

## Innovation in Romanian SMEs and its impact on performance

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**Abstract**—Romania, a New Member state of European Union, has undertaken a complex process to adapt to new conditions and requirements of European market, especially the growing competition of foreign products and services once the commercial barriers had fallen. Romanian SMEs are the one of the most affected area. In order to create a general perspective on small and medium enterprises in Romania, apprehension of the innovative activities developed within these institutions has an essential role. The undertaken research revealed that innovative efforts within SMEs were especially focused on new products, new technologies, new managerial and marketing approaches, renewing the informational system and human resources training<sup>1</sup>.

**Key words:** *innovation, Romanian SMEs, performance, entrepreneurship*

### I. RESEARCH ISSUES

In order to create a general perspective on small and medium enterprises in Romania, apprehension of the innovative activities developed within these institutions has an essential role. The undertaken research revealed

that innovative efforts within SMEs were especially focused on new products (34.87%), new technologies (26.99%), new managerial and marketing approaches (15.92%), renewing the informational system (13.77%) and human resources training (13.46%). We also highlight the relative low percentage of companies where the absence of innovative approaches was noticed (21.18%), demonstrating that Romanian entrepreneurs are aware of the fact that as the competition increases within each activity field, innovation represents an efficient method to insure a high competitiveness. See figure 1.

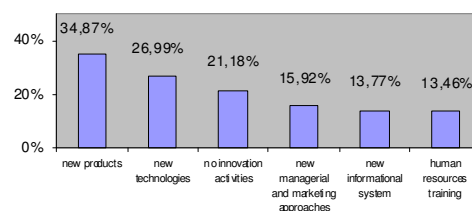


Figure 1. Innovation activities within SMEs

Analyzing innovation activities in Romanian SMEs by size classes (table 1), we noticed that the percentages of companies with a view for new products, new technologies, new managerial and marketing approaches, new informational systems and human resources training increase together with the enterprises' size.

[1] <sup>1</sup> Research sponsored from Romanian National Council for SMEs Fund, Romanian Government Research Project PN2 91-043 and CNC SIS 1162

TABLE I. INNOVATION ACTIVITIES WITHIN SMES BY SIZE CLASSES

No	Innovation activities	Size classes		
		Micro enterprises	Small enterprises	Medium enterprises
1	New products	30.75%	41.82%	44.54%
2	New technologies	20.50%	36.36%	44.54%
3	New managerial and marketing approaches	14.25%	18.18%	21.85%
4	New informational systems	11.50%	17.58%	18.49%
5	Human resources training	11.38%	16.97%	18.49%
6	No innovation activities	27.13%	12.12%	5.88%

Analyzing innovative activities within SMEs on fields of activity reveals the following aspects: new products are the most frequently among enterprises within tourism (52.63%), big efforts in order to develop new technologies are undertaken within companies activating in the industrial field (45.33%), the improved managerial/ marketing approaches and the human resources training are observed in a higher proportion in constructions (22.58% and 32.26%), the interest for new informational systems is more well-marked in services (17.29%) and the absence of innovation activities is frequently recorded for companies in transportation (26.20%). See table 2 for further details.

TABLE II. INNOVATION ACTIVITIES WITHIN SMES BY FIELDS OF ACTIVITY

No	Innovation activities	Fields of activity					
		Industry	Constructions	Trade	Tourism	Transportation	Services
	New products	47.56%	32.26%	31.25%	52.63%	39.30%	24.30%
	New technologies	45.33%	45.16%	18.13%	34.21%	21.12%	23.83%
	New managerial and marketing approaches	15.11%	22.58%	18.13%	15.79%	11.76%	18.69%
	New informational systems	12.89%	12.90%	14.38%	2.63%	11.23%	17.29%
	Human resources training	12.00%	32.26%	10.63%	23.68%	9.89%	16.12%
	No innovation activities	11.11%	6.45%	24.38%	15.79%	26.20%	22.43%

Considering the part of SMEs' investments dedicated to innovation (products, processes or organization), we observed that in most of the enterprises subject to our research (22.17%) there is no interest for innovation activities. These are followed by the companies that dedicated for innovation between 5-10%, 10-20% and 0-5% of the invested amounts (with weights of 20.00%, 19.25%, respective 18.21%), companies with investments of 20% and 50% (13.40%), and the last position goes to economic agents with investments of more than 50% of the investments fund (with a weight of 6.98% of the SMEs). One can notice that most of the SMEs accomplish— in a higher or lower degree – innovative investments, which actually make the difference between companies, generating competitive advantage. See figure 2.

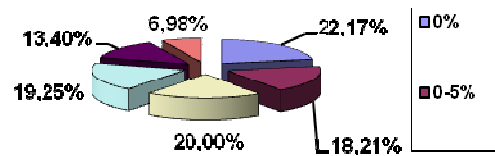


Figure 2. SMEs' investments in innovation

Analyzing SMEs' investments in innovation by size classes (table 3), we observe that: the percentages of SMEs investing in innovation weights from 5 to 10% and 10-20% increase in a direct proportion to the companies' size, and the proportion of companies that have no innovation activities decreases together with the enhancement of the enterprises, due to the differences regarding the economic potential. As for enterprises investing 20-50% and more than 50% in innovation, the highest weight is covered by small sized enterprises (22.67% and 9.00%) and the lowest by micro enterprises (8.37% and 5.89%).

TABLE III. SMEs' INVESTMENTS IN INNOVATION BY SIZE CLASSES

No	Part of investments dedicated to innovation	Size classes		
		Micro enterprises	Small enterprises	Medium enterprises
1	0%	29.46%	10.67%	9.17%
2	0-5%	19.38%	16.33%	16.51%
3	5-10%	19.22%	20.33%	24.77%
4	10-20%	17.67%	21.00%	23.85%
5	20-50%	8.37%	22.67%	17.43%
	More than 50%	5.89%	9.00%	8.26%

If we classify SMEs on economic fields of activity, we notice the following aspects:

- enterprises that allocated to innovation more than 50% of investments register higher percentage in constructions (14.29%) and lower in trade business (2.26%);
- as for the SMEs that accomplished no innovative activities in the last year, the highest percentage belongs to the companies in trade business (29.32%) and the lowest to the companies within industry (12.82%);
- enterprises within tourism register a higher percentage regarding the investments in innovation of 10-20% (27.03%) and lower proportions if we take into account investments of 5-10% and 20-50% (13.51%, respective 8.11%). See table 4 for further details.

TABLE IV. SMES' INVESTMENTS IN INNOVATION BY FIELDS OF ACTIVITY

No	Part of investments dedicated to innovation	Fields of activity					
		Industry	Constructions	Trade	Tourism	Transportation	Services
	0%	12.82%	17.86%	29.32%	24.32%	25.57%	21.79%
	0-5%	15.90%	14.29%	21.05%	16.22%	15.86%	20.95%
	5-10%	24.62%	14.29%	21.05%	13.51%	19.42%	18.72%
	10-20%	25.13%	21.43%	14.29%	27.03%	18.77%	17.32%
	20-50%	13.85%	17.86%	12.03%	8.11%	15.21%	12.29%
	More than 50%	7.69%	14.29%	2.26%	10.81%	5.18%	8.94%

Analyzing the part of turnover generated by new or renewed products and/ or services introduced in the last year, we notice that: 21.53% of the enterprises hold a percentage of 5-10%; 21.24% of the economic agents had no innovation activities in 2007; 19.31% of SMEs register a 10-20% percentage; 17.86% of the companies register a 0-5% percentage and 14.58% register a 20-50% percentage. Only in 5.50% of the SMEs, the turnover resulted more than 50% from new and/ or renewed products and/ or services. Taking into account these aspects, we may conclude that the processes of products innovation are relatively frequent for the majority of the SMEs in Romania. A graphical representation of this situation is designed by the figure 3.

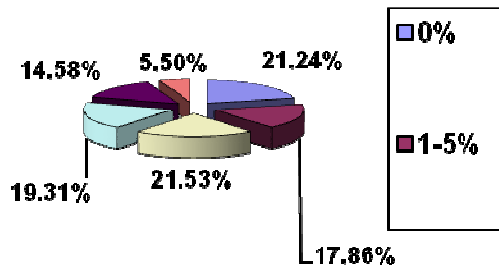


Figure 3. Part of SMEs' turnover generated by innovation

In terms of SMEs size classes (see table 5), we noticed that: the weight of the firms with no innovation activity increases in an inverse proportion with the SMEs' size, and the number of enterprises with a 5-10% percentage from their turnover generated by new products/services increases as the size of the firm increases as well. As for the enterprises having 10-20%, 20-50% and more than 50% of their turnover generated by new products/services, the small sized companies hold the highest weights (23.21%, 22.18%, respective 6.83%).

TABLE V. PART OF SMEs TURNOVER GENERATED BY INNOVATION – CLASSIFICATION BY SIZE CLASSES

No	Part of turnover generated by innovation	Size classes		
		Micro enterprises	Small enterprises	Medium enterprises
1.	0%	27.85%	10.92%	9.52%
2.	0-5%	19.62%	12.97%	20.95%
3.	5-10%	19.30%	23.89%	27.62%
4.	10-20%	16.93%	23.21%	22.86%
5.	20-50%	11.08%	22.18%	15.24%
6.	More than 50%	5.22%	6.83%	3.81%

The analysis of The SMEs by fields of activity highlights the following aspects: as for the enterprises with no innovation activities the highest weight is registered in trade business (25.58%) and the lowest one in constructions (10.34%). If we consider the firms having more than 50% of their turnover generated by new products/services the highest percentage is recorded by the companies in tourism (11.11%), and the lowest one among those in constructions (3.45%). The economic agents operating in construction also hold the highest weight of firms with 0-5% and 20-50% (27.29%, respective 31.03%) of their turnover generated by new products/services. See table 6.

TABLE VI. PART OF SMEs TURNOVER GENERATED BY INNOVATION – CLASSIFICATION BY FIELDS OF ACTIVITY

No	Part of turnover generated by innovation	Fields of activity					
		Industry	Constructions	Trade	Tourism	Transportation	Services
	0%	15.26%	10.34%	25.58%	22.22%	23.36%	21.84%
	0-5%	18.42%	27.59%	17.05%	5.56%	16.45%	19.54%
	5-10%	22.11%	13.79%	18.60%	16.67%	22.04%	22.99%
	10-20%	23.68%	13.79%	20.93%	19.44%	21.05%	15.23%
	20-50%	15.26%	31.03%	11.63%	25.00%	12.83%	14.37%
	More than 50%	5.26%	3.45%	6.20%	11.11%	4.28%	6.03%

## II. CONCLUSIONS

- Innovative activities within SMEs were focused especially on new products (34.87%), new technologies (26.99%), new managerial and marketing approaches (15.92%), new/improved informational systems (13.77%) and human resources training (13.46%) and in 21.18% of the companies innovative activities didn't exist.
- Taking into account the percentage of investments dedicated to innovation in products, processes or organization, the majority of enterprises subject to our research (22.17%) register no innovative activities. These are followed by the companies that

register a percentage of 5-10%, 10-20% and 0-5% of the investment fund (with weights of 20.00%, 19.25%, respective 18.21%), companies with investments of 20-50% (13.40%), and the last position is held by economic agents with investments of more than a half of the investment fund (with a weight of 6.98% of the SMEs).

- Innovation investments of more than 50% are more frequent for the SMEs with more than 15 years of experience (10.14%), enterprises in North West (14.71%), small sized companies (9%), companies with other juridical status (10.91%) and firms within constructions (14.29%)
- Almost 1/5 of the enterprises hold a percentage of 10-20% from their turnover generated by new products/services and 21.24% of the economic agents made no innovation efforts in 2007
- Only in 5.50% of the SMEs turnover is generated by new products/services in a proportion of more than 50%.

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