Bosnia and Herzegovina, the contributions of this paper are reflected in a number of achievements that have made a significant departure from other research on issues of human resources competency management in SMEs and the impact on business performance of enterprises observed through four perspectives of a BSC. Most of the research was related to the research of individual competency management activities, most of them by identifying key competencies and their impact on some of the business performance. Also, research was mainly conducted in large companies. By researching, formulating and presenting the results of research on the impact of human resources competency management on the business performance of SMEs, a number of scientific contributions have been made.

Classification and systematization of numerous human resources competency management activities has been performed, and in this way the work of future researchers of human resources competency management has been facilitated through the development of the offered theoretical framework. The classification and systematization of the approach to defining and measuring the business performance of SMEs through a BSC was performed, and thus it will be easier for future researchers of business performance of small and medium enterprises through the development of the offered theoretical framework.

The subject of research has been set in a new and original way linking the human resources competency management and business performance of SMEs through the development of a theoretical model of the relationship between defined variables. An original theoretical and empirical model has been formed, the purpose of which is to determine the impact, direction and intensity of the links between the human resources competency management and business performance of SMEs. A model for measuring the business performance of SMEs has been developed using a BSC model that includes four perspectives (financial perspective, customer perspective, internal business processes perspective and learning and growth perspective).

The validity of the model has been verified by this research, which is a significant departure from other research and models. The mutual influence and connection of groups of activities of human resources competency management and business performance observed through all four perspectives of the balanced scorecard determined in the set model has been determined.

Empirical verification of the defined model expanded and deepened the insight into the paradigm of modern business, and human resources competency management, their development and affirmation in the field of management and business success.

The practical implications of this research are also numerous. Three phases of the human resources competency management process have been identified, and activities for each of the phases of competency management have been identified, which will help SMEs and their management in developing and improving HRM. The practice of human resources competency management in SMEs in Bosnia and Herzegovina has been established. The business performance of SMEs in Bosnia and Herzegovina has been determined, measured through four perspectives of the BSC method, which are to a large extent also predictors of future business performance indicators. The positive impact of all phases of human resources competency management on business performance has been determined through all four perspectives, which will provide a quality foundation for SMEs to make further decisions on competency management activities in small and medium but also large enterprises, which can significantly raise competitiveness of enterprises, and affect their business performance. By introducing the human resources

competency management process, companies will have better financial results, improve the quality of business, reduce the frustration and dissatisfaction of employees, and increase the satisfaction, knowledge and skills of employees. That will lead to more efficient and effective work, and thereby speed up and improve the quality of the business process and company results.

The results of the research will be used as a basis for making recommendations for SMEs to improve the human resources competency management, which can significantly increase the business performance of enterprises themselves, and affect their competitive position, development and survival. This is especially true for SMEs in Bosnia and Herzegovina, where owners and managers need to understand that people are the ones who create and maintain their competitive advantage and that the only way to survive and develop is to focus on people and human resource management, as well as good practices and achievements in human resources competency management.

Limitation of a conducted research is reflected in the extent of the sample and the method of creating the research sample. According to the spatial coverage, the research was conducted on the territory of the larger of the two entities. It would be useful and desirable but also a recommendation for future research to include the area of the smaller B&H entity, neighbouring countries, and also EU member states and other countries. Empirical research covered SMEs, which is a certain limitation, and it would be recommended in future research to investigate competency management as well as business performance in large companies and micro enterprises.

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Vpliv upravljanja kompetenc človeških virov na poslovno uspešnost malih in srednjih podjetij

Izvleček

Uspeh organizacije temelji na kakovosti človeških virov, njihovih kompetencah, motivaciji, zvestobi in poslovnih rezultatih. Osnovni cilj te raziskave je ugotoviti, ali in v kolikšni meri upravljanje kompetenc človeških virov vpliva na poslovno uspešnost malih in srednje velikih podjetij (MSP). Empirična raziskava je bila izvedena v 234 MSP v Bosni in Hercegovini januarja 2021. Za raziskavo je bil izdelan izvirni vprašalnik, s katerim so bila zbrana mnenja vodilnih menedžerjev. V članku je upravljanje kompetenc človeških virov obravnavano kot proces, ki ga sestavljajo: določanje zahtevanih kompetenc, ugotavljanje trenutnih kompetenc in vrzeli v kompetencah ter izvajanje dejavnosti za zagotavljanje in razvoj potrebnih kompetenc. Poslovna uspešnost je bila raziskana s štirih vidikov sistema uravnoveženih kazalnikov (BSC) (finančni vidik, vidik strank, vidik notranjih poslovnih procesov ter vidik učenja in rasti). Rezultati raziskave so pokazali povezanost med preučevanimi spremenljivkami in vpliv upravljanja kompetenc človeških virov na poslovno uspešnost MSP, gledano z vseh štirih vidikov. Prispevek vključuje primerjavo s podobnimi raziskavami, omejitve in priporočila za prihodnje raziskave. Izvirnost tega dela je v oblikovanju izvirnega modela povezave med upravljanjem kompetenc človeških virov in poslovnim uspehom (uspešnostjo) MSP, gledano s štirih perspektiv BSC, ki je bil empirično preverjen. Prav tako v BiH še ni bila izvedena nobena tovrstna raziskava, ki bi preučevala vpliv med upravljanjem kompetenc človeških virov in poslovno uspešnostjo MSP.

Ključne besede: poslovna uspešnost, uravnoveženi sistem kazalnikov, upravljanje kompetenc, človeški viri, mala in srednja podjetja