Employees’ and Students’ Attitudes of Business Process Orientation Usefulness in Croatia

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Abstract: Considering the growing competition in the market, each company strives to operate in accordance with the time in which it exists and following modern techniques of business system management. One of such techniques is manifested in designing and managing business processes in organizations. The authors investigated two groups of respondents. The first group consists of employees of different organizations in Croatia. The second group of respondents are students of higher years of economic faculties in Croatia. The perception of these two groups on the importance of the company's business process orientation was examined. The two groups were examined for an overview of the current situation with the help of employees and the future through the prism of future employees – current students. This paper aims to assume future trends of BPO use in organizations taking into account the perception of the participants surveyed.

1. INTRODUCTION

Many criteria can define the success of an organization and no consensus solution could label an organization as successful. Precisely because of this, success is a subjective concept and is perceived differently by different scientific and professional disciplines. However, one of the criteria for the success of the organization is certainly efficiency in business processes, since efficient business processes imply rational business activity.

McCormack and Johnson (2001) emphasize that business process orientation (BPO) is not just a kind of strategy the organization implements, but it is an orientation that puts the process at the forefront instead of the hierarchy. According to modern marketing principles, business processes in companies are customer-oriented, which is corroborated by Kotler et al. (2014) who showed that modern enterprise organization puts clients at the forefront. Alfirević (2000) stresses that “organization should be viewed as an instrument for reaching the goals of its stakeholders”, and that there should be a link between the economic performance of a particular organization and the quality of its organizational design. If the performance of an organization is understood as some form of output that can be quantitatively determined and measured (Armstrong, 2006) it is possible to assess the impact of BPO on performance as well. The measurement of performance at process level will indicate places where it is possible to introduce some improvements (Bakotić, 2012). Orientation to business processes has a positive effect on the non-financial performance of the organization, and therefore, indirectly on financial performance (Škrinjar et al., 2008). The influence of BPO on organizational performance, on a sample of companies in Croatia, was examined by the authors Milanović Glavan and Bosilj Vukšić (2017) and they found that the better the non-financial performance of the company the more the organization is focused on business processes, where such a result, in the form of improved non-financial performance, eventually results in better financial performance. Münstermann et al. (2010) found that process standardization has a positive and significant impact on process performance, such
as process quality, output, price and timing. The financial performance of the enterprise can be improved using some of the techniques of business process management (Ittner and Larcker, 1997). The process orientation of the organization, as far as marketing processes are concerned, has a positive impact both on marketing efficiency (quality, costs and time) and on the effectiveness of marketing (Diller and Ivens, 2006). Markovic and Kowalkiewicz (2008) emphasize that the decomposition of the main goal to smaller goals, which is associated with a particular process, is important and such linking of the goal and process allows the advanced analysis of the process, where processes can be detected as ones that sufficiently contribute to one of the organizational goals as well as processes that do not have a goal. Everything that has been discussed previously indicates the importance of applying BPO in the context of organizational performances as an indicator of organization success.

The implementation of BPO is carried out by modeling the process of the observed business system. The business system consists of a series of processes that are necessary for it to function. According to Brumec (2011) the business process is considered a set of activities and decisions that is performed due to a specific goal, consumes certain resources and has a time duration. In order for a particular organization to successfully survive on the market, it must perform its business processes efficiently. The efficiency of work is considered as the relationship between inputs, i.e. costs and final results (Todorović and Kostic, 2008). Alotaibi (2014) laid out a timeline that shows the historical development of business process management (BPM), from the 1960s to here, highlighting the characteristics of decades, from system engineering (1960s) to automatization (70s), quality management (80s), business process reengineering (90s) and a new century characterized by advanced reporting and analytics, based on which business processes are managed during operation for the purpose of their optimization and quality management. Kaniški and Vincek (2018) defined the management of business processes through three activities: process formation, process execution and measurement of the success of created processes. It is the third activity that serves as a control mechanism in the management of business processes, since it answers the question about the expediency of implementing a process approach into the organization. Moreover, the author Nurlankzyzy (2019) asserts as a result of the implementation of the process approach in the organization the elimination of the boundaries between the two organizational units and the suppression of delays between organizational functions. Harmon (2010) illustrates the timeline since 1900. indicates that after the appearance of the first computers, business management is included in “the story” of changing business processes. Van der Aalst (2004) notes that BPM means “methods, techniques, and tools to support the design, enactment, management, and analysis of such operational business processes". In the broader context of BPM, there are a number of methods used by managers (Wang et al., 2006): “BPEL4WS” (Business Process Execution Language for Web Services), UML (Unified Modeling Language), “XPDL” (XML Process Definition Language), “Petri Net” and “IDEF0 and IDEF3” (Integration Definition Method). Grikštaitė (2008) points out that business process modeling enables process visualization, which is one of the elementary tasks of modeling. In this paper, Business Process Modeling Notation 2.0 (BPMN 2.0), which represents the international norm for modeling business processes, will be used to determine the understanding level of respondents regarding business process modeling. BPMN 2.0 notation includes four types of diagrams: business process diagram (mostly used), collaboration diagram, choreography diagram and conversation diagram (Brumec and Brumec, 2016). According to Stroppi, Chiotti and Villarreal (2021) this term notes an internationally recognized way of modeling business processes, and one of the fundamental purposes of the existence of such a way of modeling is the simplicity of understanding and creating business processes, which is why it was chosen in
this paper. Humphrey (1987) elaborated a concept that determined the levels of process maturity in the work “Completing the software process: a maturity framework”, focusing the work on the maturity of software processes. With further development, this concept was improved, thus the “Capability Maturity Model Integrated” (CMMI) was developed and with this model it is possible to classify processes in general, including processes in organizations, and employee satisfaction with the organization of processes in enterprises will be measured by the specified model containing five levels of process organization (Wolf and Harmon, 2011):

- the first level is characteristic of enterprises in which processes are not organized or modeled until the organization itself perceives processes as a non-essential element of business, but business tasks are performed by inertia, i.e. without a specific flow,
- the second level implies that only some of the processes in the enterprise are organized,
- the third level is characterized by organizations with most defined business processes,
- the fourth is characterized by organizations that manage their business processes (organizations measure the performance of their processes and optimize processes),
- the fifth level is characterized by organizations that are process oriented and constantly strive to improve their processes through formed process teams within the enterprise.

2. METHODOLOGY

This research aims to assume future trends of BPO implementation in organizations in Croatia concerning recognition of BPO importance and knowledge by current and future employees. This was done by comparing the results of surveys conducted among two groups of respondents: employees of the observed companies, and students of senior years of economic faculties and managerial orientations, as future employees of companies, who will have the opportunity to use managerial skills and knowledge about the management of the business system acquired through higher education. The difference between the results on understanding the modelling of business processes and the importance of applying BPO to improve organizational performance in the two groups examined will be noted. Based on the comparison of these results, it will be shown whether an upward or downward trend can be expected towards implementing BPO.

2.1. Research on a sample of employees

In order to examine employees’ attitudes about the importance of modeling business processes in the context of organizational performance and their knowledge of the BPO concept, a questionnaire which was created, was divided into two parts. The first part examines the basic characteristics of employees and the companies in which they are employed. The second part of the questionnaire examines employees’ attitudes about the importance of BPO influence on organizational performances such as attitudes about business process modeling. An important segment of the second part of the questionnaire was compiled based on questions about organizational performance from Hung (2006), and questions from the conducted questionnaire on the use of BPM (Wolf and Harmon, 2011), with some other questions added. The perception of organizational performance consists of five claims about organizational performance (shown in Table 1) and respondents will express a degree of agreement with each of the claims on the Likert scale from 1 “I do not agree at all” to 5 “I completely agree”. This coefficient will be calculated as a link between the degree of agreement (from 1 to 5) with each of the claims about organizational performance, and the evaluated level of process organization according to the perception of those surveyed (from 1 to 5). In order to conclude that organizations with a larger amount of modeled processes have better organizational performance according to employee
perception, it is important to establish a statistically significant and positive correlation in all five cases. The significance of the correlation will be determined with the help of p values, with \( p<0.05 \) – the correlation is statistically significant, and \( p>0.05 \) – the correlation is not statistically significant. The correlation strength will be determined with the help of the obtained correlation coefficient, according to universal rules: \( 0<|r|<0.2 \) (slight correlation), \( 0.2<|r|<0.5 \) (weak correlation), \( 0.5<|r|<0.8 \) (moderately strong correlation), \( 0.8<|r|<1 \) (strong correlation).

2.2. Research on a sample of students

In order to determine the acquired knowledge, skills and the perception of the influence of BPO on organizational performances by future employees and current students, a second survey was formed. The survey examined students’ attitudes about the impact of BPM on organizational performances and knowledge of benefits that companies get by using business process modelling. The questionnaire is designed in such a way that it is divided into three smaller parts. The first part examines the characteristics of the sample, including the orientation at the Faculty of Economics. The second part follows questions examining students’ attitudes on business process modelling, understanding BPMN 2.0 notation, questioning the meeting with BPM so far while studying, and the perception of the importance of BPO in context of improving organizational performances. The students surveyed expressed a degree of agreement, on a Likert scale of 1 “I do not agree at all” to 5 “I fully agree”, with the desire to model the processes in the organization or organizational unit if they find themselves in a situation to manage such a system. In order to examine whether the students surveyed perceive positive or negative modelling of business processes in organizations, the mean of the degree of agreement with the above statement must be statistically significantly higher than the grade 3, which represents the value between agreeing and disagreeing with the claim. That will be verified by the One-Sample test in the SPSS. Statistical significance will be determined with the help of p values, and according to the rule; \( p<0.05 \) – statistically significant, \( p>0.05 \) – is not statistically significant. In the third part of the questionnaire, students were asked to express a degree of agreement with claims offered. They were offered five claims presented in Table 2, which were taken or adapted from the papers interpreted below. The first claim was taken from the paper Škrinjar et al. (2008) whose focus of research is on the impact that the company’s orientation towards business processes has on the performance of the enterprise. The second claim was taken from the paper Kesari et al. (2003) focusing their research on the pros and cons and usefulness of process modelling in companies. The third claim was adapted from the paper Grikštaitė (2008), who analyzed the disadvantages and advantages of process modelling and simulation in enterprises. The fourth claim is adapted from the paper Lemańska-Majdzik and Okręglicka (2015), who analyzed business processes, on the example of companies in Poland, as well as the advantages of a process approach in the context of organization management. The fifth claim was adapted from the paper Indulska et al. (2009) whose research is based on an analysis of the positive effects of business process modelling. A higher degree of agreement with the claims taken from these papers supports the greater knowledge of the students surveyed about business process modeling and positive repercussions that BPO has on organizational performances, while the above will be verified in the same way as in the second part of the questionnaire.
3. RESEARCH RESULTS

3.1. Description of the results obtained by examining employees

The questionnaire was completed by 101 employed persons, of which 41 were women (40.6%) and 60 were men (59.4%). The ages of the participants were divided into classes of 10 years each, and the most numerous categories of respondents, 39 (38.6%) were between 31 and 40 years old. Furthermore, 39 of those surveyed (38.6%) have higher education, 22 (21.8%) have undergraduate studies, and 25 (24.8%) have high school education, while the remaining 14.8% of those surveyed have another level of education. The majority of those surveyed, 82 (81.2%) work in tertiary activities, while the other respondents work in the remaining three categories of activity. According to Wolf and Harmon (2011), the size of the company by the number of employees is divided into three classes, and it was found that 81 workers (80.2%) work in a company with less than 999 people, 12 (11.9%) are employed in a company that employs from 1,000 to 4,999 employees, and 8 (7.9%) work in an organization with 5,000+ employees. Afterward, respondents were asked to evaluate the understanding of the process model presented by BPMN 2.0, and the majority of respondents 85 (84.2%) considered that they “fully understand the process”, while none of the respondents said that they “did not understand the process at all”. It was then found that 55 of those surveyed (54.5%) had never worked in any of the managerial position, while 46 of those surveyed (45.5%) held a managerial position now or had done so before. Regarding the previous experience of examinees with modelling business processes, taken over from Wolf and Harmon (2011), 54 (53.5%) have never dealt with modelling business processes, while the other 47 (46.5%) have done so at least once. Furthermore, respondents were asked to assess the level of process organization according to the CMMI model explained earlier, according to their perception, in the company in which they work, with the largest group of 33 surveyed (32.7%) believing that the processes in the company in which they work are organized on the third level. The questionnaire was completed with a set of five organizational performance claims from the survey by Hung (2006). Results of the correlation between the assessed levels of processes organization and the degrees of agreement with claims about organizational performances, are presented in the table below.

<table>
<thead>
<tr>
<th>Claims about organizational performances</th>
<th>Spearman’s correlation coefficient with the rated level of process organization</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization’s competitive position improved over the last two years.</td>
<td>.411</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Productivity of employees increased over the last two years.</td>
<td>.442</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Organization’s profitability increased over the last two years.</td>
<td>.379</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Quality of products and services improved over the last two years.</td>
<td>.318</td>
<td>.001</td>
</tr>
<tr>
<td>Average cost per unit of product or service decreased over the last two years.</td>
<td>.131</td>
<td>.193</td>
</tr>
</tbody>
</table>

**Source:** author’s view

3.2. Description of the results obtained by examining students

The survey was completed by 31 students of senior years of faculties of economics in Croatia. It was found that 14 female students (45.2%) and 17 students (54.8%) completed the questionnaire, with one questionnaire completed by a student who was not eligible to participate in the survey, and this answer was ignored. The majority of those surveyed, 22 (71%), come from graduate university studies – Business Economics, which is important to point out since the target group of respondents are students of economic faculties, and managerial orientations, as stated in the
methodology. Other subjects are studying on another graduate study programme. Seven students (23.3%) claim they have not met BPM through their studies so far, and 23 of those surveyed (76.7%) have. As well as employees, students were shown the same model of process BPMN 2.0, and 19 students (63.3%) understand the process completely, while understanding with a score of 4 evaluates 23.3%, which means seven of those surveyed. Overall, 86.6% of the students surveyed understand the process. Regarding students’ opinion on modelling business processes with the help of BPMN 2.0, the majority of those surveyed expressed a positive attitude towards business process modelling in the company – 73.3%, i.e. 22 students. It is indifferent to the modelling of business processes 7 students surveyed (23.3%), and one student (3.3%) believes that process modeling in the company is negative. Then, the students were asked: “Do you think that the created process model in the enterprise contributes to better organizational performance of the enterprise?”. The answer to the question was offered three options: “yes”, “no” and “other”. Twenty-three students (76.7%) believe that the created model of processes in the enterprise contributes to better organizational performance. That this is not true is considered by 5 students (16.7%), and one respondent believes that “depending on which company” and “depends on how well it presents the picture of the actual process in the company”. Twelve of those surveyed (40%) in higher education so far have not used any software tool to model the process, and 60% of those surveyed (18 students) have used such tools. Then, the students were asked to agree with the statement: “If I am in one of the managerial positions in my future career I would like the processes in the organization or organizational department I manage to be modeled”. In the end of the questionnaire, students were asked to express a degree of agreement from 1 “I do not agree at all” to 5 “I fully agree” with the five claims presented in table 2. In doing so, the One-Sample test was carried out, and the average degrees of agreement with the claims are in order: 4.00, 4.33, 4.13, 4.10 and 4.20, while “one sided” p and “two sided” p, for each of the claims, in this case, are equal, and amount to less than 0.05 as shown in the table below.

<table>
<thead>
<tr>
<th>One-Sample Test</th>
<th>One-Sided p</th>
<th>Two-Sided p</th>
</tr>
</thead>
<tbody>
<tr>
<td>The higher the level of business process orientation a firm achieves, the better it performs non-financially in terms of more satisfied employees, customers and suppliers.</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Process modelling is useful primarily for understanding and documenting business processes.</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Business process modelling &amp; simulation facilitates further decision making and help organizations to manage changes more effectively.</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>By the implementation of business process management system, organizations achieve certain advantages, such as making it easier to identify and eliminate process delays and increase organizational flexibility.</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>One of the advantages of process modeling in an enterprise is measuring process performance, which can separate the efficient from inefficient processes.</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Source: author’s view

3.3. Discussion

Analyzing the results of the survey in which employee attitudes were examined, Spearman’s correlation coefficient was calculated between the estimated level of process organization in the subjects’ companies and the degree of agreement with each of the claims about organizational performance. A statistically significant and positive correlation was found in four out of five cases. In the first case, the correlation coefficient between the level of process organization in the enterprise and the degree of agreement with the organizational performance claim in which the employee’s perception of improving the competitive position of the enterprise was exam-
ined, is 0.411, which indicates a relatively weak but existing and statistically significant positive correlation, given that p<0.05. In the second case, in which the correlation between the level of process organization in the enterprise and the improvement in employee productivity according to the perception of those examined was observed, the correlation coefficient is 0.442, which is a weak and positive correlation, but statistically significant because p<0.05. In the third case, the correlation between the assessment of the level of process organization and the increase in corporate profitability according to those surveyed was observed and a correlation coefficient of 0.379 was determined, which indicates a weak and positive correlation that is statistically significant since p<0.05. In the penultimate case, the correlation between the level of process organization and the quality of the product and/or service offered by the company on the market is observed, where the coefficient is 0.318 and p=0.001, that is, p<0.05, indicating a statistically significant, weak and positive correlation. However, in the last case, where the correlation between the level of process organization in the company and the decrease in the average cost per unit of product/service in companies is observed, the resulting correlation coefficient is 0.131 indicating the absence of correlation.

On the other hand, most students positively perceive business process modeling. This is concluded from the degree of agreement with the statement: “If I hold one of the managerial functions in my future career I would like the processes in the organization or organizational unit I manage to be modeled”. 73.3% of students expressed a certain degree of agreement with the claim, while for this claim the average level of agreement is 3.967. That is statistically significantly different from the test value 3, which is the limit of agreement and non-agreement since the p value in the One Sample test performed is less than 5%. Also, it was found that students are aware of the advantages of the process orientation of the enterprise. This is evidenced by the high degree of agreement with the set of claims in the third part of the questionnaire (shown in Table 2), which was confirmed by using the One Sample test where it was found that the average degree of agreement differs statistically significant from the boundary of agreement and non-agreement (3), because of p<0.05 for each of the claims. In addition, 76.7% of the students surveyed believe that the created process model in the enterprise contributes to better organizational performance, which confirms the notion that most students perceive business process modeling as an essential element that contributes to the growth of organizational performance.

4. CONCLUSION

In this paper, we investigated the views of two groups of respondents on the usefulness of the enterprise process orientation. Since many of the papers interpreted in the literature review evidenced the usefulness of the process orientation of the enterprise, this research has obtained information about the perception of current employees and students, as future employees, about the importance of modeling business processes in organizations. Concerning the continuous growth of business complexity, that is, the generation of more and more knowledge that is globally dispersed, and the business of today’s organizations that is largely based on information technology, considering all the positive effects of the process approach in organizations, it is justified to conclude that in the future all those organizations that want to be client-oriented will incorporate a process approach. The employees surveyed showed to some extent familiarity with the modeling of business processes. Considering the statistically significant correlations between the evaluated level of process organization and the degree of agreement with the claims of organizational performance, it is concluded that according to the perception of employees, a higher level of process organization in the enterprise contributes to better organizational perfor-
mance, not completely but in most part, because the correlation is established in 80% of cases. On the other hand, in view of the results of the research, most students, as future employees, perceive BPO in organizations in a positive way, and knowledge of business processes modeling proves a high degree of agreement of the surveyed students with a set of claims that are taken from the works of the authors mentioned in the methodology. Also, in support of the positive perception that reigns among students regarding the process approach, the fact is that most students express their agreement with the use of business process modeling in the company in which they will be employed in the future, and according to the expressed attitude, most students believe that the drafted model of the process contributes to organizational performance. By comparing these two groups of examinees it can be concluded that students (a group of persons with little or no experience, but with a good theoretical background) perceive the process approach in the organization more positively. Positive perception and awareness of the advantages of business process modeling by most students indicates a positive trend of expanding the application of BPO in the future in companies in Croatia.

REFERENCES


