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Examining the impact of business process orientation on organizational performance: the case of Croatia

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Abstract. The competitive global market of the new millennium has raised awareness of business processes as the most important management paradigm. Extensive literature on business process management suggests that organizations can enhance their overall performance by adopting a process view of business. However, empirical research in this field is lacking. The aim of this paper is to examine the how business process orientation (BPO) impacts financially and non-financially organizational performance (OP) using empirical data from Croatian companies. A questionnaire survey was conducted on a sample of 127 companies in Croatia and propositions were tested using a structural equation model. The results suggest that the BPO practice relates positively to non-financial performance. In addition, the impact of non-financial performance on financial performance has been verified as well. This effect on financial performance is indirectly caused by non-financial factors suggesting that companies should view performance in such terms as well. The paper is valuable for academics and practitioners because the impact of BPO on OP is confirmed. An improved understanding and the clearly demonstrated financial and non-financial benefits of implementing and practicing BPO opens up a wider application of such systems in everyday business, which will eventually lead to their refinement and further development.

Keywords: business process management, business process orientation, organizational performance, Croatia

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1. Introduction

In many industries, competition is based mainly on strategic assets and the ability to deploy such assets. Competition in the modern global economy is based on capabilities, or the "complex bundles of skills and accumulated knowledge, exercised through organizational processes" [31]. Owing to this new business approach,

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many organizations are now viewing processes as strategic assets. In line with this perspective, organizations are no longer viewed as a collection of functional areas, but as a combination of highly integrated processes [31]. Additionally, processes are now viewed as assets requiring investment and development as they mature. Thus, the concept of BPO is becoming increasingly important. A review of literature shows that there are several general definitions of BPO, but the most extended version was delivered by McCormack [29]: The BPO of an organization is the level at which an organization pays attention to its relevant (core) processes (end-to-end view across the borders of departments, organizations, countries, etc.). BPO can slim down operational costs, promote customer relations by better satisfying customer needs and increase employee satisfaction by harnessing the benefits available in organizational knowledge. As this is a complex process done over an extended period of time, companies can attain various degrees of BPO acceptance through adjustments of their business processes.

The extensive literature on business process management [5;12;29] suggests that organizations can enhance their overall performance by adopting a process view of the business. Most of the literature on business process management lacks research or an empirical focus [32]. However, McCormack and Johnson [29] and Škrinjar [27] showed that BPO has positive impact on business performance by using structural equation modelling. In his research, Škrinjar [38] concluded that the BPO construct consisting of only 3 dimensions that he used was not consistent enough, so he recommended using a broader BPO construct consisting of 9 dimensions. Given that Škrinjar [38] conducted his research on Slovenian companies, our intentions was to carry out empirical research in Croatia to verify the existence of a link between BPO and OP in a transition economy. The aim was to investigate an understanding of the process view and process maturity levels of Croatian companies and to test the impact of the process orientation maturity level on organizational performance.

To carry out the empirical study, a questionnaire was developed. It contained 60 questions on BPO characteristics. The questions were distributed across the nine dimensions (as Škrinjar [38] recommended) and are presented in the theoretical part of the paper. The questionnaire survey was conducted on a sample of 127 companies in Croatia and propositions were tested using a structural equation model using SPSS and AMOS software. The data from the empirical study subjected to certain statistical techniques showed that Croatian companies are positioned between the Defined and Linked levels of BPO maturity. Companies with this level of BPO maturity have well defined and documented processes, but do not realize that these business processes are connected. According to the results of the survey, in order to advance to the higher linked level of BPO maturity, managers of Croatian companies need to increase efforts in stimulating the following BPO elements: information technology, process organizational culture, people management and process measurement and management.

The contribution of our study is verification of the link in a transition economy and a more detailed specification of organizational performance that includes non-financial performance measures.
The paper is organized into a number of sections. First, the background and purpose of the conducted research is explained. This is followed by a definition of the BPO model. Third, the organizational performance is described, which is followed in the fourth section which analyses the link between these two concepts. Fifth, the conceptual model and research hypothesis are given. Next, in the sixth section, the methodology is explained. The seventh section presents research results from the survey conducted in Croatian companies, and finally, a discussion and conclusion are outlined.

2. Business process orientation model

The broad adoption of BPO within organizations comes from an understanding that processes have life cycles or developmental stages that can be clearly defined, managed, measured and controlled throughout time. Higher levels of maturity in any business process result in: better control of results; improved forecasting of goals, costs, and performance; greater effectiveness in reaching defined goals; and the improving ability of management to propose new and higher targets for performance [29]. As organizations increase their process maturity, institutionalization takes place by way of policies, standards, and organizational structures [26]. Building an infrastructure and a culture that supports process oriented or horizontal methods, practices and procedures enables process maturity to survive and endure long after those who have created it. Continuous process improvement is based on many small evolutionary rather than revolutionary steps. Continuous process improvement serves as the energy that maintains and advances process maturity to new maturity levels [29]. As processes mature, they move from an internally focused perspective to an externally focused system perspective. A maturity level represents a threshold, which when reached, will institutionalize a total systems view necessary to achieve a set of process goals [29]. Achieving each level of maturity establishes a higher level of process capability for an organization. In the current business environment, there is no scarcity of process maturity models [32]. For the purpose of this research, the BPO maturity model and assessment instruments from McCormack and Johnson [29] were used as a starting point. The McCormack construct describes a four-step pathway for systematically advancing business processes along the maturity continuum ("Ad hoc", "Defined", "Linked" and "Integrated" level). Each step builds on the work of the previous steps to apply improvement strategies that are appropriate to the current maturity level. The following definitions for the stages that an organization goes through when becoming BPO are provided [29;31]:

(1) "Ad hoc". The processes are unstructured and ill defined. Process measures are not in place and the jobs and organizational structures are based upon the traditional functions, not horizontal processes.
(2) "Defined". The basic processes are defined, documented and available in flowcharts. Changes to these processes must now go through a formal procedure. Jobs and organizational structures include a process aspect, but remain basically functional. Representatives from functional areas (sales, manufacturing, etc.) meet regularly to coordinate with each other, but only as representatives of their traditional functions.
(3) "Linked". The breakthrough level. Managers employ process management with strategic intent and results. Broad process jobs and structures are put in place outside of traditional functions.
(4) "Integrated". The company, its vendors and suppliers, take cooperation to the process level. Organizational structures and jobs are based on processes, and traditional functions begin to be equal or sometimes subordinate to process. Process measures and management systems are deeply imbedded in the organization.
Based on our extensive literature review we synthesized different viewpoints of BPO into a comprehensive BPO model that takes into account majority of components, frequently mentioned in literature. In order to analyse and improve BPO, companies need to take the following nine dimensions into account:
A1. "Strategic view"
A2. "Process identification and documentation"
A3. "Process measurement and management"
A4. "Process oriented organizational structure"
A5. "Human resources management"
A6. "Process oriented organizational culture"
A7. "Market orientation"
A8. "Supplier perspective"
A9. "Process oriented information technology"

A1. "Strategic view"
Two dominant aspects of the strategic view seem to be critical [42]:
(1) The alignment of business processes with an organization's strategy possibly achieved by linking process goals to the organization goals. A well-developed strategy enables optimal definition, planning and execution of business processes that implement that strategy;
(2) Active support and involvement of top management in activities that implement the principles of BPO into the organization's functioning. It has been shown that, compared to projects where top management did not participate, the active involvement of top management lead to higher success rates.

A2. "Process identification and documentation"
Excellent knowledge and understanding of internal processes is a prerequisite of BPO. Organizations need to understand how processes work, where they are being executed and how they interconnect. The following aspects of process definition and documentation that an organization must ensure are [33]:
(1) Existence of a complete and uniform enterprise,
(2) Process model,
(3) Documentation of processes,
(4) Use and update of process documentation,
(5) Definition of inputs and outputs for each process,
(6) Definition of suppliers and customers for each process,
(7) Existence of process cascades,
(8) Segmentation of business processes if they face heterogeneous requirements.
Additionally, process documentation enables and catalyses process improvements, helps employees in understanding how end-to-end processes really work and their role in the process.

A3. "Process measurement and management"
Management and measurement are closely tied. What is not measured cannot be managed. Appropriate performance indicators encourage employees to act in alignment with the strategic goals. Two of the most frequently cited aspects of measurement and management element are [3]:
(1) Implementation of a process measurement system by defining process goals (that need to be aligned with an organization's goals), key performance indicators for these goals, the setting of performance targets and continuously monitoring the efficiency and effectiveness of processes;
(2) Formalization of the process improvement practices and the usage of established methodologies and techniques that enable more successful implementation of new and/or changed processes.

A4. "Process oriented organizational structure"
The organizational structure describes the predominating configuration of activities and tasks in an organization. Some of the most cited aspects of process organizational structure are [42]:
(1) Organizing work around core processes,
(2) Flatter organizational structure (fewer levels of hierarchy),
(3) Teamwork,
(4) Employee empowerment,
(5) Jobs that involve heterogeneous task and activities, not just simple work,
(6) Process ownership.
BPO does not require a complete process organizational structure as it has some disadvantages as well. The final goal should not be to replace vertical structures

with horizontal ones, but to find a way to intertwine the advantages of both – specialization and expertise of functional structures with responsiveness and adaptability of process structures.

A5. "Human resources management"
Human resources management is a wide management discipline that deals with many aspects of managing people. With regard to BPO, the most important aspect of people management is strategic people management that focuses on the practices connected to training and educating employees to align employee skills and knowledge with the business strategy. Closely tied with the structural elements of BPO, the most cited elements of people management are as follows [40]:
(1) Enabling employees to work in multifunctional teams;
(2) Providing them with training and education to acquire new skills and knowledge to operate on newly defined jobs that are multidimensional, not just simple tasks;
(3) Including and involving employees in the improvement programs, as they have the domain knowledge and will need to buy-in the new processes;
(4) Educating employees on techniques and methods of process improvement and redesign;
(5) Communicating the changes of processes to all the employees that are affected by the changes.

A6. "Process oriented organizational culture"
Changing an organization to process oriented represents a vast change in the way business is conducted. In that sense, organizational culture plays an important role in an organization's ability to change. Key values and aspects of organizational culture that are most often cited in literature with regard to implementing BPO are [22]:
(1) Shared vision and purpose,
(2) Openness and cooperation,
(3) Creativity and positive attitude of employees,
(4) Usage of appropriate process terminology (input, output, process owner, etc.),
(5) Employee empowerment and their inclusion in decision making,
(6) Flexibility,
(7) Goal orientation,
(8) Employees' understanding that they work for end customers.

A7. "Market orientation"
The basic goal of any process is creating value for (external or internal) customers. In that regard, understanding customer needs and wishes is inextricably linked to

BPO. Organizations need to understand customers' preferences in order to design appropriate processes that will be able to supply the output to satisfy these preferences. Organizations must know who their customers are in the first place. They can be internal or external. Organizational goals must be focused on external customers and that is why it is important to identify them. Customers can be a valuable source of information in process improvement efforts [43]. Knowing and understanding customers is only one part of market orientation. Organizations also need to know and understand their competition. Appropriate strategies and the underlying processes that execute them can only be set if the organization combines knowledge about its customers and competitors.

A8. "Supplier perspective"
Process optimization cannot be optimal if supplier processes are disregarded. Clearly, an organization does not have an impact on supplier processes if cooperation is transaction based. On the other hand, forming long-term relationships with supplier offers more possibilities for a joint and coordinated redesign of processes that span several organizations [45].

A9. "Process oriented information technology"
The role of information technology (IT) in process redesign has long been stressed as one of the more important aspects of redesign efforts. Combining process redesign and utilization of appropriate IT support can drastically improve business processes. Even though many authors stress the importance of IT in redesign efforts, its role can be very different at different stages of the redesign [23].

3. Organizational performance

Organizational performance comprises the actual output or results of an organization as measured against its intended outputs: goals and objectives. Organizational performance measures allow companies to focus attention on areas that need improvement by assessing how well work is done. With the pressure of global competition, measurement of organizational performance has become increasingly necessary for the continued survival of today's companies. Inadequacies in financial performance have led to innovations ranging from non-financial indicators of "intangible assets" and "intellectual capital" to "balanced scorecards" of integrated financial and non-financial measures. By supplementing the right set of financial measures (e.g. return on investment, return on sales, return on equity, revenue growth, sales by employee, sales to assets, return on assets, cost-income and other aspects) with non-financial data on strategic performance and implementation of strategic plans, companies can communicate objectives and provide incentives for managers to address long-term strategies.

To address this issue, an interdisciplinary review of organizational performance measurement frameworks is espoused in both academic literature and business press [44]. Therefore, there is an extensive amount of literature on performance measures, approaches and frameworks. Attempts have been made in the past to measure performance based on quantitative financial measures, while less emphasis has been placed on the qualitative components of performance measurement. Hence, Maskell [28] suggests that performance measures should primarily use non-financial performance techniques and change over time as the company needs change. It is also important to involve qualitative indicators, such as customer service and satisfaction, product quality, learning and innovation [19]. In order to investigate the relationship between the implementation of TQM practices and organizational performance in SMEs, Demirbag et.al [6] proposed both financial and non-financial perspectives. One cannot evaluate organizational performance without taking organizational goals into consideration. The modern business environment demands a multi-goal orientation. According to Waggoner et. al [44] performance measures within an organization can be designed on the basis of 6 different approaches: (1) the engineering approach which measures the input/output ratio; (2) the system approach which sets objectives for each work unit and measures the achievement of these objectives; (3) the management accounting approach measuring the achievement of financial results; (4) the statistical approach which extends the engineering approach by providing empirically tested information about input/output processes; (5) the consumer marketing approach which measures consumer satisfaction and (6) the 'conformance to specifications' approach which advocates the use of a checklist of attributes of a product or service and its service delivery system.

It has become quite obvious that all stakeholders need to be taken into account when assessing a modern company's performance. Emerging management paradigms emphasize a stakeholder perspective. When studying the relationship between stakeholder management and a firm's financial performance, Berman et al. [2] found that fostering positive connections with key stakeholders (customers and employees) can help a firm's profitability. Due to the significance of various stakeholders, organizational performance should not be solely assessed by financial indicators, since they have many limitations and flaws (financial indicators reflect past decisions and actions; many enhancements cannot be quantified financially; they are inflexible and unified, and thus cannot cater to departmental specifics). Furthermore, focusing solely on financial indicators can cause many problems for a company (for example, managerial focus on short term results). There are several approaches to organizational performance measurement that encompass different stakeholder perspectives. The Balanced Scorecard (BSC) [19;20;21] is the most established and most commonly quoted and that is why it was used as a starting point for this research and adapted as needed for each individual research

objective. Our adapted BSC model suggests that a performance measurement system should be organized around five distinct but linked perspectives of performance: financial measures, buyers, employees, suppliers and business processes. Financial performance (FP) presented through financial perspective and non-financial performance (NFP) is presented in terms of buyer, employee, supplier and business process perspectives.

4. Link between BPO and organizational performance

From a perspective of business practitioners and academics, BPO is regarded as an approach to help organizations achieve competitive advantage and to increase a performance [17;25]. According to [25] "numerous variables influence organizational performance", so the objective of this study is to examine the link between BPO and OP. The main advantages of process-based organizational structure, in comparison to functional one, are in economical design of business processes, as well as in reducing cycle time [37], while there is also a dramatically increased flexibility of the firm along with improved customer satisfaction. Process organization eliminates such redundant activities, verifying input once for all functions [11]. Implementing BPO as a way of organizing and operating in an organization will improve internal coordination and break down the functional silos that exist in most companies. Research has shown that this increase in cooperation and decrease in conflict improve both short- and long term performance of an organization [30]. Furthermore, the more an organization is business process oriented, the better it performs both from an overall perspective as well as from the perspective of the employees.

While the literature presents more than a plentiful supply of benefits of BPO, their empirical confirmation is scarce [23;25]. Roeser and Kern [36] provide an overview of surveys related to BPO, business process management (BPM) or BPM-related topics. Within this survey a non-empirical work was excluded and the results were grouped in 6 classes. One of these classes comprises "the investigation of the impact of BPM/BPO as an independent variable on a dependent variable, where the independent variable is a construct consisting of single items either to operationalize BPM/BPO or BPM-related topics" [19;20;21]. This class contains 16 papers and "some of studies imply that a higher BPM/BPO maturity levels results in a better process or organizational performance" [36]. Table 1 presents the list of 8 studies according to [36] that evidenced the impact of BPM/BPO maturity on a process or organizational performance.

The author (s)	..test(s) the impact of	…on a process	…on an organization
Ittner and Larcker (1997)	BPM		Financial performance
Diller and Ivens (2006)	BPO	Process performance	
Škrinjar et al. (2008)	BPO		Financial performance Non-financial performance
Münstermann et al. (2009) Kummar et al. (2010)	Process standardization BPO	Process performance	
Münstermann et al. (2010)	Process standardization	Process performance	
Kohlbacher and Gruenwald (2011)	Process ownershop Process performance management		Financial performance
Hernaus et al. (2012)	Strategic alignment of BPM Process performance management		Financial performance Non-financial performance
Kohlbacher and Reijrs (2013)	BPO		Financial performance Non-financial performance

Table 1: *Studies that evidenced the impact of BPM/BPO maturity on a process or organizational performance*

In addition, [23] emphasize the need for a research on a relationship between individual PO dimensions and overall organizational performance. So, the results of study conducted by Hernaus et al. [14] show that "BPM governance practices, such as: a strategic approach to BPM, a centralised BPM responsibility and assigned decentralised process ownership roles effect the organizational performance". The paper of Kohlbacher and Gruenwald [24] investigates the interaction effect of process performance measurement and the process owner role on OP. The results indicate that "the higher OP is achieved only if both concepts (process performance measurement and process owner role) are implemented [24]. Furthermore, Hernaus et al. [15] conducted a questionnaire survey in Croatian

companies to investigate the influence of strategic approach to BPM on financial and non-financial performance. According to the authors the results suggests that: "(1) process performance measurement practice is positively related to strategic approach to BPM and (2) process performance measurement has an indirect impact on financial performance measures through non-financial measures" [15].
In their seminal work, McCormack and Johnson [29] conducted an empirical study to explore the relationship between BPO and enhanced business performance. The research results showed that BPO is critical in reducing conflict and encouraging greater connectedness within an organization, while improving business performance. Their results indicate a surprisingly strong relationship between BPO and overall performance. Furthermore, the more business process oriented an organization is, the better it performs both from an overall perspective as well as from the perspective of the employees. Considering all the factors that can potentially affect business performance, this finding is compelling [29]. Škrinjar [38] extended the original study, whereby he has scrutinized the effects of BPO on OP in much more detail by capturing and analyzing performance in coherence with the stakeholder theory [10] and balanced scorecard approach [19;20;21]. It must be emphasized that Škrinjar [38] carried out the study in the transition economy of Slovenia and found that the original evidence on the impact of BPO on OP was also applicable in this socio-economic environment. The brief literature overview presented above shows the awareness of academies on the importance of this research area, but the place to intensify the investigation about link between BPO and OP still exists.

5. Conceptual model and research hypothesis

The main purpose of this paper was to test if higher levels of business process orientation lead to better organizational performance using structural equation modelling. Since the theoretical background of the BPO and OP constructs has been presented in the previous parts of the paper, here we will only present the hypothesized relationships and the rational for them.
As companies renew themselves and change existing practices and adopt new ones striving to become more process oriented, they inevitably optimize their processes and organizational structures that support them. There is an abundance of literature [5;12;29] that argues that renewing business processes translates into better organizational performance. We adopted this view and based on this we present our first hypothesis:

H1: The higher the level of business process orientation an organization achieves, the better it performs financially.
Becoming more process oriented has a profound impact on many facets of an organization. It changes the way employees work and interact. As functional silos

are broken down and business processes start to get integrated, inter-functional conflicts decrease and inter-departmental connectedness increases. Furthermore, becoming more process oriented strengthens esprit de corps [29], all of which has a positive effect on employee satisfaction. Process orientation also changes the interaction between a firm and it business partners (suppliers and customers) – by integrating processes beyond the boundaries of a firm, transaction based cooperation is transformed into long-term partnership resulting in increased performance for all links in a supply chain [41]. In this context, we propose our second hypothesis as follows:

H2: The higher the level of business process orientation an organization achieves the better it performs non-financially.

The rationale for our third hypothesis stated below is as intuitive as is widely supported in literature. Firstly, satisfied employees perform better and execute their tasks more effectively and efficiently. They are less inclined to change jobs and are less frequently absent, all of which should have a positive impact on financial performance. Satisfied customers make repeat purchases and purchase more. Good, long-term relationship with suppliers is beneficial for both parties involved [41]. Hoque and James [16] studied the use of non-financial measures proposed by various performance measurement frameworks and confirmed a strong positive relationship between such measures and financial performance. The findings suggest that there may be a certain time lag in the performance effects. Empirical analyses conducted by Škrinjar [38] and Milanović Glavan [32] produced similar findings: business process orientation has a strong, indirect impact on financial performance through non-financial performance. Therefore:

H3: Better non-financial performance leads to better financial performance.

In Figure 1, the conceptualized model along with the hypothesized relationships is shown (relationship number 1 represents H1, relationship number 2 represents H2 and relationship number 3 represents H3).

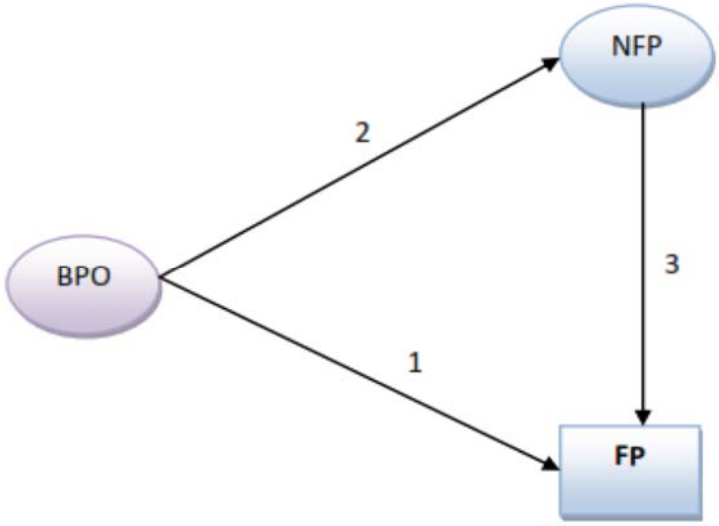

Figure 1: *Conceptual model of BPO impact on OP*

6. Methodology and data source

6.1. Research instrument

In order to test the proposed hypotheses our instrument was composed of two parts. The first part measuring BPO was adopted from the original study conducted by McCormack and Johnson [29]. Even though the original instrument from McCormack and Johnson [29] included an overall BPO construct, it was only measured with 3 dimensions. As our goal was to tap deeper into the problem, we enlarged the given construct. The BPO construct had 60 questions regarding BPO characteristics (components) that were divided in 9 dimensions described in previous chapter as follows: "Strategic view" (5 questions), "Process identification and documentation" (6 questions), "Process measurement and management" (10 questions), "Process oriented organizational structure" (7 questions), "Human resources management" (5 questions), "Process oriented organizational culture" (6 questions), "Market orientation" (7 questions), "Supplier perspective" (3 questions), "Process oriented information technology" (11 questions). Each question describes a particular BPO component within each dimension.
The second part of our research instrument was based on the balanced scorecard [10; 11; 12] and its main goal is to measure different facets of organizational performance, namely, financial and non-financial. We used 16 questions regarding organizational performance that were divided 5 dimensions: "financial perspective" (3 questions), "buyer perspective" (3 questions), "employee perspective" (4 questi-

ons), "supplier perspective" (2 questions) and "business process perspective" (4 questions).
The degree of BPO presence and OP characteristics in the organization was measured on a 7 point Likert scale (1=Strongly disagree, 2=Disagree, 3=More disagree than agree, 4=Neither agree or disagree, 5=More agree than disagree, 6=Agree, 7 =Strongly Agree).

6.2. Sample description

In 2014, empirical research was carried out with the main goal of assessing the current state of BPO maturity of Croatian companies. The main source of data on Croatian companies was the database provided by the Institute for Business Intelligence and the questionnaire was sent randomly to the 1200 companies. The questionnaire was addressed to the company CEOs or chairpersons who were instructed to fill out the questionnaire themselves or give forward it to a competent person within the organization. A total of 127 Croatian managers responded, so the final response rate was 10.58%.
The selected companies were analysed according to the number of employees. In the resulting data set 40 companies had between 1 and 50 employees, 44 companies had between 50 and 249 employees and 43 companies had 250 or more employees. Companies from all sectors participated in the research, so all business sectors were appropriately captured in the data sample. The most common branch of business in the data set was financial and insurance services (16.53%). This was followed by manufacturing (15.75%), trade (11.81%) and information and communication services (11.09%). In all, 44.82% of the companies in the sample represented other sorts of business. The sample is an adequate representation of the population of big, small and medium sized Croatian companies from all sectors.

7. Data analysis and research findings

To test the hypothesized relationships, we employed the combined exploratory-confirmatory approach. In the first phase, we analysed the questionnaire items using exploratory factor analysis in order to test if the item in fact measures pre-specified constructs. In the second phase, following the approach proposed by Diamantopoulos and Siguaw [7], we tested the relationships between constructs using structural equation modelling. Structural equation modelling (SEM) is a statistical technique for building and testing statistical models, which are often causal models. It is a hybrid technique that encompasses aspects of confirmatory factor analysis, path analysis and regression, which can be viewed as special cases of SEM. SEM encourages confirmatory, rather than exploratory, modelling; thus, it is suited to theory testing, rather than theory development. It usually starts

with a hypothesis, represents it as a model, operationalizes the constructs of interest with a measurement instrument and tests the model. With an accepted theory or otherwise confirmed model, one can also use SEM inductively by specifying a model and use data to estimate the values of free parameters. Often the initial hypothesis requires adjustment in light of model evidence, but SEM is rarely used purely for exploration. Among its strengths is the ability to model constructs as latent variables - variables which are not measured directly, but are estimated in the model from measured variables which are assumed to 'tap into' the latent variables. This allows the modeller to explicitly capture the unreliability of measurement in the model, in theory allowing the structural relations between latent variables to be accurately estimated. SEM is an extension of the general linear model that simultaneously estimates relationships between multiple independent, dependent and latent variables [4].

7.1. Exploratory factor analysis

Before testing the entire model using structural equation modelling, we conducted exploratory factor analysis to get the first insight into our data and to assess the validity of our measurement model. The main concern in this part is “Do items really measure the specified constructs?” We used the statistical package SPSS 18.0 to run a series of data reduction tests. Data were subjected to the factor analysis technique using principal axis factoring extraction method combined with Varimax rotation. First, we analysed the items measuring business process orientation construct. As this construct had been tested extensively, the results shown in Table 2 were anticipated, as nine factors emerged, each representing one aspect of BPO. Using 0.50 loading cut-off value, which according to [7] is a good score, two things need to be pointed out: (1) Items A4_4, A7_3, A7_4, A6_2, A5_1, A9_1 have not reached value 0.50 and were therefore omitted from further analysis; (2) Item A9_5 has not reached the 0.50 value, we decided to keep IT in our analysis as its loading was very close to the prescribed one.

	Factor								
	1	2	3	4	5	6	7	8	9
A2_2_Business ProcessDefinition	.777								
A2_4_Business ProcessDefinition	.769								
A2_3_Business ProcessDefinition	.758								
A2_6_Business ProcessDefinition	.749								

A2_5_Business ProcessDefinition	.740								
A3_1_Business ProcessMeasurement	.723								
A3_9_Business ProcessMeasurement	.636								
A2_1_Business ProcessDefinition	.628								
A5_2___Human ResourceManagement	.615								
A3_10_Business ProcessMeasurement	.608								
A5_3___Human ResourceManagement	.596								
A4_4_Organizational Structure									
A3_4_ Business ProcessMeasurement		.757							
A3_3_ Business ProcessMeasurement		.733							
A3_6_ Business ProcessMeasurement		.626							
A3_5_ Business ProcessMeasurement		.608							
A3_8_ Business ProcessMeasurement		.589							
A3_2_ Business ProcessMeasurement		.544							
A3_7_ Business ProcessMeasurement		.515							
A9_8_Information Technology			.834						
A9_7_ Information Technology			.805						
A9_9_ Information Technology			.770						
A9_5_ Information Technology			.495						
A1_5_Strategic Approach				.642					
A1_1_ Strategic Approach				.620					
A1_2_ Strategic Approach				.585					

A1_3_ Strategic Approach				.573					
A1_4_ Strategic Approach				.504					
A7_3_Market Orientation									
A4_3_ Organizational Structure					.667				
A4_2_ Organizational Structure					.597				
A5_5__Human ResourceManagement					.541				
A7_4_ Market Orientation									
A6_2_Organizational Culture									
A5_1_ Human ResourceManagement									
A8_2_Supplier Perspective						.872			
A8_1_ Supplier Perspective						.710			
A8_3_ Supplier Perspective						.536			
A9_2_ Information Technology							.764		
A9_3_ Information Technology							.644		
A9_1_ Information Technology									
A7_6_ Market Orientation								.820	
A7_7_ Market Orientation								.715	
A6_5_ Organizational Culture									.688
A6_6_ Organizational Culture									.576

Table 2: *Rotated factor Matrix for BPO*

Our analysis continued with the organizational performance measurement items. The results of the rotated factor matrix for organizational performance are shown in Table 3. Considering the 0.50 cut-off loading values, only item B5_4 has been removed from the further analysis.

	Factor		
	1	2	3
B1_1_FinancialPerspective		.845	
B1_2_ FinancialPerspective		.856	
B1_3_ FinancialPerspective		.908	
B2_1_ FinancialPerspective	.636		
B2_2_ FinancialPerspective	.569		
B2_3_ FinancialPerspective	.700		
B3_2_EmployeePerspective	.673		
B3_3_EmployeePerspective	.604		
B3_4_EmployeePerspective	.705		
B4_1_SupplierPerspective			.823
B4_2_ SupplierPerspective			.918
B5_1_BusinessProcessPerspective	.759		
B5_2_BusinessProcessPerspective	.636		
B5_3_BusinessProcessPerspective	.525		
B5_4_BusinessProcessPerspective			

Table 3: *Rotated factor Matrix for OP*

7.2. Operationalization of business process orientation and organizational performance

After subjecting the data to factor analysis, the purified data were used to operationalize the measurement of BPO and OP constructs. Table 4 shows the operationalization of the BPO construct and the components that BPO dimensions include after factor analysis. As the BPO construct has already been operationalized by McCormack and Johnson [29] and Škrinjar [38], we have closely followed their route and grouped items into new scales. The "new" dimensions of BPO construct are: definition and documentation of business processes (DDPP),

business process measurement and management (MUP), information technology - tools (ITA), strategic approach (SP), organizational structure (OSTP), supplier perspective (OSD), information technology – results (ITR), market orientation (TO) and process oriented organizational culture (OK).

DOMAINS	COMPONENTS
Definition and documentation of business processes (DDPP)	A2_1, A2_2, A2_3, A2_4, A2_5, A2_6, A3_1, A3_9, A3_10, A5_2, A5_3
Business process measurement and management (MUP)	A3_2, A3_3, A3_4, A3_5, A3_6, A3_7, A3_8
Information technology - tools (ITA)	A9_5, A9_7, A9_8, A9_9
Strategic approach (SP)	A1_1, A1_2, A1_3, A1_4, A1_5
Organizational structure (OSTP)	A4_2, A4_3, A5_5
Supplier perspective (OSD)	A8_1, A8_2, A8_3
Information technology – results (ITR)	A9_2, A9_3
Market orientation (TO)	A7_6, A7_7
Process oriented organizational culture (OK)	A6_5, A6_6

Table 4: *Operationalization of BPO construct*

Table 5 shows the operationalization of OP construct and the components that OP dimensions include after factor analysis. Based on an extensive review of literature and our intention to scrutinize organizational performance in detail, organizational performance is included in the model as three separate constructs. The "new" dimensions of OP construct are: financial performance (FP), non-financial performance – buyer, employee and process perspective (NFKZP) and non-financial performance – supplier perspective (NFD). Hence, the "new" OP construct is based on two separate constructs: financial performance (FP) which includes only financial perspective and non-financial performance (NFP) which includes buyer, employee, process and supplier perspective.

DOMAINS	COMPONENTS
Non-financial performance – buyer, employee and process perspective (NFKZP)	B2_1, B2_2, B2_3, B3_2,B3_3, B3_4, B5_1, B5_2, B5_3
Financial performance (FP)	B1_1, B1_2, B1_3
Non-financial performance – supplier perspective(NFD)	B4_1, B4_2

Table 5: *Operationalization of OP construct*

7.3. Confirmatory analysis using structural equation modelling

The next step in our analysis was the assessment of the model fit, where we were interested whether the hypothesized model is consistent with the data. First, we examined the measurement part of the model. Our aim was to determine the validity and reliability of the measures used to represent the constructs of interest. Validity reflects the extent to which an indicator actually measures what it is supposed to measure. Validity can be assessed by examining the magnitude and significance of the loading paths λ that represent a direct relationship between the indicator and the construct. All λ's should be significant (t-values should exceed 1.96) and exceed a 0.50 threshold [12]. As can be seen in the Table 6 below. all indicator loading values are significant (at $p < 0.01$ or better – t-values exceed 2.64) and exceed 0.50 which provides evidence of validity in favor of the indicators used to represent the constructs of interest.

		Unstandardized factor loading	Standardized factor loading	t-value
Factor1	A5_3	1.000	0.803	
Factor1	A5_2	0.867	0.808	10.838
Factor1	A3_1	0.955	0.816	10.984
Factor1	A3_9	1.052	0.814	10.954
Factor1	A3_1	1.125	0.870	12.101
Factor1	A2_6	1.040	0.844	11.543
Factor1	A2_5	1.058	0.764	9.978
Factor1	A2_4	0.969	0.825	11.108
Factor1	A2_3	1.151	0.890	12.530
Factor1	A2_2	1.093	0.865	12.023
Factor1	A2_1	0.839	0.771	10.100

Factor2	A3_8	1.000	0.889	
Factor2	A3_7	0.971	0.813	12.337
Factor2	A3_6	0.976	0.861	13.927
Factor2	A3_5	0.905	0.853	13.608
Factor2	A3_4	1.035	0.896	15.129
Factor2	A3_3	1.038	0.881	14.05
Factor2	A3_2	0.947	0.801	11.924
Factor3	A9_9	1.000	0.902	
Factor3	A9_8	1.078	0.901	13.700
Factor3	A9_7	1.054	0.846	12.358
Factor3	A9_5	0.722	0.648	8.144
Factor4	A1_5	1.196	0.778	7.230
Factor4	A1_4	1.000	0.627	
Factor4	A1_3	1.324	0.814	7.482
Factor4	A1_2	1.383	0.874	7.866
Factor4	A1_1	1.134	0.799	7.389
Factor5	A5_5	1.000	0.742	
Factor5	A4_3	0.957	0.761	8.380
Factor5	A4_2	0.889	0.872	9.580
Factor6	A8_3	1.000	0.704	
Factor6	A8_2	1.233	0.984	9.473
Factor6	A8_1	0.754	0.735	7.891
Factor7	A9_3	1.000	0.845	
Factor7	A9_2	0.958	0.873	9.966
Factor8	A7_7	1.000	0.895	
Factor8	A7_6	0.780	0.807	8.524
Factor9	A6_6	1.000	0.835	
Factor9	A6_5	1.019	0.740	8.305
Finan	B1_1	1.000	0.901	
Finan	B1_2	1.026	0.940	16.489
Finan	B1_3	1.081	0.937	16.539
Nefinan2	B4_1	1.000	1.020	
Nefinan2	B4_2	0.783	0.839	13.104
Nefinan1	B2_1	1.000	0.828	
Nefinan1	B2_2	0.790	0.662	7.957

Nefinan1	B2_3	1.001	0.838	11.260
Nefinan1	B3_2	0.952	0.798	10.464
Nefinan1	B3_3	0.771	0.736	9.430
Nefinan1	B3_4	0.991	0.786	10,232
Nefinan1	B5_1	0.778	0.775	10.077
Nefinan1	B5_2	0.942	0.728	9.183
Nefinan1	B5_3	0.911	0.747	9.503

Table 6: *Validity analysis*

Subsequently, reliability analysis was also conducted and Cronbach's alfa coefficients were calculated. In evaluating the scale reliability, we were led by recommendations that internal consistency coefficients of 0.70 or higher are considered as indicating adequate reliability [9]. As can be seen from Table 7, all Cronbach's alfa coefficients were above the cut-off value, suggesting that the item scales were internally consistent.

	Cronbach alfa	Number of components
DDPP	0.949	11
MUP	0.947	7
ITA	0.895	4
SP	0.863	5
OSTP	0.802	3
OSD	0.800	3
ITR	0.835	2
TO	0.823	2
OK	0.745	2
NFD	0.912	9
NFKZP	0.919	2
FP	0.943	3

Table 7: *Cronbach alfa values*

An assessment of model fit was conducted using the fit indices [9]. The proposed conceptual model was developed using the SAS module and yielded a $\chi 2$ of 91.904 with 32 degrees of freedom (due to the sample size and number of variables used). Since $\chi 2$ is usually sensitive to sample size, other indices were additionally used to assess the overall model fit. The correspondence between observed and hypothesized variance was assessed using the Comparative Fit Index (CFI). The CFI

should be greater than 0.90 and in our case is 0.906. Furthermore, the value of the Normed Fit Index (NFI) was close to 0.90 (0.872), which indicated a good fit [1]. The Root Mean Square Error (RMSEA) indicated a satisfactory 0.080 value [1]. In another words, we can conclude that our research model fulfilled the above mentioned rigorous methodological requirements.

7.4. Research findings

Figure 2 shows the path diagram of our model.

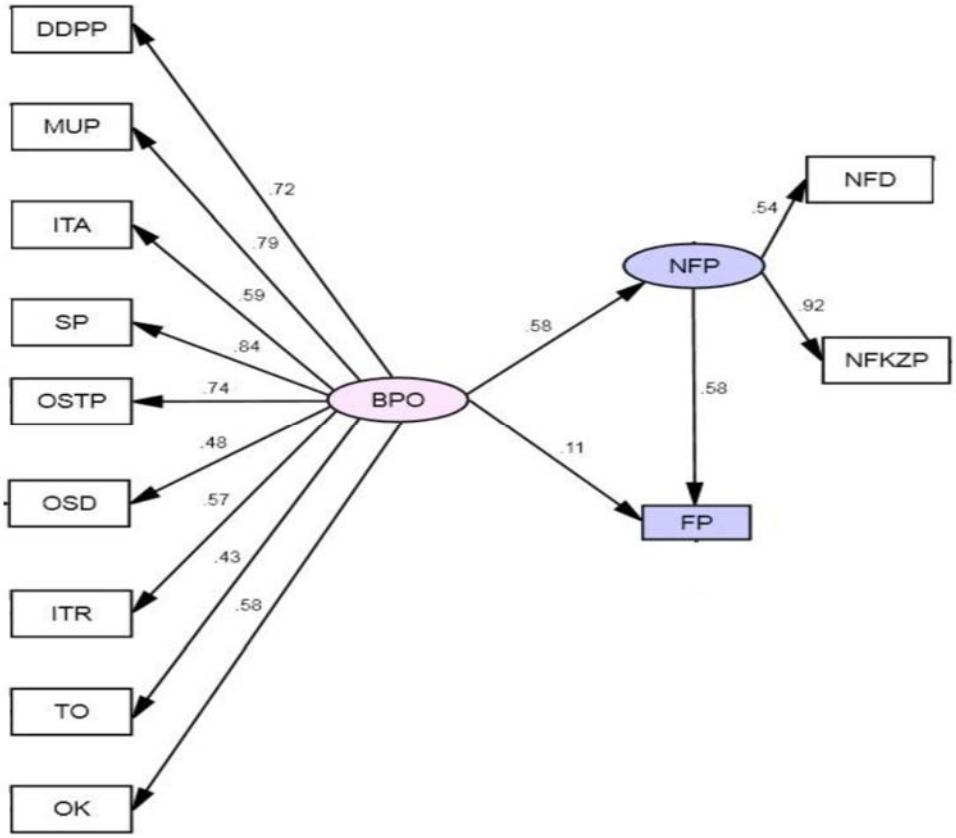

Figure 2: *Path diagram of conceptualized model*

Given that the overall model exhibited a good fit, the structural part had to be examined. The aim was to determine whether the theoretical relationships specified by our hypotheses are indeed supported by the data. Three issues were of relevance here. First, we looked if the signs of the parameters representing the paths between the constructs indicated the same direction as hypothesized. In

that regard, all three hypotheses are supported by the data as there is a positive sign between BPO and FP, between BPO and NFP and between NFP and FP. Second, we examined the statistical significance of parameters (Table 8). Only paths representing second and third hypotheses were found to be statistically significant (t values: 3,608 and 4,002 respectively). The relationship between BPO and FP was not found to be statistically significant. Third, the squared multiple correlations (R^2) for the structural equations are inspected as they indicate the amount of variance of endogenous constructs that is accounted for by independent constructs. For hypotheses 2 and 3 the R^2's are high (0.583 and 0.578 respectively) indicating strong relationship. Again, the lack of a direct relationship as stated in hypothesis 1 was reconfirmed in very low R^2 (0.11) for the path representing that link. In considering all three aspects of the structural relationship, we accept the second and the third hypothesis, but reject the first one.

			Understanding factor loading	Standardized factor loading	t-value
NFP	<--	BPO	0.502	0.583	3.608
OSD	<--	BPO	0.820	0.475	4.313
ORST	<--	BPO	1.413	0.743	6.889
STRA	<--	BPO	1.360	0.836	6.136
ITA	<--	BPO	1.480	0.586	4.423
NFD	<--	NFP	1.000	0.538	
NFKZP	<--	NFP	1.592	0.916	4.808
ITR	<--	BPO	1.212	0.567	5.425
DDPP	<--	BPO	1.305	0.720	5.852
ORKL	<--	BPO	1.000	0.583	
TO	<--	BPO	0.732	0.426	3.915
MUPP	<--	BPO	1.565	0.787	5.984
FP	<--	NFP	1.430	0.578	4.002
FP	<--	BPO	0.230	0.108	0.873

Table 8: *Unstandardized, completely standardized loading estimates and t-values*

8. Discussion and conclusion

The main goal of our study was to determine whether higher levels of business process orientation lead to better organizational performance. The data from the empirical study that was subjected to rigorous statistical techniques has shown support for that. Therefore, based on our hypotheses, we conclude that higher levels of business process orientation lead to better financial and non-financial

performance. Furthermore, it has been shown that there is a strong direct impact of BPO on non-financial performance. On the other hand, no such impact has been found between BPO and financial performance. This does not mean that there is no connection whatsoever. It has been shown that BPO has a strong indirect impact on financial performance through non-financial performance.

The scientific contribution of this paper lies in the fact that it shows the importance of this research field and provides the results of empirical study, showing the impact of business process orientation on organizational performance. It also confirms the results of other, similar research that have been carried out using this methodology [15;32;38;41;42]. Our contribution also lies in: 1) the verification of BPO positive influence on business performance, 2) using broader construct of BPO and 3) more detailed specification of organizational performance that includes non-financial performance measures. Also, we carried out the study in a transition economy and found that the original findings are also applicable in this socio-economic environment.

In addition, the results of our study have many practical implications for managers. As companies change themselves and adopt new practices striving to attain higher levels of process orientation, it enables them to improve their relationship with their key stakeholders, employees, customers, and suppliers by creating a fertile environment for conducting business. Clearly such an environment is also a catalyst for better financial performance. Therefore, as a business environment gets more competitive, business process orientation offers a way to adapt to new conditions and circumstances. Since higher levels of business process orientation maturity lead to better organizational performance, managers need to familiarize themselves with this concept and the issues of practical implementation. They need to examine their current practices, structures and management, and measurement processes and assess the current state. The BPO maturity model will then serve as a road map for improvements and renewal efforts.

However, the conducted research has some potential limitation. Though we rejected the first hypotheses postulating the positive effect of BPO on financial performance, this of course is not conclusive. We have showed the positive effect of BPO on financial performance indirectly, through non-financial performance. However, there is a need for examining and proving direct link between BPO and financial performance in the future studies. Also, the research sample could be more extensive to get more generalizable results. As in the questionnaire, only companies from Croatia were included and it is therefore difficult to conclude whether the tested hypotheses are valid in different countries and research contexts. So, this or similar study should be conducted on the larger sample of companies from various countries in order to be able to make proficient conclusions regarding differences among companies of different size, in different industries or different countries.

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