

INNOVATION ACTIVITIES IN EUROPEAN UNION ENTERPRISES: AN OVERVIEW

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Nowadays innovation is more than necessary for an enterprise to survive the competition on the market. The Community innovation survey from the EUROSTAT Database provides us with the data necessary to analyze the innovation activities of the enterprises in EU Countries. In this paper we will focus on the latest data from 2018 describing the enterprises with innovation activities by activity and size class and the enterprises that introduced new or improved processes by type of innovation, activity and size class.

Key words: innovation, innovation activities, innovative enterprises

1. INTRODUCTION

According to the Reference Metadata in the Community innovation survey 2018 (CIS2018), an “innovation is a new or improved product or process (or combination thereof) that differs significantly from the unit’s previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process).

The minimum requirement for an innovation to occur is that the product or process (marketing or organizational) method must be new or significantly improved to the

firm. This includes not only products, processes and methods that firms are the first to develop but also those that have been adopted from other firms or organizations.” [1]

Also according to CIS2018, the “Innovation activities include all developmental, financial and commercial activities undertaken by a firm that are intended to result in an innovation for the firm.

Types of innovation activities:

- Successfully introduced product or process innovation;
- Completed by not yet implemented innovation;
- On-going, with work in progress that has not yet

- resulted in the implementation of an innovation;
- Abandoned before the implementation of an innovation;
 - R&D activities.” [2]

2. DATA ANALYSIS

2.1. Enterprises with innovation activities

In the following 5 tables we synthesized the data concerning the innovation core activities by type of enterprise in EU countries.

For the practical view of the countries we have used the countries code, as follows: BE (Belgium), BG (Bulgaria), CZ (Czechia), DK (Denmark), DE (Germany), EE (Estonia), IE (Ireland), EL (Greece), ES (Spain), FR (France), HR (Croatia), IT (Italy), CY (Cyprus), LV (Latvia), LT (Lithuania), LU (Luxembourg), HU (Hungary),

MT (Malta), NL (Netherlands), AT (Austria), PL (Poland), PT (Portugal), RO (Romania), SI (Slovenia), SK (Slovakia), FI (Finland), SE (Sweden).

In Table 1 we can observe the composite average for the EU-27 group of countries and also the maximum and minimum values as percentage of enterprises.

For the innovative enterprises and enterprises with completed innovation activities we have the maximum value in Estonia (73.1% and 68.6%). For the enterprises with abandoned/suspended innovation activities we have the maximum value in Cyprus (44.2%), and for enterprises with on-going innovation activities the maximum is in Italy (47.6%).

For this indicator we have the minimum value for all the four types of enterprises in Romania.

Table 1. Innovation core activities

Innovation core activities	EU-27 (%)	MAX (%)	MIN (%)
Innovative enterprises	50.3	73.1 (EE)	14.6 (RO)
Enterprises with completed innovation activities	46.5	68.6 (EE)	14.3 (RO)
Enterprises with abandoned/suspended innovation activities	7.4	44.2 (CY)	0.4 (MT)
Enterprises with on-going innovation activities	26.2	47.6 (IT)	2.0 (RO)

Table 2. Innovative enterprises

Innovative enterprises (%)	Countries	No of countries
14-25	RO, PL	2
25-36	HU, BG, SK, ES, LV	5
36-47	PT, IE, MT, CZ	4
47-58	SI, NL, LT, LU, FR, HR, DK	7
58-69	EL, FI, AT, SE, IT, BE, DE, CY	8
69-80	EE	1

In Table 2 to Table 5 we have made a grouping of countries depending on the type of enterprise innovation activities.

In Table 2 we have the innovative enterprises. The majority of the EU countries have at least 47% of innovative enterprises out of total number of enterprises: Slovenia – 48.6%, Netherlands – 49.7%, Lithuania – 50.5%, Luxembourg – 50.6%, France – 51.5%, Croatia – 52.5%, Denmark – 57.1%, Greece – 60.3%, Finland – 61.9%, Austria – 62.6%, Sweden – 63.1%, Italy – 63.2%, Belgium – 67.8%, Germany –

67.8%, Cyprus – 68.2%, and Estonia – 73.1%.

Table 3 shows the enterprises with completed innovation activities. 18 out of 27 EU countries have enterprises with at least 44% of this type of activities: Ireland – 44.1%, Czechia – 44.2%, Slovenia – 44.6%, Malta – 45.7%, Netherlands – 46.2%, Lithuania – 48.4%, Luxembourg – 48.6%, France – 49%, Croatia – 52.1%, Denmark – 54%, Finland – 55.7%, Italy – 56.7%, Greece – 58.5%, Austria – 60.3%, Sweden – 61.4%, Germany – 63.7%, Cyprus – 68.2%, and Estonia – 68.6%.

Table 3. Innovative enterprises

Enterprises with completed innovation activities (%)	Countries	No of countries
14-24	RO, PL	2
24-34	HU, SK, BG, ES, LV	5
34-44	PT	1
44-54	IE, CZ, SI, MT, NL, LT, LU, FR, HR	9
54-64	DK, FI, IT, EL, AT, SE, DE	7
64-74	CY, EE	2

Table 4 displays the enterprises with abandoned/suspended innovation activities. The greatest number of EU countries (8) have enterprises with less than 3 % at this indicator: Malta – 0.4%, Romania – 0.7%, Poland – 2.4%, Latvia – 2.5%, Sweden – 2.5%, Bulgaria – 2.7%, Spain – 2.7%, and Hungary – 2.7%.

Table 5 shows the enterprises with on-going innovation activities. 18 out of 27 EU countries have

enterprises with less than 26% of this type of activities: Romania – 2%, Bulgaria – 6.1%, Cyprus – 6.5%, Poland – 8%, Hungary – 9.4%, Spain – 10.7%, Slovakia – 13.4%, Portugal – 13.7%, Latvia – 14.4%, Lithuania – 15.7%, Malta – 16.8%, Austria – 19.3%, Croatia – 19.9%, Czechia – 22.3%, Slovenia – 22.6%, Luxembourg – 23.1%, Netherlands – 23.6%, and Ireland – 24.6%.

Table 4. Enterprises with abandoned/suspended innovation activities

Enterprises with abandoned/suspended innovation activities (%)	Countries	No of countries
less than 3	MT, RO, PL, LV, SE, BG, ES, HU	8
3-6	LT, SK, PT, SI, HR	5
6-9	CZ, LU, AT, FR, NL	5
9-12	DE, EL, DK, FI, IE	5
12-15	BE, IT	2
more than 15	EE, CY	2

Table 5. Enterprises with on-going innovation activities

Enterprises with on-going innovation activities (%)	Countries	No of countries
2-10	RO, BG, CY, PL, HU	5
10-18	ES, SK, PT, LV, LT, MT	6
18-26	AT, HR, CZ, SI, LU, NL, IE	7
26-34	DK, SE, FR, FI, EL	5
34-42	EE, DE	2
42-50	BE, IT	2

2.2. Enterprises that introduced new or improved processes by type of innovation

In the next 9 tables we have synthesized the information regarding the percentage of enterprises in EU countries that introduced new or improved processes in their activity.

In Table 6 we can observe the composite average for the EU-27 group of countries and also the maximum and minimum values as percentage of enterprises. We

mention that for all the 8 indicators the minimum value was in Romania and the maximum value was in Cyprus.

Table 7 displays the countries with enterprises that have introduced business process innovation. 10 out of 27 EU countries have this percentage between 38% and 48%: Ireland – 38.5%, Netherlands – 40%, Luxembourg – 40.2%, Czechia – 40.3%, France – 40.5%, Malta – 40.6%, Lithuania – 44.5%, Croatia – 46.3%, Denmark – 46.6%, and Finland – 47.5%.

Table 6. Innovation core activities – percentage of enterprises

Innovation core activities	EU-27 (%)	MIN (%) (RO)	MAX (%) (CY)
Business process innovation	41.0	8.0	65.9
New or improved methods for producing goods or providing services	20.9	4.5	43.3
Innovations in logistics	12.9	2.7	60.4
New business practices for organizing procedures or external relations	15.2	2.8	39.2
New methods of organizing work responsibility, decision making or human resource management	20.5	4.2	39
New or improved methods for information processing or communication	22.8	3.6	60.7
New methods for accounting or other administrative operations	17.6	1.9	51.3
New marketing methods for promotion, packaging, pricing, product placement or after sales services	16.6	4.9	39.3

Table 7. Business process innovation

Business process innovation (% of enterprises)	Countries	No of countries
8-18	RO	1
18-28	PL, HU, BG, SK, ES, LV	6
28-38	PT, SI	2
38-48	IE, NL, LU, CZ, FR, MT, LT, HR, DK, FI	10
48-58	EE, IT, EL, AT, DE, SE	6
58-68	BE, CY	2

Table 8 shows the countries with enterprises that have new or improved methods for producing goods or providing services. 19 out of 27 EU countries have less than 25% enterprises with this type of activities: Romania – 4.5%, Poland – 9.7%, Spain – 11.3%, Hungary – 11.3%, Bulgaria – 11.6%, Slovakia – 11.7%, Latvia – 14.2%, Denmark – 17.2%, Luxembourg – 17.2%, Netherlands – 17.6%, Czechia – 19.8%, Ireland – 19.8%, Slovenia – 20.9%, Malta – 21.9%, Portugal – 22.1%, France

– 22.9%, Sweden – 23.2%, Germany – 23.9%, and Finland – 24.4%.

Table 9 displays the countries that have enterprises with innovations in logistics: 14 out of 27 EU countries have this indicator between 10% and 18%: Netherlands – 10.5%, Czechia – 10.9%, France – 11%, Lithuania – 12%, Luxembourg – 13%, Denmark – 13.1%, Slovenia – 13.4%, Portugal – 13.8%, Finland – 14.6%, Germany – 14.7%, Malta – 15%, Belgium – 15.6%, Sweden – 15.8%, and Estonia – 16.6%.

Table 8. New or improved methods for producing goods or providing services

New or improved methods for producing goods or providing services (% of enterprises)	Countries	No of countries
4-11	RO, PL	2
11-18	ES, HU, BG, SK, LV, DK, LU, NL	8
18-25	CZ, IE, SI, MT, PT, FR, SE, DE, FI	9
25-32	HR, EE, LT, AT, BE, IT	6
32-39	EL	1
39-46	CY	1

Table 9. Innovations in logistics

Innovations in logistics (% of enterprises)	Countries	No of countries
less than 10	RO, BG, ES, HU, PL, SK, LV, IE	8
10-18	NL, CZ, FR, LT, LU, DK, SI, PT, FI, DE, MT, BE, SE, EE	14
18-26	AT, HR, IT, EL	4
more than 26	CY	1

Table 10 shows the EU countries with enterprises that have new business practices for organizing procedures or external relations – less than 20%: Romania – 2.8%, Spain – 4.3%, Hungary – 6.3%, Sweden – 6.8%, Latvia – 7.7%, Poland – 8.8%, Bulgaria – 9.2%, Slovakia – 10%, Slovenia – 10.4%, Lithuania – 11.4%, Netherlands – 12.3%, Czechia – 13.5%, Estonia – 14.6%, France – 14.6%, Finland – 16.1%, Luxembourg – 16.3%, Croatia –

16.8%, Portugal – 18.2%, Malta – 19.4%, and Germany – 19.8%.

Table 11 displays the EU countries with enterprises that apply new methods of organizing work responsibility, decision making or human resource management. The majority of the countries have between 10% and 16% of the type of enterprises mentioned above: Belgium – 10.1%, Poland – 10.5%, Latvia – 12.3%, Netherlands – 13.6%, Denmark – 13.8%, Lithuania – 13.9%, and Slovenia – 13.9%.

Table 10. New business practices for organizing procedures or external relations

New business practices for organizing procedures or external relations (% of enterprises)	Countries	No of countries
less than 8	RO, ES, HU, SE, LV	5
8-14	PL, BG, SK, SI, LT, NL, CZ	7
14-20	EE, FR, FI, LU, HR, PT, MT, DE	8
20-26	IT, IE, DK, BE	4
26-32	AT, EL	2
more than 32	CY	1

Table 11. New methods of organizing work responsibility, decision making or human resource management

New methods of organizing work responsibility, decision making or human resource management (% of enterprises)	Countries	No of countries
4-10	RO, ES, BG, HU, SK	5
10-16	BE, PL, LV, NL, DK, LT, SI	7
16-22	SE, LU, CZ, FR, IE	5
22-28	PT, HR, FI, EE, MT, IT	6
28-34	DE, AT	2
34-40	EL, CY	2

In Table 12 we can observe the EU countries with enterprises that have new or improved methods for information processing or communication. 10 out of 27 EU countries have between 23% and 33% at this indicator: Estonia – 23.6%, Ireland – 23.9%, Malta – 25.6%, Croatia – 26.5%, Luxembourg – 27.1%, Finland – 27.5%, Denmark – 29.1%, Belgium – 29.5%, Italy – 32.4%, and Greece – 32.8%.

Table 13 shows the enterprises from EU countries that have applied new methods for accounting or other administrative operations. 16 out of 27 EU countries have less than 19%: Romania – 1.9%, Bulgaria – 6%, Spain – 7.7%, Slovakia – 8.5%, Latvia – 8.6%, Hungary – 8.6%, Poland – 8.8%, Slovenia – 11.3%, Sweden – 14.3%, Czechia – 14.9%, Portugal – 15.1%, France – 15.6%, Denmark – 16.8%, Lithuania – 17%, Luxembourg – 17.9%, and Ireland – 18.1%.

Table 12. New or improved methods for information processing or communication

New or improved methods for information processing or communication (% of enterprises)	Countries	No of countries
less than 13	RO, BG, PL, LV, ES, SK, HU	7
13-23	CZ, SE, LT, NL, FR, SI, PT	7
23-33	EE, IE, MT, HR, LU, FI, DK, BE, IT, EL	10
33-43	DE, AT	2
more than 43	CY	1

Table 13. New methods for accounting or other administrative operations

New methods for accounting or other administrative operations (% of enterprises)	Countries	No of countries
less than 10	RO, BG, ES, SK, LV, HU, PL	7
10-19	SI, SE, CZ, PT, FR, DK, LT, LU, IE	9
19-28	HR, EE, NL, MT, FI, IT, DE, AT	8
28-37	BE, EL	2
more than 37	CY	1

In Table 14 we can see the enterprises from EU countries that have applied new marketing methods for promotion, packaging, pricing, product placement or after sales services. 14 out of 27 EU countries have less than 16% at this indicator: Romania – 4.9%, Spain – 7.9%, Poland – 8.2%, Bulgaria – 8.6%, Hungary – 8.7%, Slovakia – 8.7%, Latvia – 10%, Netherlands – 12.5%, Belgium – 13%, Slovenia – 13.2%, Sweden – 14.5%, France – 14.7%, Lithuania – 14.8%, and Luxembourg – 14.9%.

incentives for implementation of innovation, innovation cooperation, source of financing of innovation, sources of information on innovation, innovation barriers etc.”

In this paper the focus was on the innovation core activities in EU countries enterprises: business process innovation, new or improved methods for producing goods or providing services, innovations in logistics, new business practices for organizing procedures or external relations, new methods of organizing work responsibility, decision making

Table 14. New marketing methods for promotion, packaging, pricing, product placement or after sales services

New marketing methods for promotion, packaging, pricing, product placement or after sales services (% of enterprises)	Countries	No of countries
less than 10	RO, ES, PL, BG,HU,SK	6
10-16	LV, NL, BE, SI, SE, FR, LT, LU	8
16-22	PT, IE, DK, FI,HR, MT	6
22-28	CZ, IT, EE, DE, AT	5
more than 28	EL, CY	2

3. CONCLUSIONS

The Community Innovation Survey [3] collects data regarding the number of enterprises in Europe with “innovation activities, innovation expenditure, innovative products (new to firm; new to the market), turnover from innovative products, business process innovation,

or human resource management, new or improved methods for information processing or communication, new methods for accounting or other administrative operations, new marketing methods for promotion, packaging, pricing, product placement or after sales services.

Due to the fact that Romania has registered minimum values on

all these indicators we can conclude that, unfortunately, the innovation in enterprises is not a priority for the moment in our country's enterprises.

ENDNOTES

- [1]https://ec.europa.eu/eurostat/cache/metadata/en/inn_cis11_esms.htm, pag. 5
- [2]https://ec.europa.eu/eurostat/cache/metadata/en/inn_cis11_esms.htm, pag. 6
- [3]https://ec.europa.eu/eurostat/cache/metadata/en/inn_cis11_esms.htm, pag. 2

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