COMPARATIVE ANALYSIS OF INNOVATIVE FORMS OF WORK ORGANIZATION AT EUROPEAN LEVEL

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ABSTRACT

Innovation activity or creation of new knowledge, involves consideration of systemic aspects. In an economy, organizations are directly involved in different types of innovative activities. The innovation process is also influenced by the set of institutional rules that embody, restrict, constrain or encourage the research work of innovators. Emerging, innovative forms of work organization are an insufficient and highly differentiated resource used in European organizations, but they offer the potential for convergence between improved organizational performance and employment growth. The European Union institutions place a strong emphasis on the influence of workplace innovation, both in a direct relationship with the performance of companies and institutions and as a factor of national and regional economic growth, thus requiring a common strategy and similar policies in the employment field. The purpose of the current study is based on analysing innovative forms of work organization at European level. Therefore, the methodology of this paper is focused on literature review of the relevant publications. It was revealed that, in the literature, there are numerous studies that have evaluated and confirmed the interdependencies and/or correlations between workplace innovation, policies promoted by public institutions, respectively strategies implemented at the level of companies or organizations and increasing their performance. In most cases, highlighting workplace innovation as a factor influencing existing processes within organizations depends on the type of innovation, the time horizon of the research, the perspective of the study, and the research methodology used.

KEYWORDS: *increasing performance, innovation activity, organizational innovation, work organization.*

1. INTRODUCTION

By embracing multiple forms, innovation is the introduction of a new good or service, meaning improved components, features or specifications, that can also lead to the implementation of new production methods or of some that have undergone significant technical changes, namely changes in concept or product promotion, or methods and practices of organizational and workplace learning (OECD, 2005).

Innovation, by its nature, implies not only novelty, significant improvement of a product, process, method, but also distribution, implementation, or use. Innovation is a key factor in economic growth and development with profound implications for all human activities. The creation of ideas, knowledge, products, new, valuable processes, induced technological and social changes are essential for the efficiency of the production process, for gaining productivity, having a decisive role in increasing the competitiveness of firms, in the emergence of skilled jobs to meet the motivations and expectations of the people.

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Innovation activity or creation of new knowledge, involves consideration of systemic issues. In an economy, organizations are directly involved in different types of innovative activities. The innovation process is also influenced by the set of institutional rules that embody, restrict, constrain or encourage the research work of innovators. Together, all these rules, organizations, institutions, and collaborations between them constitute an innovation system. According to the OECD (2005), an innovation system is a network of public and private institutions that, through their activities and interactions, create, accumulate and transfer knowledge, skills and objects that are the origin of new technologies. Such institutions may be enterprises, universities, public research bodies, professional or scientific associations, public bodies (Mulgan, 2006).

The importance of links between societies, organizations and the state, the need for inter-company interactions between different departments, but also between businesses and institutions themselves has outlined the existence of a system of own innovation in each country, namely a national innovation system. Literature specific to national innovation systems has captured the interest of the scientific community since the 1990s, but a unanimously accepted definition of them has not yet been agreed, with the concept evolving over time. Furthermore, literature is also divergent as to the origin of the term national innovation system. The paternity of the term is also attributed to Lundvall (1992) as the first to use this expression, along with "new combinations" for defining innovation. However, Edquist (2006) mentions Freeman, who in 1987 defined this system as the network of public and private sector institutions whose interactions initiate, import, modify and diffuse new technologies. Patel and Pavitt (1994) characterize it as the national institutions, their incentive structures and competencies, which determine the rate and direction of technological learning, or the volume and composition of technological activities, in a country. Metcalfe (1995) develops existing concepts and considers national innovation systems to be composed of distinct institutions that contribute jointly and individually to the development and diffusion of new technologies that provide the framework within which governments are shaping and implementing policies to influence the innovation process.

Being a continually evolving term, some recent works consider innovation systems to be the elements and relationships that interact in the production, dissemination and use of new and economically useful knowledge (Lundvall, 2016). Thus, a national innovation system encompasses an ensemble of institutions with a leading role in a research and innovation process. The national innovation system operates on the basis of a vast network of interactions, information transfers between different actors: enterprises, state, universities, research institutes etc. Each of them, even if it has a specific role and interest, is responsible for the enrichment of knowledge and contributes to the realization of new ones, including recombinations of existing ones. The measurement and evaluation of national innovation systems has focused on four types of knowledge or information flows: business interactions, in particular through joint research and other technical collaborations; interactions between businesses, universities and public research institutes through joint research, co-patenting, co-publishing, questioning or quoting; the diffusion of knowledge and technology for enterprises, through the adoption of new technologies in production and the dissemination of knowledge through equipment and equipment; mobility of administrative and technical staff within and between public and private sectors (OECD, 1997, Kristensen, 2011). Lundvall (2016) analyzes innovation patterns in the context of establishing a common code of concepts that is needed to deliver results within the scientific community. Cyclically, new paradigms will be developed and accepted, while abandoning the old ones, and introducing innovations based on the results of scientific research will underpin the user - innovative or firm - employee perspective. The author defines innovation as the result of complex interactions between different actors and institutions, at national or international level, where technological developments do not take place in one direction or in a linear succession, but through feedback effects from systems centered on companies.

2. LITERATURE REVIEW

In the literature, there are numerous studies that have evaluated and confirmed the interdependencies and / or correlations between workplace innovation, policies promoted by public institutions, respectively strategies implemented at the level of companies or organizations and increasing their performance. The role of innovation in productive processes, from the perspective of its influence on the quantity and quality of goods and services, changes in the structure of jobs (Thorsrud, 1981) and economic performance respectively are recurrent themes in the economic literature, which, given market dynamics, the characteristics of economic agents or the particularities of individuals active in the labor market cannot be exhaustively dealt with.

In most cases, highlighting workplace innovation as a factor influencing existing processes within organizations depends on the type of innovation, the time horizon of the research, the perspective of the study, and the research methodology used. Among the first studies to analyze innovation from a sociological and economic perspective are Klein (1976), Kalleberg and Sørensen (1979), Abbott (1993), Osterman (1995), Castillo (1999) or Appelbaum (2013).

Numerous reference studies that have estimated a significant impact of workplace innovation practices on productivity, production quality, economic performance and financial profitability. Osterman (1994) conducted a study of innovative practices (work teams, rotation at work) using data from an investigation conducted in 1992 in 694 US companies. The results revealed that 35% of private companies with more than 50 employees in sectors other than agriculture and non-profit, who have used flexible working practices and require minimal state intervention (as a labor market regulator) had the main positive effect of increasing employment. The importance of innovative processes in increasing productivity is analyzed by Appelbaum and Batt (1994), which suggests that the proportion of Fortune 1000 firms in 1990 with at least one employee actively involved in innovative practices is about 85%. On the other hand, Ichniowshi, Shaw and Prennushi (1997) demonstrated that production lines adopting employee information and consultation practices on average had an increase in productivity of 3.5% and Black and Lynch (2004), using data from service sectors, have shown that these practices contribute about 1.4% in terms of productivity.

More recent research confirms that employee involvement, sharing of knowledge and innovative practices within organizations is on the same trend of positively influencing organizational performance (Girneata & Potcovaru, 2015). In 2001, an extended survey on the example of Sweden showed that decentralization of work organization and human resource development are positively associated with higher productivity (ITPS, 2001), with flexible organizations being 20-60% more productive. New production methods have increased the level of responsibility in decision making, so that even if full autonomy and control remain focused at high decision-making, participatory culture and transfer of responsibilities have led to the elimination of intermediate hierarchical levels of supervision (Osterman, 2004). The author analyzes the impact of work organization on salaries and wage policies of a representative number of US manufacturing companies with a minimum of 50 employees through studies conducted in 1992 and 1997. It shows that higher wage levels are associated with high performance work systems and the main interdependence relationship is based on the increase in productivity independently of skills and technology related to jobs, with similar results being obtained by Appelbaum et al. (2000).

European literature also demonstrates positive relationships between participatory forms of work organization and performance (Totterdill et al., 2012; Totterdill, 2015, Girneata et al., 2015). We find many such impact studies from the beginning of this century to the present. Bauer (2004) analyzed the impact of flexible working practices on workplace innovation through EWCS survey data from 2000, finding that employee involvement in flexible work systems is associated with improving workplace satisfaction in most countries EU-15, with the exception of Belgium, Greece, Ireland and Portugal, and the individual components of the flexible working systems do not

contribute significantly to the association with working autonomy than in 8 of the 15 countries. Using the same data, Arundel et al. (2005) demonstrated that the "lean" type of work organization does not promote innovation, and employee engagement strategies: workplace rotation, teamwork or responsibilities awarded for quality control, lead to an improvement in the organization's economic performance.

A series of studies analyze the influences that workplace innovation has on organizational economic performance as a whole. Thus, Combs et al. (2006) perform a meta-analysis of 92 literature studies (from 1983 to 2005, including 19,319 organizations), using 22 variables related to high-performance working practices financial compensation, on-the-job training, employee involvement, internal promotion and performance appraisal, human resource planning, teamwork, or workplace safety), concluding that organizations can improve their productivity by 0.2% for each 1% incrementing of these practices.

The systemic link between forms of work organization and organizational innovation was confirmed in the study by Arundel et al. (2007). The authors have identified a significant positive correlation between the form of learning organization and the frequency of innovation regions, while identifying fundamental differences between countries in terms of how they work and how companies are innovating, meaning that organizations that do so of activities support the generation of knowledge (through innovation) unequivocally. Using the 2010 EWCS survey data on a sample of 27 European Union countries, Beblavy, Maselli and Martelucci (2012) identify a strong and significant correlation between workplace innovation and labor productivity, and linear correlations between patents and time flexible work (R2 = 0.81) and between distance work and employment (R2 = 0.75). Thus, the results of the study demonstrate a positive relationship between workplace innovation practices, which is equivalent to high-performance work systems (HPWS) and organizational performance. Effective practices include flexible working time, remote work, alternative payment schemes, horizontal hierarchies, autonomy, job rotation, or team work. At the same time, the authors identify the existence of a directly proportional relationship between workplace innovation and process or product innovation as well as between it and the increase in employment and productivity.

The advantages of participatory work for employees are also obvious. Ramstad (2009) carried out an assessment of the organization's economic performance to identify the factors contributing to its improvement, using data from 409 development projects in Finland, implemented between 199 and 2005. Based on a cluster analysis, the author grouped the projects into three categories, depending on the level of innovation (increased, medium and low). Its results highlight the fact that there is a direct relationship between employment growth and workplace innovation and that a higher level of innovation can be achieved through employee participation and internal collaboration. Similarly, according to Totterdill (2015), the choice of working methods and flexible working time contribute to motivating employees to the quality of active life, both playing an important role in reducing stress, improving health and satisfaction at the place (Totterdill, 2015), which in turn have a strong impact on economic performance.

Oeij et al. (2016) assessed the consequences of implementing in-work innovation practices and their effects on improving the performance of organizations and the quality of active life, in terms of real employee engagement. In this analysis, the authors used data from Eurofound's European Company Survey 2013 (ECS) questionnaire on 51 companies in 10 EU countries, showing that employee participation in decision-making processes significantly influences companies' performance and the main motivations for decision-makers organizations should promote innovation in the workplace are based on criteria for increasing efficiency, competitiveness and innovation as a whole.

The empirical literature on the determinants and influences of workplace innovation cannot give the entities involved in innovative processes precise indications of measures that enhance organizational performance and the quality of active life (Dhondt et al., 2017). They conclude that

technological innovation accounts for only 25% of innovation performance, while innovations in the workplace account for about 75% of this. Making a critical review of literature, Dhondt et al. (2017) note that workplace innovation is mainly analyzed in the Nordic European countries (Holland, Finland, Norway) due to the multiple research programs developed in this area geographically, thus requiring a multidisciplinary integrated approach to be carried out in an expanded framework at the level of a larger number of states.

3. CHARACTERISTICS OF INNOVATIVE ORGANIZATIONAL CLASSES

The literature analyzes the ways of organizing work in the context of specific organizational specificities related inclination to learning, autonomy, quality of work (Smith et al. 2008), the complexity and constraints at work, and monotony, rotation or repetition of tasks. The introduction of new methods of work organization can lead to different configurations that support more or less the innovative business activity, with multiple effects not only on their economic and financial performance, but also on a sectoral, regional and national level. One of the most widely accepted approaches regarding the innovative organization of work is that proposed by Lorenz and Valeyre (2005), which set out the guidelines for four specific forms of work organization defined by them as: discretionary learning (DL), lean production (LP), "taylorism" (TA) and simple or traditional organizations (SO). The authors define the characteristics and signal the major differences between these forms, concluding that the organization of labor is guided by the market, technological development, trends and challenges in society and legal regulations. Subsequent, these forms of organization have been taken over, explained, used in analyzes, studies by other authors as well (Lorenz, 2015; Lundvall, 2016), including EU institutions, as part of Community projects, policies and initiatives.
In order to establish the specificities and differences between the four forms of work organization, respectively to reflect their importance in strategies, policies at micro, meso and macroeconomic level, we synthesized the main characteristic elements found in the literature for each one.

3.1 Discretionary Learning

The setting up of Discretionary Learning is based on several corroborated causes: production crises, technological progress, and high competitiveness in the 1970s, alongside standardized jobs and an inflexible labor market (Williamson, 1975; Atkinson, 1984). This is characterized by: autonomy in setting methods and pace of work, flexible time, remote work, alternative payment schemes, horizontal hierarchies, job rotation, and teamwork.
According to the Commission of the European Communities, DL, predominant in intensive care activities, combines problem-solving responsibilities with a high degree of autonomy in work, and its main feature is the flexibility of working practices of organizations where most work places require a high level of product and service quality. As key practices in improving productivity, Golzalez and Almondb (2012) address their flexibility in organizations implementing the Autonomy and Training form, showing that the Scandinavian countries, Germany and Japan are better suited than the US and UK to implementing such a form, thanks to factors such as employee skills, knowledge or culture to education and training. DL is also the most common in the business, banking and insurance sectors, as well as in gas, electricity and water supply (analysis based on EWCS surveys applied between 2005 and 2010). Thus, DL is specific to companies that are constantly confronted with new and complex problems, which require diversified ways of solving them, respectively that have no standard procedures defined. Arundel et al. (2007), Lorenz (2015) point out that some of the tasks carried out within the working teams are not considered to impose constraints on work but to solve problems collectively.

3.2 Lean Production

Lean production is a "philosophy" of continuous improvement of production that was recognized under this name in the 1990s by Womack and Jones (1990). This is seen as one of the most effective methods of managing and improving business, representing a production evolution perfectly correlated with the conditions in which the 21st century enterprises develop. "Lean" production can be found at all stages of industrial production, from designing products to manufacturing, involving organization and human resources, customer service, based on a set of specific principles, methods and practices.

In an analysis based on data EWCS 2000, Lorenz and Valeyre (2005) concludes that companies adopt a production of "lean", the values are above the average of teamwork, rotation of tasks, responsibilities of employees, quality control or factors related to working norms (speed or quality). Compared to the first form of organization, however, the level of autonomy is lower and quantitative production rules are used to assess employee activity. However, with regard to traditional forms of organization (SO), problem solving activities are significantly higher in LP organization.

As an application and organizational level of representativeness, the Lean production model is the most developed in the manufacturing sector, especially in the field of transport and electronics. Also, the form of organization involves problem solving and learning at work, but is constrained and often repetitive and monotonous. The widespread use of job rotation (between similar tasks within the same department) and teamwork can be seen as an attempt to overcome the limits of less intensive forms of organization in knowledge and to create a certain degree of participation active employees, while limiting absenteeism (Lorenz, 2015).

3.3 Taylorism

Frederick Winslow Taylor (1911) analyzed and developed the means by which the work process is designed and organized to facilitate mass production. In order to secure maximum prosperity for both the employer and every employee, Taylor sets out some basic principles: replacing work methods with those based on the study of individual tasks; selection, training and development of each employee at the expense of ignoring them; providing detailed instructions and supervising each employee in carrying out their tasks, respectively division of labor equally between employees and between managers. This form of organization is predominantly characterized by the design and fragmentation of work in a large number of small tasks, each requiring a low level of worker qualification and assuming a high repetition of tasks. The responsibility for the design, planning, organization and control of the production process has been separated from the work force involved in the production process and, in addition, equipment for the optimization of the assembly flow has been introduced (Bain et al., 2002).

According to Adler (1997) or Uddin and Hossain (2015), "taylor" is associated with a low level of education and training at work and lack of involvement in problem solving, opposed to Discretionary Learning. However, Lorenz (2015) believes that this form of organization is generating superior profit to others, which justifies an increased interest of companies in externalizing their activities in low-wage countries requiring limited qualifications, employees being easily replaceable with each other or with technological equipment.

3.4 Traditional or simple organisations

Traditional organization involves activities and solving less complex problems, including tasks with the highest degree of individualism compared to other forms, but less monotonous than lean and taylor (Arundel & Hollanders, 2005). Many of the traditional jobs involve direct and indirect interaction with customers and therefore the number of places on the labor market is more limited. Based on the EWCS survey data applied in 2005, Arundel et al. (2007) conclude that the form of traditional organization is mainly found in service sectors (land transport, hotels and restaurants,

telecommunications or wholesale and retail trade), with trends remaining similar in 2010 (Lorenz, 2015).

4. WORKING CONDITIONS APPROPRIATE TO THEIR ORGANIZATION AND STRUCTURE AT EUROPEAN LEVEL

In the process of setting, measuring, and estimating forms of work organization, Lorenz and Valeyre (2005) propose a set of criteria for categorizing respondents in organizational classes, depending on the characteristics of each form, starting from a set of 15 questions, whose responses are measured by a "yes" - "no" dichotomic scale, and which were the subject of the Eurofound EWCS 2000 survey. Since 1990, this investigation has been carried out periodically at five-year intervals, and even though their number and content have been expanded along the way, there is perfect comparability over time.

The three studies conducted on the basis of the EWCS questionnaires applied during the period 2000-2010 used the same methodology of grouping the respondents on forms of work organization according to their answers to 15 questions. With similar results for the entire period of analysis, Discretionary Learning is specific for about 38% of the sample, with employees having specific tasks such as accountability for quality control, problem solving, workplace learning, and discretion in setting methods and rhythm for work. The second class of lean production includes about 27% of the total number of employees. Compared to the first, the organization of work is characterized by low levels of autonomy in setting the pace and working methods, recording the highest values for problem-solving activities, the quality of work standards and teamwork.

Taylorism is representative of approximately 18% of the number of employees surveyed, its characteristics being opposite to that of autonomy and training. Thus, the lowest values are recorded for problem-solving activities and discretion in establishing methods and pace of work. At the same time, the most frequently encountered tasks are those of team work, labor quality norms, respectively the horizontal and hierarchical constraints.

In line with the research methodology proposed by Arundel et al. (2007), using the EWCS survey data from 2005, the results for the EU-15 Member States confirm that a high level of autonomy and complexity of work combined with high levels of learning and increased problem-solving opportunities / requirements, are specific to the Discretionary Learning model, with the respective employees not being subject to significant temporal or hierarchical constraints. Even within the modern forms of work organization, the "lean" organization does not give employees such a great deal of discretion in establishing working methods (Lorenz, 2015), who work more in teams and undergo rotation of tasks compared to the first form. Also, specific to "lean" production is the fact that companies show constraints on labor quality standards, being the highest of the four groups, where "the responsibility of the employees for quality control considerably exceeds the average level of others" (Lorenz, 2015). For traditional forms of work organization, the results of the authors reveal low levels of employees in choosing their own methods of work and those in which they can carry out problem-solving activities, teamwork and the rotation of cadres at average levels. At the same time, while for employees in traditional organizations it is specific that all these dimensions of work have the lowest level, relevant is individual responsibility for quality control or well-defined working methods.

A number of authors (Arundel et al., 2007; Lorenz, 2015, Lundvall, 2016) present fundamental problems that manifest themselves as trends in the European Union, one of which is that in countries where work is organized to support high levels of autonomy, firms tend to be more active in terms of innovation developed through their own efforts. Conversely, in countries where workplace learning and problem-solving is constrained and employee autonomy is low (in establishing pace and working methods), firms tend to use an innovation strategy dominated by

upstream entities (suppliers). Their analysis gives rise to new assumptions about how participatory management strategies such as job rotation and teamwork are related to innovation.

4.1 European Innovation Policies in the Workplace

Emerging, innovative forms of work organization are an insufficient and highly differentiated resource used within European organizations, but they offer potential for convergence between improved organizational performance and employment growth (Totterdill, 2002). The European Union institutions place a strong emphasis on the influence of workplace innovation, both in a direct relationship with the performance of companies and institutions and as a factor of national and regional economic growth, thus requiring a common strategy and similar policies in the field employment.

The European Union is confronted with difficulties in achieving fundamental economic and social objectives such as competitiveness, innovation, quality employment, health and social inclusion. In recent years, changes in approaches and content in innovation policies are evident through the integration of innovative forms of work organization into Community and national research, innovation and social improvement programs and also as part of innovation policies, innovation technological innovation is thus complemented by innovation in the workplace. The potential offered by innovation in the labor market has no impact only at the level of the organizations, which can contribute to the mitigation of unemployment, to the creation of jobs for an increasingly educated workforce. However, there is an appreciation of insufficient use of fragmented policies for innovative forms of work organization, while the EU's innovation policies remain dominated by technological innovation and the business model. (Pot et al., 2016; Oeij et al., 2018).

Izsák et al. (2013) perform a comparative analysis of the 27 EU Member States, plus Norway and Switzerland, on the implementation of a mix of research and innovation policies, which outlines three categories of measures taken between 1999 - 2011 in research and innovation policy: institutional funding of research programs, collaborative programs between public and business organizations, direct support for business through scholarships and loans for research and innovation). The authors appreciate that national innovation policies remained relatively stable over the period under review, and the reform of a national innovation system through changes in the policy mix implies a much longer time.

The Europe 2020 Strategy, adopted at the European Council meeting on 17 June 2010, addresses the program, the objectives, the national and Community initiatives proposed to increase competitiveness at European level. One of its "Innovation Union" initiatives aims at achieving two objectives: a stronger link between research and innovation and job creation by creating an innovation-friendly environment, removing barriers to innovation (the difficulty in patents, fragmented markets) or the application of new concepts and ideas at the level of products and services, all with the main purpose of economic growth and employment.

Innovation policies are also in the non-technological sphere, with the European Commission drafting a "Guidelines for Member States' Workforce Policies", which closely monitors work-life balance policies with an adequate living standard and the existence of innovation in work, especially among young people, elderly workers and women (European Commission, 2010).

Also, in 2013, the European Commission launched the European Workplace Innovation Network (EUWIN), through which it outlined the main directions in defining, organizing, measuring and synthesizing workplace innovation. Thus, the widening of the content of innovation has led to the construction of new indicators, including in recent years specific workplace innovation indicators that support the assessment of the strengths and weaknesses of national innovation systems, respectively in the direction of the areas where countries need to adopt innovation strategies. Edler and Fagerberg (2017) stress the need for a deep understanding of national innovation systems for the implementation of effective innovation policies.

In essence, innovation policies prove to be an increasing instrument in support of technological and social innovation, and by strengthening innovation policies at the workplace, the European Commission seeks to respond to the requirements of a nation's entities (employees, societies, institutions). Since the 1990s, the tools used have been extended, including the EUWIN Framework Program, Community Inquiries or various comprehensive analyzes to highlight the directions to be followed through national programs. On this basis, the European Commission (2014) appreciated the achievement of three main objectives: developing a conceptual framework of workplace innovation; verifying empirical results on the existence of innovation at work; the recommendation of practical indicators in the analysis of workplace innovation.

5. CONCLUSIONS

Innovation is a complex and interactive process that involves both internal hierarchical levels, organizational structures of the company, as well as proposals from clients and suppliers. Through information networks created through research alliances with different institutions, laboratories, universities and integrating consumers, businesses are involved in the design of a product, financially support the development of technologies, production models, and can also benefit from the research results of collaborative institutions and acquiring knowledge that they can apply in their production processes. This competitive advantage in fact means a good use of resources, as well as the imposition on their markets of their products. In assessing national influences on economic performance, innovative processes in public sector organizations are directly relevant to supporting knowledge-intensive activities, while key organizations in the financial sector is the source of funding for the public and private sector, of R & D investment. At the same time, the internal organization of private companies is a component of the national innovation system, the author demonstrating that the organization of information flow and learning process affects the innovative capacity of the company through the interaction between the different departments involved in sales, production and R & D, business relationships are factors for structuring the national innovation system, based on competition and competitiveness. In the development of business-to-business and public or private research, innovation networks, the state has a special contribution. It provides the necessary financial resources for the research activity of national institutes, universities, and also has a number of levers (various tax programs or measures such as tax and tax cuts) that can increase interest in a more intense innovation activity, not only for large companies, but also for others.

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