

1 Article

2 Innovations and Other Processes as Identifiers of 3 Contemporary Trends in the Sustainable 4 Development of SMEs: The Case of Emerging 5 Regional Economies

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11

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

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

35

36 1. Introduction

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

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

45 means for perceiving the results of the functioning of the organization [3,4] as the sum of effects of
46 fragmentary processes occurring in the organization in time and in space. However, it is not a simple
47 sum. The system approach means using the synergy effect based on the cooperation of various
48 factors. It is not necessarily optimal locally, which may possibly strengthen the final (global) effect
49 [5].

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

57 The identification of individual processes as the idea [9], and the system approach is
58 understood as the measurement of achievement results in noticing and solving problems by means
59 of improvements. Strengthening the linkage and entrepreneurship in innovation with the
60 intellectual assets dimension, which depends more on qualified human resources [10,11], can
61 increase the innovation effects at the level of the firm [12]. A transparent scope of responsibilities and
62 liabilities may be established through the concentration of attention on such factors as resources,
63 methods, and materials, which improve key activities of the organization [13]. It should be noticed
64 that for the effective development of the enterprise such processes, whose effects may be objectively
65 verified, are significant. Especially in contemporary current enterprises. There are processes that
66 cause innovative changes [14], as they determine their success. According to McGowan [15], creative
67 activity, understood also by its competitiveness, where strong emphasis is placed on implementing
68 the idea of the innovative process, as well as defining it as a constant process, begins with noticing
69 the opportunity, yet ends up in making a decision about implementing this idea and accessing it
70 [16]. The innovative process concept, from the point of view of effects for the enterprise, is divided
71 into four stages according to Griffin: development, applying the developed idea in the production,
72 starting, height, maturity, and close [17,18].

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

76 **2. The Concept of Sustainable Development**

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

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

95 3. Emerging Economies Versus Developed Economies

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

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

118 4. Materials, Methods, and Hypothesis

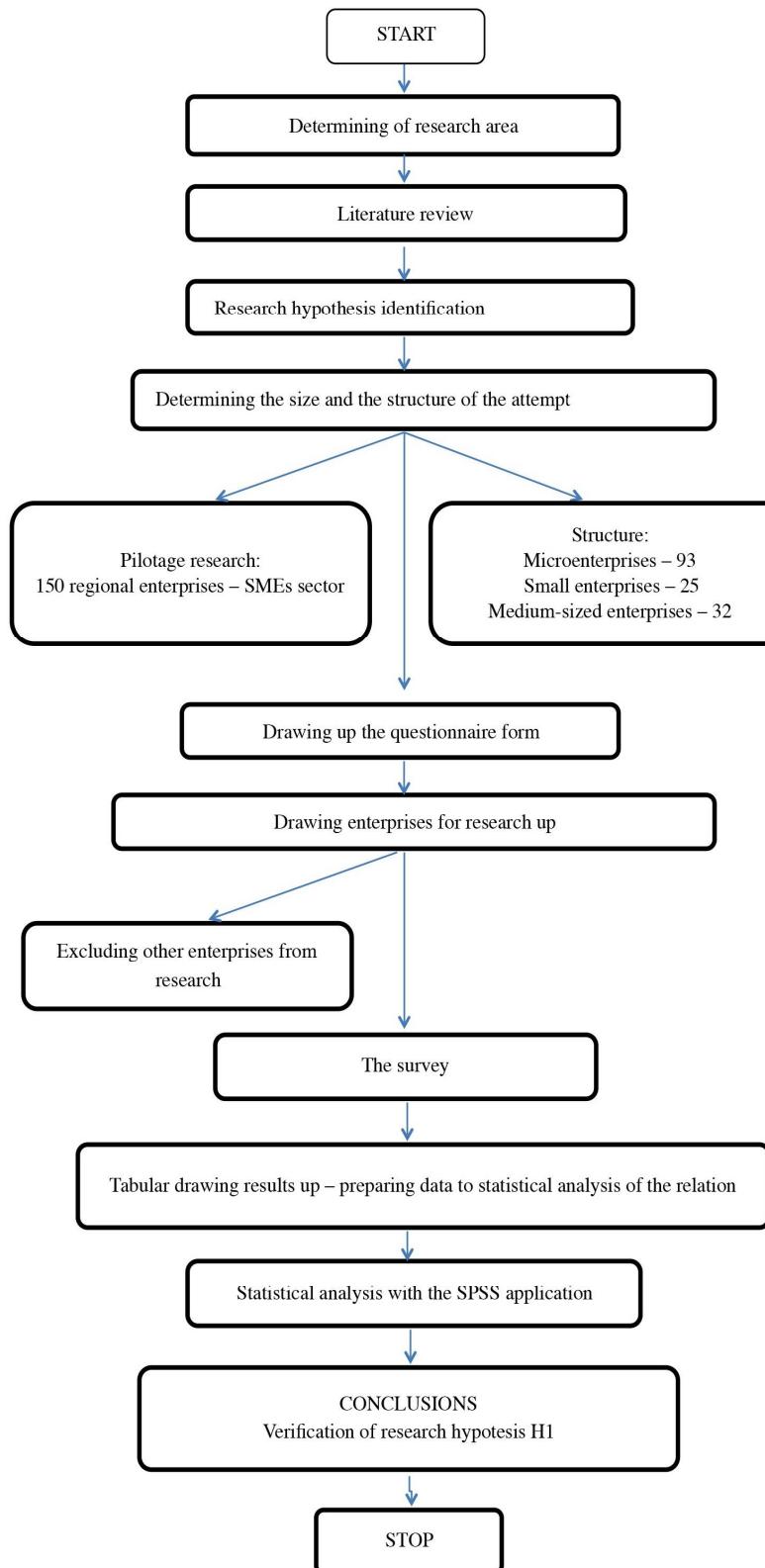
119 The purpose of this paper is the recommendation of the impact and essence of the process for
120 the existence and development of the enterprise, as well as to present research concerning the
121 process-based approach and the problem of process identification according to the small and
122 medium-sized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

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

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

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

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



147

148 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.

Questions: Innovations and Other Processes...	Q7_Outside organization auditing existing TQM
1. The company is an enterprise:	Q7_Tax Office
Q1_micro	Q7_National Labour Inspectorate
Q1_small	Q7_Social Insurance Institution
Q1_middle-sized	Q7_Fire Service
2. Does the enterprise implemented any management system?	Q7_Other - which?
Q2_Yes, implemented, non-certified quality management system	8. Is it possible to identify any processes occurring in the enterprise? (Any number of responses) 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	9. Which processes are possible to identify in the enterprise? (Any number of responses)
Q2_I do not know	Q9_Cooperation
3. Since when (time period) have the enterprises had the pointed system?	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
4. Has implemented management system existing in the enterprise got any requirements given to the cooperating enterprise(s)? 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

Questions: Innovations and Other Processes...	
Q4_Yes, it has	Q7_Outside organization auditing existing TQM
Q4_No, it has not	Q9_Implemented CSR
Q4_I do not know	Q9_Sending goods
Q9_Flow of documentation	
5. Which requirements given to the cooperating enterprise(s)? (Any number of responses)	Q9_I do not know
Q5_promptness of supplies	10. Which levels of cooperation are possible to identify in the enterprise? (Any number of responses)
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
6. Does the enterprise have control at over the quality of goods given to the customer(s)? (Any number of responses)	11. Which kinds of innovations are possible to identify in the enterprise? (Any number of responses)
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
7. Whether within three last years the enterprise was controlled (audited) by outside organizations? (Any number of responses)	Thank you for your attendance

161 Figure 2. Survey

162 *4.2. Characteristics of the Region and Reason for Selection*

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

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

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

181 **5. Results**

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

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

191 **Table 1.** Number of enterprises taking part in research declaring the implementation of management
 192 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

193 Source: Results of our own research.

194

195 **Table 2.** Since when (time period) have the enterprises had the pointed system: number of
 196 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

197 Source: Results of our own research.

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

209 Further questions have allowed data concerning requirements to be obtained by adapting these
 210 from the standards of the enterprise of the cooperating entrepreneurs such as suppliers,
 211 sub-suppliers, and subcontractors. One hundred percent of respondents indicated that the
 212 promptness of supplies and the compliance of the order or service completion with its specification,
 213 by means of the requirements towards cooperating enterprises, was of importance. Furthermore,
 214 100% of the enterprises researched indicated that adapting a guarantee to its own standards was one
 215 of the requirements given to cooperating enterprises; in addition, 87% stated that the guarantee
 216 should be longer than required under binding laws and regulations; 17% of respondents required
 217 the service performance with the customer from cooperating enterprises; only 2% required the spare
 218 parts for delivered products. The respondents were unanimous as to the three most important
 219 requirements given to cooperating enterprises. Thus, it is possible to state, in the context of the
 220 processes and identification of the processes, especially in terms of crucial processes occurring in the
 221 enterprise, that the identification of such processes was conducted by the enterprises themselves.

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

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

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

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

232 ¹ Road Transport Inspection.

233 ² 1. Road Transport Inspection, 2. National Health Inspection, 3. Chimney Sweep.

234 Source: Results of our own research.

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

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

241

Table 4. Processes identified by researched enterprises.

Process	% of answers ¹ 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 ¹ 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 ¹ 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 ¹ 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.

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

Kind of Innovation occurred in SMEs	% of answers ¹ 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%

267 ¹ Respondents had multiple-choice answers. For this reason, the sum of the replies exceeded 100%. The
 268 data from Table 4 were considered as an Innovation Process and treated as a 100% value.

269 Source: Results of our own research.

270
 271 The compilation of those answers was the reason for an additional open question given to the
 272 enterprises analyzed: how do they understand the definition of sustainable development and how
 273 do they identify it in their enterprises? The definitions proposed were quite similar, and it is
 274 probable that the enterprises found this information in available publications (but they were not
 275 asked about this) or the Internet, as repeated answers appeared such as:

276
 277 “Sustainable development is the organizing principle for meeting human development goals
 278 while at the same time sustaining the ability of natural systems to provide the natural resources and
 279 ecosystem services upon which the economy and society depend” [21],

280
 281 “Sustainability can be defined as the practice of maintaining processes of productivity
 282 indefinitely—natural or human made—by replacing resources used with resources of equal or
 283 greater value without degrading or endangering natural biotic systems” which is similar as Lynn et
 284 al. [31],

285
 286 “The desired result is a state of society where living and conditions and resource use continue
 287 to meet human needs without undermining the integrity and stability of the natural systems.” [32],

288
 289 “Sustainable development is development that meets the needs of the present without
 290 compromising the ability of future generations to meet their own needs. It contains within it two key
 291 concepts: the concept of 'needs', in particular, the essential needs of the world's poor, to which
 292 overriding priority should be given; and the idea of limitations imposed by the state of technology
 293 and social organization on the environment's ability to meet present and future needs.” [33],

294
 295 “Sustainability reporting should be reframed through the lens of four interconnected domains:
 296 ecology, economics, politics and culture” [25].

297
 298 In the answers given in the second part of the additional question, enterprises claimed that they
 299 understood internal sustainable development as

300
 301 “development in all directions” and

302
 303 “development in all process appearing in the questionnaire”, which suggests that they are
 304 understood as the processes shown in Table 4,

306 “we have certified ISO 1400 system in our enterprise” this seems that enterprises are equal to
 307 the environmental management system and the sustainable development, or
 308

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

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

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

327 The cross-check analysis was done as an additional verification of the relationships and validity
 328 of the data within the aim of deepening the analysis of findings using statistical methods. The
 329 examination of the structure of answers was conducted with the use of the chi-square test of
 330 independence, and a p-value calculated by Monte Carlo simulations [34,35]. Monte Carlo
 331 simulations were implemented as there was a small sample size (pilot research). According to the
 332 established hypothesis, there is a relationship between the management system functioning in the
 333 enterprise (certified or non-certified), and with the identification of inspections led by outside
 334 individuals as the audits of the third parties. There is also a relationship between the management
 335 system functioning in the enterprise (with or without a certificate) and with the identification of
 336 processes made by the enterprise itself (including innovations) as one of the occurring processes.
 337 This may be worth studying to gain an understanding of sustainable development in its institutional
 338 dimension. If the significance level α was established as lower than 0.05, then a p-value of less than
 339 0.05 would definitely lead to the confirmation of the given hypothesis.

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

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

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

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

347

348 **Table 8.** Cross-table including the relationship between a not certified, implemented management
 349 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 ¹

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

351 Source: Results of our own calculations (SPSS).

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

358 **Table 9.** Cross-table including the relationship between the certified, implemented management
 359 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 ¹

360 ¹ Respondents used multiple-choice answers; $\chi^2 = 61.670$, $p = 0.000$.

361 Source: Results of our own calculations (SPSS).

362 **Table 10.** Cross-table including the relationship between the not certified, implemented management
 363 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 ¹

364 ¹ Respondents used multiple-choice answers; $\chi^2 = 5.315$, $p = 0.021$.

365 Source: Results of our own calculations (SPSS).

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

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

Process ¹	X ²	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

371 ¹ Respondents used multiple-choice answers.

372 Source: Results of our own calculations (SPSS).

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

Process ¹	X ²	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

375 ¹ Respondents used multiple-choice answers.

376 Source: Results of our own calculation (SPSS).

377 The values shown demonstrate that the hypothesis were confirmed.

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

382 4. Discussion

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

392 Apart from the identification of processes occurring in the enterprise, it is important to separate
 393 the most important ones: those which have implications for and an effect on the functioning and
 394 survival of the enterprise. Such an approach matches Pareto's rule¹ [50], which states that 80% of the

¹ 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

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

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

399

400 (1) primary processes, which have a key importance for the organization and whose effects are
401 transferred directly to the position of the organization,
402 (2) support processes, which have the task of supporting primary processes even though they
403 do not have any direct effects on their own², and
404 (3) management processes, also called general processes, whose task is to assist in the efficient
405 functioning of the organization [51-53].

406

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

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

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

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

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

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.

² On the contrary, supporting processes generate costs many times.

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

447 **5. Conclusions**

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

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

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

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

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

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

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

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

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508 research and analyzed the data; K.M. and A.J.B. wrote the paper.

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