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ORIGINAL SCIENTIFIC PAPER

Quality and Human Resources in Function of Business Excellence in Production Organizations Owned by Women Entrepreneurs



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ABSTRACT

Business excellence model has a key role in increasing the effectiveness and efficiency of European organizations in enhancing the importance of quality in all aspects of its activities and stimulating and assisting in the development of quality improvement. This paper represents part of research of quality and human

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resources impact on EFQM among 70 organizations on the territory of Republic of Serbia. Woman entrepreneurs as respondents contributed to this research by telling their subjective attitude and rating offered claims. The analysis proves that variable Quality significantly influences EFQM model unlike variable Human resources which has lower impact. Purpose of this research lays in creating a sustainable model of success for future female entrepreneurs

KEY WORDS: *EFQM model, Quality, HR, production organizations, woman entrepreneur, system model*

Introduction

The development of the world economy has caused a wide and varied range of products and services and is therefore identified by the user and the supplier.

Developed countries of the world, large official government institutions and politicians have realized the importance of the changes that are taking place and create the conditions for their companies to be better in terms of competition in order to survive on the market, thus creating favourable conditions for the country's progress. From there came the business excellence and the EFQM model.

The goal of this paper is to improve business performance by raising the organization's awareness of the existence and significance of the impact of human resource variables and the quality of achieving business excellence.

This paper presents an analysis of the data obtained from small and medium-sized enterprises in the form of a response to the questionnaire on the impact of quality and HR on business excellence. The questionnaire was distributed to companies that women entrepreneurs run, (owners and top management).

The theme of this paper is entrepreneurship, managed by womens. Women entrepreneurship development is an essential part of human resource development. Women Entrepreneurs may be defined as the women or a group of women who initiate, organize and operate a business enterprise (Singh & Manisha, 2013).

Entrepreneurship among women, no doubt improves the wealth of the nation in general and of the family in particular. Women today are more willing to take up activities that were once considered the preserve of men,

and have proved that they are second to no one with respect to contribution to the growth of the economy (Sharma, 2013).

Business Excellence and EFQM Model

Business excellence involves a well-organized system that is constantly improving but also gives good financial results. The quality system enables us to define the internal organization, powers and responsibilities of employees. Of course we also make constant improvements and increase the level of services. The environment is something we should not operate with a quality system. The responsibility of the management is to achieve continuous success in the salaries of employees. If used almost all resources, we come to the point that further improvement is only an increase in the level of service we provide (Kanji, 2015).

EFQM - European Foundation for Quality Management was established in 1988 by representatives of 14 major European companies with the approval of the European Commission. The current number of members is over 500 organizations, classified from major multinational and important national companies, to research institutes and prominent universities ("Knowledge Base", 2017).

The model explains that customer satisfaction, people, the impact on society is achieved through "leadership" that is managed by politics and strategy, human resources management, resources and processes leading to excellence and business results.

EFQM mission is:

- To stimulate and help organizations throughout Europe to participate in improvement activities, leading unconditionally to customer satisfaction, meeting employee, improving social and business results, and
- to support accelerating the process of introducing Total Quality Management as a decisive factor for achieving global competitive advantages.

EFQM has a key role in increasing the effectiveness and efficiency of European organizations in enhancing the importance of quality in all aspects of its activities and stimulating and assisting in the development of quality improvement.

The EFQM consists of nine elements. Each of the 9 elements is the criterion used to evaluate the organization's progress on the road to excellence. The business excellence model is based on evaluating these nine key criteria with a number of elements. The first group of elements refers to the assessment of activities in the organization (competences), and the second group on the evaluation of the effects of the work (results). Each element contains a number of questions in order to carry out self-assessment in the business entity itself (Eskildsen & Dahlgaard, 1998, Wang, Bhanugopan & Lockhart, 2015).

The properties of the applied model are:

- possible application to the entire business system or only part of it,
- the ability to be implemented in a short period of time with its own resources,
- to be applied by inter-ministerial teams or one person, with the support of the highest management,
- it represents an entry for a more extensive process of self-assessment and finding of own models,
- to identify and facilitate the determination of possible improvements for improvement,
- to facilitate a successful business system, to turn to the performance levels of the most developed part of the world.

The determinants of the business excellence model are:

1. Leadership
2. Policy and Strategy
3. People Management
4. Resources
5. Processes
6. Customer Satisfaction
7. People Satisfaction
8. Impact on Society
9. Business Results. (ISO 9004).

Research Methodology

Based on the theoretical research (Arsovski 2013; Bass 1994; Rebelo 2014; Vanhaverbeke 1998, ISO 9004), the methodology set up was made by

the research questionnaire. The questionnaire consists of 70 claims classified according to the meaning in 11 elements. These 11 elements are listed as follows:

- Leadership
- HR
- Innovation
- Business results
- Quality
- Strategy
- Resource management
- Process management
- Monitoring measurement and measurement analysis
- Improving innovations
- Achieving sustainable success

Possible attitudes for each set of claims are defined in the following way:

- grade 1 – completely disagree,
- grade 2 - disagree,
- grade 3 – neither agree neither disagree,
- grade 4 - agree,
- grade 5 – completely agree.

For purpose of this paper elements (*variables*), HR (*human resources*) and quality are used as factors under assumption (hypothesis) that they significantly affect level of EFQM (*business excellence model*).

Model Analysis

For further analysis, systematic model shown in Figure 1 was used, with the dependent and independent variables:

Dependent variables:

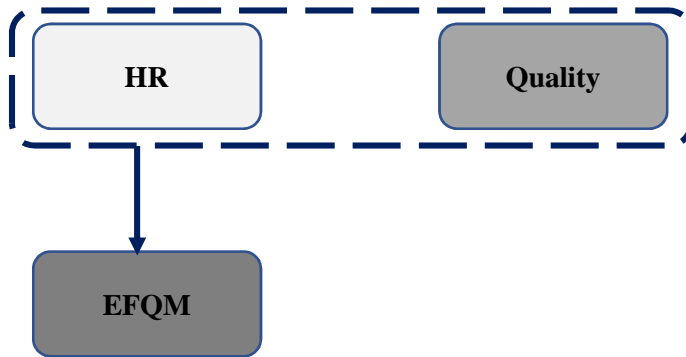
- *EFQM* (this type of dependent variables includes: Leadership, Innovation, Business Results and Strategy) and,

Independent variables:

- *HR and*

- Quality.

Figure 1: System model



Source: Author

In this paper is discussed EFQM - aspect of production organizations, where is defined hypothesis H_1 : levels of HR and the quality significantly affect level of EFQM.

Interpretation of the results of Pearson correlation in table 1 shows the descriptive statistics for all variables, where the values of the average scores are:

- HR = 4.110,
- Quality = 4,100, and
- EFQM of production organizations = 4.11

Table 1: Descriptive statistics

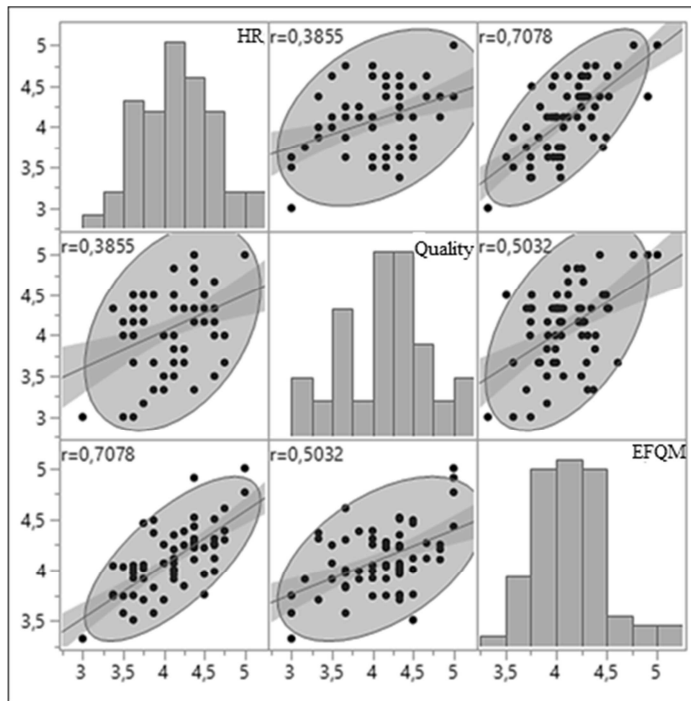
	HR	Quality	EFQM
Mean	4,1107143	4,1	4,1103423
Std Dev	0,4436258	0,5204358	0,3298444
Std Err Mean	0,0530234	0,062204	0,0394239
Upper 95% Mean	4,2164931	4,2240935	4,1889909
Lower 95% Mean	4,0049355	3,9759065	4,0316936
N	70	70	70

Source: Author

In the table 2. is the matrix of correlation data for different variables in a system model of EFQM of the manufacturing organization. The number of

cases in the sample is $N = 70$ is correct and there are no missing data. From the presented dimensions, we can see the relationship between the variables and the correlation r . We can conclude: a positive correlation between the variables in all cases and that the highest correlation coefficient between variable HR and EFQM. Correlation coefficient is $r = 0.7078$, these variables were moderately correlated - related.

Figure 2: Correlations of variables in the system model



Source: Author

In the table 3 was calculated coefficient of determination $R = 0.5632$, which illustrates how the percentage of variance of the dependent variable is explained in the model, and the coefficient of multiple correlation $r = 0.7504$ that illustrates what is the strength of the correlation between the variables. It means that 56.32% of the variability of the dependent variable EFQM organization of production can be explained by the influence of the independent variable: HR and Quality. Here variables are moderately correlated - related.

Table 2: Summary of Fit for variables: HR, Quality and EFQM production organizations

RSquare	0,563264
RSquare Adj	0,550227
Root Mean Square Error	0,22121
Mean of Response	4,110342
Observations (or Sum Wgts)	70

Source: Author

In order to assess the statistical significance we must observe Table 4. - ANOVA. There are the results of the null hypothesis, r^2 in the population is 0. The statistical significance of the (Sig. = 0.0001), which means that r is <0.0005 . Hypothesis H11 - confirms that the independent variables HR and Quality have a significant impact on the dependent variable EFQM in manufacturing organizations. In the further analysis, we will still analyze this hypothesis.

Table 3: ANOVA

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	2	4,2284316	2,11422	43,2054
Error	67	3,2785830	0,04893	Prob > F
C. Total	69	7,5070146		$<,0001^*$

Source: Author

In the Table 5, coefficients can determine which of the independent variable in the model contribute to the prediction of a dependent variable. In this case, the highest coefficient beta is 0.603 which is the value for the independent variable HR, which means that this independent variable contributes most to the explanation of the dependent variable of EFQM production organizations.

Table 4: Coefficients

Term	Estimate	Std Error	t Ratio	Prob> t	Std Beta	VIF
Intercept	1,5628689	0,27755	5,63	$<,0001^*$	0	.
HR	0,4486972	0,065059	6,90	$<,0001^*$	0,603477	1,1745774
Quality	0,1714652	0,055457	3,09	$0,0029^*$	0,270542	1,1745774

Source: Author

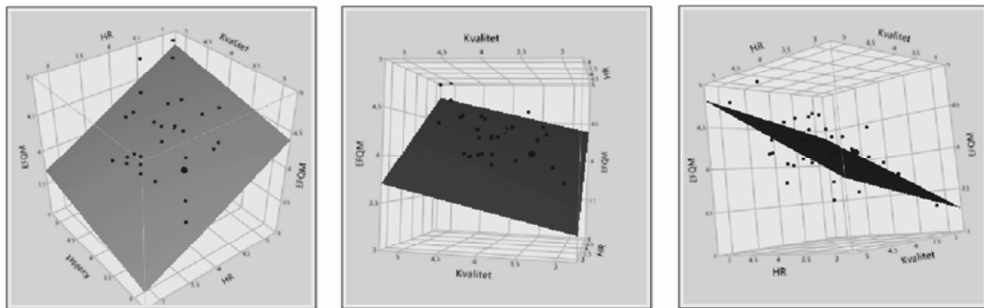
For drawing a regression equation we can use the values from column B in (Table 27), based on which, the multiple linear equations is:

$$y = 1,562 + 0,448 \cdot x_1 + 0,171 \cdot x_3 \quad (1)$$

or

$$EFQM \text{ of production organizations} = 1,156 + 0,448 \cdot HR + 0,17 \text{ Quality} \quad (2)$$

Figure 3: 3D simulation of a multiple linear equation



Source: Author

Figure 3. shows the 3D simulation of the resulting multiple linear equations for the effects of changing HR and Quality at variable EFQM for production organization.

Conclusion

By analyzing the EFQM model from the woman entrepreneur point of view we concluded that the variable quality has greater impact on business excellence. Variable HR which stands for human resources according to respondents does not have great impact on business excellence but its significance is not exclusive. This article explains quality as paradigm of every successful business. The model presented in paper can be extended to other elements of the EFQM model in order to create a sustainable model of success for future female entrepreneurs.

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