

Article

# Innovations and Other Processes as Identifies of Contemporary Trends in the Sustainable Development of SMEs: The Case of Emerging Regional Economies

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**Abstract:** Small and medium enterprises (SMEs) are the biggest group of enterprises in the European Union (EU); they are also characteristic for emerging economies. Given this situation, there is a need to provide instruments such as processes, which allows them to realize a model of sustainable development. The ability to classify processes and occurrences happening inside these processes often affects the condition of the enterprises. The implementation of innovations, as identified process, enables the directions of SME development towards sustainable development. The purpose of this article is to find out if the identification of processes such as innovations, have any influence on the competitiveness and sustainable development of SMEs. This study was based on pilot research, which examined small and medium enterprises at the regional level, at the example of Polish emerging economy region. It was researched under the angle of the identification of processes and changes happening inside enterprises in terms of understanding the sustainable development concept. Research composition allows to present an understanding by the SMEs of the problems analyzed. The novelty was in the new questionnaire, the definition of sustainable development, and matching those processes identified by the enterprises analyzed with the particular sustainable development dimensions suggested by the authors. In light of the analysis of the literature and the results of this research the important contributions of this study are as follows. This approach pointed the understanding and practical meaning of the identification of processes to be understood. The most important finding was that there is a need to make entrepreneurs aware of the fact that innovations are also processes in themselves, which often constitutes the sum of other supporting processes occurring in the enterprise. Support in the form of knowledge transfer from experts to SMEs would also be recommended.

**Keywords:** sustainable development; SMEs; competitiveness, enterprises development; innovation; emerging economy

## 1. Introduction

Nowadays, enterprises act in a manner that is difficult to identify with regard to not only the competitive economy, but also the social and natural environment.

It is possible to consider every action or set of actions as being mutually tied together or interrelated, where input devices convert into exits i.e., the process. On the other hand, a process-based approach applies the system of processes in the organization along with their systematic identification and interrelations, as well as proper process management [1], is focused on with regard to the sustainable development [2] of the enterprise. Furthermore, a system is defined as every connection of various components into one structure; it considers what a system approach

means for perceiving the results of the functioning of the organization [3,4] as the sum of effects of fragmentary processes occurring in the organization in time and in space. However, it is not a simple sum. The system approach means using the synergy effect based on the cooperation of various factors. It is not necessarily optimal locally, which may possibly strengthen the final (global) effect [5].

When considering so defined approach to changes taking place in the enterprise, there is no possibility of not mentioning the eight fundamental rules of the quality management system from which these notions result. The following rules involve an orientation towards customers, leadership, their employees' commitment, and a process-based approach to management [6]. Furthermore, in terms of the rules mentioned, a system approach to management should also be stressed, as well as constant improvement, posteriori decision making, and mutually beneficial connections with suppliers [7,8].

The identification of individual processes as the idea [9], and the system approach is understood as the measurement of achievement results in noticing and solving problems by means of improvements. Strengthening the linkage and entrepreneurship in innovation with the intellectual assets dimension, which depends more on qualified human resources [10,11], can increase the innovation effects at the level of the firm [12]. A transparent scope of responsibilities and liabilities may be established through the concentration of attention on such factors as resources, methods, and materials, which improve key activities of the organization [13]. It should be noticed that for the effective development of the enterprise such processes, whose effects may be objectively verified, are significant. Especially in contemporary current enterprises. There are processes that cause innovative changes [14], as they determine their success. According to McGowan [15], creative activity, understood also by its competitiveness, where strong emphasis is placed on implementing the idea of the innovative process, as well as defining it as a constant process, begins with noticing the opportunity, yet ends up in making a decision about implementing this idea and accessing it [16]. The innovative process concept, from the point of view of effects for the enterprise, is divided into four stages according to Griffin: development, applying the developed idea in the production, starting, height, maturity, and close [17,18].

Finally, it is possible to state that the scientific, technological, organizational, financial, and commercial steps that are connected together as the process or processes in the enterprise, which actually take place or are planned, lead to the implementation of innovations [19, 20].

## 2. The Concept of Sustainable Development

The term "sustainable development" was introduced on a global scale prior to 1980 [21], but the most widely recognized definition of sustainable development is the following: "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of 'needs', in particular, the essential needs of the world's poor, to which overriding priority should be given and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs." [22]. It is also the consolidation of social, economic, and environmental targets in the long term [23]. Sustainable development is also based on a balanced strengthening of the three interdependent pillars of development: social and environmental development as well as the protection and management of the natural environment in local, regional, national, and global dimensions [24]. Sustainability should be reframed through the four interconnected domains of ecology, economics, politics, and culture [25].

The authors understand sustainable development as being effective for present and future resource management in its economic dimension; for equality and eliminating disproportions in the access to resources available in a given territory in its social dimension; for integrating the building and planning of functional environmental areas and reducing pressure on the environment in its environmental dimension; and for its effective, clear, and participational management in its institutional dimension.

### 3. Emerging Economies Versus Developed Economies

An emerging market economy (EME) is defined as an economy with low to middle per capita income [26]. EMEs are also considered to be fast-growing economies. Emerging economies promise huge potential for growth, but also pose significant political, monetary, and social risks. Economic growth enables emerging economies to gradually close the gap with more developed economies. Activities that develop an economy in transition may include: increasing standards of living, developing a competitive industrial and commercial base, and improving infrastructure.

High standards of living in many countries have been equated with education, computer usage, and the ability to innovate. The key factor for effective change from an emerging economy to a developed status economy is the country's strong and continuous economic growth [27]. As an emerging market, a country embarks on an economic reform program that will lead to stronger and more responsible economic performance levels, as well as transparency and efficiency in the capital market. One key characteristic of the EME is an increase in both local and foreign investment (portfolio and direct). Growth in investment in a country often indicates that the country has been able to build confidence in the local economy. Furthermore, an emerging market economy has to consider local political and social factors as it attempts to open up its economy to the world. The people of an emerging market, who are accustomed to being protected from the outside world, can often be distrustful of foreign investment [28]. In accordance with the MSCI 2017 Emerging Markets Index, emerging markets in the Americas are: Brazil, Chile, Colombia, Mexico, and Peru; in Asia: China, India, Indonesia, Korea, Malaysia, Pakistan, Philippines, Taiwan, and Thailand; in Europe, the Middle East and Africa: Czech Republic, Egypt, Greece, Hungary, Poland, Qatar, Russia, South Africa, Turkey, and the United Arab Emirates. Therefore, it is reasonable to analyze Poland as one of the emerging economies of Europe.

### 4. Materials, Methods, and Hypothesis

The purpose of this paper is the recommendation of the impact and essence of the process for the existence and development of the enterprise, as well as to present research concerning the process-based approach and the problem of process identification according to the small and medium-sized enterprises sector. To achieve our results, the method of analyzing the literature concerning processes and the process-based approach to enterprise development was used. Upon completion of this research method [29], having obtained primary data, the questionnaire survey was directed at enterprises of the Opole Region. This allowed for the establishment of the identity of processes within the enterprise itself, and analyses of their becoming accustomed, functioning, and in contact with management systems in the enterprises investigated. Then, as the triangulation method, understood as evaluation the same research by two methods or more, by the cross-check analysis, was done. It was an additional verification of the relationships and validity of the data within the aim of deepening the analysis. This was a pilot research that examined micro, small and medium-sized enterprises in its sector dimension. Research was taken at the regional level under the angle of the identification of processes and changes happening inside enterprises in terms of understanding the "process" concept, which can be the basis for further comparative, international research.

The authors decided to explore the sustainable development of SMEs in the context of regional emerging economies. Thus, this paper includes the following hypothesis:

Hypothesis 1 (H1). Emerging economies SMEs identify internal processes which allow to point realization of sustainable development concept by them.

To study the research hypothesis, a collection of separate data measures was selected. First, a qualitative survey was completed. Second, a focus group interview with a structured questionnaire was used. Finally, there was also an additional open question provided to analyze the enterprises after the analysis of the questionnaire: "how do they understand the definition of sustainable

development and how do they identify this in their enterprises?”. This provided a better understanding from a subjective point of view. In addition, the standard cross-check analysis was undertaken to verify the relationship and validity of the data. The research process is shown in Figure 1.

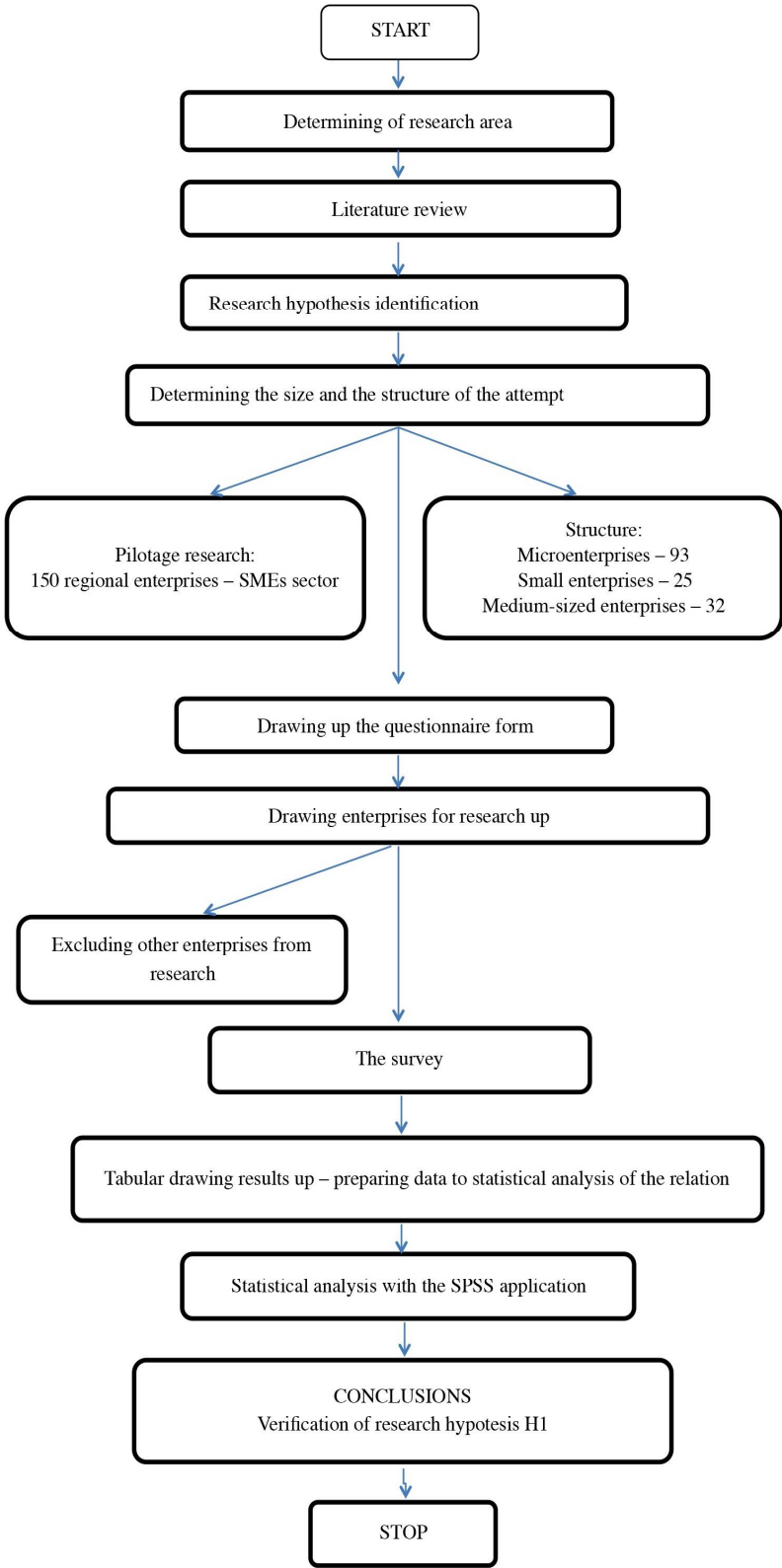


Figure 1. Research process

## 149 4.1. Characteristics of the Group Analyzed

150 In 2015 there were 4 184 469 enterprises in Poland where 99,98% was SME sector; at the same time  
 151 there were 40 097 SMEs enterprises in the Opolskie Province. Enterprises of the Opole Province took  
 152 part in the questionnaire survey conducted anonymously by using the questionnaire form. One  
 153 hundred and fifty enterprises were chosen (by draw) as the probe used for the pilot research. The  
 154 evaluated probe included 93 micro-enterprises, 25 small enterprises, 32 medium-sized enterprises,  
 155 which were all representative of SMEs in the region. The responses rate was one hundred and fifty  
 156 enterprises. Among the respondents, four enterprises (micro-enterprises) indicated that they had not  
 157 encountered the quality management system at all and were also not going to implement changes  
 158 concerning their existing manner of business administration. In spite of this, all of the enterprises  
 159 answered all the questions in the questionnaire, which related to the cause and analysis of the data  
 160 presented on the 150 enterprises of Opole Province. The questionnaire is shown in Figure 2.

<b>Questions: Innovations and Other Processes...</b>	Q7_ Outside organization auditing existing TQM
<b>1. The company is an enterprise:</b>	Q7_Tax Office
Q1_micro	Q7_National Labour Inspectorate
Q1_small	Q7_Social Insurance Institution
Q1_middle-sized	Q7_Fire Service
<b>2. Does the enterprise implemented any management system?</b>	Q7_Other - which? .....
Q2_Yes, implemented, non-certified quality management system	<b>8. Is it possible to identify any processes occurring in the enterprise? (Any number of responses)</b> If yes, please go to question no 9, if no or you do not know, please go to question no 10.
Q2_Yes, implemented, certified quality management system	Q8_Yes, it is
Q2_Yes, implemented, non-certified integrated (ISO 14001) management system	Q8_No, it is not
Q2_Yes, implemented, certified integrated (ISO 14001) management system	Q8_I do not know
Q2_No	<b>9. Which processes are possible to identify in the enterprise? (Any number of responses)</b>
Q2_I do not know	Q9_Cooperation
<b>3. Since when (time period) have the enterprises had the pointed system?</b>	Q9_Innovation Process
Q3_Yes, since last year	Q9_Providing goods
Q3_Yes, since 2-3 years	Q9_Accepting goods
Q3_Yes, since 4-5 years	Q9_Sell
Q3_Yes, since 6 years or longer	Q9_Contact with customers
Q3_I do not know	Q9_Sustainable development
<b>4. Has implemented management system existing in the enterprise got any requirements given to the cooperating enterprise(s)?</b> If yes, please go to question no 5, if no or you do not know, please go to question no 6.	Q9_Flow of information

<b>Questions: Innovations and Other Processes...</b>	Q7_ Outside organization auditing existing TQM
Q4_ Yes, it has	Q9_ Implemented CSR
Q4_ No, it has not	Q9_ Sending goods
Q4_ I do not know	Q9_ Flow of documentation
<b>5. Which requirements given to the cooperating enterprise(s)? (Any number of responses)</b>	Q9_ I do not know
Q5_ promptness of supplies	<b>10. Which levels of cooperation are possible to identify in the enterprise? (Any number of responses)</b>
Q5_ adapting a management system to enterprise's own standards	Q10_ International
Q5_ the service performance with the customer	Q10_ National
Q5_ the spare parts for delivered products	Q10_ Regional
Q5_ the guarantee longer than required under binding laws and regulations	Q10_ Local
Q5_ I do not know	Q10_ I do not know
<b>6. Does the enterprise have control at over the quality of goods given to the customer(s)? (Any number of responses)</b>	<b>11. Which kinds of innovations are possible to identify in the enterprise? (Any number of responses)</b>
Q6_ studying customer satisfaction on the phone	Q11_ Process
Q6_ monitoring the amount of customer complaints	Q11_ Product
Q6_ monitoring the reasons of customer complaints	Q11_ Marketing
Q6_ checking (randomly) the quality of goods prepared for sending to the customer	Q11_ Organizational
Q6_ I do not know	Q11_ I do not know
<b>7. Whether within three last years the enterprise was controlled (audited) by outside organizations? (Any number of responses)</b>	<b>Thank you for your attendance</b>

Figure 2. Survey

#### 4.2. Characteristics of the Region and Reason for Selection

The Opole Voivodeship was selected for an analysis of the innovative activities from the small and medium-sized enterprise sector. It is a region situated in South West Poland. Opole Voivodeship belongs to a group of small European regions with a population of about one million inhabitants. Amongst the characteristics of the analyzed region is a strong connection with the German economy and the biggest international migration of people. What is significant is the fact that the multiculturalism of such a small region resulting from historical changes, is displayed in its identity. It is also affected by a decreasing number of inhabitants, which contributes to the fact that by 2030, Opole Voivodeship will have one of the highest shares of post-working age populations in Poland. It can be stated that it is a region of good living conditions and a high standard of living. Industry is the dominant part of the region's economy, ranked third in the country. An asset of the region is the diversified industry structure, an industry of medium-level technology, and the tradition of industrial production. Additionally, the building industry influences the economic

growth of the region. Unfortunately, the service sector is still poorly developed. Moreover, the level of innovation in the economy, enterprise, and the R&D expenditures sphere is still relatively low. What is positive: the Opole region has also been identified as the region where European funds are best used in Poland [30].

Therefore, it is a reasonable undertaking to analyze this Polish region as an example of sustainable development in SMEs in European emerging economies.

5. Results

The research conducted concerned the identification of processes occurring in enterprises based on the example of enterprises from the Opole province. At its base, it was possible to formulate conclusions regarding the awareness of entrepreneurs regarding processes occurring in enterprises owned by themselves and the direction of their future development. It was also possible to show processes which entrepreneurs met, as well as those they were conscious of (or were not), with reference to selecting and controlling the development of enterprises.

One of the first questions following the question about the size of the enterprise concerned implementing the management system, where the given answers provided are presented in the Tables 1 and 2.

**Table 1.** Number of enterprises taking part in research declaring the implementation of management system based on ISO 14001 norm as the standard.

Size and number of Enterprises taking part in research	Number of enterprises having implemented and certified quality management system	Number of enterprises having implemented but non-certified quality management system
Medium 32	17	14
Small 25	11	12
Micro 92	4	22

Source: Results of our own research.

**Table 2.** Since when (time period) have the enterprises had the pointed system: number of years/number of enterprises.

Medium	Small	Micro
6 and more/7	6 and more/1	6 and more/0
4–5/4	4–5/5	4–5/0
3–2/9	3–2/8	3–2/16
1 and less/11	1 and less/9	1 and less/8

Source: Results of our own research.

Enterprises indicated that they had both implemented and certified systems and non-certified quality management systems. This means that among those entrepreneurs analyzed, there was an awareness of the necessity of implementing systems, identifying processes occurring in enterprises, as well as the benefits resulting from them for the functioning of the enterprise. Among the answers given by the respondents, it was possible to notice a certain pattern: big and medium-sized enterprises had systems certified for a longer period of time. However, small and microenterprises had, to a substantial extent, systems lacking certificates, whilst functioning for a shorter period of time. Collected data were proof of the greater awareness among bigger enterprises, as well as of the fact that smaller enterprises could only identify processes occurring inside them in a less professional manner. It was also concluded that a large structure of bigger enterprises could impose the need to gain and implement management systems (including quality).

Further questions have allowed data concerning requirements to be obtained by adapting these from the standards of the enterprise of the cooperating entrepreneurs such as suppliers, sub-suppliers, and subcontractors. One hundred percent of respondents indicated that the promptness of supplies and the compliance of the order or service completion with its specification, by means of the requirements towards cooperating enterprises, was of importance. Furthermore, 100% of the enterprises researched indicated that adapting a guarantee to its own standards was one of the requirements given to cooperating enterprises; in addition, 87% stated that the guarantee should be longer than required under binding laws and regulations; 17% of respondents required the service performance with the customer from cooperating enterprises; only 2% required the spare parts for delivered products. The respondents were unanimous as to the three most important requirements given to cooperating enterprises. Thus, it is possible to state, in the context of the processes and identification of the processes, especially in terms of crucial processes occurring in the enterprise, that the identification of such processes was conducted by the enterprises themselves.

Respondents were also asked about the control over the quality of services and/or products delivered to customers. Results from the answers given indicated that 86% of those researched monitored the amount and reasons for customer complaints; 47% randomly checked (by the quality control department) the quality of goods prepared for sending to the customer; and 12% studied customer satisfaction on the phone. This data proved the awareness of the importance of reflexive data, along with putting the customer first.

Further questions were connected with conducting the external audit by external organizations as well as indicating the nature of such organizations. Table 3 shows the answers to these questions.

**Table 3.** Number of enterprises inspected by outside organizations (audit by third parties) along with the type of such organizations.

Auditing organization	Whether within three last years the enterprise was controlled (audited) by outside organizations? % of answers Yes/No	% of enterprises having external audits within the last three years Yes/No	Comparison: Overage in Poland (% of enterprises) Yes/No
Sum	98%/2%	100%	100%
Outside organization auditing existing	5%/95%	5%/95%	7%/93%
TQM	-	67%/33%	72%/28%
Tax Office	-	14%/86%	18%/82%
Social Insurance Institution	-	2%/98%	7%/93%
National Labour Inspectorate	-	3%/97%	4%/96%
Fire Service/Other (which?)	-	4% <sup>1</sup> /96%	7% <sup>2</sup> /93%

<sup>1</sup> Road Transport Inspection.

<sup>2</sup> 1. Road Transport Inspection, 2. National Health Inspection, 3. Chimney Sweep.

Source: Results of our own research.

It should be noted that 98% of the enterprises analyzed declared that they had been controlled (audited) by outside organizations within the three last years; only 5% pointed out that the external organization had audited the existing quality management system. Other inspections were made by state agencies entitled to conducting control actions as part of the business activity of enterprises.

The final questionnaire dealt with the processes occurring in the enterprise; the processes identified by respondents are presented below in Table 4.

241 **Table 4.** Processes identified by researched enterprises.

Process	% of answers <sup>1</sup> in all enterprises	% of answers in microenterprises	% of answers in small enterprises	% of answers in medium-sized enterprises
Sales	64%	73%	63%	28%
Contact with customer	23%	42%	62%	59%
Providing goods	12%	2%	11%	38%
Accepting goods	6%	3%	37%	42%
Sending goods	6%	56%	43%	49%
Flow of information	74%	14%	32%	67%
Flow of documentation	51%	8%	48%	97%
Cooperation	26%	9%	64%	72%
Implemented CSR	12%	3%	9%	17%
Sustainable development	79%	29%	63%	85%
Innovation Process	8%	4%	12%	27%

242 <sup>1</sup> Respondents had multiple-choice answers, for this reason the total number of replies exceeded 100%.  
243 Source: Results of our own research.

244 The processes identified by enterprises constitute specific markers of perceiving the processed  
245 attempts at enterprise development. It is not without significance that enterprises are able to  
246 accurately identify processes occurring within them.

247 What is interesting is the subjective identification of the processes taking place within  
248 companies. It should be pointed out that it was not difficult to specify the existing management  
249 system (certified or non-certified) of the companies. However, some of them identified this with  
250 sustainable development. That indicates a misunderstanding of the concept of sustainable  
251 development by the SME sector. Enterprises indicated the existence of many processes related to  
252 their current activities such as sales, contact with customers, providing, accepting, and sending  
253 goods as well as the flow of information and documentation. They also showed the process of  
254 cooperation through which they themselves identified international, national, regional, and local  
255 cooperation. Testing the number of enterprises indicated the process of cooperation was 100%; and it  
256 was possible, on the basis of the subjective answers of enterprises, to select the kinds of cooperation  
257 occurring in the companies analyzed. These answers are illustrated in Table 5.

258 **Table 5.** Kinds of cooperation process identified by the enterprises researched.

Kind of Cooperation Process	% of answers <sup>1</sup> in all enterprises	% of answers in microenterprises	% of answers in small enterprises	% of answers in medium-sized enterprises
International	53%	15%	25%	38%
National	17%	31%	37%	27%
Regional	16%	43%	24%	21%
Local	14%	11%	14%	14%

259 <sup>1</sup> Respondents had multiple-choice answers. For this reason, the sum of the replies exceeded 100%. The  
260 data from Table 4 considered Cooperation as a 100% value.  
261 Source: Results of our own research.

262 Respondents also regarded implemented Corporate Social Responsibility, sustainable  
263 development and innovation as separate processes. In the case of innovation, they divided them into  
264 four basic groups (which are presented in Table 6), which may be worth considering as indicators for  
265 understanding sustainable development in its economic dimension.

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**Table 6.** Kinds of innovations identified by the investigated enterprises.

Kind of Innovation occurred in SMEs	% of answers <sup>1</sup> in all enterprises	% of answers in microenterprises	% of answers in small enterprises	% of answers in medium-sized enterprises
Processes	24%	12%	18%	24%
Product	19%	19%	27%	37%
Marketing	21%	21%	42%	17%
Organizational	36%	48%	33%	22%

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<sup>1</sup> Respondents had multiple-choice answers. For this reason, the sum of the replies exceeded 100%. The data from Table 4 were considered as an Innovation Process and treated as a 100% value.  
Source: Results of our own research.

The compilation of those answers was the reason for an additional open question given to the enterprises analyzed: how do they understand the definition of sustainable development and how do they identify it in their enterprises? The definitions proposed were quite similar, and it is probable that the enterprises found this information in available publications (but they were not asked about this) or the Internet, as repeated answers appeared such as:

“Sustainable development is the organizing principle for meeting human development goals while at the same time sustaining the ability of natural systems to provide the natural resources and ecosystem services upon which the economy and society depend” [21],

“Sustainability can be defined as the practice of maintaining processes of productivity indefinitely—natural or human made—by replacing resources used with resources of equal or greater value without degrading or endangering natural biotic systems” which is similar as Lynn et al. [31],

“The desired result is a state of society where living and conditions and resource use continue to meet human needs without undermining the integrity and stability of the natural systems.” [32],

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of 'needs', in particular, the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.” [33],

“Sustainability reporting should be reframed through the lens of four interconnected domains: ecology, economics, politics and culture” [25].

In the answers given in the second part of the additional question, enterprises claimed that they understood internal sustainable development as

“development in all directions” and

“development in all process appearing in the questionnaire”, which suggests that they are understood as the processes shown in Table 4,

“we have certified ISO 1400 system in our enterprise” this seems that enterprises are equal to the environmental management system and the sustainable development, or

“there is integrated ISO system in our enterprise”, which allows for the statement that enterprises equal the integrated quality and environmental management systems with sustainable development.

This confirmed the data within the questionnaire. In other answers, it was possible to use the generalization that sustainable development meant the development of the enterprise. However, treating them as accidental actions, not connected together and not causing global effects allows it to be stated that, in the sector of small and medium-sized enterprises analyzed that there was no place for a mature, comprehensive perception of the issue.

In accordance with the concept of sustainable development, it is possible to match processes signified by the enterprises analyzed with their particular dimensions: selling, providing, accepting and sending goods with an economic dimension; contacting customers and implementing CSR within social dimension. The implemented CSR also fulfills its environmental dimension as well as the flow of information and documentation with an institutional dimension. Processes regarded by enterprises as sustainable development were excluded from this part of the analysis as its understanding by the analyzed enterprises was not really connected with its scientific meaning. Processes such as cooperation and innovation seem to fulfill all the dimensions of sustainable development. Therefore, this should be under special consideration and developed as processes realized by the sustainable development of enterprises.

The cross-check analysis was done as an additional verification of the relationships and validity of the data within the aim of deepening the analysis of findings using statistical methods. The examination of the structure of answers was conducted with the use of the chi-square test of independence, and a p-value calculated by Monte Carlo simulations [34,35]. Monte Carlo simulations were implemented as there was a small sample size (pilot research). According to the established hypothesis, there is a relationship between the management system functioning in the enterprise (certified or non-certified), and with the identification of inspections led by outside individuals as the audits of the third parties. There is also a relationship between the management system functioning in the enterprise (with or without a certificate) and with the identification of processes made by the enterprise itself (including innovations) as one of the occurring processes. This may be worth studying to gain an understanding of sustainable development in its institutional dimension. If the significance level  $\alpha$  was established as lower than 0.05, then a p-value of less than 0.05 would definitely lead to the confirmation of the given hypothesis.

The following tables (Tables 7 and 8) are graphic illustrations of the results of the methods applied.

**Table 7.** Cross-table including the relationship between a certified, implemented management system and its external audit.

Value	Audit 0.00/1.00	Total
ISO 14001 certified,	116/0	116
implemented	26/6	32
Total	142/6	148 <sup>1</sup>

<sup>1</sup> Respondents used multiple-choice answers;  $\chi^2 = 22.669$ ,  $p = 0.00$ .  
Source: Results of our own calculations (SPSS).

**Table 8.** Cross-table including the relationship between a not certified, implemented management system and its external audit.

Value	Audit 0.00/1.00	Total
ISO 14001 not certified, implemented	94/6 48/0	100 48
Total	142/6	148 <sup>1</sup>

<sup>1</sup> Respondents used multiple-choice answers;  $\chi^2 = 3,002$ ,  $p = 0.083$ .

Source: Results of our own calculations (SPSS).

As the p-value was higher than 0.05, it is possible to state that the given hypothesis on the appearance of the relationship was not confirmed by the research. In these conditions, it is possible to state that the functioning of non-certified quality management systems had a smaller effect on the self-awareness of the enterprise than certified systems. The cause of such a state could be the lack of external independent control over processes occurring in such enterprises; Tables 9 and 10 include the graphic presentation of further research.

**Table 9.** Cross-table including the relationship between the certified, implemented management system and all external audits.

Value	Audit, Tax Office, Social Insurance Institution, National Labor Inspectorate, Fire Office, Other 0.00/1.00/2.00/3.00/4.00/5.00	Total
ISO 14001 certified, implemented	46/21/1/0/0/0 0/54/19/4/2/1	100 48
Total	46/75/20/4/2/1	148 <sup>1</sup>

<sup>1</sup> Respondents used multiple-choice answers;  $\chi^2 = 61.670$ ,  $p = 0.000$ .

Source: Results of our own calculations (SPSS).

**Table 10.** Cross-table including the relationship between the not certified, implemented management system, and all external audits.

Value	Audit, Tax Office, Social Insurance Institution, National Labor Inspectorate, Fire Office, Other 0.00/1.00/2.00/3.00/4.00/5.00	Total
ISO 14001 certified, implemented	46/33/14/4/2/1 0/42/6/0/0/0	100 48
Total	46/75/20/4/2/1	148 <sup>1</sup>

<sup>1</sup> Respondents used multiple-choice answers;  $\chi^2 = 5.315$ ,  $p = 0.021$ .

Source: Results of our own calculations (SPSS).

Research was also directed at processes highlighted by enterprises as processes occurring inside those enterprises. Tables 11 and 12 are graphic illustrations of that part of the research results.

**Table 11.** The relationship between the not certified, implemented management system and all other internal processes identified by enterprises.

Process <sup>1</sup>	X <sup>2</sup>	p-value
Sales	0.823	0.364
Contacts with customers	3.497	0.061
Providing goods	9.219	0.002
Flow of information	4.794	0.029
Cooperation	0.516	0.473
Sustainable development	26.489	0.000
Innovation Process	8.012	0.005

<sup>1</sup> Respondents used multiple-choice answers.  
Source: Results of our own calculations (SPSS).

**Table 12.** The relationship between the certified, implemented management system and all other internal processes identified by enterprises.

Process <sup>1</sup>	X <sup>2</sup>	p-value
Sales	3.148	0.076
Contacts with customers	41.946	0.000
Providing goods	69.622	0.000
Flow of information	77.831	0.000
Cooperation	65.453	0.000
Sustainable development	46.745	0.000
Innovation Process	60.508	0.000

<sup>1</sup> Respondents used multiple-choice answers.  
Source: Results of our own calculation (SPSS).

The values shown demonstrate that the hypothesis were confirmed.

The regional data obtained also corresponded to research on a domestic scale [36] as well as to international research focused on innovations in many forms: not only with regard to the behavior of firms, but also whole societies [37], regional disparities [38–42], a degree of entrepreneurial SME orientation, and sensitivity to changes in the business context [43].

**4. Discussion**

Small and medium-sized enterprises are “a major engine” of economic growth and socioeconomic development [44]. The process approach is often referred to in the literature as a philosophy that is a cornerstone of the work organization in the company and the foundation of all business operations and activities [45,46]. The process approach allows organizations to eliminate the biggest disadvantages of a traditional functional approach that cannot be considered as an approach appropriately flexible for changes in the corporate environment, variety of procedures, or excessive substitution of workers [47,48]. The objective of the business process can be defined as the development and optimization of running the organization to ensure effective, efficient, and economical reactions to customer requirements [49].

Apart from the identification of processes occurring in the enterprise, it is important to separate the most important ones: those which have implications for and an effect on the functioning and survival of the enterprise. Such an approach matches Pareto's rule<sup>1</sup> [50], which states that 80% of the

<sup>1</sup> Pareto's rule is a tool that is used to determine the significance of factors (causes) triggering a given problem. According to this principle, it is possible to observe the frequency of the majority of types of events in only small fragments of possible circumstances. The rule states that about 20% of causes trigger about 80% of types of events; hence there are also other expressions of this method such as "Method 80/20". This relation regards different phenomena, which occur in nature as well as

effects come from 20% of the causes; in the case of the process-based approach, costs are associated with a given mistake.

It should be noticed that, in every organization, it is possible to identify diverse processes at different levels of its activity. Taking that into account, it is possible to identify:

- (1) primary processes, which have a key importance for the organization and whose effects are transferred directly to the position of the organization,
- (2) support processes, which have the task of supporting primary processes even though they do not have any direct effects on their own<sup>2</sup>, and
- (3) management processes, also called general processes, whose task is to assist in the efficient functioning of the organization [51-53].

A process driven company is focused on the outcome of its activities, or the added value for the customer who paid for them; such a company is more flexible and able to respond more quickly to market changes and customer preferences [54]. The aim of process identification is the development and optimization of the daily running of the enterprise in a way which defines the work-related processes; there, each and every process with its inputs are clearly defined as are the outputs or results, and the associated responsibilities and personal responsibilities are assigned for each and every process or activity while establishing a system for the measurement of the performance of these processes and tracking and evaluating each and every process [55, 56].

What is possible to state after presented research, enterprises in emerging economies mostly point ISO-based managing systems when they are asked about any processes occurring inside them. This is characteristic for emerging economies enterprises and corresponds to EEs trends [57, 58]. When taking into consideration another criterion of identity which is the place where the process occurs, it is possible to classify processes as occurring in one or a few cells/departments of the organization. This fact should always be taken into account, that the end (exit) of one process often constitutes the beginning (entry) of another process or processes. Furthermore, within one process, greater processes, or perhaps a few other smaller processes, may occur.

Moreover, processes have been described in the literature in the deliberations and research in the fields of the (fiscal) harmonization of the European Union [59–63] as fields of forecasting trends and prospects of pricing as processes [64], or decision-making under risk and uncertainty [65].

Today, appropriate technology is often developed using open source principles, which have led to open-source appropriate technology, which has been proposed as a new model of enabling innovation for sustainable development [66, 67]. This is exemplified by research that ties sustainability to innovation and operational efficiency [68] or environmental impact assessment [69]. SMEs also emphasize care for future generations [70] and social capital [71]. Therefore, it seems possible to raise their innovation level as a process through the realization of the sustainable development concept. Innovative processes that occur within enterprises are also known as successful innovation management models [72]. Research allows to state that innovation process is still not enough developed in EEs small and medium-sized enterprises sector. Analysed sector should be supported towards innovation development. By having sustainable development concepts as the realization of a process-based approach, it is worth pointing out that the social capital of enterprises is the missing ingredient in successful practice that economics cannot explain [73]. SMEs identify sustainable development as one of the processes which appear inside them. Sustainable development should be treated as the aim of enterprises development, not only as the process. Small and medium-sized enterprises require educational, supporting and coaching actions towards proper understanding of sustainable development concept and benefits from its implementation.

Emerging economy enterprises are embracing the sustainability challenge, in their products and processes, through their measurement and reporting, and in how they see themselves and their

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technical and economic systems. The name "Pareto's principle" was first used by Joseph Juran in 1941 for the description of many phenomena quality research.

<sup>2</sup> On the contrary, supporting processes generate costs many times.

future. Emerging economies will also be central players in shaping tomorrow's enterprises development standards. They are also challenging many of the sustainability standards established in economical practice.

## 5. Conclusions

The identification of processes is of key importance for the efficiency and direction of the development of effective enterprises. The process-based approach in business administration undoubtedly requires the workload from the enterprise; however, it is transferred into measurable end results connected with customer satisfaction as well as with the reduction of costs related to the malfunctions taking place in the enterprise.

Regarding small and medium-sized enterprises, the research arrived at the following conclusions, making it possible to state that the enterprises analyzed had relatively small numbers of implemented and certified quality management systems, and medium-sized enterprises often kept their own standards regarding the quality of management systems. Therefore, they regarded this system as an instrument of correct functioning.

On the other hand, small enterprises mostly identified internal processes and had effective quality management systems according to their own standards; however, they did not verify the correctness of either the data obtained in this way or indicators. The research allowed us to point out that enterprises, which did not have certified quality management systems, did not connect controls conducted by outside organizations such as the Revenue Office or the National Labor Inspectorate, with the system audit of the third part; furthermore, in terms of the smaller enterprises, the identification of processes made independently was less correct than those conducted by the enterprises themselves. In addition, smaller enterprises believed that international cooperation was an essential process; this is the indispensable latest trend in the search for sales markets and opening the SME sector to change. Nowadays, what is important for economic theory, especially for the sustainable development concept used in practice, is the system of social responsibility of the enterprise, which is more often perceived as a separate process, and the identification of social responsibility in enterprises as the process inside these enterprises proves the significance of their social and environmental awareness, and, at the same time, their effective realization of the sustainable development concept. As the research demonstrated, it is possible to conclude that enterprises identify their own development as a process, rather than as a marker of the effectiveness of processes occurring inside the enterprise, and, in spite of this fact, 79% of respondents regarded changes occurring in the enterprise as the process, although only 8% identified the change that applies to innovative solutions. The data provided the need to make entrepreneurs aware of innovations to also be the process, and often constitute the sum of other supporting processes occurring in the enterprise.

The authors see misunderstandings in using and understanding SMEs in emerging economies as the problem, on the basis of the case study analyzed, with the concept of sustainable development as the enterprises of the sector analyzed may use a scientific source to provide a sustainable definition. However, in further analysis, we asked for their own, subjective understanding of that concept, where they demonstrated a basic misunderstanding. The SMEs of emerging economies equated sustainable development with quality management systems, integrated quality and environmental management systems, or simply regarded any development as sustainable development.

The final conclusion regards the recommendations on supporting micro and small-sized enterprises in the form of knowledge transfer from experts. It would be worthwhile for them to establish and organize their own sustainable development strategies, based on expert experience and knowledge. Certainly, such solutions would contribute to the regularity of the actions of enterprises, which are typical for the identification of processes occurring in the enterprise; these involve processes that directly contribute to its development (such as innovative processes) and apply enterprise resources more effectively. Furthermore, after the identification of both processes—cooperation and innovation—as fulfilling all dimensions of sustainable development,

they should be under special consideration of the enterprises. Regional authorities, having that knowledge, should add the development of actions supporting the creation of such processes in enterprises into regional strategies.

Moreover, the identification of processes as well as establishing sustainable development strategies for professional enterprises may bring benefits connected with early detection, at the same time providing the possibility of preventing potential shortcomings and mistakes. Sustainable projects and technologies should be a motor of regional challenges and drive regional markets.

Using the sustainable development approach for the development of enterprises would undoubtedly result in benefits contributing to the competitive success of the enterprise. Because presented research was conducted as a pilot research, at the example of emergency economy region, this problem will be an issue for further studies. Thus we are planning to conduct a comparative study and to include other European countries, which are emerging economies.

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