
Process Maturity Assessment in the SME Sector in Poland

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Abstract:

Purpose: The aim of the paper is to present the research findings concerning process maturity assessment among Polish enterprises. We undertook a study in this field as we had noticed a research gap in the literature on the practical analysis of the implementation of the process approach by business organizations from different industries in the Polish market. There is a scarcity of available studies in this area, which makes it an interesting subject of research. The analysis of the implementation degree of the process approach in Polish business entities is an introduction to more in-depth studies.

Methodology: The responses to the survey questions allowed us to assign enterprises to the respective level of process maturity. Our taxonomy was subjected to thorough analysis, which took into consideration, among other things, the market experience of individual companies.

Findings: On this basis, we drew conclusions concerning the current state of the process approach implementation in Polish small and medium enterprises.

Practical Implications: We also attempted to identify the potential directions of the development of the process approach in this group of enterprises.

Keywords: Maturity model, Business process, SME`s Polish enterprises

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1. Introduction

In the present economic conditions, also on the global scale, one can observe numerous organizational changes introduced by enterprises. Their main aim is to adapt a company to the changing environment. The increasing competitiveness accompanying the globalization process makes business organizations shift their approach from the industrial perspective to knowledge-based economy. This allows them to build competitive advantage more effectively because their non-material resources are a lot more difficult or even impossible to emulate by other businesses from the same industry.

Therefore, company managers are motivated to seek and develop these resources. The introduction of such changes is strictly connected with changing the way of managing the whole organization to replace the functional management style with the process approach. However, the shift from a functional to process organization is not an easy, quick, and cheap solution. Because of numerous implementation barriers, enterprises may encounter a number of difficulties at every stage of the process of change. The complete restructuring of an organization also requires a lot of time to draw up, implement and monitor all steps in the transformation procedure, which unavoidably entails significant costs. Changes can be introduced in two ways.

Some managers deliberately introduce changes in the operation mode of companies, as the result of which enterprises may be at different stages of process maturity depending on the stage of transformation. At the same time, it is possible to reorganize a corporate structure using an intuitive way, which is not reflected in a specific phase of the process approach but has some of its symptoms. In such a case, however, a company can also be assigned to a given maturity level.

The existing body of literature provides a lot of information about the process approach from theoretical perspective, but there is a scarcity of empirical data on process maturity, especially among Polish enterprises. This creates a gap in the current state of knowledge concerning the shift of Polish economy towards process-based organizations.

Therefore, we decided to carry out research with the intent to assess the process maturity level of Polish enterprises based on information collected from market entities operating in various industries. We also undertook to find out how the obtained results influence and may influence in future the development of logistics processes implemented in the examined businesses.

In order to conduct the study, we presented levels of process maturity, including level zero, to which individual business entities were assigned according to their operation mode. We used an online survey questionnaire to gather necessary data concerning enterprises. The obtained results were analysed to determine the degree of process maturity of each company and identify a tendency of changes in the approach to the functioning of Polish enterprises.

2. Literature Review

2.1 The Notion of Process

The notion of process is commonly used in natural, social, economic, or even technical sciences. A business process is a complete and dynamically coordinated collection of activities or logically interrelated tasks which should be performed in order to provide customers with a value or to accomplish other strategic goals (Guha and Kettinger, 1993; Strnadl, 2006).

According to EN ISO 9000:2015 norm, a process is a “set of interrelated or interacting activities that use inputs to deliver an intended result” (ISO). This definition shows the broader meaning of this concept – it specifies that each process has a set of certain input and output elements, with the output result with parameters. The result may be both a physical object and a service or immaterial value. Thanks to this, the definition may concern both manufacturing and service processes and those in which, for example, knowledge is gained.

A process can be also defined as a sequence of structured and measurable actions designed with an aim of accomplishing the production of goods for the selected groups of customers (Davenport, 1993). The author indicates measurability as an important aspect of the process, arguing that each process can be evaluated according to some specific criteria to be measured in the course of or after completing the process. This implies that process implementation may be subject to numerous analyses, thus, also to different adjustments aimed at improving the assessed parameters. The other important feature is the more detailed specification of recipients. They are not generally “customers”, but a certain, selected group of recipients, which shows that each process has its own specific customers who have needs to be satisfied by the outcome of a given process.

The term Business Process Management (BPM) was first used in 2002 and implies that it is a method from life cycle management group, aimed at the constant improvement and management of processes (vom Brocke and Rosemann, 2015). According to Hofstede and Weske (2003), BPM includes a set of methods, techniques, and tools to support the design, configuration, implementation, control, and diagnosis of processes. The knowledge of processes performed in the organization enables the creation of value added for the customer. Moreover, it helps to design the workplace properly (Leber *et al.*, 2018; Feyen *et al.*, 2000).

2.2 Process Maturity and its Levels

The concept of process maturity appeared in response to the need for evaluating organizations' ability to ensure better business performance in a systematic way (Hammer, 2007; Rosemann and de Bruin, 2005). Humphrey defined process maturity as „the degree of explicit definition, management, measurement, control and effectiveness a process has” (Humphrey, 1987).

The current process maturity models are based on the studies conducted by R. Nolan and P. Crosby (Kalinowski, 2016). The model they designed includes a collection of variables which are assessed to indicate the stage of process development and the level of maturity of this aspect in the examined organization (Becker *et al.*, 2009; Gottschalk, 2009; Kazanjian and Drazin, 1989).

The basic model used to evaluate process maturity is the Capability Maturity Model (CMM/CMMI) (Humphrey, 1987). The CMM/CMMI distinguishes the following maturity levels (Kalinowski, 2016):

- initial: processes are not documented, the organization lacks a formal process management and processes are ineffectively planned,
- repeatable: processes are at least documented sufficiently and are under such statistical control that repeating the same steps may be attempted,
- defined: processes are defined/confirmed as a standard business process and decomposed,
- managed: processes are quantitatively managed in accordance with agreed upon metrics,
- optimized: measured processes create the foundation for continuing improvement and optimization.

The CMMI is currently one of the most popular organizational maturity assessment tools (Gibson *et al.*, 2006; Humphrey, 1988). As regards the studies carried out by Röglinger, Poppelbuss, and Becker (2012), Spanyol (2004), Albliwi *et al.* (2014) and Kalinowski (2016), it can be observed that there are more than 150 process maturity models in the literature, and they are constantly developed. The key maturity models originating from this trend are the Business Process Management Maturity Model (Rosemann and de Bruin, 2005; Rosemann *et al.*, 2006), Business Process Orientation Maturity Model (McCormack, Johnson, 2001), Process and Enterprise Maturity Model (Hammer, 2007), Business Process Maturity Model (OMG, 2008), and Process Maturity Ladder (Harmon, 2007). These models enable the assessment of processes according to specific variables.

It is believed that the higher degree of process maturity translates into companies' better performance. This statement has been confirmed by numerous studies (Jiang *et al.*, 2003; Herbsleb *et al.*, 1997; Škrinjar *et al.*, 2008; McCormack *et al.*, 2009; Nowosielski, 2012).

3. The Presentation of the Problem

3.1 The Characteristics of Process Maturity Levels

The analysis of publications in the area of the process approach allows us to indicate a number of models to assess the level of companies' process maturity. Researchers' experiences and analyses connected with the process approach in Polish enterprises reveal that – in most business entities – we should speak about the level of process awareness rather than maturity, which stems from the specific nature of the market (the Polish market is much less developed than West European markets, especially in the sphere of technological innovations).

Literature queries and studies of companies show that one cannot speak of an organization's process maturity without the awareness of processes. Because of the characteristics of small and medium enterprises in the Polish market, we decided to use the notions of process maturity and awareness simultaneously, although we do realize they do not have the same meaning.

We distinguished two detailed goals in the research process connected with the assessment of process maturity:

- C1: assigning variables corresponding to the subsequent steps of process maturity,
- C2: the assessment of the level of process maturity among Polish enterprises.

To accomplish goal C1, we needed to identify the level of an organization's process maturity. The analysis of the literature on the subject shows that, in most cases, authors are inclined to use a five-degree scale of process maturity. Based on these proposals and taking into account research experiences, we designed a six-degree scale of an enterprise's process maturity. The initial scale was extended by level "0", defined as the total lack of process awareness. Table 1 presents the general description of all levels.

Table 1. *The general description of process maturity levels*

Maturity level	Description
level 0	No awareness of process in an enterprise
level 1	Identified and undocumented processes
level 2	Documented processes, which are not subject to assessment
level 3	Processes assessed with specific indicators
level 4	Processes subject to assessment and optimization
level 5	Full process maturity

Source: Hammer, 2007; Rosemann, de Bruin, 2005; Jiang et al., 2003; Herbsleb et al., 1997; Škrinjar et al., 2008; McCormack et al., 2009; Nowosielski, 2012.

The lowest level of process maturity is level "0", at which an enterprise has no awareness whatsoever of the ongoing processes concerning its operations, which could bring specific effects thanks to the application of certain material and non-material resources. We can also observe organizational chaos: it is difficult or impossible to assign responsibility for the particular tasks to the respective functions in the company structure. The way of performing duties is not clearly defined, which makes it impossible to perform duties in a repeated manner. The enterprise does not measure performance indicators to assess the course of task implementation.

On the first maturity level, an organization has the awareness of performing duties in a systematized form of processes, consisting of a strictly defined sequence of tasks. Thanks to this, all actions are taken in a repeated way. However, there is still no documentation, which would include detailed descriptions of the course of processes and indicators to measure performance.

Moving on to the second level, apart from the awareness of processes and their repeatability, one can observe other symptoms of growing process maturity. Enterprises on this level have documentation containing descriptions of processes, usually in the form of maps. Particular tasks undertaken in the course of a process are assigned to specific employees. Performance indicators are still not used, though.

The third level is marked with the full awareness of processes, which are described in documentation. Indicators to measure the effects of process implementation are also specified. Owing to this, it is possible to award employees based on their efficiency in performing tasks according to the appraisal results. On this maturity level, processes have their “owners”, who are responsible for the proper execution of all tasks in the area they are in charge with.

The next, fourth, level of maturity, apart from the abovementioned characteristics, is distinguished by the fact that organizations aim at the optimization of implemented processes. To this end, process maps “as is/to be” are devised. They specify the direction of changes and improvements that must be introduced to raise process efficiency on various layers, i.e., time consumption and cost, or the quality of products. On this level, the previously prepared process documentation is gathered and stored in a repository in a systematic way and so that materials can be easily accessed.

The fifth, highest, level of process maturity combines all characteristics of the previous stages. In this case, however, an enterprise fully manages its processes. The established strategic objectives are reflected in the goals of particular processes, which are subject to regular assessments and are aimed at improving performance through constant adjustments.

Long-term objectives are translated into an enterprise’s specific activities, which makes it easier to control progress towards accomplishing them. On this level, a company goes through all stages of the constant improvement process, from the identification of processes, through analysing and optimizing them, to the assessment and reidentification.

Table 2. *The characteristic features of enterprises on a given level of process maturity*

Factor	Process maturity level					
	0	1	2	3	4	5
Current activities are identified in the form of processes			x	x	x	x

Processes exist only in the awareness of people who implement them	x	x				
Processes have a descriptive form			x	x	x	x
Processes are visualized in the form of activities and events (e.g. maps)			x	x	x	x
There is a place for storing processes					x	x
Each employee knows processes and knows where their descriptions or maps can be found					x	x
New operations and activities are implemented (without informing on their effects and causes)	x					
New processes are implemented						x
There are indicators to measure processes				x	x	x

Source: Authors' own work.

The other research goal was to recognize which features connected with an enterprise's operations must be present to assign this entity to a given level of process maturity. The process maturity characteristics of companies were identified on the basis of literature studies and interviews with process management experts.

Table 3. *Employees' aspects in process maturity*

No.	Question	Level					
		0	1	2	3	4	5
2	Are there people in the organization who are responsible for processes (so-called process owners)?				x	x	x
3	Does each employee know what their role in the process is?			x	x	x	x
4	Does each employee know what happens to the outcome of their work?			x	x	x	x
5	Can each employee initiate changes in the company's mode of operation?						x
8	Does the size of staff change depending on the amount of work (seasonality)?				x	x	x

Source: Authors' own work.

Table 4. Terms used in an enterprise at different levels of process maturity

Term	Level					
	0	1	2	3	4	5
Process			x	x	x	x
Business/process role			x	x	x	x
Process mapping			x	x	x	x
Process map AS IS / TO BE					x	x
Process owner				x	x	x
KPI (key performance indicators) / process indicator				x	x	x
Process optimization					x	x
Process change management						x
Process repository					x	x

Source: Authors’ own work.

For each group of features, the responses assigning an entity to a given level of process maturity were specified. Each subsequent level has a larger set of attributes. This means that those features which classify companies to the lower level, also have to be identified in all enterprises assigned to the higher levels. This stems from the fact that each successive level contains new elements of the development of a company and those included on the lower levels. Table 2 presents a collection of factors characteristic of the particular levels of process maturity.

In a similar way, we assigned variables referring to company employees, especially the degree of their process awareness connected with the duties they perform (Table 3). The last aspect affecting the level of process maturity is the employees’ use of expressions connected with process activity in the company’s internal communication. Table 4 includes a collection of terms related to the levels of process maturity. All these tables allow us to design employee surveys and interpret the answers obtained.

3.2 The Methodology of Research and Data Analysis

The empirical studies were conducted with the use of questionnaire forms, which were sent online. The forms reflected tables 2, 3 and 4. In the case of the first two of them, the respondents could choose answers “yes”, “no” or “don’t know”. The response “don’t know” was recognized as equal to “no”, because if the respondent is not certain whether a given phenomenon occurs in the enterprise, we cannot assume that it exists. Consequently, only the answer “yes” was considered as the one which classifies to a given level.

Questions prepared based on Table 4 had a slightly different format. The respondents' task here was to indicate which of the terms was used in internal communication in their enterprise. The range of expressions used reflected the level of process awareness. When a respondent chooses the option that none of the terms is used in his or her organization, it is assigned to level 0.

Each company's responses were analysed individually. It was assigned to a specific level of process maturity level only if information in all areas was given. If any of them remained with no response, the company was automatically located on the lower level of maturity.

3.3 The Description of the Research Group

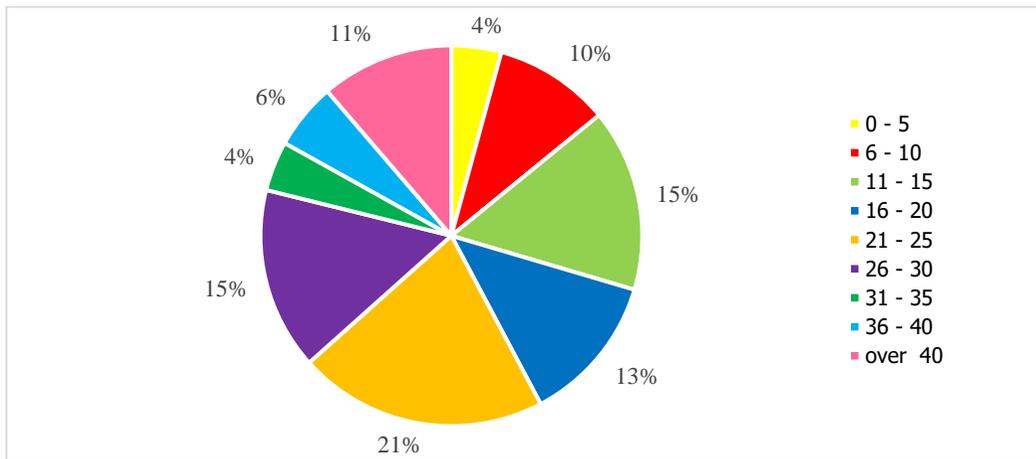
The study was conducted on a group of 71 Polish small and medium enterprises, operating in different industries. It was carried out with the application of online forms, which allowed the companies to remain anonymous and enabled us to access enterprises from the whole country. For the analysis, we obtained a database of SME entities in the Polish market – the base contains the data of more than 12,000 business entities with their basic activity in Section C: Manufacturing in the Code List of Classification of Business Activities in Poland (PKD – Polska Klasyfikacja Działalności). We sent 3,000 e-mails to companies asking them to participate in the survey. Only 71 enterprises agreed.

The first aspect which differentiated companies participating in the study was their market experience. It was defined based on the year of establishment of the respondent's firm. The length of time a company has been in the market also has an influence on many other aspects of its operations. Business experience allows enterprises to gain the expected market position, customers' trust, qualified staff, and financial resources. All these factors can consequently affect the implementation of the process approach in the company.

On the other hand, enterprises with a short history in the market are often more likely to transform into a process-based organization as they are free of employees' work habits, which long-established companies frequently have to grapple with when introducing changes. Among the entities under study, market experience, defined on the basis of the length of market operation, was referred to year 2020. Figure 1 presents the percentage share of the groups of enterprises in the research sample.

Another aspect which differentiates enterprises in the research group is their size. This factor can also have an influence on the implementation of the process approach. This is connected, as it was the case earlier, with the resources that may be allotted for improvements, but also with the number of implemented processes and organizational changes that should be introduced to shift from the functional to process management of an enterprise. The entities participating in the study were divided into four groups, according to two parameters: the number of employees and the annual turnover expressed in euro.

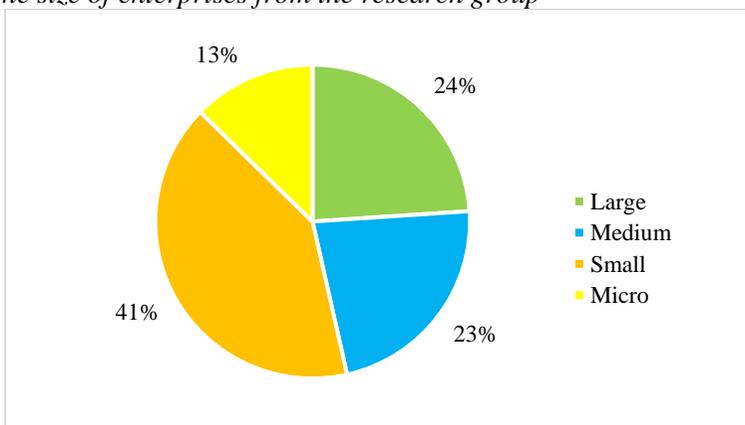
Figure 1. Market experience of the companies participating in the survey



Source: Authors' own work on the basis of questionnaire findings

Figure 2 presents the percentage share of companies of a given size in the whole research group. We selected micro, small, and medium enterprises for the analysis. When analysing what the predominant industries that the respondents operate in are, we observed that more than a half of the examined enterprises deal with manufacturing. This probably stems from the cross-section of the group according to experience. Considering the fact that entities established after the political transformation in Poland or after its accession to the European Union constitute the majority, their affiliation with the manufacturing sector may be explained by the then market demand for such type of activity.

Figure 2. The size of enterprises from the research group



Source: Authors' own work based on the questionnaire findings

It should be also emphasized that the number and diversity of processes in enterprises operating in this industry is very big. What is more, these companies – wanting to gain customers' trust and competitive advantage – see the repeatability and high efficiency of

processes as priority. Attempts to organize and properly manage processes can be one of the key activities aimed at streamlining the operations of the whole enterprise and, thus, leading to the achievement of the higher level of process maturity.

4. Results

4.1 The Level of Process Maturity of Polish Enterprises

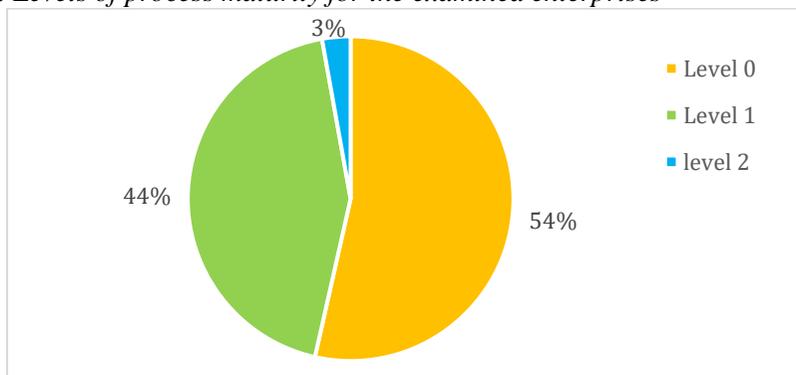
Using the adopted method of interpreting answers to questionnaire questions, we analysed the level of process maturity for all enterprises in the research group. In accordance with our assumption, an entity can be classified to a given level only if all criteria for being assigned to this level have been met. Even if one condition has not been fulfilled, the enterprise is automatically moved to the lower level.

For each potential response, we identified the level or the range of levels for which it is met. Through the analysis of gathered data, each enterprise was assigned to a specific level of process maturity. Figure 3 presents the percentage shares of entities of a given level in the whole research group.

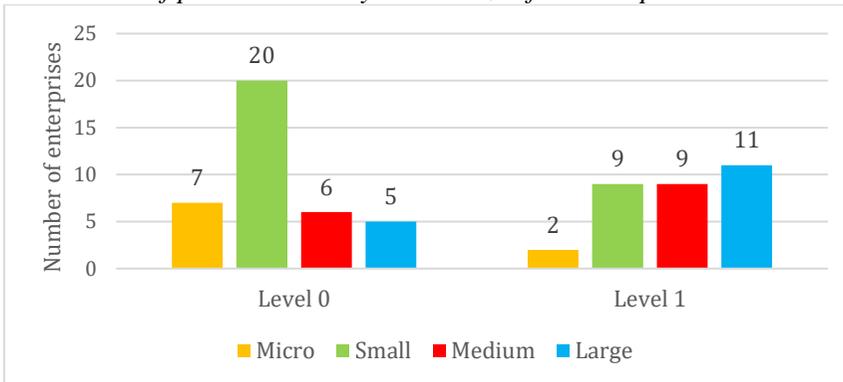
The obtained results allow us to conclude that the maximum level of process maturity that Polish enterprises achieve is level 2, where only two out of 71 examined business entities were located. Level 1 was achieved by 31 organizations, while the other 38, accounting for over a half of the analysed enterprises, did not meet the sufficient criteria to be assigned to the level higher than 0.

The two organizations that met the criteria for being classified on level 2 of process maturity were quite different from each other. The first of them is a medium-sized manufacturing company, which has operated in the market for 25 years. The other one is a medium-sized enterprise dealing with finance and insurance, established seven years ago.

Figure 3. Levels of process maturity for the examined enterprises



Source: Authors' own work based on the questionnaire findings.

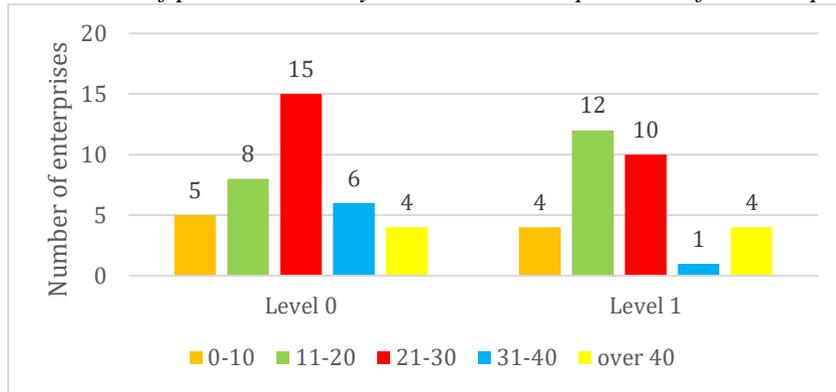
Figure 4. The level of process maturity vs. the size of an enterprise

Source: Authors' own work based on the questionnaire findings.

In the analysis of enterprises assigned to levels 0 and 1, we first paid attention to their size. Figure 4 presents data concerning the number of companies of a given size divided into levels. It shows that the size of an enterprise constitutes one of the factors which may affect the process maturity of an organization. It can be observed that most micro-enterprises in the examined group do not develop in the process-based manner. This is also the case with small organizations, where twice fewer of them have achieved the first level of maturity. As regards medium-sized entities, we can see the reverse trend – most of them are located on level 2.

The above data confirm the barriers to the implementation of the process approach observed by authors in the literature on the subject. They include, among other things, huge amount of time invested and significant financial spending. Medium-sized companies find it far easier to raise the needed resources than small or micro-enterprises, which may often not be able to overcome these barriers, or it is a lot more difficult for them. The market experience of enterprises on both levels of process maturity was subjected to a similar analysis, which was shown in Figure 5 (it presents the ranges of years of companies' existence). The enterprises were grouped in 10-year ranges. The exception is the last group, which includes entities operating in the market for more than 40 years.

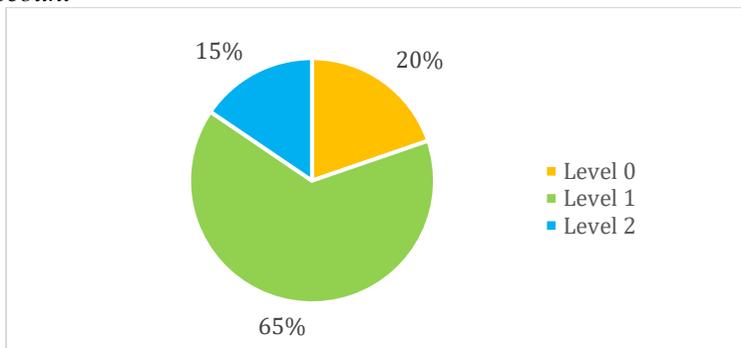
As regards the youngest and oldest enterprises (ranges 0-10 and over 40 years), we observed an equal division of entities into levels 0 and 1 (Figure 5). Among the companies which do not presently operate in the process-based manner, the enterprises that have been present in the market for 21-30 years represent the biggest share. These are companies which were launched in the 1990s. They were established after the economic transformation in Poland and their managers were not at all familiar with the process approach. It is possible that the organizations that have followed the functional approach for years are not willing to introduce any changes and shift towards the process model as it would require thorough restructuring. It should also be emphasized that despite the above, one organization that has existed for 31 years was assigned to level 1. This means that it had started implementing changes concerning the process approach.

Figure 5. The level of process maturity vs. the market experience of an enterprise

Source: Authors' own work based on the questionnaire findings.

4.2 The Discussion of the Research Results

When assigning enterprises to the appropriate levels of process maturity, we observed that features from Tables 2 and 3 refer to issues related to the functioning of entities. The content of Table 4, however, concerns terms and names used in organizations. Having this in mind, we reassigned companies to levels ignoring the knowledge of notions connected with process maturity to identify the degree of the implementation of the process approach exclusively from the perspective of the practical application of this corporate management model.

Figure 6. The level of process maturity of enterprises without taking the terminology used into account

Source: Authors' own work based on the questionnaire findings.

Figure 6 presents the percentage share of entities from a given level of process maturity in the whole research group in accordance with the new assignment. The presented results of the degree of the process approach implementation without the terminology used are significantly different from the previous ones. It turned out that if only the practical aspects of the process approach were taken into account, as many as 65% of entities met the criteria for being located on the first level of process maturity, which meant they had been shifted from level 0 to 1.

After comparing the above findings with the full analysis, it appeared that the evaluation of the process maturity level changed for 32 entities. For one of the organizations, the difference was so considerable that the company which had initially been located on level 0 because it did not use any process approach concepts was moved to level 2 after excluding this aspect. The remaining 31 entities were assigned to the next higher level.

Such differences in the results may indicate the practical rather than theoretical implementation of the process approach, which, in some cases, may reflect the intuitive way of streamlining company operations. Enterprises make changes aimed at improving, e.g., the efficiency or accuracy of their activities, not knowing that the introduced adjustments are examples of the process approach and, thus, they cannot properly call certain phenomena or objects.

The presented results, obtained from the study of a group of small and medium enterprises, lead us to the general conclusion that Polish business entities today do not develop towards the process orientation. Both the full and narrowed analyses allowed the examined companies to be located on the second level of process maturity at most.

However, although the overall appraisal of entities, based on the summary of responses to the particular questions, makes them look quite immature in terms of processes, it is worth paying attention to those aspects which are absent in the final assignment to levels. It appears that a number of enterprises did not meet the criteria for being classified on level 1 or 2, but, at the same time, some areas of their operations are consistent with the top levels of process maturity.

The analysis of the group of 38 enterprises which did not qualify to the first level reveals that over 68% of them (26 entities) met at least two criteria for being classified on level 3 or higher. In many cases, they were issues related to the implementation of new processes, the initiation of changes by employees, or the creation of AS IS/TO BE maps, which are the token of highly developed process maturity in the organizational structure. Taking account of this phenomenon in the interpretation of the obtained results, we can draw a few conclusions and attempt to identify the causes of the state of process maturity in Polish enterprises.

What may be one of the reasons for the low implementation degree of the process approach is the market structure of Polish enterprises in terms of their size. Small organizations constitute the largest group and, as the comparison of size with process maturity showed, such companies develop more slowly in this aspect than medium-sized entities. This may stem from, among other things, their limited financial resources in comparison to larger enterprises, which can afford to use profit surpluses to cover costs related to process improvements.

Moreover, in the case of small firms, which employ no more than 50 people, the overall number of implemented processes is usually smaller than in medium-sized companies, which can offer the wider range of products or services. If there are fewer processes in an organization, it is also easier to manage them, so there are no standard and documented implementations of the related improvements.

What is more, the small number of employees and processes helps the managerial staff to control all operations without having to appoint so-called process owners to monitor the course of a given activity. This means that small enterprises are far less likely to be willing to change their mode of operations. What is another factor which contributes to the low level of process maturity is the fact that company managers are often unaware of the existence of such an approach. Process-based management is not popular among the owners of small enterprises nowadays. It is not extensively taught at economic universities, either.

Despite the emergence of the concept of process-orientation, the design of functional organizational structures remains to be the most common model. Consequently, managers have no necessary knowledge of the process approach, which contributes to the lack of related implementations. Organizations often introduce some changes dictated by an intuitive or experimental approach to changes in each area. Thus, the transformation consisting in the shift from the functional to process-based approach is unconsciously made.

Several entities fully meet the criteria for being classified as more process mature than it results from the overall evaluation. Such a conclusion may become the starting point for conducting further studies. This may be linked both with the intuitive implementations of improvements and with the incorrect introduction of process-oriented changes. If there occurs a situation in a company that processes are subjected to measurement or are optimized and, at the same time, employees do not know what their role in the process is, we can risk a statement that the managers have failed to introduce changes in the appropriate way.

Another possible situation is that all improvements concerning mainly the upper echelons of an organization are introduced, and the role of ordinary staff is marginalized in the correct implementation of the process approach. This shows the lack of proper communication between subordinates and superiors, which is often reflected in the insufficient involvement of lower-level employees in the process of changes. This in turn contributes to the lack of possibility of the full implementation of the process approach and of the accomplishment of effects that it could bring to the whole organization.

What could be another cause of low process maturity among Polish business entities are differences in the terminology concerning some phenomena or objects. It is the concepts used that were often the reason for low evaluation. It is possible that if the implementation of the process approach has been conducted with no support from specialists, the organization has not adopted a specific set of terms consistent with the theoretical description of the particular aspects of process orientation. If this was the case, the respondents could be unfamiliar with some of the concepts. However, had they become acquainted with their definitions, they could have realized that they were the concepts already used in their organization, but under a different name.

5. Conclusion

Both the questionnaire findings and the discussed factors affecting the evaluation of

process maturity led us to believe that the implementation of the process approach in the companies that were predominantly established as functional organizations is a highly difficult and complex issue. It turns out that it is a lot harder to meet the criteria for assigning an entity to higher levels of process maturity than it would appear from the theoretical assumptions because if at least one condition is not fulfilled, the overall evaluation of the organization is lower.

However, in order for the evaluation to be a reliable illustration of the condition of the examined enterprises, this rule cannot be waived. If the complete set of assumptions were not fulfilled, it would cause considerable discrepancies in the mode of operations of entities assigned to a given level. This would lead to the situation in which the organizations assessed to be on the same level of maturity do not actually meet the same criteria and, thus, the evaluation is inaccurate.

The obtained results allow us to draw the basic conclusion that today's Polish small and medium-sized companies from different industries tend to operate in accordance with the classical functional approach, which is the predominant design of a corporate organizational structure, which is discussed both in the literature and at university courses concerning management. However, taking into consideration the growing interest in the issues of the process approach, both among practitioners and theoreticians of management, we may expect the awareness of processes in Poland to develop in the years to come.

This growth of interest may largely contribute to the improvement in the efficiency of the functioning of business entities, but one cannot forget that the implementation of changes which to a significant degree interfere with the adopted rules of operation often meets with opposition from employees. This is connected with Chatelier's principle, according to which if a system experiences a disturbance, it will aim to restore a new equilibrium state. The phenomenon is especially applicable to human resource-based systems because any change in work routine at the initial stages causes difficulties for employees, who are forced to change the way of performing certain tasks partially or wholly. It is quite possible, however, that managers who will become convinced to the process approach and will consistently monitor the accuracy of the implemented changes, will be able to transform their organizations into process-based entities.

Unfortunately, the introduction of these changes takes time, so companies which are now classified on level 0, will need at least a few years to move to the higher levels of process maturity. Because of the dynamic character of changes in the Polish market, enterprises compete with each other on a number of fields. That is why it is safe to say that quite a lot of them will begin to apply the process approach, which makes it easier to achieve strategic goals as compared to operating in the form of a functional organization. The companies which will identify and describe all implemented processes and then subject them to appraisal and optimization will far more efficiently cope with the dynamically changing realia, connected both with the market and with the influence of other entities and law regulations. This assumption is also a starting point for further studies of the process maturity of Polish small and medium-sized enterprises.

References:

- Albliwi, S., Antony, J., Arshed, N. 2014. Critical Literature Review on Maturity Models for Business Process Excellence. IEEE International Conference on Industrial Engineering and Engineering Management. 10.1109/IEEM.2014.7058604.
- Andriani, M., Samadhi, T.A., Siswanto, J., Suryadi, K. 2018. Aligning business process maturity level with SMEs growth in Indonesian fashion industry. *International Journal of Organizational Analysis*.
- Becker, J., Knackstedt, R., Pöppelbuß, J. 2009. Developing maturity models for IT management – a procedure model and its application. *Business and Information Systems Engineering*, Vol. 1, Issue 3, 213-222.
- Davenport, T.H. 1993. *Process Innovation. Reengineering Work through Information Technology*. Harvard Business School Press, Brighton.
- Feyen, R., Liu, Y., Chaffin, D., Jimmerson, G., Joseph, B. 2000. Computer-aided ergonomics: A case study of in corporating ergonomics analyses into workplace design. *Applied Ergonomics*, Vol. 31, No. 3, 291-300. doi: 10.1016/S0003-6870(99)00053-8.
- Froger, M., Bénaben, F., Truptil, S., Boissel-Dallier, N. 2019. A non-linear business process management maturity framework to apprehend future challenges. *International Journal of Information Management*, 49, 290-300. ISSN 0268-4012, <https://doi.org/10.1016/j.ijinfomgt.2019.05.013>.
- Gottschalk, P. 2009. Maturity levels for interoperability in digital government. *Government Information Quarterly*, Vol. 26, No. 1, 75-81.
- Guha, S., Kettinger, W.J. 1993. Business process reengineering. *Information Systems Management*, 10(3), 13-22.
- Hammer, M. 2007. The Process Audit. *Harvard Business Review*, Vol. 85, Issue 4, 111-123.
- Harmon, P. 2007. *Business process change: A guide for business managers and BPM and Six Sigma professionals*. Burlington: Morgan Kaufmann. <http://dx.doi.org/10.1016/b978-0-12-374152-3.50072-0>.
- Harmon, P., Wolf, C. 2014. *The State of Business Process Management*. BPTrends. <http://www.bptrends.com/bpt/wp-content/uploads/BPTrends-State-of-BPM-Survey-Report.pdf>.
- Herbsleb, J., Zubrow, D., Goldenson, D., Hayes, W., Paulk, M. 1997. Software quality and the capability maturity model. *ACM*, Vol. 40, Issue 6, 30-40. <https://www.iso.org/obp/ui/#iso:std:iso:9000:ed-4:v1:en>
- Humphrey, W.S. 1987. *Characterizing the software process: A maturity framework*. Carnegie Mellon University/Software Engineering Institute. Pittsburgh.
- Jiang, J.J., Klein, G., Hwang, H.G., Huang, J., Hung, S.Y. 2003. An exploration of the relation between software development process maturity and project performance. *Information and Management*, Vol. 41, Issue 3, 279-288.
- Kalinowski, T.B. 2016. Analysis of business process maturity and organisational performance relations, *Management*, 20(2), 87-101. doi: <https://doi.org/10.1515/manment-2015-0052>.
- Kazanjian, R.K., Drazin, R. 1989. An empirical test of a stage of growth progression model. *Management Science*, Vol. 35, Issue 12, 1489-1503.
- Leber, M., Bastič, M., Moody, L., Schmidt Krajnc, M. 2018. A study of the impact of ergonomically designed workplaces on employee productivity. *Advances in Production Engineering and Management*, Vol. 13, No. 1, 107-117. <https://doi.org/10.14743/apem.2018.1.277>.
- McCormack, K.P., Johnson, W.C. 2001. *Business process orientation. Gaining the e-business competitive advantage*. New York: St. Lucie Press. <http://dx.doi.org/10.1201/9781420025569>.
- McCormack, K., Willems, J., van den Bergh, J., Deschoolmeester, D., Willaert, P., Stemberger, M.I., Skrinjar, R., Trkman, P., Ladeira, M.B., Valadares de Oliveira, M.P., Vuksic, V.B.,

- Vlahovic, N. 2009. A global investigation of key turning points in business process maturity. *Business Process Management Journal*, Vol. 15, No. 5, 792-815.
- Nowosielski, S. 2012. Dojrzałość procesowa a wyniki ekonomiczne organizacji. *Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu*, No. 264, 354-369.
- OMG. 2008. Business process maturity model (BPMM), object management group (Document Number: formal/2008-06-01). <https://www.omg.org/spec/BPMM/>.
- Porter, M. 1985. *Competitive Advantage*. Free Press, New York.
- Röglinger, M., Poppelbuss, J., Becker, J. 2012. Maturity models in business process management. *Business Process Management Journal*, 18(2), 328-346. <http://dx.doi.org/10.1108/14637151211225225>.
- Rosemann, M., de Bruin, T. 2005. Towards a Business Process Management Maturity Model. *Proceedings of the thirteenth European Conference on Information Systems (ECIS)*, Regensburg, Paper 37.
- Rosemann, M., de Bruin, T., Power, B. 2006. BPM maturity. In J. Jeston & J. Nelis (Eds.), *Business process management: Practical guidelines to successful implementations*, 313-329. Burlington: Elsevier.
- Škrinjar, R., Bosilj-Vukšić, V., Indihar-Štemberger, M. 2008. The impact of business process orientation on financial and non-financial performance. *Business Process Management Journal*, Vol. 14, Issue 5, 738-754.
- Spanyi, A. 2004. Beyond process maturity to process competence. *BPTrends*.
- Strnadl, C.F. 2006. Aligning business and it: The process-driven architecture model. *Information Systems Management*, 23(4), 67-77.