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RELATIONSHIP BETWEEN THE QUALITY OF INFORMATION FROM ERP SYSTEMS AND BUSINESS PERFORMANCE: CONTROLLING ANALYSIS USING DUPONT SYSTEM

ABSTRACT

The aim of this paper is to determine the relationship between the quality of information from the Enterprise Resource Planning system (ERP system) and business performance. The quality of information from the ERP system is assessed using a survey questionnaire examining the end users of the ERP system, namely middle and top management because they use information from the ERP system to make business decisions. Business performance is monitored from a controlling point of view, using selected indicators from the DuPont system. Empirical research was conducted on medium and large enterprises in Bosnia and Herzegovina. The existence of a positive correlation between information quality and business performance was examined using regression analysis and correlation analysis. Regression analysis and correlation analysis indicate that return on sale (ROS) and return on assets (ROA) have a medium significant correlation with the quality of information, and total asset turnover ratio (TR) does not correlate with the quality of information. Based on the obtained results, a positive relationship between the quality of information from the ERP system and business performance was confirmed. This can be interpreted that information is becoming an increasingly important resource in supporting organizational activities, and information quality has been identified as one of the main determinants influencing the decision-making process.

Keywords: *quality of information, ERP system, business performance, DuPont system*

JEL: *M15, M20*

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1. INTRODUCTION

In today's global economy, organizations face many challenges, especially with increasing competition and higher customer expectations. Rapid changes in social, economic and political forces, combined with rapid advances of technology, make business markets more competitive, resulting in a strong impact on the way businesses operate. These changes in business have led to the creation of huge amounts of information in the business world, whether it is information generated within the company or external information. Some authors believe that the success of a company increasingly depends on timely information (internal and external) that is available to the right person at the right time to make management decisions (Chen et al., 2006, according to Nazemi et al., 2012). Companies implement ERP systems to improve the speed of decision-making and control of business costs and improve the distribution of information throughout the organization (Dezdar, 2012). ERP system is an information system (IS) that includes integrated software solutions and can be used to manage and integrate all business functions within the organization (Ross et al., 2006). The most important attributes of an ERP system are its ability to automate and integrate business processes, enabling the implementation of best business practices, access to shared data and practices across the enterprise, and the creation and access of real-time information (Soh et al., 2000; Nah and Lau, 2001).

2. Review of relevant literature

According to DeLone and McLean (2003), the quality of an IS, and thus an ERP system, has three main dimensions: information quality, system quality, and service quality. The research in this paper is focused on the quality of information. Quality of information implies desirable characteristics of results obtained from the IS (Petter et al., 2008). Desirable characteristics of managerial reports from IS could be completeness, ease of understanding, personalization, relevance, security and accuracy.

Information quality is defined as the availability of information that meets user requirements (Strong et al., 1997). Data from IS is often used in the decision-making process - almost every activity that organizations deal with includes data and they therefore provide the basis for operational, tactical and strategic decisions. As information becomes an increasingly important resource in supporting organizational activities, its quality has been identified as one of the main determinants influencing the decision-making process (Porat and Haas, 2006). Moreover, due to the rapid increase in the amount of information and the complexity of organizations, the quality of information has a crucial influence on the outcome of decisions (Even et al., 2006). Decision makers may be frustrated with an IS if the data is inaccurate (Bailey and Pearson, 1983) or details are not available to the right level (O'Reilly, 1982).

Any of these problems can influence a manager's decision about whether to use certain information in the decision-making process (Goodhue, 1998). Although all decisions in organizations involve a certain amount of uncertainty, it is clear that decisions based on relevant, complete, accurate, and timely information are more likely to contribute to achieving an organization's goals (Redman, 2001). Poor information quality can affect the setting of a strategy, its execution, the ability to infer from information, and the ability to put an organization in order (Redman, 2001). The concept of data quality "garbage in - garbage out" indicates that we can not get quality output information from poor quality input data and is valid for any type of system, especially for ERP systems because they are highly integrated. Therefore, possible data problems in one area would affect the quality of data in the entire ERP system (Xu, 2019). Nelson et al. (2005) single out four measures of information quality that they consider the most important: accuracy, completeness, timeliness and format.

Similar information quality measures are used by Pipino et al. (2002), and the main difference is that they propose a longer list of measures, as shown in Table 1.

Table 1: Information quality measures - extended list

Measure	Definition
Availability	The level to which information is available, ie easy and quick to obtain.
Appropriate amount of information	The level to which the amount of information is appropriate for work tasks.
Persuasiveness	The degree to which information is considered true and credible.
Completeness	The level to which information is not lacking, and it is sufficient breadth and depth for work tasks.
Conciseness of the presentation	The level to which the information is concisely presented.
Consistency of presentation	The extent to which information is presented in the same format.
Ease of manipulation	The degree to which information is easy to manipulate and apply to a variety of tasks.
Accuracy	The degree to which information is accurate and reliable.
Possibility of interpretation	The level to which the information is in the appropriate language, symbols, units and with clear definitions.
Objectivity	The degree to which information is objective, unbiased and impartial.
Relevance	The degree to which information is applicable and useful for work tasks.
Reputation	The degree to which information is highly valued in terms of its source or content.
Security	The level to which access to information is adequately restricted in order to maintain security.
Timeliness	The degree to which information is sufficiently up-to-date for work tasks.
Intelligibility	The degree to which information is easily understood.
Added value	The level to which information is effective and provides benefits through its use.

Source: *Pipino et al., 2002*

Research shows that measuring the quality of information is based on the perception of users or others who must rely on or evaluate data to make key decisions that affect the organization (DeLone and McLean, 1992; Seddon, 1997).

Xu et al. (2002) conducted a case study in two companies on the issue of data quality in the implementation of ERP systems. The aim of this research was to determine whether data quality is one of the reasons for deciding on the implementation of ERP systems and what are the key success factors for data quality during its implementation (Xu et al., 2002). Four types of stakeholders have been identified in data quality research: data producers, data guardians, data users, and data managers (Strong et al., 1997). If these stakeholders are translated into the context of the ERP system, the following can be said (Xu et al., 2002):

- Data producers are those who create or collect data for an ERP system.
- Data guardians are those who design and develop the ERP system and manage it.
- Data users are those who use this information for their work activities.
- Data managers are those who are responsible for managing data quality in an ERP system.

The findings of the case study show that data quality problems are one of the main reasons for implementing ERP systems because old ISs had separate subsystems and therefore companies kept the same data in multiple places (Xu et al., 2002).

Later, Xu (2019) again researched the quality of data in the implementation of ERP systems on a sample of 115 companies. He tried to connect the measures of data quality from the ERP system with the perceived usefulness of information, and the usefulness of information with user satisfaction with the implementation of the ERP system. The analysis of the collected data confirmed the proposed relationships within the research (Xu, 2019).

Glowalla and Sunyaev (2014) tried to facilitate the understanding of the interdependence of ERP systems and data quality with their research. This paper introduces the concept of data quality management (DQM), and refers to the definition, measurement and optimization of data quality. The DQM concept is essential for identifying and mitigating poor data quality as well as direct and hidden costs associated with poor data quality (Haug et al., 2011; Glowalla and Sunyaev, 2014). The research is based on the TTF model, which aims to determine how to use the ERP system together with the DQM concept to obtain quality data that corresponds to work tasks (Glowalla and Sunyaev, 2014).

2.1. Controlling

Controlling is an advisory and informative management function that is focused on examining the compliance between achieved and planned business results and goals and on making recommendations on how to optimize the company's business in the future. Controlling is highly interdisciplinary in its nature and is related to different areas of business activity in the company. It is completely subordinate to the existing management system and helps it in the following way (Nowak, 2013):

- information support, which includes providing management with the necessary information to run the company
- decision support, which is reflected in the definition of the proposed solutions aimed at improving the company's business
- analytical support, which includes conducting analyzes of the effects of the company's activities, especially those expressed in monetary value.

The controlling function involves monitoring the existing set of performances and determining deviations from the standard. Performance standards are often expressed in monetary terms, such as revenue, costs or profit, but can also be expressed in other indicators, such as units produced, number of defective products or levels of customer service (Osmanagić-Bedenik, 2004). Controlling, as a support to management, primarily monitors profitability indicators at different levels of the company, where it is necessary to select 2-3 indicators that best suit and continuously monitor them, which makes the DuPont model a frequent tool of controllers (Očko and Švigir, 2009).

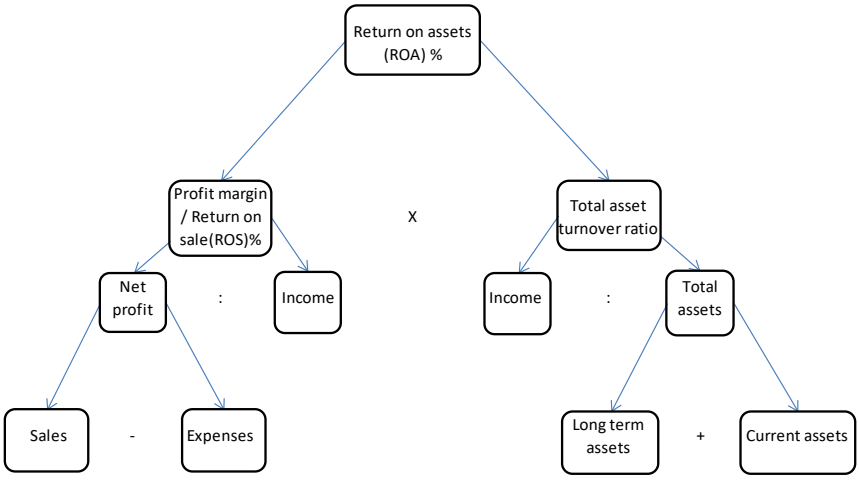
2.2. DuPont model

Business performance can be simply defined as the performance of an individual, team or entire organization by measuring whether and to what extent the defined goals, strategies or plans have been achieved, and if there is a gap between planned and achieved performance, what should be done in the future to eliminate it (Matić, 2009). Performance measurement provides a foundation for assessing how it is progressing against defined goals, helps to identify strengths and weaknesses, and directs future initiatives to improve organizational performance (Amaratunga and Baldry, 2002), and both financial and nonfinancial performance can be measured.

DuPont model is a model that can be used to analyze the business performance of a company, and is an important management tool that indicates to managers which forms of assets to pay attention to when managing. Developed in the 1920s, it was named after the American chemical company DuPont de Nemours & Co.

The DuPont system is primarily used for the purposes of analysis, and thus for the purposes of planning and management of business and enterprise development, and its analysis includes two basic financial statements: balance sheet and income statement (income statement). As can be seen in Figure 1, it is shown in the form of a pyramid consisting of right and left sides. The left side of the pyramid, the profit margin, derives from the data recorded in the profit and loss account. The right side of the pyramid, the turnover ratio of total assets, is derived from the data in the balance sheet. At the top of the pyramid, as a top indicator, is the profitability of the company's total assets. Peak indicator - return on total assets (ROA) reflects the fundamental business objective from which the requirements to be met at lower levels of business are derived.

Figure 1: Pyramid scheme of DuPont model



Source: *Žager and Žager, 2008*

ROA or return on total assets is an indicator of the success of the use of assets in generating profit. It refers to the profit that the company generates from one unit of invested assets, and the calculation formula is as follows (Šlibar, 2010):

Return on assets (ROA) = net profit / total assets *(1)*

Profit margin (ROS) shows the percentage of realized profit according to the value of the entire business, ie how much of net profit is realized on total income. The low profit margin indicates a struggle to maintain market share by lowering prices, ie maintaining existing product prices. In addition to relatively low prices, the low profit margin can be explained by the high share of costs in total revenue. It is calculated according to the following formula (Belak, 2014):

Profit margin (ROS) = net profit / total income *(2)*

The turnover ratio of total assets shows how successfully the company uses the assets in order to generate income, or how many times the total assets of the company are turned over in one year. It is positive that the value of this indicator is greater than 1, and the value should be as high as possible. It is calculated according to the following formula (Očko and Švigir, 2009):

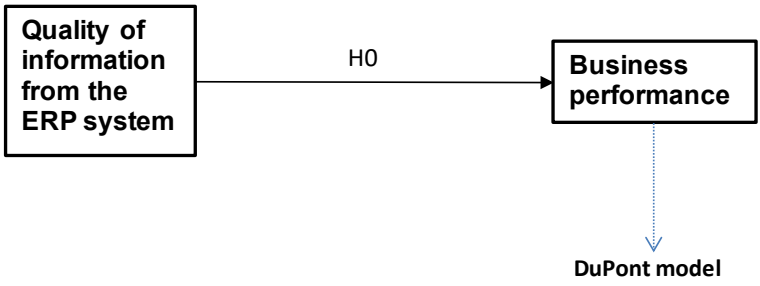
Total Asset Turnover Ratio (TR) = Total income / Total Assets *(3)*

The starting point of the research in this paper is to determine the benefits of ERP systems for the company. From the available literature (DeLone and McLean, 2003) it can be concluded that the evaluation of ERP systems within the benefits it brings to the company can be done only from the perspective of the end user of ERP systems. This perspective implies an assessment of the quality of the ERP system, and in this paper it will be measured by comparing the answers to the questions that will serve to determine the degree of quality of information from the ERP system. Based on the model for evaluation of IS and ERP systems and research on the quality of information from ISs (Redman, 2001; Glowalla and Sunyaev, 2014; Xu, 2019), a positive association between information quality and business performance is assumed, and hypothesis H0 reads:

H0: There is a positive correlation between the quality of information from the ERP system and business performance.

Figure 2 shows a model for investigating the relationship between the quality of information from the ERP system and business performance using DuPont model.

Figure 2: A model to investigate the relationship between ERP information quality and business performance using DuPont model



Source: *Authors' construction*

3. Data

Empirical research was conducted on medium and large enterprises in Bosnia and Herzegovina because they have two or more business processes that need to be supported and harmonized using an appropriate ERP system. According to the Law on Accounting and Auditing of the Federation of BiH (2010), medium-sized companies are those that meet at least two of the following conditions on the date of preparation of financial statements:

- the average number of employees during the year is between 50 and 250
- the average value of business assets at the end of the business year is between 1,000,000 KM and 4,000,000 KM
- total annual income is between 2,000,000 KM and 8,000,000 KM.

Medium-sized companies are also classified as those whose values are higher than the above amount in one of the three conditions. Large companies are those that exceed the above values in at least two of the three conditions (FBiH Law on Accounting and Auditing, 2010).

Data from a database owned by the renowned international company Bisnode were used as the basic set for empirical research. For companies in BiH, Bisnode obtains official data from two main sources: the FIA (Financial Information Agency) and the CBBH (Central Bank of Bosnia and Herzegovina), so it has official data for all active legal entities in BiH (www.boniteti.com). According to Bisnode, there are currently 3,089 medium-sized companies and 1,648 large companies in BiH, which is the basic set of 4,737 companies for research purposes. This research was conducted on 335 medium and large companies in Bosnia and Herzegovina, which were found in the pilot research to have an ERP system, that they have been using for more than two years. These 335 companies were a statistical set for basic research for this paper.

The survey collected 87 questionnaires, or 26% of the statistical set. Eight questionnaires were filled in incorrectly, so 79 companies entered the further analysis of the survey results.

4. Research methodology

The aim of this paper is to determine the relationship between the quality of information from the Enterprise Resource Planning system (ERP system) and business performance. To confirm the hypothesis of existence a positive correlation between the quality of information from the ERP system and business performance, empirical research was conducted.

In order to investigate the quality of information from the ERP system, a questionnaire was used, created on the basis of the theoretical knowledge described in previous part of this paper and adapted to the research needs. Statements in the questionnaire, marked with statement numbers from 1 to 9, represent measures for the independent variable - information quality, which is marked as A1 in statistical analysis. The research aimed to examine the quality of information from ERP system, rather than operational use, which is mandatory, so the survey questionnaire was aimed at middle and top management of companies that use information from ERP systems to make decisions. A Likert scale with five degrees of intensity is used to evaluate the statements.

For business performance research, data from the balance sheet and income statement of the company for a period of five years were used, in order to obtain a realistic database of financial indicators based on a larger sample of financial data for analysis. Financial data were taken from Bisnode's database (www.boniteti.com) and necessary data for the surveyed companies were consolidated in MS Excel. Then, selected financial indicators were calculated separately for each of the observed years, according to established formulas for calculating these indicators. After that, the statistical analysis of the data was started in MS Excel and in SPSS software packages. In order to investigate set hypothesis on collected data, descriptive statistics, regression analysis and correlation analysis were performed.

5. Results of empirical research

The structure of the surveyed companies in terms of size can be seen in Table 2.

Table 2: Sample structure by enterprise size

Company size	Number of companies	% share of the company
Medium	36	45,6%
Large	43	54,4%
Total	**79**	**100,0%**

Source: *Authors' calculation*

Table 3 shows the analysis of the companies that participated in the survey by their economic activity.

Table 3: Structure of enterprises by economic activity

Activity code	Name of activity	Number of enterprises by activity	% share of the company
C	Manufacturing	19	24,1%
D	Production and supply of electricity, gas, steam and air conditioning	1	1,3%
F	Construction	6	7,6%
G	Wholesale and retail trade; repair of motor vehicles and motorcycles	47	59,5%
H	Transport and storage	2	2,5%
J	Information and communication	1	1,3%
Q	Health and social work activities	2	2,5%
S	Other service activities	1	1,3%
Total		**79**	**100,0%**

Source: *Authors' calculation*

After analyzing the data obtained from the balance sheet and profit and loss account for 79 quoted companies in the period from 2013 to 2017, the average values of financial indicators by year were calculated. Table 4 shows the average values of selected financial performance indicators from the DuPont model.

Table 4: Average values of indicators in a sample of 79 companies

Year	ROS	ROA	TR
2013	5,52%	6,61%	1,73
2014	5,80%	6,32%	1,74
2015	6,40%	7,89%	1,74
2016	7,30%	8,76%	1,60
2017	7,30%	8,84%	1,60
total	6,46%	7,68%	1,68

Source: *Authors' calculation*

Table 5 represents results of ANOVA test for statements used to investigate the independent variable "quality of information from the ERP system". An ANOVA test is a type of statistical test used to determine if there is a statistically significant difference between two or more categorical groups by testing for differences of means using variance (Simkus, 2022).

Table 5: Anova - Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Statement1	79	325	4,113924	0,538137
Statement2	79	310	3,924051	0,532619
Statement3	79	312	3,949367	0,561506
Statement4	79	307	3,886076	0,691983
Statement5	79	297	3,759494	0,800389
Statement6	79	306	3,873418	0,624797
Statement7	79	342	4,329114	0,454398
Statement8	79	318	4,025316	0,614735
Statement9	79	304	3,848101	0,822785

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	18,23066	8	2,278833	3,635565	0,00037	1,951576
Within Groups	440,0253	702	0,626817			
Total	**458,256**	**710**				

Source: *processing in Excel*

P value is less than 0,05 which means there is a statistically significant difference between groups ie between statements in the independent variable. It is also confirmed by the F value which is higher than the F crit., so the ratings given by respondents to individual statements in the questionnaire are sufficiently different to have a statistically significant difference between individual statements.

The existence of a positive relationship between information quality (A1) and business performance was examined using regression analysis and correlation analysis.

Regression analysis is a set of statistical methods used for the estimation of relationships between a dependent variable and one or more independent variables (Freund et al., 2006). Table 6 represent the statistical output of regression analysis between information quality (A1) as the independent variable and ROS as the dependent variable.

Table 6: Regression analysis for A1 and ROS

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0,5258
R Square	0,2765
Adjusted R Square	0,2671
Standard Error	0,0583
Observations	79,0000

ANOVA

	df	SS	MS	F	Significance F
Regression	1,0000	0,1001	0,1001	29,42573834	6,48131E-07
Residual	77,0000	0,2620	0,0034		
Total	78,0000	0,3621			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	-0,1836	0,0462	-3,9693	0,000160647	-0,27564	-0,09147
A1	0,0626	0,0115	5,4245	6,48131E-07	0,03961	0,08556

Source: *processing in Excel*

The coefficient of determination (R squared) is the proportion of the variance in the dependent variable that is predictable from the independent variable (Petz, 2007). R squared in Table 6 shows that quality of information explains 27,65% of the variance within the ROS data. The standard error of the regression indicates the size of the standard error in the regression model on average. The lower values signify that the distances between the data points and the fitted values are smaller. The standard distance between the predicted and observed values of ROS is 0,058. ANOVA table in regression analysis determines whether the model with its independent variable explains the dependent variable's variability (Freund et al., 2006). In ANOVA table P value for the overall F-test is 6,48131E-07. The E-07 indicates that p-values are smaller than the significance level. Consequently, it can be concluded that the regression model as a whole is statistically significant. The coefficients table displays the parameter estimates for the independent variables in the model. The coefficient for A1 is approximately 0,06. The positive sign indicates that as A1 increases, ROS also tends to increase. For every unit increase in A1, ROS increases by an average of 0,06. The confidence interval for a coefficient indicates the range of values that the actual population parameter is likely to fall.

The confidence interval for A1 is 0,0396 and 0,0856, so it's 95% confident that the actual population parameter for A1 in correlation with ROS falls within this range.

Table 7 represent the statistical output of regression analysis between information quality (A1) as the independent variable and ROA as a dependent variable.

Table 7: Regression analysis for A1 and ROA

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0,4440
R Square	0,1972
Adjusted R Square	0,1867
Standard Error	0,0568
Observations	79

ANOVA

	df	**SS**	**MS**	**F**	**Significance F**
Regression	1	0,0610	0,0610	18,91036583	4,14802E-05
Residual	77	0,2482	0,0032		
Total	78	0,3092			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	-0,1169	0,0450	-2,5973	0,011250963	-0,20654	-0,02728
A1	0,0488	0,0112	4,3486	4,14802E-05	0,02647	0,07120

Source: *processing in Excel*

R squared in Table 7 shows that the quality of information explains 19,72% of the variance within the ROA data. The standard error between the predicted and observed values of ROA is 0,057. In ANOVA table P value for the overall F-test is 4,14802E-05, so the regression model as a whole is statistically significant. The coefficient for A1 is approximately 0,05 and a positive sign indicates that as A1 increases, ROA also tends to increase. For each unit of increase in A1, ROA increases by an average of 0,05. The confidence interval for A1 is between 0,0265 and 0,0712, so it's 95% confident that the actual population parameter for A1 in correlation with ROA falls within this range.

Table 8 represents a statistical output of regression analysis between information quality (A1) as the independent variable and TR as the dependent variable.

Table 8: Regression analysis for A1 and TR

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0,2042
R Square	0,0417
Adjusted R Square	0,0292
Standard Error	1,3738
Observations	79

ANOVA

	df	SS	MS	F	Significance F
Regression	1	6,3227	6,3227	3,35021601	0,071065749
Residual	77	145,3189	1,8873		
Total	78	151,6416			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	3,6543	1,0892	3,3552	0,001233474	1,48555	5,82314
A1	-0,4974	0,2717	-1,8304	0,071065749	-1,03846	0,04372

Source: *processing in Excel*

ANOVA analysis in Table 8 table shows the P value above the 0,05 significance level. It can be concluded that regression analysis of relationships between A1 and TR is not statistically significant. That also confirms the p-value for the A1 coefficient.

Correlation analysis is using a correlation coefficient that indicates whether two phenomena move simultaneously in the same direction and to what extent this movement is simultaneous (Udovicic et al. , 2007).

Table 9: Analytical correlation matrix

		ROS	ROA	TR
A1	Pearson Correlation	,526**	,444**	-,204
	Sig. (2-tailed)	,000	,000	,071
	N	79	79	79

***. Correlation is significant at the 0.01 level (2-tailed).*

**. Correlation is significant at the 0.05 level (2-tailed).*

Source: *processing in SPSS*

If the correlation coefficient is significant with respect to the set significance limit (usually P <0.05), we conclude that the correlation coefficient is significant and may be interpreted. If the value of P> 0.05, we conclude that the correlation coefficient is not significant and that regardless of its value should not be interpreted (Udovičić et al., 2007).

Table 9 shows the following:

- Return on sale (ROS) has a medium significant correlation with the quality of information. This correlation is positive, these two variables move in the same direction. It can be interpreted that a higher level of information quality from the ERP system is associated with a higher level of ROS, and a lower level of information quality is
- Return on assets (ROA) has a medium significant correlation with the quality of information. Same as with ROS, the correlation between the quality of information and ROA is positive. A higher level of information quality from an ERP system is correlated with a higher level of ROA, and a lower level of information quality from the ERP system is correlated with a lower level of ROA.
- Total asset turnover ratio (TR) does not correlate with the quality of information because the obtained significance is greater than 0.05. Using correlation analysis any relation between the quality of the information and TR has not been confirmed.

6. Discussion of results

According to the results of correlation analysis, information quality has a correlation with two (ROS and ROA) of the three used financial performance indicators from DuPont model. Correlation with both ROS and ROA is statistically significant and Pearson's coefficient indicates a medium correlation. Also, R squared shows that variance in both ROS and ROA can be explained by the quality of the information in certain shares. Results of the regession analysis indicate that the independent variable explains variability in ROS and ROA. The model of regression analysis for quality of information from the ERP system and ROS is statistically significant, the same as the regression model for the quality of information from the ERP system and ROA. Although the correlation between the quality of information from ERP system and TR wasn't confirmed, the correlation between the quality of information from the ERP system with 2 of 3 selected financial indicators of business performance was confirmed.

Based on this, H0 can be accepted as true, ie the positive connection between the quality of information from the ERP system and business performance has been confirmed. A higher level of quality of information obtained from the ERP system corresponds to a higher level of business performance of the company, presented using the most important indicators from the DuPont model - ROS and ROA.

On the other hand, the lower level of quality of information obtained from the ERP system corresponds to the lower level of business performance of companies, presented using the DuPont model. This means that a company with a higher level of quality of information obtained from the ERP system can expect a higher rate of ROS and ROA than a company with a lower level of quality of information obtained from the ERP system.

7. CONCLUSION

The existence of a positive relationship between the quality of information from ERP systems and business performance can be interpreted as information becoming an increasingly important resource in supporting organizational activities, and their quality has been identified as one of the main determinants influencing the decision-making process. Due to the rapid increase in the amount of information and the complexity of organizations, the quality of information has a crucial impact on the outcome of decisions.

Taking into account the previously mentioned tasks of controlling, it can also be established that a well-built ERP system is a condition for the existence of today's controlling function in companies, which in fact cannot exist without quality information. The following research can be focused on determining the relationship between the controlling function in companies in Bosnia and Herzegovina and the quality of ERP systems.

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POVEZANOST KVALITETE INFORMACIJA IZ ERP SUSTAVA I POSLOVNIH PERFORMANSI: KONTROLING ANALIZA POMOĆU DUPONT SUSTAVA POKAZATELJA

SAŽETAK

Cilj rada je utvrditi povezanost između kvalitete informacija iz ERP sustava i poslovnih performansi. Kvaliteta informacija iz ERP sustava se ocjenjuje pomoću anketnog upitnika ispitujući krajnje korisnike ERP sustava, i to srednji i top menadžment jer se oni koriste informacijama iz ERP sustava za donošenje poslovnih odluka. Poslovne performanse se promatraju sa stajališta kontrolinga, korištenjem odabranih pokazatelja iz DuPont sustava pokazatelja. Empirijsko istraživanje provedeno je na srednjim i velikim poduzećima u Bosni i Hercegovini. Postojanje pozitivne povezanosti između kvalitete informacija i poslovnih performansi ispitano je korištenjem regresijske analize i korelacijske analize. Regresijska analiza i korelacijska analize pokazuju da povrat od prodaje (ROS) i povrat na imovinu (ROA) imaju srednje značajnu korelaciju s kvalitetom informacija, a koeficijent obrta imovine (TR) nije u korelaciji s kvalitetom informacija. Na temelju dobivenih rezultata potvrđena je pozitivna povezanost između kvalitete informacija iz ERP sustava i poslovnih performansi. Ovo se može protumačiti na način da informacije postaju sve važniji resurs u pružanju podrške organizacijskim aktivnostima, a njihova kvaliteta identificirana je kao jedna od glavnih odrednica koje utječu na proces donošenja odluka.

Ključne riječi: *kvaliteta informacija, ERP sustav, poslovne performanse, DuPont sustav*

JEL: *M15, M20*