

DEVELOPING INNOVATION: AN OVERVIEW ON THE BUSINESS ORGANIZATIONS IN ROMANIA VS PORTUGAL

DANILEȚ ALEXANDRA-MARIA

ASSISTANT PROFESSOR PHD, ȘTEFAN CEL MARE UNIVERSITY OF SUCEAVA, ROMANIA
e-mail: alexandra.danilet@usm.ro

CHIFAN DENISA-ALEXANDRA

PH.D. STUDENT, ȘTEFAN CEL MARE UNIVERSITY OF SUCEAVA, ROMANIA
UNIVERSITY OF BEIRA INTERIOR, PORTUGAL
e-mail: denisa.chifan@usm.ro

Abstract

Innovation has a special place in the work of business organisations, regardless of their field of activity, size or market experience. Thus, whether we are looking at firms involved in the production of goods or the provision of services, innovation has become a buzzword that is not missing from corporate language or organisational processes. In fact, managers' concern for performance enhancement has led to the adoption and implementation of various innovative tools in certain aspects/activities in the companies they manage, tools that have a positive influence on competitiveness and organisational performance. Traditionally, innovation is approached through technical elements, and is usually associated with a new product, a new technology, which is easier to quantify/determine, as results can be observed more quickly. Business realities highlight that innovation also involves other elements that are part of a company's processes, playing at least as important a role as those strictly linked to new products/technologies, including process, organisational and marketing innovations. These contribute significantly to the way the firm streamlines its operations, improves certain processes, implements new techniques/tools that will facilitate a high level of performance. Therefore, there is a need for a broader approach to the types of innovations that are found in the work of business organisations and how they contribute beneficially to their economic progress.

Keywords: innovation, product innovation, process innovation, performance, competitiveness

Clasificare JEL: M10, M19

1. Introduction

The different contexts in which different firms carry out their specific activities and processes are linked by a similar goal of achieving a high level of profitability that strengthens their position in a given market. At the same time, the means used by successful companies to achieve that level of profitability have one thing in common, namely innovation. Depending on the specifics of each business area, market experience and resources, companies implement different strategies for innovative activities. From this perspective, the activity of business organisations may, on the one hand, focus on the development of new products, i.e. the introduction of new specifications/features that bring improvements to the product, and, on the other hand, implement/introduce new methods in their activities, including new processes or improvements to current ones. The process component is broad, covering many aspects of the work of business organisations, including those related to the organisation of marketing, accounting or other administrative activities, which supports the impact of innovations in these areas on organisational efficiency and performance.

The two-way approach to innovation, i.e. both from the perspective of the firms that innovate and subsequently sell the resulting innovations and from the perspective of the end users of the innovations, highlights the even greater impact of innovative activity on the long-term progress and development of both business organisations and society as a whole. This role of innovation is highlighted in many academic papers and can also be seen from the realities of business, in that the

best performing companies are those that invest in research and innovate continuously. In practice, innovative activities have become drivers of performance for business organisations as they need to cope with the changing needs of their customers, increased competition and regulations in the countries where they operate.

2. Methodology

The aim of this paper is to highlight the innovation performance of companies operating in the EU market, based on the classification of innovations in the OSLO Manual, under the auspices of the OECD and Eurostat. In order to create an overall picture, we opted for a comparison between Romanian and Portuguese firms, and finally we also compared the situation at EU level as a whole.

In carrying out the research, we took into account a qualitative component that materialized in the exploration of the specialized literature dealing with topics associated with the theme of this paper. At the same time, we included a quantitative component that focused on the exploration of statistical data available on the Eurostat platform and which are of interest for our research. Based on the research topic, we have selected indicators that highlight innovative activity at the level of European companies. In this respect, we have included in the study the following indicators: the number of firms that carry out innovative activities, the number of firms with R&D activity (whether carried out internally or outsourced), the number of firms that have introduced product and process innovations, the number of firms that have introduced certain types of product innovations and the number of firms that have included different process innovations in their activity. The selection of indicators was based on a number of criteria such as the activity carried out by companies (we took into account innovation core activities, giving NACE Rev. 2 activity and size class), the availability of data for the countries analysed, and the structure of the CSI (Community Innovation Survey) which has changed since 2018. According to the methodology presented on Eurostat in relation to data collection mode and collection period, it follows that the data published in one year were collected, as a rule, over 3 years (e.g. data for 2020 were collected in 2018-2020). Thus, based on these aspects, it will be seen that in fact the current research covers the period 2016-2020, with data summarised over 2 years, 2018 and 2020.

3. Literature review

Innovation as a process through which innovations are achieved continues to be a priority in the strategies of business organisations. This is because the results of the innovation process translate into benefits for firms' performance and competitiveness. From the perspective of innovation outcomes, we will consider the analysis of innovations based on the OSLO Handbook classification into product innovations, process innovations, marketing innovations and organisational innovations (OECD, 2005).

Product innovation refers to both a new product and a new service, encompassing in fact a novelty at the level of the firm's core business that may concern the production of different goods, the provision of services or the execution of things that are totally different compared to the previous activity of the business organisation. At the same time, product innovation also includes a series of improvements that can be made to products and/or services, which will contribute to the differentiation of the firm in the market (OECD, 2018). Innovation at the level of organisational processes concerns, on the one hand, a new process and, on the other hand, a series of improvements that can be made at the level of a process or for several processes in the organisation. In both cases, process innovation highlights a novelty for the firm in relation to the activities previously carried out, i.e. the processes carried out (OECD, 2018). Marketing innovation includes improvements in marketing activity through the implementation/adoption of new methods/techniques in relation to product promotion, pricing, market placement, and product

design or packaging (OECD, 2005). Organisational innovations involve the adoption of new methods in a firm's current practices, i.e. both in the organisation of tasks specific to each job in a company's organisation chart and in relations with its partners/collaborators (OECD, 2005).

As we will see later, innovations have a major impact on both the companies that develop them and their end-users, who can be both individuals and companies. For example, if a company acquires software to improve its operations, this is a process innovation that benefits both the company that will use it and the company that developed it (for which the software may be a product innovation). In both cases, we are looking at organisational and financial benefits.

The strategy applied by business organisations towards innovative activities is not only about the products they produce, but also about the implementation of creative and therefore innovative thinking in all organisational processes, i.e. in the whole business model followed (Jonhstone and Bate 2003). Therefore, the changes that take place in the business model through the innovations created or implemented in the firm bring significant improvements in organisational competences and therefore in market competitiveness. Product innovation at the organisational level is to some extent conditioned by the firm's core competencies, its resources, the experience and expertise of its employees. Thus, some studies highlight the existence of a positive correlation between the firm's resources and the development of new products, in the sense that firms succeed in producing successful products when they exploit their advantages (Danneels, 2002). However, it should be stressed that beyond organisational resources, which play a major role in the development of innovative activity, the development of innovation is also conditioned by the strategy applied by the firm's management, by the top managers' vision of innovation.

There is some work in the literature highlighting a relationship between product-level innovation performance and intellectual capital. Thus, in terms of product innovation, in particular, firm performance related to innovative products, it is highlighted that an important role is played by human resources, through the knowledge and skills of employees, but also through the relationships that develop between them; equally, innovation-oriented organizational culture and a clear strategy towards product innovation are advantages for business organizations (Costa et al, 2014). Knowledge and training of human resources are at the basis of innovative activity, therefore the innovation strategy of firms should also include aspects related to identify and employ qualified personnel, training them and providing a working environment that fosters creativity and therefore the development of innovations.

Both product innovations and marketing innovations play an important role in increasing the productivity of business organizations, and there is a complementary relationship between these two categories of innovations in firms operating in skill-intensive sectors (Junge et al, 2016). Skills-intensive sectors as well as knowledge-intensive services involve activities with a high level of specialisation, and therefore have human resources with knowledge and skills in key aspects of the firm, human resources that can become indispensable. With regard to the role/impact of product and marketing innovations on the productivity of firms in these areas, we emphasize that the market success of a new and/or improved product depends on the extent to which it meets market requirements, i.e. consumer needs. Marketing innovations can therefore make a significant contribution to the development of product innovations that are attractive to customers.

Process innovation encompasses changes in the way firms carry out certain operations, including how they deliver their products or services to customers. In this case, process innovation can be implemented through the use of information technologies, including the Internet, to manage/monitor the supply chain (from order initiation to order receipt) (Carayannis et. al, 2003). Advances in the sphere of information technologies as well as in the direction of integrating artificial intelligence into the activities of business organisations have facilitated process innovation. Moreover, to some extent, digitisation mediates process innovation among business organisations.

Some papers highlight that there is also a complementary relationship between product innovation and process innovation, in the sense that when firms focus on developing new products, i.e. new specifications/features for existing products, they will often also have to develop and implement process innovations (new products require new ways of running organisational processes). At the same time, large, high-performing companies with extensive experience in product innovation will, in the long run, be more likely to develop process innovations at the expense of product innovations (Martinez-Ros and Labeaga, 2009). This is because there is a need to improve current processes, a more efficient allocation of resources, and a greater focus on activities involving less consumption of material resources (such as knowledge-intensive services). Throughout its existence, a successful company will engage in innovative activities in several spheres due to the need to identify the best options in achieving the desired/expected progress. Thus, if it finds that current practices in one department are not working, it will need to adopt new methods/techniques to ensure that there is an optimal framework for running operations in that department (any shortcomings in one activity can spill over to other activities, which supports the implementation of innovations).

Regarding to product and process innovation, it is necessary to point out that they concern different aspects of the activity of business organisations that may at some point intersect. On the one hand, product innovation is usually dependent on the needs and requirements of the market (i.e. the external environment of the firm) and is thus focused on the effects it generates on the market through new or improved products that are intended to bring certain benefits to consumers. On the other hand, process innovation is driven by organisational needs, i.e. the situation in the firm's internal environment, i.e. the need to use resources more efficiently, improve some operations, etc. (Bergfors and Larsson A, 2009). At the same time, the literature shows that product and process innovations are positively influenced by organisational innovations (Cozzarin, 2016). We therefore observe that between the four types of innovations analysed there are a number of connections that will have a positive effect on the performance and competitiveness of firms in the long run.

Typically, success at the level of the business organisation is quantified in terms of productivity, research performance, new product/service development and implementation of new business practices/techniques. As far as the innovative business organisation is concerned, success can be determined not only through the R&D budget, but also through the strengthening of the firm's knowledge base (which underpins the innovative activity), i.e. the firm's ability to develop and implement organisational and managerial innovations (Teece, 2007). This combination of actions undoubtedly leads to increased competitiveness of the firm. The sphere of innovation therefore also encompasses other aspects of business organisation activity, which have become a necessity for firms in today's society.

4. Findings

As far as innovative activity in EU firms is concerned, we will briefly highlight below a number of indicators that give an overview of the level of innovation and, by extension, the position of European business organisations with regard to what it means to develop innovative activity. In order to highlight the interest of business organisations in innovation, we highlight in the figure below the number of firms that were involved in innovative activities during the period under review.

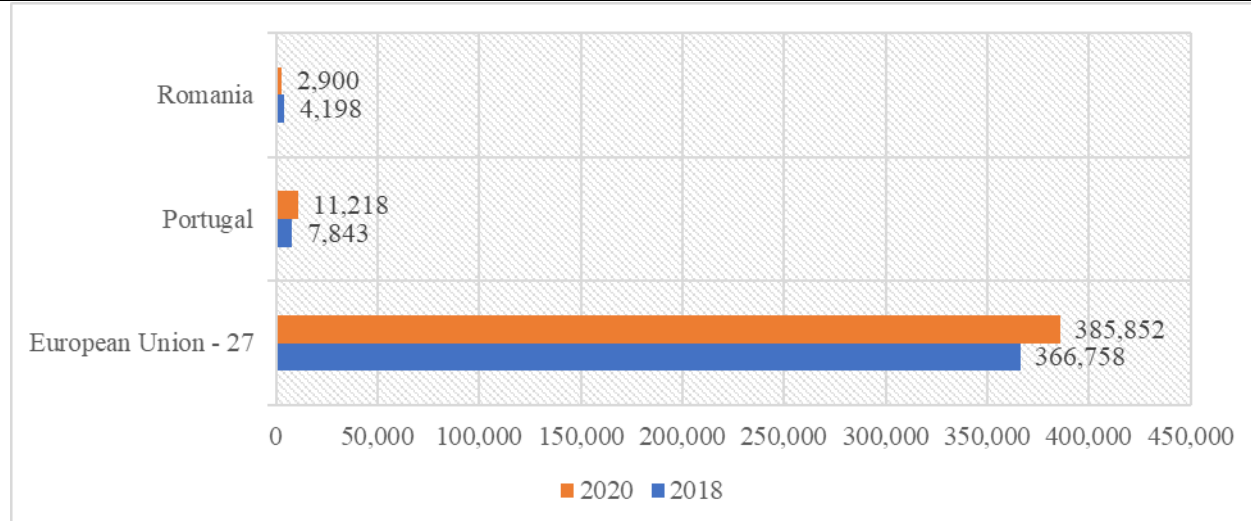


Figure 1 The number of firms with innovation activities by NACE Rev. 2 activity
Source: Own elaboration using data from <https://ec.europa.eu/eurostat>

Based on the available data, we see that the number of companies carrying out innovative activities has increased in Portugal and at EU level, while in the case of Romania there has been a significant reduction in the number of companies carrying out such activities. This can be attributed to the weak national strategy to support R&D and, therefore, innovation. The European programmes supporting this component have brought a number of positive changes, but without a greater allocation of resources in this direction, the desired results cannot be achieved.

At the same time, we would point out that the number of innovative firms at EU level in 2020 represents only 1.65% of the total number of enterprises in the EU market; in Portugal, around 1.2% of firms are considered innovative, while in Romania only 0.54%. These results go some way to justifying the significant amount of funds allocated to research, development and innovation through the NRDP, which should bring a number of improvements at national and, by extension, EU level.

Innovative activity is often directly connected to research activity, which may indicate a dependency between innovation and R&D, although sometimes innovations are not the result of deliberate actions, but of an error or an action adjacent to a process. However, based on the importance of R&D for innovative activities, we highlight in the figure below some data on the number of firms in Romania, Portugal and the EU that carried out R&D activities during the period under study.

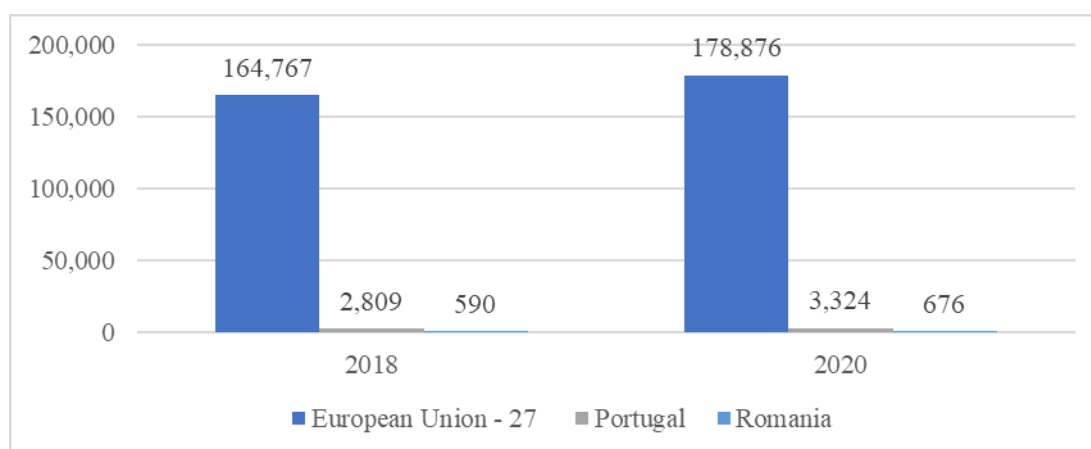


Figure 2 The number of firms with research and development activities during by NACE Rev. 2
Source: Own elaboration using data from <https://ec.europa.eu/eurostat>

According to the available data, we can see that progress has been made in terms of R&D activity for all parties analysed. Specifically, the number of R&D performing firms increased by around 9% at EU level, by more than 18% in Portugal and by around 15% in Romania. The data shown suggest a growing interest in R&D over the period under review, which highlights the need for long-term funding of these activities, as R&D-related processes and activities do not have a proper shelf-life or a permanent end point. More specifically, R&D is an activity that is constantly developing and is linked to the realities of society and, by extension, the business environment.

Based on the classification made by the OSLO handbook, we will now turn to a review of the number of business organisations that have had product and process innovations during the period under review.

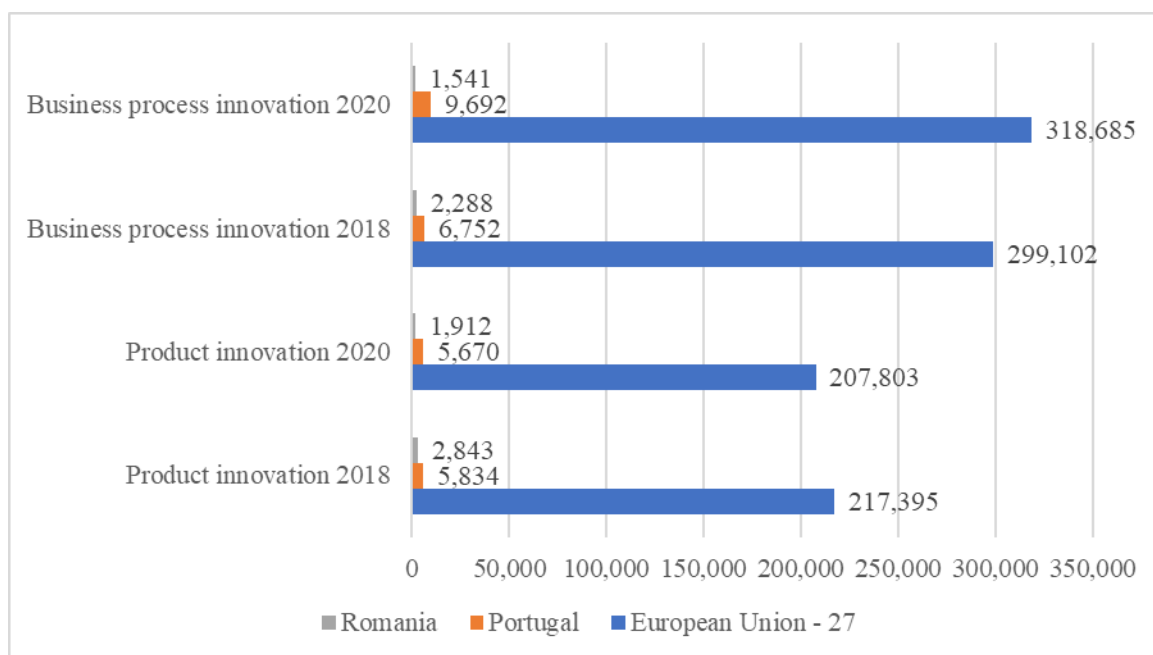


Figure 3 The number of firms that had business process innovation and product innovation
Source: Own elaboration using data from <https://ec.europa.eu/eurostat>

The figure above shows a better positioning of process innovations compared to product innovations for both countries analysed and for the EU. Data available for the two periods show that the number of firms that had process innovations was higher compared to those that had product innovations. In addition, it can be seen that in 2020 there was an increase in the number of firms with process innovations by about 7% compared to the previous period included in the study, while the number of firms with product innovations decreased in 2020 by about 4% compared to the other period analysed. The lower number of firms with product innovations can also be attributed to the complexity of these innovation categories. In addition, as we will see later, the spectrum of process innovations is much broader than that of product innovations. In the following, we present some data showing the types of product and process innovations that have been introduced by companies in Romania and Portugal, as well as in the EU as a whole.

With regard to product innovations, in the following figure we analyse a series of data on firms that introduced new or significantly improved products that were new to the market and, at the same time, those that introduced new or significantly improved products that were new to the firm.

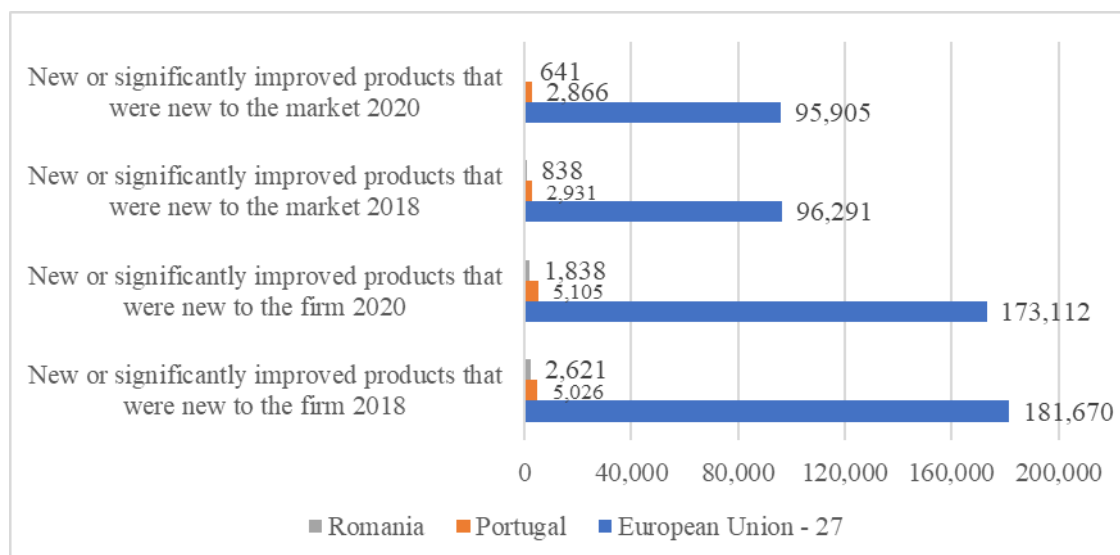


Figure 4 The number of firms that have introduced a production innovation type during 2018 and 2020
Source: Own elaboration using data from <https://ec.europa.eu/eurostat>

As can be seen, the number of firms introducing new or significantly improved products for the firm is much higher compared to those introducing new or significantly improved products for the market. This can be justified by the fact that the number of new products for the firm is much higher as the firm makes a smaller number of products, which means that the novelty elements can be more extensive from the firm's own activity. In addition, when referring to a market segment or a market, we are dealing with a larger number of firms, i.e. products, which makes it more difficult to introduce elements of novelty. Comparing the data for the two time intervals studied, we find that there was no positive development for the two categories of innovation analysed. Specifically, the number of firms introducing a new or significantly improved product for the firm or market was lower among the results published in 2020 compared to those published in 2018.

Given that the typology of process innovations is much broader, we have chosen to present the situations of the firms in the countries analysed in two figures, which allows a better organisation of the study. In the figure below, we present data on innovations introduced in processes concerning the organisation of human resources work, including decision-making, new practices in the sphere of relations within and outside the firm, improvements in logistics and new or improved methods of producing goods and providing services.

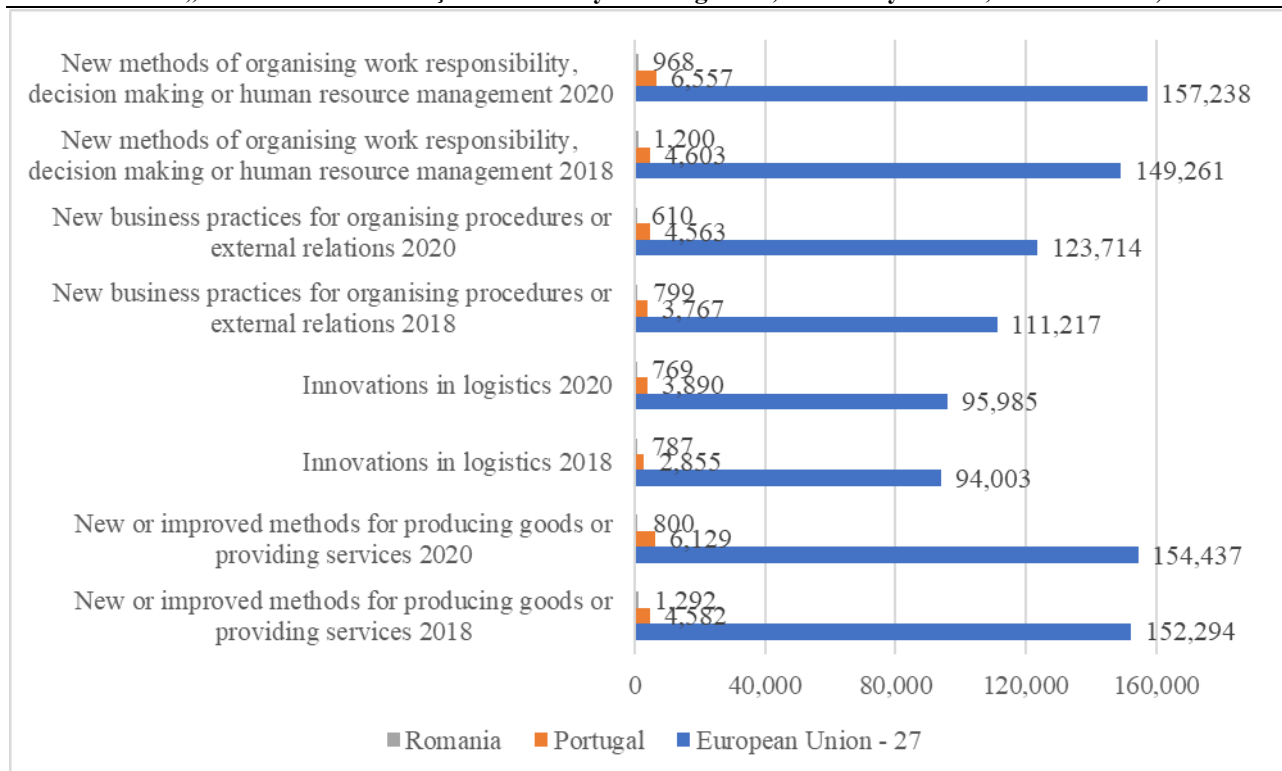


Figure 5 The number of firms that have introduced a process innovation type– part 1

Source: Own elaboration using data from <https://ec.europa.eu/eurostat>

Overall, the situation at EU level shows an improvement in 2020 compared to 2018 for all types of process innovations highlighted in Figure 5. As can be seen, more progress has been made among firms that have introduced process innovations in the form of new methods of organising human resource work, i.e. methods closely related to human resource management; a similar situation is also observed for the number of firms that have introduced process innovations in the production of goods and provision of services. Significant progress can also be observed among firms in Portugal for the same categories of process innovations, but also for the whole period analysed. At the opposite end of the spectrum are firms in Romania that fail to increase the pace of adoption/inclusion of process innovations in their activities.

In the following, we will review the number of firms that have introduced process innovations concerning new packaging, promotion or pricing methods, new methods in administration or accounting, or new or improved methods in information processing and communication.

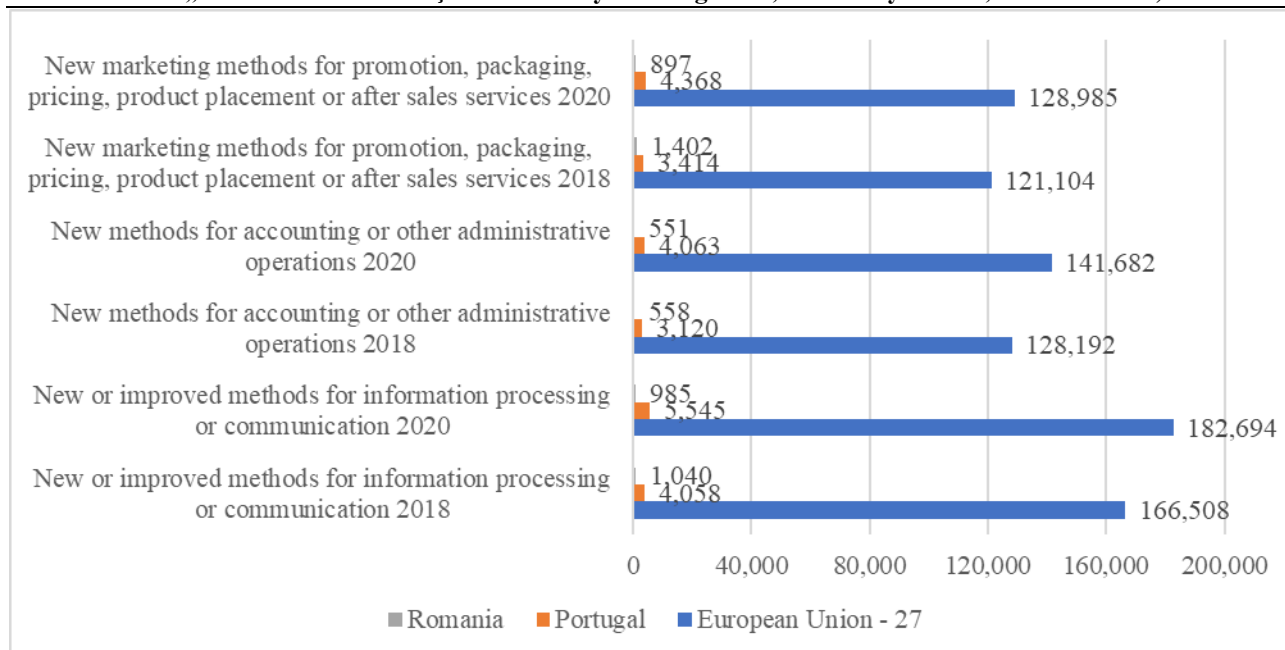


Figure 6 The number of firms that have introduced a process innovation– part 2

Source: Own elaboration using data from <https://ec.europa.eu/eurostat>

As can be seen, there is a positive situation at EU level over the period analysed, which can be observed for all types of process innovations included in Figure 6. Thus, the number of EU firms introducing new/improved methods in the way of information processing or communication in 2020 has increased by about 10% compared to the previous period; at the same time, regarding process innovations concerning new methods for accounting or administrative operations, an increase in the number of firms by about 11 in 2020 compared to 2018 is observed. As regards firms in Portugal, we highlight that the number of firms that have introduced process innovations of the type included in the figure above is higher than the number of firms in Romania, with a favourable evolution observed in 2020 compared to 2018. Unfortunately, Romanian firms have not had a favourable evolution in terms of adoption of process innovations, an aspect that should be improved in order to improve their performance and competitiveness on both the national and EU markets.

5. Conclusions

Depending on the business model implemented, each business organization will resort to the development of different innovations (product innovations), respectively to the implementation of organizational, process or marketing innovations with the aim of improving its performance, implicitly competitiveness. Each type of innovation has a specific role for business organizations contributing to solving a problem, making a process more efficient, improving an activity, enhancing competitiveness, increasing profitability as well as long-term development. Depending on the strategies at the management level, each company will capitalize on the advantages it has, so it will opt for the development of innovative activity in certain areas, so it can only decide for the development of certain types of innovations, which respond to its expertise and needs. As we could see, between the categories of innovations analyzed there are a series of relationships, correlations and complementarities that bring a series of advantages to business organizations (increasing productivity, amplifying performance, improving competitiveness, etc.).

Regarding the progress registered by Romanian companies in the sphere of innovation, we specify that this is a modest one as a whole and inferior to that of companies in Portugal. This fact

is due to the lack of a national strategy to support innovation in the business environment and beyond. Funds allocated for research activity are quite low at the national level, an aspect that affects the progress achieved in this direction at the level of companies, research institutes and other types of organizations. Starting from the impact of innovation on performance and long-term development, regardless of the typology we refer to, we emphasize that support measures are needed at the macroeconomic level, but also at the microeconomic level, more precisely a closer collaboration between the business environment and state institutions.

6. References

- [1] Bergfors M.E., Larsson A., (2009), *Product and process innovation in process industry: a new perspective on development*, Journal of Strategy and Management, Vol. 2 Issue: 3, pp.261-276
- [2] Carayannis E. et al, (2003), *The Nature and Dynamics of Discontinuous and Disruptive Innovations from a Learning and Knowledge Management Perspective*, in *The International Handbook on Innovation*, Ed. Shavinina L.V., Elsevier Science Ltd.
- [3] Costa R. et al, (2014), *Critical elements for product innovation at Portuguese innovative SMEs: an intellectual capital perspective*, Knowledge Management Research & Practice, (12), 322-338
- [4] Cozzarin B.P. (2016), *Impact of organizational innovation on product and process innovation*, *Economics of Innovation and New Technology*, ECONOMICS OF INNOVATION AND NEW TECHNOLOGY, Routledge, Taylor & Francis Group
- [5] Danneels e., (2002), *The dynamic of product innovation and firm competences*, Strategic Management Journal, 23: 1095–1121
- [6] Johnstone R.E., Bate J.D., (2003), *The power of strategy innovation: a new way of linking creativity and strategic planning to discover great business opportunities*, AMACOM, New York
- [7] Junge M. et al, (2016), *Product-marketing innovation, skills and firm productivity growth*, Review of Income and Wealth, Series 62, Number 4
- [8] OECD/Eurostat (2005), *Oslo Manual: Guidelines for Collecting and interpreting innovation data, 3th Edition, The Measurement of Scientific and Technological Activities*, OECD Publishing, Paris/Eurostat, Luxembourg
- [9] OECD/Eurostat (2018), *Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation, 4th Edition, The Measurement of Scientific, Technological and Innovation Activities*, OECD Publishing, Paris/Eurostat, Luxembourg, <https://doi.org/10.1787/9789264304604-en>
- [10] Martinez-Ros E., Labeaga J.M., (2009), *Product and process innovation: Persistence and complementarities*, European Management Review, 6, 64-75, Palgrave Macmillan
- [11] Teece D., (2007), *Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance*, Strategic Management Journal, 28: 1319–1350
- [12] <https://ec.europa.eu/eurostat/data/database>