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Benchmarking in Regional Government

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ABSTRACT

The regional government in the Republic of Croatia is regulated by Law on local and regional self-government. There are 20 counties and the City of Zagreb as regional government units. The public sector has implemented some paradigms for managing internal business processes, risk management, financial management and control, in the past 10 years, as they had earlier been implemented in the private sector as well. In this article the authors will analyze the regional government in the Republic of Croatia, but the main goal of this article is to create benchmark based on four perspectives which are the basis of the Balanced Scorecard Method (BSC). The authors will conduct a survey in two regional government institutions (counties) and propose a benchmark standard for measuring the efficiency and effectiveness of regional government.

Keywords: *regional government, balanced scorecard, benchmark*

Introduction

The performance measurement is becoming more and more important in a very competitive environment. It is important to answer the question: "What performance indicators should we measure?" and almost immediately after that "What should we do with those results".

The problem statement of this research is how to identify important performance indicators, how to evaluate them and how to benchmark important issues?

To address these issues the Balanced Scorecard Method will be used as a source of performance indicators which will be tested using a poll survey. The poll survey has been conducted in two regional government units (counties) – Varazdin County (VZC) and Koprivnica-Krizevci County (KCKZC). Using the same performance indicators the benchmarking of two counties regarding BSC perspectives has been carried out. To analyse the differences between the group means and their associated procedures Analysis of Variance (ANOVA) has been used.

The regional government in Croatia is in charge of the following areas: education, healthcare, physical and urban planning, economic development, transport and infrastructure, maintenance of public roads, planning and development of educational, social and cultural institutions, construction and zoning permits, and other documents regulated by special laws [1]. Consequently, counties are restricted to deliver services to the citizens only in these specific areas.

Legal regulation for public institutions in the Republic of Croatia recognizes the BSC method and some of the BSC perspectives are regulated by various laws. The internal processes are regulated by financial management control in public sector law [2] and by revision law [3]. The financial performance is regulated by Budget law[4] and by Fiscal responsibility law [5]. Learning, growth and research perspective is mostly regulated by Ministry of Public Administration and Ministry of Finance. User/Customer perspective is regulated by Ministry of Justice (anti-corruption). The process of methodology development for all perspectives is currently in progress for public administration in Croatia. This methodology is obligatory in most cases for regional government, especially in the finance perspective.

Balanced Scorecard

The Balanced Scorecard term can be traced back to 1990 when case studies about innovative performance – measurement systems were examined by David Norton and Robert Kaplan and the representatives of different companies from different industries [6]. The group discussions led to an expansion of the scorecard and Kaplan and Norton labelled it as "Balanced Scorecard" [6]. The findings were summarized in the article "The Balanced Scorecard – Measures

that Drive Performance" and published in "Harvard Business Review" (January – February 1992) [7].

The basic ideas of the Balanced Scorecard concept are that financial accounting measures were becoming obsolete and they weren't enough to manage organizations in complex environments [6].

Secondly, the number and the type of the perspectives depend on the type of organization and the usual perspectives for for-profit organization are [8]:

- **Financial perspective** – "If we succeed, how will our shareholders see us?" Traditional financial measures are used (profitability, revenue growth, cost control, etc.)
- **Customer perspective** – "How do we create value for our customers?" Organizations ability to assure quality products and services, effective delivery and customer satisfaction.
- **Internal perspective** (or Internal business process) – "To satisfy customers and shareholders, which processes do we have to excel at?" Organizational effectiveness, productivity, turnover cycle and costs.
- **Learning and growth** (or Innovation and Learning) - "How can our organization continue to learn and improve?"

Finally, the Balanced Scorecard is a useful method for benchmarking, measuring, management and strategic management.

Figure 1 shows the balanced scorecard methods with four perspectives which are connected to the vision and the strategy.

The vision, the development strategy and the business objectives must be defined in the organization which wants to be successful. The business objectives must be measurable with defined initiatives and activities to direct organization towards business objectives [8]. The BSC enables systematic approach on solving addressed issues.

Figure 1. *The Balanced Scorecard: Four Perspectives[1]*
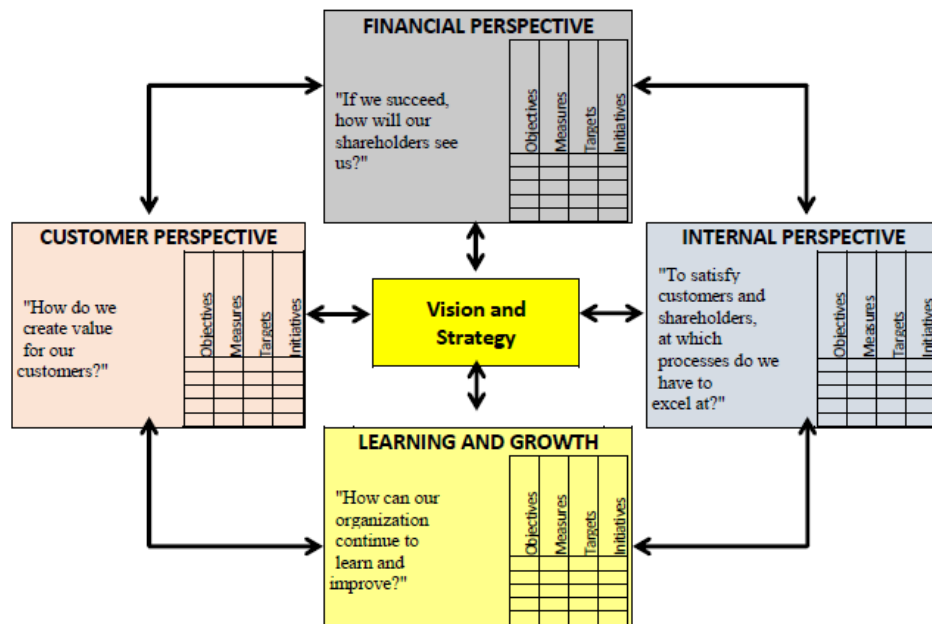
Kaplan and Norton [6] began emphasizing the importance of adjusting the BSC to organizational context: "The four perspectives of the BSC have been found to be robust across a wide variety of companies and industries. But the four perspectives should be considered a template, not a strait jacket. No mathematical theorem exists that four perspectives are both necessary and sufficient."

Robert Kaplan has explained that the Balanced Scorecard was originally developed for the private sector to overcome deficiencies in the financial accounting model, which fails to signal changes in the company's economic value as an organization makes substantial investments (or depletes past investments) in intangible assets, such as the skills, motivation, and capabilities of its employees, customer acquisition and retention, innovative products and services, and information technology [9].

Brumec has developed [8] guidelines for objective and measures assessment in non-profit and for-profit organizations presented in Table 1.

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[1]Kaplan, Robert S., and David P. Norton. The Balanced Scorecard: Translating Strategy into Action. Boston, Massachusetts: Harward Business School Press, 1996.

Table 1. *Guidelines for Objective and Measures Assessment in Non-Profit and For-Profit Organizations*[2]

	Non–profit organization	**For- profit organization**
Financial perspective	How to reduce costs and not jeopardize the core mission?	What is the financial result expected by owners and shareholders?
Customer perspective	To achieve our mission, what do we need to know about the needs and expectations of citizens?	To achieve our vision, how can we introduce ourselves to each category of our customers?
Internal perspective	Which business processes should we improve to satisfy our citizens?	Which business processes are critical for the achievement of the results expected by owners and shareholders?
Learning and growth	What do we need to know to adapt the citizens' demands and deliver better services?	What should we learn to find the appropriate response to the market changes?

Kloot and Martin [10] suggested a Balanced Approach to performance management and adopted from Fitzgerald et al., 1991, Ballantine et al., 1998, and Kaplan and Norton, 1996 the view that Financial perspective and Customer perspective are Primary objectives or results to be achieved. Secondary objectives or determinants of success to achieve are Internal Business Processes and Innovation and Learning.

Non-profit organizations encounter an increasing competition for funding, therefore the accountability and performance management have become the urgent topic [9]. In non-profit organizations, public performance reports and internal performance management focus only on financial measures (donations, expenditures, and operating expense ratios). Success for non-profits should be measured by how effectively and efficiently they meet the needs of their constituencies [9].

Benchmarking

The benchmarking term has been defined in many different ways and from many different aspects in the literature, but for this article the appropriate definition for benchmarking is "to find out and use the best solutions of business processes to fulfil the expectations of users" [11].

It can be stated that benchmarking is the process of comparing organizations' own performance to the performance of other leading organizations, groups or communities. It involves the use of specific measures that enable comparison, and is often used as a longitudinal measure of change. Benchmarking is used when an organization needs the objective measure of results. It is necessary to know how to establish measures that provide good indicators of what you are trying to understand. Benchmarking usually involves survey so training and experience in survey design and application is important if the results have to

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[2]J. Brumec and M. T. Furjan, "Design Methods for Measures in Balanced Scorecard," presented at the CASE 18 Methods and Tools for Information and Business Systems development, 2006.

be rigorous and meaningful. The resource implications include time setting up measures, recruiting research participants, undertaking surveys, analysing and writing up findings.

The results of Osmanagic and Ivezic's research [12] represents a scientific articles about the advantages and the disadvantages of benchmarking types. Benchmarking could be observed by criteria of subject or object comparison. The authors reported about the innovative property of benchmarking as a kind of a learning process. At the same time, benchmarking is an instrument of a strategic control. The main characteristic of a strategic control is a continual improvement of business success.

Benchmarking can be used as a way of determining the best practice, to accept the best practice, to keep comparing the results of our own activities with the best subject in class and to improve executing operative excellence in executing strategy [13].

Benchmarking is based on the idea that it is possible to explore the best procedures of other organizations and also to implement changes based on those observations. This method uses the advantages in the process of setting the organization's goals, acceleration and managing the changes, better performing the business processes, looking wider to the organization, etc.

Benchmarking as a method could be implemented in the public and non-profit organizations in the same way as it is implemented in the private and profit organizations. Benchmarking as a method can be used for improvements in the regional government, too.

Different phases of implementing benchmark method are suggested and specified in the literature. The majority of them are very similar with some differences in the details.

The model presented by Delic S. in the "Role of benchmarking in the design of business activities" published in 1998, as the master thesis defines the benchmarking phases: (1) Defining the scope and the problem which has to be solved, (2) Plan of the project, (3) Analysis of the start position, (4) Analysis of the relevant organizations, (5) Extracting information form collected data, (6) Identification of the possible improvements, (7) Application and monitoring of the results.

As well as other strategic planning methods, benchmarking was originally created for business profit organizations. Nowadays, benchmarking has been implemented in public and government institutions as well as in profit organizations. Benchmarking is a tool created for improvement of service quality and decrease or optimization of their cost and it is based on objective comparison with the best entity in the class.

The Problem Statement

The aim of this research is to verify by poll whether the balanced scorecard performance measurement indicators can be used in benchmarking of regional

governments. Also, research should estimate and indicate the differences between the performance indicators of the counties.

The Research Methodology

The research methodology is based on the three master methods: questionnaire, Balanced Scorecard and Benchmarking.

A questionnaire was developed to investigate perceptions of the examinees about the performance indicators used in the Balanced Scorecard method, and to discover which perspective is the most important.

The research was conducted in KCKZC and VZC during March 2015 using a Google Forms[14] Internet questioner.

The same performance indicators will later be used for benchmarking.

The questionnaire consists of 39 questions distributed in 5 categories as shown in Table 2. The Likert type questions were used in most cases and they are represented in Table1 without brackets. The examinees were supposed to answer the question by putting a bullet mark under one of suggested answers (1-5), where the mark 1 meant "I completely disagree" and mark 5 meant "I Completely Agree". Other types of questions were mostly used for general data and demographic data.

Table 2. *Question categories with question distribution*

Categories	Question	Total
General Data	(Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8)	8
Customer Satisfaction	Q24, Q25, Q26, Q27, Q28, Q29, Q30, (Q31)	8
Financial Performance	Q32, Q33, Q34, Q35, Q36, Q37, (Q38, Q39)	8
Internal business process	Q9, Q10, Q11, Q12, Q13, Q14, Q15, Q16, (Q17)	9
Innovation and Learning	Q18, Q19, Q20, Q21, Q22, Q23	6
	TOTAL	39

Participants

The target persons were all employees of VZC and KZKZC. It was not obligatory for employees to answer the questions, but those employees who decided to participate had to answer all of them. The participation was voluntarily and anonymous. The total number of employees who were employed on February 28th 2015 was:

- Varazdin County: 99
- Koprivnica-Krizevci County: 79

The data about the number of the employees was collected from the departments responsible for human resources in both counties.

The Research Procedure

The questionnaires were distributed to the participants by e-mail as a link in both counties. There were 178 questionnaires distributed and 104 were completed, e.g., 58% of VZC employees have completed 62 questionnaires (63%) and KZKZC employees have completed 42 or 53%. The qualitative and quantitative controls were performed on collected data to identify incompatible factors.

The Reliability of Measurement Instrument

To ensure that the repeated measuring would show the equal measurement indicator, it is necessary to measure the reliability of the measurement instrument. Regardless of the subject of the measurement, the degree of internal consistency should be determined to approximate the reliability of the instrument. The reliability is considered satisfying if the coefficient of reliability is 0.70, some authors use 0.75 or 0.80 as a cut-off value, while others are as lenient as 0.60. In general this varies by discipline [15]. Cronbach alpha test is mostly used to apply the reliability estimation by using internal consistency coefficient.

The benchmarking method is very convenient to use for comparing regional governments. Every organization has some specific resources and can identify other possibilities that can be improved, so do the counties.

Brainstorming was used to conclude what performance measure indicator to use in BSC perspectives, and later in benchmarking.

Research Results

Prior to the data analysis, the reliability and validity of the measurement instrument were explored. To ensure the validity, the construction of the instrument content and questions were grouped regarding BSC perspectives. The questions were selected in order to point out some performance indicators. The reliability was verified using Cronbach alpha coefficient. In Table 3 the Cronbach alpha coefficient is presented for every perspective. The coefficient is higher than 0.70 for all perspectives and it can be concluded that the instrument is reliable. The average mark for every perspective and overall was calculated and presented in Table 3.

Table 3. *Average Marks and Cronbach Alpha Coefficient Regarding Perspective*

BSC Perspective	Average mark - VZC	Average mark - KCKZC	Average Mark	Cronbach alpha
Customer Satisfaction	4.07	4.18	4.12	0.8615
Financial Performance	3.56	3.75	3.64	0.7412
Internal business process	4.14	4.14	4.14	0.7956
Innovation and Learning	3.75	3.59	3.69	0.7795

It is interesting to note that the average mark for Internal business process perspective is the same for both counties. The average grades for perspectives Customer satisfaction, Financial performance are higher in KCKZC and Innovation and learning is the only perspective which has higher Average grades in VZC. It is obvious that the average marks are higher in KCKZC.

A demographic profile analysis reveals that 66% of overall respondents are female and 34% male. Surprisingly, the majority of the respondents are aged between 31 and 40. Regarding academic qualification, the majority of respondents 75% (79) have education higher than secondary school. The precise results are represented in Table 4.

Table 4. *Demographic Profile of Respondents*

VARIABLE	CATEGORIES	KCKZC		VZC		TOTAL
Gender						
	Male	11		24		35
	Female	31		38		69
Age group		Male	Female	Male	Female	
	18-30 years		4	5	5	14
	31-40 years	3	12	7	13	35
	41-50 years	5	8	5	8	26
	51-60 years	3	7	6	12	28
	61 years and more			1		
Highest academic qualification		Male	Female	Male	Female	
	PhD			1		1
	Master of science	2	1	2	1	6
	Secondary school	1	6	3	10	20
	Specialist		1	3	2	6
	Higher education	5	21	8	19	53
	Vocational college	3	2	7	6	18

Among 39 questions in the questionnaire, one very interesting question was selected, "How would you rank the importance of listed BSC perspectives for organizational strategic management?" The rank scale was 1 - 4, where 1 implicates the smallest priority and 4 the highest priority. That question is important because the perspective which has the greatest importance will be used for benchmarking in this paper.

The Customer satisfaction perspective was ranked as the most important; 97 examinees (93%) ranked it with the highest grade (4). That implicates the good understanding of the role and the mission of the regional government.

The financial perspective is the second important with 89 examinees who ranked it with the highest grade. The split opinion between counties can been noticed with other two perspectives where a slight majority of VZC examinees gave the lower rank 3 for perspectives Internal business process (42 – rank 3, 34 rank 4) and Innovation and Learning (42 – rank 3, 40 rank 4). KCKZC examinees gave the rank 4 for those perspectives.

The third most important perspective is Innovation and Learning and the fourth perspective is Internal business process.

Descriptive statistics was used for data analysis. To identify the area where the organizations have better or weaker performance the percentages for all items were ranked.

Table 5. *Performance Indicators Ranking with Average Marks*

PERFORMANCE INDICATORS	AVERAGE MARK - VZC	AVERAGE MARK - KCKZC	AVERAGE MARK
Q12 Obligations, responsibilities and consequences are very clearly presented	4,65	4,57	4,62
Q14 The scope of duties of my position is completely clear to me	4,65	4,45	4,57
Q30 The department provides services for wide community	4,29	4,43	4,35
Q29 The department delivers good service	4,24	4,48	4,34
Q11 Organization/department executes projects and programs effectively	4,27	4,29	4,28
Q25 The organization carries out operations within it's jurisdiction to the satisfaction of its citizens	4,16	4,07	4,13
Q09 I'm very familiar with business processes in my organization	4,21	3,93	4,10
Q26 The organizations promotes positive values	4,06	4,07	4,07
Q27 The customers are mostly satisfied with services	3,98	4,10	4,03
Q13 Organization/department cooperates well with other organizations/departments	3,97	4,10	4,02
Q24 I'm motivated to work at my workplace	3,90	4,05	3,96
Q28 The service delivery time is acceptable	3,87	4,10	3,96
Q35 Financial management in organization/department is very good	3,77	4,17	3,93
Q15 The department is well organized to achieve objectives of organization	3,92	3,93	3,92
Q21 The state of the art technology is adopted	4,18	3,52	3,91
Q18 I have the opportunity for education and training regarding my duties	3,90	3,69	3,82
Q34 Financial management and controls are working well	3,77	3,86	3,81
Q10 Mission, vision and objectives have been defined clearly by management	3,74	3,88	3,80
Q33 Do you agree that the process of drafting budget for three years period is transparent	3,63	4,05	3,80
Q16 Communication within the organization / department is good	3,68	3,95	3,79
Q20 Initiatives for improving business and innovations are accepted by superiors	3,71	3,64	3,68
Q22 The opportunity of making independent decisions in my job has been allowed	3,81	3,50	3,68
Q23 The team work is encouraged	3,63	3,67	3,64
Q36 The resource management is effective	3,58	3,67	3,62
Q19 Possibilities of advancement in service is very clearly defined and enabled	3,29	3,50	3,38
Q37 Rationalization of expenditure could contribute to the introduction of new services to the citizens and other users	3,45	3,21	3,36
Q32 The funds allocated to the department are sufficient	3,18	3,57	3,34

Table 5 represents the statistical summary of responses ranked by overall average mark. The performance indicators were ranked in quartiles, the green colour labels first quartile indicators and red colour labels fourth quartile indicators.

In the first quartile regarding performance indicators ranking, 3 performance indicators refer to Customer Satisfaction perspective (Q24, Q29, Q30) and three to Internal Business Process perspective (Q12, Q14, Q11). Therefore, it can be concluded that the performance indicator ranking is in accordance with the perspective importance ranking. Very similar marks in the first quartile were obtained from both counties with a slight difference in two indicator rankings (Q9-VZC, Q35 – KCKZC).

The fourth quartile shows similar distribution of ranks, with some differences in two indicator rankings (Q33 – VZC, Q21 – KCKZC).

The most appropriate method to evaluate the difference among the collected data between BSC perspectives in VZC and KCKZC counties is the Analysis of variance. The analysis of variance is a set of analytic procedures based on a comparison of two estimates of variance [16]. One estimates the differences among scores within each group, and the second difference between group means, and this is considered to be a reflection of group differences or a treatment of effects and errors. If these two estimations of variance do not differ significantly, the conclusion is that all the groups' means come from the same sampling distribution of means, and that the slight difference among them is due to a random error. Also, if the group means differ more than expected, it is concluded that they come from different sampling distributions of means and the null hypothesis should be rejected [16]. Accordingly, the analysis of variance (ANOVA) is used for:

- Testing the hypothesis on the equality of arithmetic means of the k basic groups, by using the independent random samples,
- The analysis of the drafts of statistic experiments, and
- Testing the hypothesis on parameters (variables) in regressive models.

The analysis of variance according to the number of independent variables recognizes the univariate and multivariate analysis of variance.

For the purpose of this research for testing hypothesis on the means equality of two basic groups, in the analysis of variance were used:

- The null hypothesis (H0) – the arithmetic means of all basic groups are equal, meaning the differences among the arithmetic means can be described as random and are not significant, and
- The alternative (H1) hypothesis – the arithmetic means are not equal, meaning the differences among the arithmetic means cannot be described as random

Prior to the analysis of variance method, following assumptions should be examined:

1. The variable whose arithmetic means is tested is distributed according to the normal distribution. This assumption will be tested using the Kolmogorov-Smirnov test;
2. The distributions of basic groups have equal variances. This assumption can be tested by the Leven test and the Brown-Forsythe test. The Leven test is mostly used to test the samples of equal sizes. While testing the samples of different sizes the Brown-Forsythe test is more sensitive and robust. If variances are not equal, the analysis of the variance is pursued by the weighted analysis of variance, i.e. the Welch analysis.
3. The samples chosen from the basic groups are independent. The independence of samples is ensured by randomly chosen participants.

Figures 2-5 shows the normality tests using Kolmogorov-Smirnov test for all perspectives. With the probability value p and significant level $\alpha=0.05$, it can be concluded that all distributions are close to normal distribution.

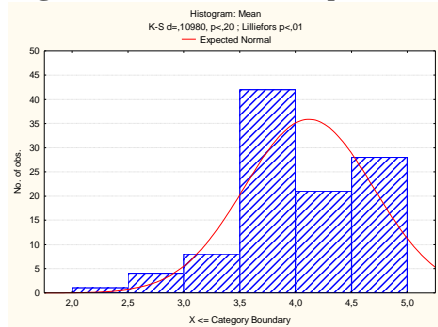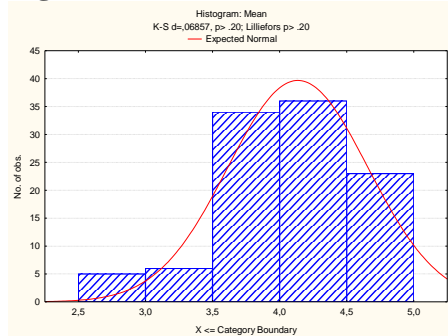**Figure 2.** *Customer Perspective - Kolmogorov-Smirnov Test[3]*

Figure 3. *Internal Business Process - Kolmogorov-Smirnov Test*

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[3]All tests were conducted using StatSoft Statistica 8.0.

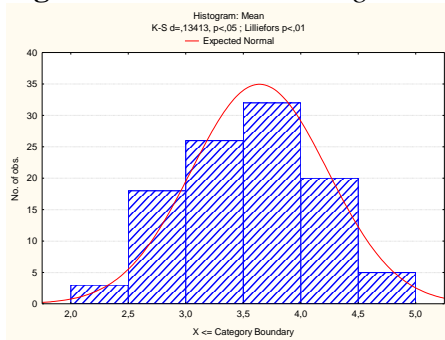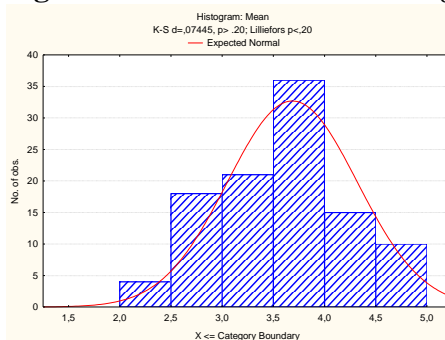**Figure 4.** *Finance - Kolmogorov-Smirnov Test*

Figure 5. *Innovation and Learning- Kolmogorov-Smirnov Test*

The homogeneity of variances was tested using Leven and Brown-Forsythe tests as shown in Table 6.

The null hypothesis (H0) is proved by probability level p, which is higher than $\alpha=0.05$ for all perspectives in the questionnaire which means that the variances of compared samples are equal.

All the assumptions for the analysis of variance are fulfilled regarding the results of previously conducted tests.

Table 6. *Variance Homogeneity Test and Variance Analysis Results*

Perspective	Variance homogenity		Variance analysis	
	Leven test	Brown Forsythe test		
	p-value	p-value	F-value	p-value
Customer Satisfaction	0,5293	0,5975	0,9046	0,3438
Financial Performance	0,4607	0,4307	2,5919	0,1105
Internal business process	0,2676	0,2616	0,0003	0,9862
Innovation and Learning	0,7212	0,6997	1,7132	0,1935

The second part of Table 6 shows the results of Variance analysis for identifying the differences between arithmetic means of samples from VZC and KCKZC.

- (H0) – the arithmetic means of all basic groups are equal.
- (H1) – the arithmetic means are not equal.

- Significant value α=0.05.

The conclusion will be based on the probability level – p and it will be used for all perspectives. With the significant value α=0.05 and the p value higher than 0.05, the H0 hypothesis cannot be rejected (H0 should be accepted), meaning that the differences between the samples' arithmetic means are random and not significant. On the contrary, if the p value is less than 0.05, H1 hypothesis can be accepted, meaning that the differences between the samples' arithmetic means are significant.

According to this research p - values for all perspectives are higher than 0.05 and the H0 hypothesis is accepted. That means, for perspectives Customer satisfaction, Financial Performance, Internal Business Process and Innovation and Learning the differences between the samples' arithmetic means are not significant. In other words, the assumption based on the given results is that there is no significant difference in applying BSC perspectives between the VZC and KCKZC. The similarities between counties in applying BSC perspectives are represented in Figures 6 to 9.[4]

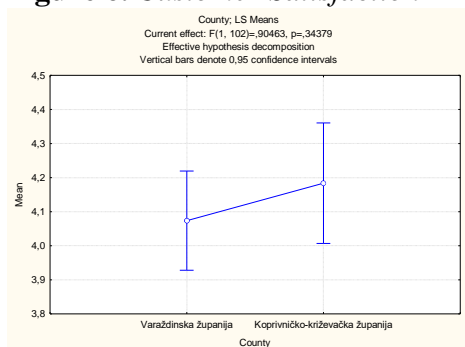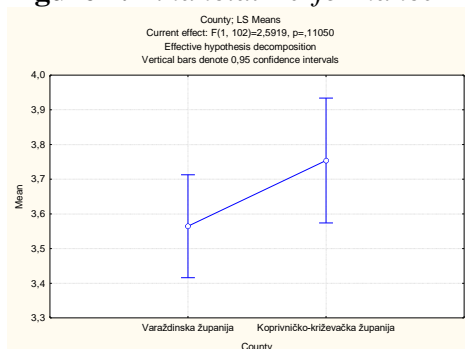**Figure 6.** *Customer Satisfaction – Analysis of Variance (ANOVA)*

Figure 7. *Financial Performance – Analysis of Variance (ANOVA)*

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[4]Analysis of Variance was conducted using StatSoft Statistica 8.0.

Figure 8. *Innovation and Learning – Analysis of Variance (ANOVA)*
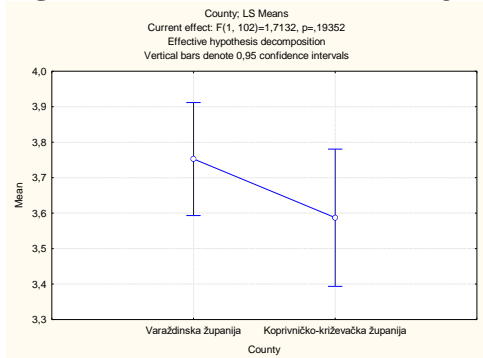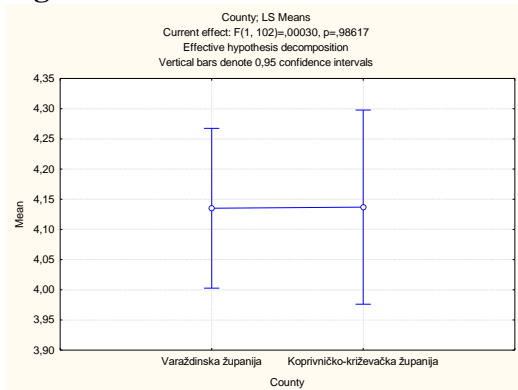

Figure 9. *Internal Business Process – Analysis of Variance (ANOVA)*

Conclusion

A challenging environment requires that non-profit organizations, like regional governments, compete for a limited amount of financial resources. That implies that more successful organization will have greater opportunity to apply for financial resources and to fulfil their mission. It has never been so important to measure the organizational performance, to recognize the leader in this particular field, to compare with the leader and to identify the scope of possible improvements.

This research gives a possible solution to all addressed issues.

Since the Balanced Scorecard method can be effectively used in non-profit organizations to measure the performance indicators, to align business with the vision and the strategy and to benchmark with other organizations, the performance measurement indicators from BSC were used in this research. The poll survey in VZC and KCKZC provided estimation whether the performance indicators grouped in BSC perspectives can be used for benchmarking or not. The intention was to define the measure for benchmarking in regional government using the Balanced Scorecard perspectives with performance indicators. To analyse the differences between group means and their associated procedures Analysis of Variance (ANOVA) was used.

The 93% respondents from both counties ranked the Customer satisfaction as most important. That implies the high awareness of the employees about the role and the mission of the regional government.

The results analysis of the research pointed out a surprisingly high level of knowledge about performance measurement, BSC perspectives. Some suggestions for performance measurement indicators were also given. The average marks in every perspective were very similar for both counties, and even the marks of every indicator were similar. When indicators were grouped in quartiles, some minor differences appeared.

The variance analysis proves that there is no significant difference in applying BSC perspectives between the VZC and KCKZC.

The research results indicate that the importance of measuring performance indicators is recognized in regional governments of this particular area of Croatia and it can be implemented.

Secondly, it is possible to use the balanced scorecard performance indicators for benchmarking.

Finally, the research results shows that it is possible to identify the area where the organizations have better or weaker performance (or similar) which is vital for benchmarking.

At the same time, some constraints have to be pointed out. The research covered only 2 out of 21 regional governments. Those counties are based in the north region of Croatia and a small percentage of overall number of employees in regional governments is covered by the survey.

On the other hand, it is a great opportunity to refine the methodology and expand the research to other counties in different regions or even abroad. The numerous opportunities for benchmarking regions, counties, functions, levels of competence, etc. have emerged.

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