



ACADEMY OF ECONOMIC STUDIES OF MOLDOVA

As a manuscript
CZU: [334.72:332.1]:339.137.2(478)(043)

Rusu Ecaterina

**THE FORMATION OF ECONOMIC CLUSTERS AS A FACTOR IN
ENHANCING THE COMPETITIVENESS OF THE MOLDOVAN
ECONOMY**

**SPECIALITY: 521.01
ECONOMIC THEORY AND ECONOMIC POLICY**

Summary of the Doctoral Thesis in Economic Sciences

Chisinau, 2026

The thesis was elaborated within the Doctoral School, Academy of Economic Studies of Moldova

Scientific supervisor:

BENEA-POPUȘOI Elina, PhD, associate professor, Academy of Economic Studies of Moldova

Members of the doctoral thesis advisory committee:

STRATAN Alexandru, Habilitated doctor, university professor, academician;

ACULAI Elena, Habilitated doctor, associate professor and researcher;

GHEORGHITĂ Maria, PhD, university Professor

Members of the committee for the public defense of the doctoral dissertation:

1. **STRATAN Alexandru**, Habilitated doctor, university professor, academician, rector of the Academy of Economic Studies of Moldova - chair;
2. **BENEA-POPUȘOI Elina**, PhD, associate professor, Academy of Economic Studies of Moldova - scientific supervisor;
3. **GHEORGHITĂ Maria**, PhD, university professor, Technical University of Moldova - official reviewer;
4. **NASTASE Carmen-Eugenia**, PhD, university professor, Dean of the Faculty of Economics, Administration, and Business, Ștefan cel Mare University of Suceava, Romania - official reviewer;
5. **HĂMURARU Maria**, PhD, associate professor, Vice Rector, Moldova State University - official reviewer;
6. **IGNATIUC Diana**, PhD, associate professor, Head of the Department of Economic Theory and Policy, Academy of Economic Studies of Moldova - official reviewer.

The defense will take place on October 22, 2026, at 2:00 p.m., during the meeting of the committee for the public defense of the doctoral dissertation at the Academy of Economic Studies of Moldova, located at: Republic of Moldova, Chișinău, MD-2005, 59 Gavriil Bănulescu-Bodoni St., Building B, 1st floor, Room 104. The doctoral dissertation and its abstract are available for consultation at the Scientific Library of the Academy of Economic Studies of Moldova, on the ASEM website (www.irek.ase.md), and on the ANACEC website (www.anacec.md).

**Chair of the Committee for the Public Defense
of the Doctoral Dissertation:**

doctor habilitat, profesor universitar,
academician

STRATAN Alexandru

Scientific supervisor:

PhD, associate professor

BENEA-POPUȘOI Elina

Author:

RUSU Ecaterina

TABLE OF CONTENTS

CONCEPTUAL FRAMEWORK OF THE RESEARCH	4
CONTENT OF THE DISSERTATION	8
GENERAL CONCLUSIONS AND RECOMMENDATIONS	25
BIBLIOGRAFY	31
LIST OF SCIENTIFIC PUBLICATIONS	34
ADNOTARE	36
ANNOTATION.....	37

CONCEPTUAL FRAMEWORK OF THE RESEARCH

Relevance and importance of the research topic. The competitiveness of the national economy is an essential factor in a country's economic development and prosperity and is directly influenced by the performance and productivity of enterprises. In the context of intensifying competition, enterprises continuously modernize their products, services, and processes in order to maintain their competitiveness. However, many enterprises, particularly small and medium-sized enterprises, have limited financial, technological, and human resources to support innovation and modernization processes independently. Under these conditions, cooperation among enterprises and their interaction with research institutions, public authorities, and other organizations facilitate access to complementary resources, knowledge, and skills. Economic clusters represent a model for organizing cooperation that is becoming increasingly widespread both in the business environment and within economic and regional development policies. The effectiveness of this model is supported by empirical research findings, which highlight the contribution of clusters to improving enterprise performance, intensifying innovation activity, and, consequently, fostering economic development.

For the Republic of Moldova, the role of clusters is particularly relevant given the structural constraints affecting national competitiveness, reflected mainly in low labour productivity, enterprises' limited access to technologies, skills, and resources for modernization, and limited innovation capacity. These conditions require a shift towards an economic development model based on sustainable sources of competitiveness, such as knowledge, innovation, and effective use of human capital. Economic clusters can support this transition by fostering higher value-added activities and strengthening enterprises' capacity to compete in external markets. In this context, research on economic clusters as a factor in enhancing the competitiveness of the Republic of Moldova's economy is particularly relevant.

At the same time, the long-term viability of clusters requires them to be firmly grounded in the economic realities of the national and regional context. It is therefore necessary to identify territorial concentrations and economic specializations that can provide the foundations for the formation and development of functional clusters. Such clusters cannot be created artificially or through the mere replication of international models; rather, they need to be grounded in the structure of the economy, territorial specificities, and existing or potential relationships among economic actors.

Identifying these conditions is particularly important in the context of the *National Economic Development Strategy 2030*, which promotes cluster development as a means of strengthening economic competitiveness. Effective implementation requires an analytical basis for targeting support towards areas with genuine clustering potential. Moldova's EU accession process further increases the relevance of such analysis, given the opportunities for European funding and deeper economic integration.

The scientific research problem lies in the insufficient theoretical and methodological grounding of economic cluster development and the lack of policies adapted to Moldova's context to harness clustering for enhancing national competitiveness.

Degree of research on the problem. The formation and development of economic clusters have been extensively studied internationally, while in recent years this topic has also received increasing attention in the Republic of Moldova. At the global level, the theoretical foundations of the cluster concept can be traced back to economists such as Alfred Marshall, who introduced the concept of "industrial districts", and were subsequently developed by scholars such as Jacobs, Becattini, Krugman, Porter, and Boschma. Their research addressed the role of proximity, social capital, and interactions among firms in cluster formation, as well as the contribution of clusters to enhancing competitiveness and fostering regional innovation. Over time, numerous empirical studies have demonstrated the positive effects of clusters on economic performance, productivity, and the capacity to attract investment (Asheim, Isaksen, Porter, et al.).

In the Republic of Moldova, research on economic clusters has advanced through the work of prominent researchers from the National Institute for Economic Research, including Alexandru Stratan, Elena Aculai, Natalia Vinogradova, and Alexandra Novac, whose studies have focused on the prerequisites for cluster formation, barriers to cluster development, support policies, and the assessment of clustering potential. The topic of clustering has also been addressed by other prominent Moldovan economists, including from the perspectives of competitiveness, inter-firm cooperation, and relational capital (Grigore Belostecinic, Elina Benea-Popușoi, Diana Ignatiuc, et al.); regional development and cooperation among economic actors, financing, and support infrastructure (Maria Gheorghîța, Irina Călugăreanu, Maria Hămuraru, Alina Dodu, et al.); as well as the practical implementation of cluster initiatives (Marin Ciobanu, Ion Tornea, Ghenadie Ivașcenco, et al.). These contributions are complemented by studies and initiatives supported by international organizations, particularly the United Nations Development Programme (UNDP) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).

Although existing studies address various aspects of the formation and development of clusters, the relevant literature in the Republic of Moldova remains fragmented. The relationship between economic clustering and competitiveness is insufficiently explored. Further research is therefore needed to identify clustering potential, assess the relationship between the degree of clustering and enterprise competitiveness, and provide an analytical basis for public policy.

Research aim. It aims to investigate the formation and development of economic clusters and assess their implications for the competitiveness of the Republic of Moldova's economy. In particular, the study seeks to analyse the prerequisites for cluster development in light of the evolution and structure of the national economy, the characteristics of the business environment, and the public policy framework. A key methodological component of the research is the identification and assessment of clustering potential in the Republic of Moldova by analysing the concentration and specialization of economic activities at the sectoral and territorial levels using the Clustering Index. The research also aims to determine the relationship between the degree of clustering and enterprise competitiveness, assessed through labour productivity.

The research aim is reflected in the following **research objectives**:

1. To provide a theoretical and methodological foundation for the process of economic cluster formation and the mechanisms through which this process influences the competitiveness of the national economy.
2. To analyse models and mechanisms of cluster configuration, formation, and development, drawing on international practices and the support instruments employed.
3. To analyse the structure of the Republic of Moldova's economy during the Soviet period from the perspective of the prerequisites for economic clustering, with particular emphasis on the experience of agro-industrial complexes.
4. To assess the structure of the national economy, the business environment, and the policy framework from the perspective of the prerequisites for the development of economic clusters.
5. To identify and assess clustering potential in the Republic of Moldova at the level of economic activities and administrative-territorial units.
6. To assess the relationship between the degree of economic clustering and enterprise competitiveness by applying correlation analysis.
7. To develop recommendations for stimulating clustering processes and harnessing the potential of economic clusters to strengthen competitiveness.

The research hypotheses are complex in nature and include the following:

- Hypothesis regarding the informational and methodological basis. Statistical data available in the Republic of Moldova at the sectoral and territorial levels provide a sufficient basis for applying quantitative methods to identify clustering potential.

- Hypothesis regarding the analytical methods. The application of methods for analysing economic concentration makes it possible to identify a coherent set of potential regional and sectoral clusters in the Republic of Moldova.
- Hypothesis regarding the sectoral prerequisites for cluster formation. The structure of the economy and the characteristics of the business environment in the Republic of Moldova provide differentiated sectoral prerequisites for the formation and development of economic clusters.
- Hypothesis regarding the relationship between clustering and competitiveness. There is a positive and statistically significant relationship between the degree of clustering of economic activities and enterprise competitiveness, measured through labour productivity.

Summary of the research methodology. The following methods were applied in the research:

- Scientific abstraction method, to provide the theoretical foundation for the concept of clustering and its relationship with competitiveness.
- Comparative analysis and modelling by analogy, to analyse cluster development models and international practices.
- Historical-comparative method, to analyse the evolution of the economic structure and forms of economic cooperation in the Republic of Moldova.
- Structural and statistical analysis, to identify sectoral and territorial clustering potential.
- Econometric and correlation analysis, to assess the relationship between clustering and labour productivity.
- Logical deduction and scientific systematization, to formulate the conclusions and recommendations of the research.

Scientific novelty and originality of the research. This study constitutes the first doctoral dissertation in the Republic of Moldova to focus primarily on economic clusters as its main research subject. The scientific novelty and originality of the research lie in developing an integrated theoretical and methodological framework for assessing the current and potential level of economic clustering. This approach goes beyond a static perspective on isolated industrial agglomerations and, for the first time in the Republic of Moldova, estimates the correlation between the degree of clustering and economic competitiveness. The originality of the research also derives from operationalizing the concept of clustering as a pillar of economic policy adapted to the specific context of the Republic of Moldova. The innovative character and scientific originality of the dissertation are further reflected in the following areas of scientific contribution:

- By applying the Clustering Index, the clustering potential is identified and assessed across all administrative-territorial units and manufacturing activities in the Republic of Moldova.
- The results obtained from the calculation, analysis, and interpretation of the Clustering Index are mapped to illustrate the territorial distribution of clustering potential.
- The correlation between the intensity of economic clustering and enterprise competitiveness, assessed through labour productivity, is empirically evaluated.

The theoretical significance of the research lies in synthesizing and extending theoretical approaches to cluster formation and functioning and providing a consolidated framework for explaining the relationship between clustering and economic competitiveness. A distinct contribution is the systematization of Soviet-period economic organization and cooperation, particularly the economic structure and functioning of agroindustrial complexes. The research also systematizes the evolution of cluster support policies in the Republic of Moldova, highlighting the main stages, priorities, and instruments for fostering economic clustering. Furthermore, it contributes to the methodological framework for identifying and assessing clustering potential by integrating sectoral and territorial analysis of economic activity concentration.

The practical value of the research derives from the applicability of its findings to the design and implementation of economic development policies, with particular emphasis on clustering, in the Republic of Moldova. In particular, the research contributes to achieving the objectives set out in the *National Industrial Development Programme for 2024-2028*, which envisages the assessment of clustering potential and the promotion of cluster development in the industrial sector. The findings make it possible to identify economic activities and administrative-territorial units with clustering potential and can provide an analytical basis for the development of cluster initiatives and support measures in this field.

The practical dimension of the research is further demonstrated through concrete initiatives. In this context, the doctoral candidate, together with the scientific supervisor, founded the National Association of Clusters of the Republic of Moldova, an organization established to support the coordination, development, and promotion of economic clusters at the national level. This initiative facilitates the transfer of knowledge and expertise from academia to the business environment and provides further evidence of the practical relevance of the research.

The main scientific results submitted for defence are as follows:

1. The theoretical and methodological framework of clustering was systematized by delineating the main conceptual approaches and identifying the mechanisms through which clustering can influence economic competitiveness.
2. International models and mechanisms of cluster configuration, formation, and development were systematized, and support instruments relevant to the economic and institutional conditions of the Republic of Moldova were identified.
3. The historical prerequisites for economic concentration and cooperation in the Republic of Moldova during the Soviet period were identified and interpreted, with particular emphasis on the experience of agroindustrial complexes and their elements relevant to clustering processes.
4. The prerequisites and constraints for cluster development across economic sectors in the Republic of Moldova were assessed, highlighting the factors underlying the structural and functional immaturity of industrial agglomerations.
5. The clustering potential of the manufacturing industry was identified and assessed from both sectoral and territorial perspectives through the application of the Clustering Index and the mapping of the results, highlighting economic activities and territories with clustering potential.
6. The relationship between the degree of clustering and enterprise competitiveness, measured through labour productivity, was empirically determined using correlation analysis.
7. A set of recommendations was developed based on the research findings, aimed at harnessing clustering potential and strengthening the contribution of clusters to the competitiveness of the national economy.

Publications related to the dissertation topic. The research findings have been disseminated through 11 scientific publications. Of these, two are indexed in the internationally recognized Web of Science and Scopus databases, one of which was presented at the *International Conference on Management Science and Engineering Management*.

Implementation of the scientific results. The implementation of the research findings is documented by two implementation certificates issued by the Ministry of Economic Development and Digitalization and the Parliamentary Committee on Economy, Budget and Finance of the Republic of Moldova.

Keywords: economic competitiveness, territorial competitiveness, competitiveness pole, polarisation effect, positive externalities, economic cluster, economic clustering, clustering potential, relational capital, cluster policies, industrial agglomeration, agro-industrial association, spatial distribution, territorial configuration, spatial proximity, non-spatial proximity, proximity networks, Clustering Index, cluster mapping, innovation, labour productivity, economic specialisation, glocalisation.

CONTENT OF THE DISSERTATION

Chapter 1, “Theoretical and Empirical Framework for Research on the Formation of Economic Clusters and Its Implications for Economic Competitiveness,” provides the theoretical foundation for the concept of economic clustering, examining the main approaches in the literature to defining clusters and the role of geographical and non-spatial proximity. It also addresses the methodological and institutional aspects of cluster formation and the empirical evidence on the relationship between economic agglomerations and competitiveness. The chapter further reviews international cluster development models, highlighting good practices in cluster formation and governance, as well as the role of cluster management organizations.

1.1. Theoretical Dimensions and Conceptual Approaches to the Economic Cluster

The modern definition of a cluster is the result of a long process of observation and research that began well before the term itself became established. Over time, the literature has employed several related concepts, such as “industrial district,” “competitiveness pole,” and “industrial agglomeration.” Terminology has varied depending on the author and national context, reflecting the diversity of approaches to the phenomenon of economic development.

A retrospective analysis of the evolution of the cluster concept indicates that Alfred Marshall can be regarded as a pioneer in this field. He studied what is now referred to as a cluster, using the concept of the *industrial district* to describe geographical areas characterized by a significant concentration of firms operating in similar or interdependent sectors (Marshall, 1920). According to Marshall, industrial districts generate positive externalities for firms located within the same geographical area through access to information and knowledge, the presence of specialized suppliers, and the development of a local pool of skilled labour.

A complementary perspective is provided by François Perroux (1950), who shifts the focus from the geographical concentration of firms to economic interdependencies and their effects on economic growth. Through the concept of “growth poles,” he argues that economic development is not evenly distributed but tends to concentrate around firms or industries capable of generating spillover effects on other economic activities. Thus, a growth pole does not imply the existence of a large firm operating in isolation, but rather a system of interconnected firms linked through economic relationships and mutually reinforcing development effects.

Several decades later, the Marshallian approach to territorial concentration regained the attention of researchers. In the 1970s, Giacomo Becattini further developed Marshall’s concept of the industrial district by incorporating its social and territorial dimensions. He defines the industrial district as “a socio-territorial entity which is characterised by the active presence of both a community of people and a population of firms in one naturally and historically bounded area” (Becattini, 2017, p. 15). Thus, Becattini emphasizes the role of inter-firm relationships and the embeddedness of firms within their social and territorial environment.

The concept of cluster became firmly established in the economic literature in the 1990s, particularly through the work of Michael Porter, who gradually developed the concept by incorporating new dimensions related to inter-firm relationships and the economic environment in which firms operate. In his 1990 work, Porter introduced clustering into his analysis of national competitive advantage, emphasizing the interconnections among related and supporting industries and the role of geographical concentration (Porter, 1990). Subsequently, Porter’s perspective became more complex, moving beyond geographical concentration and incorporating the importance of institutional and cultural proximity. Thus, in his later approach, a cluster is defined as “We define a cluster as a geographically proximate group of interconnected companies, suppliers, service providers and associated institutions in a particular field, linked by externalities of various types” (Porter, 2003, p. 562).

The concept of a cluster in the literature has not been limited to Michael Porter's approach. It has been developed in parallel or subsequently by numerous scholars who have emphasized different cluster characteristics, including geographical concentration, sectoral specialization, inter-firm relationships, knowledge transfer, and the role of institutions.

A synthesis of these theoretical approaches, in line with the objectives of the present research, allows for the formulation of the following definition of an economic cluster: *An economic cluster is a territorial concentration of enterprises specialized in a particular field, together with related economic and institutional actors, among which relationships of cooperation, competition, and interdependence develop. Repeated interactions among these actors contribute to the formation of relational capital based on trust and collaborative ties, facilitating the exchange of information, knowledge, skills, and resources, thereby enhancing productivity, innovation, and competitiveness.*

1.2. Clusters and the Mechanisms of Competitiveness Generation: From Geographical to Relational Proximity

Competitiveness is a multidimensional concept that was widely used in economics and the business environment long before the cluster model became a public policy instrument. Understanding the mechanisms that determine competitiveness therefore requires an analysis of how economic literature has explained the sources of competitive advantage over time. While the theories of Smith and Ricardo laid the foundations for the idea that international specialisation represents a source of competitiveness, subsequent attention shifted towards identifying the factors that determine these advantages. In this regard, Heckscher (1949) and Ohlin (1933) argued that a nation's advantages are determined primarily by its endowment with factors of production, such as labour, capital, and natural resources. Although the Heckscher-Ohlin model explains comparative advantage in terms of factor endowments, it remains rooted in the classical paradigm of international trade.

The evolution of the global economy and the intensification of competition have revealed the limitations of basing economic success exclusively on the abundance of factors of production. In this context, Porter proposes a systemic approach to competitiveness, according to which competitive advantage results from the interaction between factor conditions, demand conditions, firm strategy and rivalry, and related and supporting industries. These elements are integrated into the model known as Porter's Diamond (Porter, 2000). Within this approach, clusters provide the framework in which the interaction among these factors intensifies, stimulating productivity and innovation and thereby contributing to increased competitiveness.

The advantages of clusters are generated through mechanisms associated with geographical and relational proximity. Geographical proximity fosters the formation of a local pool of specialised labour, facilitating enterprises' access to the required skills and reducing the costs associated with recruitment and vocational training (Dadashian, 2007; Pencea, 2007). At the same time, the territorial concentration of economic activities promotes stronger cooperation and subcontracting relationships among enterprises, contributing to the consolidation of supply chains (Sforzi, 1990; OECD, 2007). Cluster membership can also facilitate enterprises' access to external markets and their internationalisation (Bettiol et al., 2021).

The competitiveness of a cluster does not, however, result exclusively from spatial concentration, but also depends on the behaviour of its actors, their sense of belonging, and relationships of trust, which can generate synergies and facilitate the exploitation of shared opportunities (Iammarino & McCann, 2006; Benea-Popușoi & Rusu, 2020; Hămuraru and Buzdugan, 2025). This relational dimension is particularly important for innovation, as interactions among actors facilitate the circulation and recombination of information and knowledge, contributing to the emergence of new ideas and solutions (Asheim, 1999; Crescenzi et al., 2012). In this regard, Boschma (2005) argues that geographical proximity alone is

insufficient for learning and knowledge transfer processes and needs to be complemented by cognitive, organisational, social, and institutional proximity.

The benefits generated by clusters are not limited to individual firms, but can extend to sectors and, ultimately, to the economy as a whole. Understanding this process requires approaching competitiveness as a phenomenon that develops and manifests itself at interconnected levels: the microeconomic level, corresponding to enterprises; the mesoeconomic level, relating to sectors and industries; and the macroeconomic level, encompassing the economy as a whole (Peneder & Rammer, 2018; Ignatiuc, 2020).

At the mesoeconomic level, competitiveness is not simply the sum of the performance of individual enterprises, but is also influenced by the relationships and interdependencies among them. Clusters represent one of the forms through which these interdependencies manifest themselves, fostering specialisation, strengthening relationships among firms, and facilitating their integration into value chains. The effects of clustering on sectoral performance are also supported by the empirical findings of Delgado, Porter, and Stern (2014), according to which industries embedded in strong clusters experience stronger growth in employment, wages, the number of establishments, and patenting activity. Moreover, the presence of strong clusters fosters the emergence of new regional industries and can create growth opportunities for other industries and clusters within the same region.

At the macroeconomic level, competitiveness refers to an economy's capacity to generate and sustain the well-being of its population, with productivity being one of its key determinants (Porter, 1990; Krugman, 1994). In this context, clusters can serve as a mechanism through which competitive advantages developed at the firm level are reinforced at the sectoral level and, together with other factors, contribute to the competitiveness of the national economy. The relationship between cluster development and national competitiveness is also supported by the empirical findings of Paraušić et al. (2014), who identify a positive correlation between the two and highlight variations in this relationship depending on the level of economic development. In developed economies, high levels of competitiveness and productivity, underpinned by investment in research and innovation, provide favourable conditions for the emergence and development of competitive clusters. In developing economies, this relationship may also operate in the opposite direction, with cluster development and improvements in innovation and productivity within clusters contributing to stronger national competitiveness. The relationship between clustering and competitiveness can therefore be regarded as interdependent, with its direction and strength shaped by the level of development and the specific economic conditions of each country.

1.3. The process of economic cluster formation: empirical approaches and international experience

Clusters can form organically or deliberately through public authority intervention aimed at achieving economic development objectives. Depending on the actors that initiate and drive the clustering process, the literature distinguishes between two main formation mechanisms: “top-down” and “bottom-up”. Overall, the main difference between the two mechanisms lies in the fact that, under the “top-down” approach, the criteria for cluster formation are established a priori by policymakers, whereas the “bottom-up” approach relies on the direct mobilisation and involvement of the business community, which identifies opportunities, initiates collaboration, and develops cooperation networks according to actual market interests and needs (Fromhold-Eisebith & Eisebith, 2005).

Regardless of the path through which they are formed, experience has shown that the sustainability of clusters depends to a large extent on how cluster actors are involved. Beyond the traditional role of firms and public authorities, the economic literature has validated the “triple helix” model introduced by Etzkowitz & Leydesdorff (2000), according to which a cluster should bring together not only representatives of the business community, but also universities and other

related institutions, such as chambers of commerce, export promotion organisations, investment promotion agencies, and SME support organisations. Within this model, universities play an important role, with cooperation between universities and clusters extending beyond graduate recruitment to include joint research, innovation, and knowledge transfer activities (Benea-Popușoi and Rusu, 2018; Gheorghita and Pripa, 2022).

However, international experience shows that the mere involvement of the three traditional categories of actors does not always guarantee the success of clusters. This is particularly characteristic of emerging and developing economies, where the lack of effective cooperation among these actors makes the “triple helix” model difficult to implement. In such contexts, the literature proposes alternative approaches, such as the “four-leaf clover” model, which adds a fourth component, namely catalyst organisations acting as “trusted intermediaries” and facilitating cooperation where social capital and direct relationships among traditional actors are insufficient or weak.

An analysis of cluster formation experiences in France, Italy, Germany, the United Kingdom, Romania, and the United States shows that, although development models differ depending on each country’s economic structure, industrial tradition, and institutional framework, they share a number of common features. In most cases, cluster formation and development have built on existing economic specialisations, industrial capabilities, or research capacities, while public intervention has focused on leveraging this potential and creating favourable conditions for cooperation among the actors involved. Differences relate mainly to the intensity of state intervention, the instruments employed, and the roles assigned to different categories of actors. In France, cluster policy was developed around the objective of enhancing competitiveness by concentrating resources within competitiveness poles and promoting joint projects between enterprises and research institutions. In Germany, emphasis was placed on leveraging the regional industrial and technological base and strengthening links between industry and research, with clusters gradually becoming integrated into innovation policy. Italy followed a trajectory, moving from traditional specialisations and local industrial districts towards national technology clusters focused on research, innovation, and strategic fields. In the United States, clusters initially developed around universities, entrepreneurship, and private initiative, while federal intervention became more prominent later, as technological competition gained importance.

Romania’s experience presents a distinct case that is also relevant to the Republic of Moldova. Unlike economies with long-standing traditions of cluster development, Romania gradually built its institutional framework, starting from the identification of existing economic agglomerations and the promotion of cooperation among enterprises, universities, research organisations, and public authorities. A distinctive feature of the Romanian model was the inclusion of catalyst organisations. Their role was particularly relevant where direct relationships between the business sector, research institutions, and public administration were still insufficiently developed. At the same time, the establishment of CLUSTERO as a representative organisation at the national level contributed to representing the interests of clusters, facilitating the exchange of experience, and connecting them to European networks.

From the perspective of the Republic of Moldova, the analysis of the models presented indicates that there is no need to adopt any international model in its entirety, but rather to select those elements that correspond to the structure of the economy and domestic institutional capacity. A first lesson is the need to build on existing economic specialisations and concentrations before establishing support mechanisms. Another lesson concerns the development of relationships among cluster actors. The experiences analysed show that the mere concentration of enterprises within a territory is not sufficient. Cooperation among enterprises, universities, research centres, and public authorities is essential for knowledge exchange, the development of joint projects, and the realisation of the benefits of clustering. For the Republic of Moldova, Romania’s experience suggests that, at an initial stage, intermediary organisations can play an important role in

facilitating these relationships, particularly where cooperation between enterprises and research institutions remains limited.

Chapter 2, “The structure of the economy of the Republic of Moldova and state policies as prerequisites for the formation of economic clusters,” examines the historical and structural evolution of the Moldovan economy from the perspective of the prerequisites for clustering, tracing their origins both during the Soviet period and throughout the post-independence period. The chapter focuses on the structure of Moldova’s economy during the Soviet period, highlighting the experience of forming agro-industrial associations. It then analyses the evolution of the main economic sectors following the declaration of independence, considering their contribution to GDP formation, employment, and the dynamics of the business environment. The chapter also examines the framework of macroeconomic, sectoral, and cluster development policies in order to assess the extent to which public policies support cooperation and economic integration at the territorial and sectoral levels.

2.1. Structure of Moldova’s economy during the Soviet period. Experience in the formation of agroindustrial associations

The Soviet period had a significant impact on the structure of the economy, profoundly shaping the organisation of economic activities, relationships among productive sectors, and the territorial distribution of resources. Over the course of these 50 years, the economy underwent major transformations, shifting from one based predominantly on agriculture to one increasingly oriented towards industry. Thus, by the end of the 1980s, the economic structure of the Moldavian SSR was considered industrial-agrarian. Industry played the leading role in the formation of the gross social product, accounting for approximately 57%, followed by agriculture with over 24%, trade with 9%, and construction with 8% (Statistical Yearbook, 1990).

Although the Soviet planned economy did not allow for the free development of economic initiatives, agroindustrial associations reflected, in an early form, some of the operating principles of modern clusters, such as geographical proximity, specialisation in economic niches, and the generation of synergies among the actors involved. In this context, Moldovan Agroproms can be regarded as forms of organisation specific to the planned economy that display certain similarities with contemporary cluster-based regional development initiatives. However, behind these similarities lie major differences in the governance mechanisms of these forms of association. While contemporary cluster management generally follows a bottom-up approach, based on voluntary interaction among the actors involved, competition, and flexible market relationships, the Agroprom model represented a rigid top-down form of integration. Within Soviet associations, coordination was imposed through mandatory central planning, administrative subordination, and the forced pooling of resources under exclusive state control. Consequently, the Soviet mechanism replaced competitive forces with state directives, undermining the long-term adaptability of agro-industrial associations.

2.2. Analysis of the structure of the economy and the enterprise environment in the Republic of Moldova in relation to the prerequisites for the formation of economic clusters

Following the proclamation of independence, the Republic of Moldova initiated a broad process of economic and institutional reforms aimed at transitioning to a market economy. The transition process was complex and lengthy, while social vulnerabilities and political instability reduced its impact and effectiveness.

Since the early 1990s, the economic structure of the Republic of Moldova has undergone major transformations, marked by an accelerated process of deindustrialisation. Overall, the national economy experienced a significant decline in the value added generated by the agricultural and industrial sectors, accompanied by a steady increase in the share of services and trade (Figure 1). Deindustrialisation and the dismantling of the agroindustrial complex also led to a profound

reconfiguration of the labour market in the Republic of Moldova, with the share of employees in the primary and secondary sectors of the economy declining significantly.

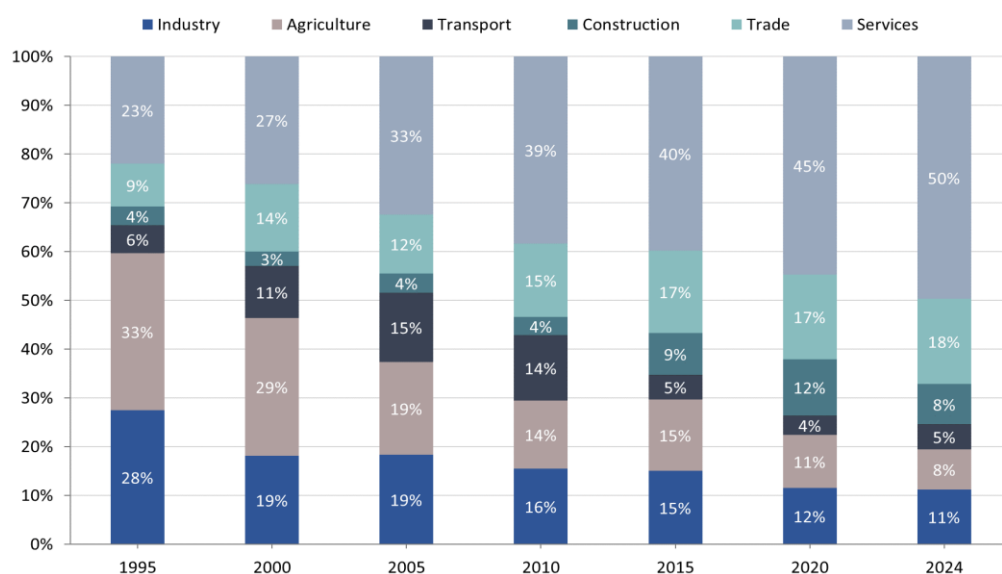


Figure 1. Changes in the structure of Gross Value Added by major economic activities, % of total

Source: developed by the author based on data from the Statistical Yearbook (2002, 2025).

Another determining factor in cluster formation is the existence of economic sectors with sufficient critical mass and potential for specialisation. The literature highlights the important role of SMEs in cluster ecosystems due to their flexibility, adaptability, and active participation in complex value chains.

An analysis of the structure of Moldova's enterprise sector, based on the SME definition, highlights two main features: on the one hand, the overwhelming predominance of microenterprises, which generally have limited potential for integration into complex value chains, and, on the other hand, the dominant role of a small number of large companies, which account for the largest share of turnover (Figure 2).

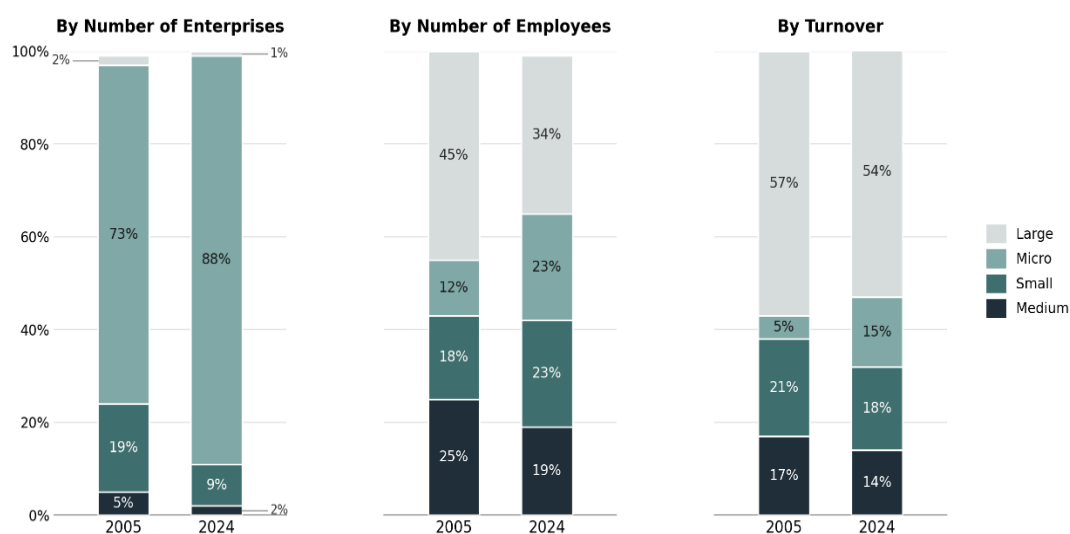


Figure 2. Structure of enterprises by size class in the Republic of Moldova

Source: developed by the author based on data from the NBS Statistical Databank, "Entrepreneurship" section

2.3. The role of state policy and private sector initiatives in the formation of economic clusters in the Republic of Moldova

Cluster development depends not only on the presence of enterprises and sectoral specialisations, but also on the macroeconomic and institutional context in which they operate. In the Republic of Moldova, the systemic framework has evolved unevenly over the past three decades, with progress in macroeconomic stability, trade liberalisation, integration into external markets, and the digitalisation of public services. At the same time, challenges persist in relation to governance and institutional effectiveness, corruption, unfair competition, the informal sector, and low levels of trust in public authorities (Stratan, 2022).

The security environment represents a fundamental pillar of economic development. In the Republic of Moldova, its evolution over the past three decades has been marked by contradictions and discontinuities stemming from both domestic political instability and the complexity of the regional geopolitical environment. These vulnerabilities have also influenced investors' perceptions of the national economy, given that political stability and the predictability of the country's external orientation are important factors in investment decision-making.

Alongside the security environment, the quality of public governance is an important condition for the stability and predictability of the economic environment. The World Bank's "Government Effectiveness" indicator reflects perceptions of the quality of public services, the professionalism of civil servants and their independence from political pressures, as well as the quality of public policy formulation and implementation (WB, 2024). In the Republic of Moldova, the indicator remained negative throughout the 1998-2023 period, recording a positive value for the first time in 2024.

These institutional conditions are further shaped by macroeconomic and financial dynamics. In recent years, the Republic of Moldova has managed to maintain relative macroeconomic stability despite a succession of crises and external shocks. Nevertheless, dependence on imports, exposure to fluctuations in energy prices, and the regional geopolitical context continue to make the economy vulnerable and generate periods of volatility in inflation, interest rates, and economic activity. For enterprises, these fluctuations increase uncertainty and reduce the predictability of financing costs, thereby affecting investment decisions. From a clustering perspective, such a context can constrain long-term investment and the development of stable cooperative relationships among enterprises.

The analysis of the evolution of framework policies shows that, for a considerable period, public interventions affecting economic development were relatively fragmented. Policies supporting the private sector focused primarily on improving the business environment, simplifying the regulatory framework, and facilitating access to finance. In parallel, agriculture benefited from a distinct sectoral policy, in which subsidies for agricultural producers and investment in the sector represented one of the main instruments of public intervention. The industrial dimension of economic policy remained less developed. Although specific instruments, such as free economic zones and industrial parks, were introduced, they remained relatively separate and were not integrated into a comprehensive vision for industrial development. A more coherent approach emerged with the adoption of the National Industrialisation Programme for 2024-2028 (Government Decision No. 280/2024), which introduced a broader mix of instruments aimed at developing and enhancing the competitiveness of the industrial sector, including support for cluster development.

However, the evolution of clustering policy per se has been less coherent, characterised by a gap between the strategic recognition of the concept and the availability of effective mechanisms for its implementation (Rusu and Benea-Popușoi, 2026). Although interest in cluster development has increased in recent years, it has not resulted in a dedicated programme for cluster development and financing. Under these circumstances, the establishment and development of clusters have relied largely on technical and financial assistance provided by development partners.

Chapter 3, “Implications of the economic cluster formation process for the competitiveness of the economy of the Republic of Moldova,” includes an empirical analysis of the potential for economic cluster formation in the Republic of Moldova. A key methodological approach is cluster mapping, based on the Clustering Index, which enables the identification of territorial specialisation and concentration of manufacturing activities and highlights administrative-territorial units with clustering potential. Based on the results obtained, a cluster map is developed, reflecting the territorial distribution and intensity of the identified economic agglomerations. The chapter also analyses the relationship between the degree of clustering and enterprise competitiveness, assessed through labour productivity, representing an element of novelty of the research through the empirical testing of this relationship in the context of the Republic of Moldova.

3.1 Analysis of economic sectors from the perspective of the prerequisites for cluster formation

The analysis of economic sectors from the perspective of the prerequisites for cluster formation highlights a number of structural vulnerabilities that affect their capacity to generate productivity and competitiveness gains.

In agriculture, labour productivity remains low, while production is fragmented among a large number of households and small-scale farms. At the same time, a significant share of agricultural production, including export-oriented production, is marketed as raw materials or products with a low degree of processing, which limits the value added generated within the sector. From this perspective, the development of agri-food clusters can provide a means of better integrating agricultural production with processing, storage, logistics, and marketing, thereby contributing to increased value added within the sector.

The manufacturing sector continues to be dominated by traditional industries, particularly food and beverage manufacturing, textiles, and apparel. At the same time, investment attracted over recent decades has contributed to the emergence of new specialisations, including the automotive components industry. Although this industry would generally imply a higher degree of technological sophistication, in the Republic of Moldova activity remains largely concentrated on the production of wiring harnesses and other components, while more complex segments of the value chain remain underdeveloped. The development of the industry has relied to a considerable extent on foreign investment attracted, among other factors, by low labour costs, an advantage that is becoming increasingly less sustainable as wages rise. A similar situation can be observed in some traditional industries, particularly apparel manufacturing, where a significant share of enterprises continue to operate under the *lohn* system, with limited involvement in design, product development, and own-brand promotion (Gheorghita, 2012; Rusu & Benea-Popușoi, 2021). Nevertheless, recent years have also seen the emergence of producers developing their own products and brands, indicating potential for a transition towards higher value-added activities.

The services sector has expanded considerably in recent years. The information technology sector has been particularly notable, becoming an important exporter of services. However, a significant part of the sector remains focused on outsourcing and providing services to foreign companies, while the development of proprietary products remains limited. This model may become increasingly vulnerable as the use of artificial intelligence expands and some activities currently outsourced become automated. At the same time, balance of payments data indicate a gradual diversification of service exports and the development of other activities, including financial and consulting services, tourism, and education. These developments broaden the basis for the formation of new agglomerations and clusters in the services sector, particularly in activities based on specialised skills.

3.2. Identification of branches of the economy of the Republic of Moldova with clustering potential

According to the literature, cluster mapping involves a sequence of stages, ranging from the selection of the identification tool to the spatial representation and interpretation of the results

(Andersson et al., 2004). Adapted to the specific features of the quantitative method and the availability of data for the Republic of Moldova, the process applied in this research and the operationalisation of each stage are summarised in Table 1.

Table 1. Operationalisation of the stages of cluster mapping

Stage	Operationalisation within the research
Selection of the quantitative instrument	Application of the Clustering Index (CI) developed by Sternberg and Litzenberger (2004), selected after testing several quantitative methods. The CI integrates three dimensions: relative industrial stock (IS), relative industrial density (ID), and relative plant size (PS), providing an assessment that does not depend on a single economic variable. Details are provided in Formula 1.
Definition of the cluster concept	The cluster is approached through its horizontal dimension, namely the geographical concentration of economic units operating in the same or related branches. An economic branch is operationalised in statistical terms as an aggregation of units engaged in the same or similar productive activities, classified according to CAEM-2.
Definition of the geographical unit of analysis	The 35 second-level administrative-territorial units, namely 32 districts, the municipalities of Chişinău and Bălţi, and ATU Gagauzia, are used as spatial units for assessing the territorial concentration and specialisation of economic activities.
Data audit and collection	Manufacturing activities are analysed at the two-digit CAEM-2 level (divisions), covering all 20 divisions, while for certain industries the analysis is further disaggregated to the three-digit level (groups) for C10, C23, and C32, and to the four-digit level (classes) for C11. Data simultaneously disaggregated by economic activity and second-level ATUs are not published at this level of detail and were provided by the National Bureau of Statistics at the author's request. Data for 2023 are used as the most recent reference year for which complete and consolidated datasets were available at the level of disaggregation required for the research.
Data processing and analysis of results	Calculation of the CI and interpretation of the results according to the thresholds proposed by Sternberg and Litzenberger: $CI \leq 1$, under-representation or uniform distribution; $1 < CI \leq 8$, over-representation without agglomeration; $8 < CI \leq 64$, moderate agglomeration; $64 < CI \leq 512$, relevant agglomeration; $CI > 512$, highly relevant agglomeration.
Mapping of results	Spatial representation of the identified industrial agglomerations according to the location and intensity of clustering potential, and development of a cluster map at the national level. To map regional clustering potential, moderate or relevant industrial agglomerations identified at the level of second-level LPAs were analysed in relation to neighbouring districts. The presence of the same economic activity in adjacent districts, including those with lower Clustering Index values, was taken into account to identify potential regional agglomerations.

Source: developed by the author

Based on the methodological stages presented above, the Clustering Index (CI) and its components are calculated using the following formula:

$$CI = IS_{ij} \times ID_{ij} \times 1/PS_{ij}$$

$$IS_{ij} = \frac{\frac{e_{ij}}{b_i}}{\frac{\sum_{i=1}^n e_{ij}}{\sum_{i=1}^n b_i}} \quad ID_{ij} = \frac{\frac{e_{ij}}{a_i}}{\frac{\sum_{i=1}^n e_{ij}}{\sum_{i=1}^n a_i}} \quad PS_{ij} = \frac{\frac{e_{ij}}{p_i}}{\frac{\sum_{i=1}^n e_{ij}}{\sum_{i=1}^n p_i}}$$

where:

e_{ij} - number of employees in region i in industry j ;

b_i - population of district i ;

$\sum e_{ij}$ - total number of employees nationwide in industry j ;

$\sum b_i$ - total population nationwide;

a_i - area of region i ;

$\sum a_i$ - total area nationwide;
 p_{ij} - number of enterprises in district i in industry j ;
 $\sum p_{ij}$ - total number of enterprises nationwide in industry j .

(1)

The results of the Clustering Index reveal an uneven distribution of clustering potential, both across economic branches and territorially.

In the Northern Region of the Republic of Moldova, industrial activity is concentrated predominantly in the municipality of Bălți, which represents the region's main industrial pole. The Clustering Index identifies a "highly relevant" industrial agglomeration in the *manufacture of motor vehicles, trailers and semi-trailers*. Several "relevant" industrial agglomerations are also identified in Bălți, including the *manufacture of electrical equipment, manufacture of basic metals, manufacture of medical and dental instruments and supplies, manufacture of wearing apparel*, as well as certain activities in the *food and beverage industry* (Table 2). The results thus outline a diversified industrial profile of Bălți and highlight important prerequisites for the development of clustering processes.

Table 2. Highly relevant and relevant industrial agglomerations in the manufacturing sector of the Northern region of the Republic of Moldova

Industrial Branch	CAEM Code	Total nationwide, 2023		Territorial level, 2023			
		No. of firms	No. of employees	ATU	No. of firms	No. of employees	CI
“very relevant” industrial agglomerations							
Manufacture of motor vehicles, trailers and semi-trailers	C29	14	10412	Bălți	2	4787	651
“relevant” industrial agglomerations							
Manufacture of electrical equipment	C27	22	1482	Bălți	2	488	297
Metallurgical industry	C24	8	103	Bălți	1	23	277
Manufacture of medical and dental instruments and supplies	C325	61	469	Bălți	7	80	194
Manufacture of wearing apparel	C14	326	13680	Bălți	29	2334	150
Manufacture of beer	C1105	13	660	Bălți	1	129	149
Manufacture of jewellery, imitation jewellery and related articles	C321	37	125	Bălți	2	23	99
Manufacture of dairy products	C105	27	3401	Bălți	1	829	89
Manufacture of games and toys	C324	15	875	Bălți	1	118	89
				Fălești	1	727	67
Manufacture of vegetable and animal oils and fats	C104	57	1300	Bălți	1	546	73

Source: developed by the author based on own calculations using NBS data.

"Moderate" industrial agglomerations show a more diversified territorial distribution. Certain activities, such as the manufacture of grain mill products and the manufacture of soft drinks, display agglomerations across several administrative-territorial units (Table 3), indicating potential for regional cluster initiatives.

Table 3. Moderate industrial agglomerations in the manufacturing sector of the Northern region of the Republic of Moldova

Industrial Branch	CAEM Code	Total nationwide, 2023		Territorial level, 2023			
		No. of firms	No. of employees	ATU	No. of firms	No. of employees	CI
Manufacture of machinery and equipment	C28	59	1118	Bălți	4	78	47
Manufacture of other non-metallic mineral products	C23	279	4898	Bălți	23	276	46
Manufacture of rubber and plastic products	C22	300	3754	Bălți	18	271	43
Processing and preserving of meat and production of meat products	C101	93	5943	Bălți	4	423	30
Manufacture of bakery and farinaceous products	C107	258	7835	Bălți	13	445	28
Manufacture of grain mill products, starches and starch products	C106	77	546	Bălți	2	18	8
				Drochia	4	64	8
				Fălești	5	72	10
Manufacture of prepared animal feeds	C109	21	206	Florești	1	127	36
Manufacture of soft drinks	C1107	18	560	Bălți	2	28	55
				Florești	1	247	30
				Sîngerei	1	73	9
Distilling, rectifying and blending of spirits	C1101	31	1340	Bălți	1	133	32
Tanning and dressing of leather; manufacture of luggage, handbags, saddlery and harness;	C15	61	2657	Bălți	2	297	36
Manufacture of paper and paper products	C17	110	1539	Bălți	7	87	36
Repair and installation of machinery and equipment	C33	225	1174	Bălți	13	41	20
Manufacture of wood and of products of wood and cork	C16	238	1306	Bălți	11	55	19
Manufacture of fabricated metal products, except machinery and equipment	C25	368	3564	Bălți	18	130	18
Manufacture of furniture	C31	452	5544	Bălți	18	173	12
Manufacture of textiles	C13	147	5492	Bălți	5	171	10
Printing and reproduction of recorded media	C18	131	968	Bălți	4	28	9

Source: developed by the author based on own calculations using NBS data

In the Central Region, Chișinău is the main industrial agglomeration pole, concentrating all relevant-level agglomerations identified in the region, with a high degree of diversification across manufacturing branches (Table 4).

Table 4. Relevant industrial agglomerations in the manufacturing sector of the Central region of the Republic of Moldova

Industrial Branch	CAEM Code	Total nationwide, 2023		Territorial level, 2023			
		No. of firms	No. of employees	ATU	No. of firms	No. of employees	CI
Manufacture of computer, electronic and optical products	C26	16	601	Chişinău	14	563	145
Printing and reproduction of recorded media	C18	131	968	Chişinău	113	895	142
Manufacture of sports goods	C323	5	81	Chişinău	4	80	140
Manufacture of tobacco products	C12	5	308	Chişinău	4	270	124
Manufacture of medical and dental instruments and supplies	C325	61	469	Chişinău	49	382	116
Manufacture of jewellery, bijouterie and related articles	C321	37	125	Chişinău	30	93	107
Manufacture of furniture	C31	452	5544	Chişinău	312	4548	100
Manufacture of paper and paper products	C17	110	1539	Chişinău	80	1162	97
Manufacture of machinery and equipment	C28	59	1118	Chişinău	40	867	93
Manufacture of chemicals and chemical products	C20	72	2450	Chişinău	42	2141	90
Manufacture of rubber and plastic products	C22	300	3754	Chişinău	167	2763	73
Tanning and dressing of leather; manufacture of luggage, handbags, saddlery and harness;	C15	61	2657	Chişinău	44	1452	70
Manufacture of fabricated metal products, except machinery and equipment	C25	368	3564	Chişinău	221	2258	68

Source: developed by the author based on own calculations using NBS data.

In the food and beverage industry, the identified agglomerations record moderate CI values but are more widely distributed territorially. In addition to Chişinău, they are found in the districts of Anenii Noi, Criuleni, Nisporeni, Ialoveni, Străşeni, and Călăraşi, indicating a broader dispersion of industrial concentrations across the Central Region (Table 5).

Table 5. Moderate industrial agglomerations in the food and beverage manufacturing industries in the Central region of the Republic of Moldova

Industrial Branch	CAEM Code	Total nationwide, 2023		Territorial level, 2023			
		No. of firms	No. of employees	ATU	No. of firms	No. of employees	CI
Processing and preserving of meat and production of meat products	C101	93	5943	Chişinău	37	2524	30
				Anenii Noi	7	1877	34
Processing and preserving of fish, crustaceans and molluscs	C102	12	588	Chişinău	7	393	69
				Anenii Noi	2	58	23
				Criuleni	1	125	36

Industrial Branch	CAEM Code	Total nationwide, 2023		Territorial level, 2023			
		No. of firms	No. of employees	ATU	No. of firms	No. of employees	CI
Processing and preserving of fruit and vegetables	C103	129	3002	Chişinău	42	1350	26
				Nisporeni	21	69	12
Manufacture of vegetable and animal oils and fats	C104	57	1300	Chişinău	15	454	16
Manufacture of dairy products	C105	27	3401	Chişinău	12	1315	30
				Ialoveni	1	269	4
Manufacture of bakery and farinaceous products	C107	258	7835	Chişinău	94	3502	29
Manufacture of prepared animal feeds	C109	21	206	Chişinău	7	30	9
				Ialoveni	2	22	13
				Străşeni	2	12	9
Manufacture of alcoholic beverages	C1102	149	7095	Chişinău	48	2458	20
				Ialoveni	16	520	10
				Străşeni	12	301	6
Manufacture of soft drinks	C1107	18	560	Chişinău	8	108	15
Manufacture of beer	C1105	660	13	Chişinău	8	440	73
Distilling, rectifying and blending of spirits	C1101	31	1340	Chişinău	15	527	34
				Călăraşi	1	279	15

Source: developed by the author based on own calculations using NBS data

Moderate agglomerations in non-food manufacturing are concentrated mainly in Chişinău, but are also found in other districts of the Central Region. Outside Chişinău, they are identified in Ungheni (manufacture of textiles), Anenii Noi, Criuleni, and Ialoveni (manufacture of basic pharmaceutical products), and Străşeni (manufacture of wood and wood products and manufacture of electrical equipment) (Table 6).

Table 6. Moderate industrial agglomerations in non-food manufacturing in the Central region of the Republic of Moldova

Industrial Branch	CAEM Code	Total nationwide, 2023		Territorial level, 2023			
		No. of firms	No. of employees	ATU	No. of firms	No. of employees	CI
Manufacture of other non-metallic mineral products	C23	279	4898	Chişinău	140	3067	56
Manufacture of wearing apparel	C14	326	13680	Chişinău	184	6014	44
Manufacture of textiles	C13	147	5492	Chişinău	98	1124	24
				Ungheni	4	2687	12

Industrial Branch	CAEM Cod e	Total nationwide, 2023		Territorial level, 2023			
		No. of firms	No. of employees	ATU	No. of firms	No. of employees	CI
Manufacture of basic pharmaceutical products and pharmaceutical preparations	C21	15	809	Chişinău	6	415	36
				Anenii Noi	2	78	18
				Criuleni	1	143	24
				Ialoveni	3	84	26
Manufacture of wood and of products of wood and cork	C16	238	1306	Chişinău	82	713	33
				Străşeni	26	107	15
Manufacture of electrical equipment	C27	22	1482	Chişinău	14	314	24
				Străşeni	2	85	9

Source: developed by the author based on own calculations using NBS data

The *Southern Region* of the Republic of Moldova has a relatively limited industrial structure, with few activities recording relevant or moderate Clustering Index values. In *Taraclia* district, the CI identifies two relevant industrial agglomerations, in *the manufacture of clay building materials* and *the manufacture of basic metals*. However, each activity is represented by a single enterprise, limiting the interpretation of high CI values as prerequisites for actual cluster formation.

In *ATU Gagauzia*, two industrial branches record high or moderate CI values but lack the critical mass required for cluster formation. In *the manufacture of coke and refined petroleum products*, the CI is very high, but the activity is concentrated in a single major enterprise, precluding the existence of an actual industrial agglomeration. Similarly, *the manufacture of tobacco products* is represented by only one active company and, although statistically classified as a moderate agglomeration, lacks the critical mass of firms required for a consolidated industrial cluster.

Mapping of economic clustering potential based on the Clustering Index

The mapping presented in Figure 3 confirms the existence of a dual mesoeconomic polarisation centred on the two major municipalities of the Republic of Moldova, which act as growth poles in the sense of F. Perroux's theory (1950). However, the identified agglomerations display divergent structural profiles.

Bălţi industrial pole. It records high Clustering Index values due to the concentration of manufacturing activities. Its structure is dominated by the manufacture of wearing apparel (C14), complemented by strategic technological sectors such as the manufacture of electrical equipment (C27) and automotive components (C29). The presence of major anchor firms, such as "Draexlmaier Automotive" SRL and "GG Cables & Wires EE" SRL, generates a strong polarisation effect on employment. In addition, a niche concentration in the manufacture of medical devices (C325) indicates the development of local technical capabilities.

Chişinău industrial pole. It displays an extensive and diversified intersectoral agglomeration. Its high industrial density encompasses both high-technology sectors, such as the manufacture of computer, electronic and optical products (C26), and consumer-goods and related industries, including printing (C18), paper packaging (C17), furniture manufacturing (C31), and the manufacture of rubber and plastic products (C22). At the same time, the municipality builds

on existing technological expertise in the manufacture of tobacco products (C12), the chemical industry (C20), and the manufacture of fabricated metal products (C25), while maintaining a presence in leather processing (C15) and machinery manufacturing (C28).

This empirical configuration shows that, while the Bălți agglomeration is characterised by deep sectoral specialisation closely linked to global value chains, Chişinău functions as a complex industrial ecosystem, where enterprise density offsets employment fluctuations across economic branches and supports labour productivity.

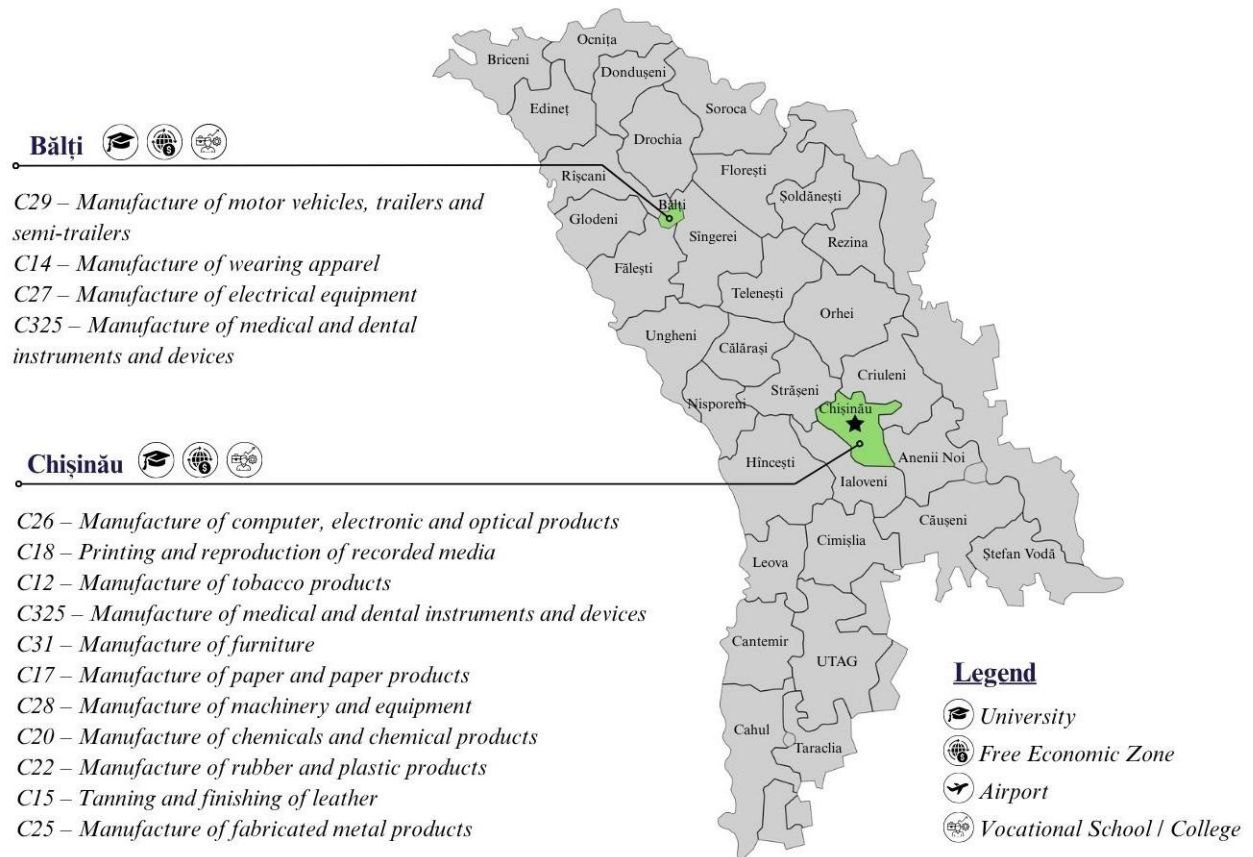


Figure 3. Spatial distribution of very relevant industrial agglomerations/clusters in the manufacturing sector of the Republic of Moldova, 2023

Source: developed by the author based on own calculations of the Clustering Index

The mapping presented in Figure 4 shows that some industrial agglomerations extend beyond a single district into neighbouring districts, forming trans-district concentrations. These are found particularly around municipalities with more developed industrial activity and indicate areas of specialisation that extend beyond administrative-territorial boundaries.

Northern trans-district agri-food agglomeration (Bălți axis). The consolidated data indicate spatial integration along two distinct food-industry value chains. The first comprises Bălți, Drochia, and Făleşti, specialising in the manufacture of grain mill products (C106). The second comprises Bălți, Floreşti, and Sîngerei, with a critical mass in the manufacture of soft drinks (C1107). This northern profile reflects the use of local agricultural raw materials and the development of the value chain through secondary industrial processing.

Central trans-district agri-food and pharmaceutical agglomeration (Chişinău axis). Several industrial concentrations extend from Chişinău into neighbouring districts. The Chişinău–Străşeni - Ialoveni axis specialises in the manufacture of prepared animal feeds (C109), while the Chişinău – Criuleni - Anenii Noi axis specialises in the processing and preserving of fish (C102).

At the same time, the Chişinău – Criuleni - Anenii Noi - Ialoveni axis shows a concentration in the manufacture of pharmaceutical products (C21), a high-value-added activity.

This territorial configuration suggests that areas with moderate clustering potential benefit from proximity and complementarity effects. The fragmented structure of SMEs in neighbouring districts is supported by the logistics and commercial infrastructure of adjacent municipalities, contributing to the stabilisation and gradual growth of labour productivity.

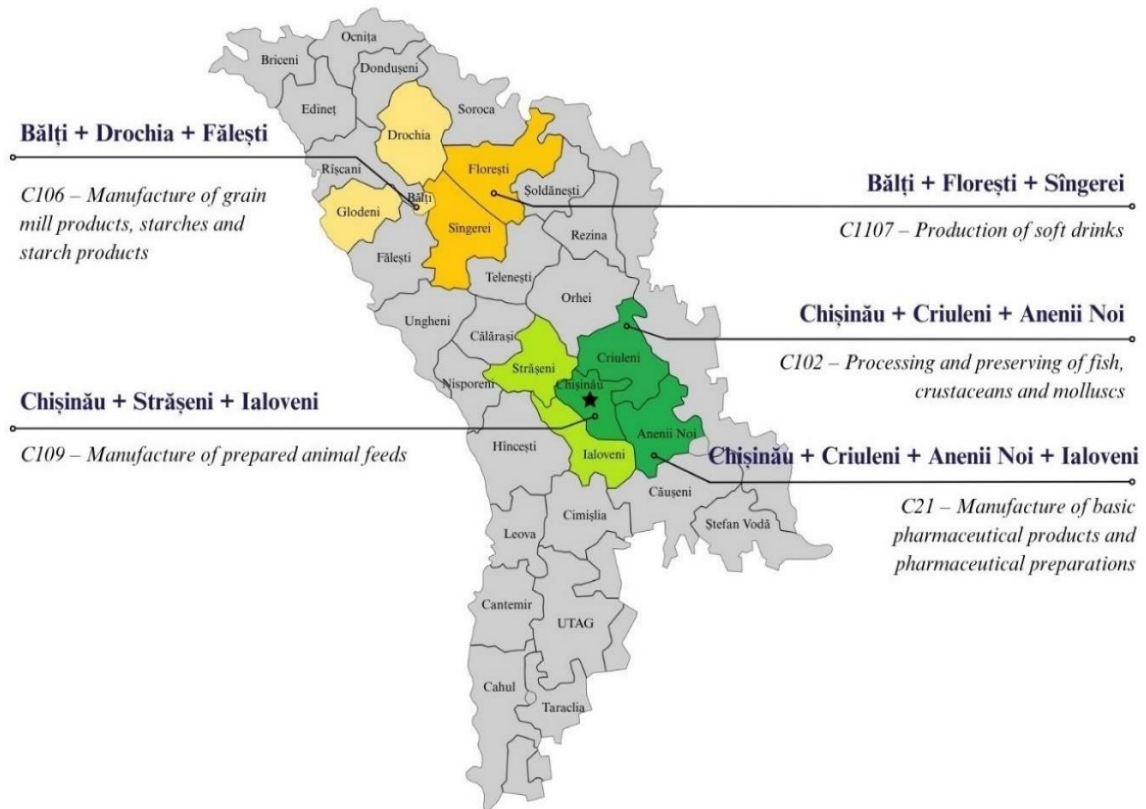


Figure 4. Territorial configuration of areas with moderate clustering potential in the manufacturing sector of the Republic of Moldova, 2023

Source: developed by the author based on own calculations of the Clustering Index

3.3 Assessment of the correlation between cluster-type industrial agglomerations and the competitiveness of the economy of the Republic of Moldova

To analyse the relationship between the degree of clustering and enterprise competitiveness, competitiveness had to be operationalised through a quantifiable indicator. At the enterprise level, productivity is frequently used in the literature as a proxy for competitiveness, as it reflects the efficiency with which enterprises transform resources into economic outcomes and can be interpreted as both a prerequisite and an outcome of competitiveness (Peneder & Rammer, 2018). In this context, two main variables were selected for the empirical analysis: (i) labour productivity (Prod), as the dependent variable and a proxy for enterprise competitiveness, and (ii) the Clustering Index (CI), as the independent variable. Since data on gross value added are not available at the sectoral and territorial level of disaggregation required for the research, labour productivity was approximated by average sales revenue per employee. To ensure a sufficient number of observations for the statistical analysis, the Clustering Index was additionally calculated for 2021 and 2022.

In the first stage, Pearson correlation analysis was conducted between the Clustering Index and labour productivity to determine the existence, direction, and strength of the linear relationship between the two variables. The Pearson coefficient ranges from -1 to +1, with positive values

indicating a direct association, negative values an inverse association, and values close to zero indicating a weak or absent linear relationship. The Pearson coefficients show that, overall, the degree of clustering is positively correlated with economic performance, although the strength of the relationship varies significantly across economic activities (Table 7).

Table 7. Industries with the highest Pearson correlation coefficients for the years 2021-2023

Industrial Branch	Pearson correlation coefficient			Interpretation
	2021	2022	2023	
C235 Manufacture of cement, lime and plaster	0,95	0,99	0,93	Extremely strong and persistent
C104 Manufacture of vegetable and animal oils and fats	0,61	0,84	0,83	Very strong and persistent
C109 Manufacture of prepared animal feeds	0,74	0,57	0,68	Strong and persistent
C29 Manufacture of motor vehicles, trailers and semi-trailers	0,20	0,42	0,65	Moderate, increasing
C321 Manufacture of jewellery, bijouterie and related articles	0,87	0,73	0,63	Strong, decreasing
C1107 Manufacture of soft drinks	0,56	0,76	0,42	Moderate, with fluctuations
C17 Manufacture of paper and paper products	0,65	0,54	0,41	Moderate, decreasing
C231 Manufacture of glass and glass products	0,52	0,61	0,59	Moderate, relatively stable

Source: developed by the author

In the second stage, using the same dataset, an additional empirical exercise was conducted by calculating the Pearson correlation coefficient for the pooled observations for 2021-2023 (panel dataset) to verify whether the relationships identified for individual years persist across a broader set of observations. The results support the findings of the annual analysis and reveal the same general trend. At the same time, the results should be interpreted as indicating statistical associations rather than causal relationships.

The results of this methodological approach show that the relationship between the degree of clustering and labour productivity, used as a measure of enterprise competitiveness, is predominantly positive, although heterogeneous across the economic activities analysed. This indicates an association between clustering and enterprise performance, whose strength varies depending on sectoral characteristics and the level of development of the economic agglomerations analysed. Through the application of logical deduction and scientific systematisation, the findings at the enterprise level allow broader conclusions to be drawn regarding the role of clustering in strengthening the competitiveness of the national economy.

The obtained results allow the analysis to be extended from the relationship between clustering and enterprise productivity to its implications for the competitiveness of the economy of the Republic of Moldova. In this research, this relationship begins at the microeconomic level, where labour productivity is used to assess enterprise performance. The positive association identified for a significant share of the activities analysed indicates that a higher degree of clustering may be accompanied by stronger enterprise performance. Although the results are not uniform across industries, the predominantly positive relationship provides an empirical basis for examining how the advantages associated with clustering may be transmitted to higher levels of competitiveness.

At the mesoeconomic level, the productivity results overlap with those obtained from the identification and mapping of industrial concentrations. Thus, the enterprises for which

productivity differences are assessed do not operate in isolation but form part of distinct economic branches and territorial specialisations. A relevant example is the manufacture of motor vehicles, trailers and semi-trailers (C29), for which the analysis identifies both a very strong territorial concentration in Bălți, with a Clustering Index of 651, and one of the strongest positive relationships between clustering and labour productivity. In this case, the microeconomic result regarding productivity coincides with the existence of a strong territorial industrial specialisation, allowing the analysis to move from enterprise performance to the competitiveness of the branch and the territory in which it is concentrated.

At the macroeconomic level, higher enterprise productivity can contribute, through stronger performance of the sectors in which firms operate, to enhancing the competitiveness of the national economy. Higher productivity promotes greater value added and can support the development of production, exports, and investment. As argued in Chapter 1, national economic competitiveness emerges through the interaction of the microeconomic, mesoeconomic, and macroeconomic levels, with enterprise performance constituting one of the foundations of competitiveness at higher levels. For the Republic of Moldova, this relationship is particularly important, given that low productivity represents one of the structural constraints on economic growth.

In this context, the research findings provide an empirical basis for the mechanism through which clustering can contribute to the competitiveness of the economy of the Republic of Moldova. However, the transmission of effects to the macroeconomic level should be interpreted as a potential mechanism, dependent on the weight and performance of the respective branches in the national economy, rather than as a direct causal effect.

GENERAL CONCLUSIONS AND RECOMMENDATIONS

The research conducted within this doctoral study addressed the formation of economic clusters as a driver of enhanced competitiveness in the economy of the Republic of Moldova. The research included the theoretical grounding of the economic cluster concept and the relationship between clustering and competitiveness, an analysis of international cluster development models and practices, and an assessment of the economic, entrepreneurial, and institutional conditions for cluster development in the Republic of Moldova.

The applied component of the research focused on identifying and assessing clustering potential from sectoral and territorial perspectives and on mapping the results obtained. At the same time, the relationship between the degree of clustering and enterprise competitiveness, measured through labour productivity, was empirically assessed. *The results obtained led to the following general conclusions.*

1. According to the research conducted, the conceptual analysis of economic clusters has evolved from approaches focused primarily on geographical concentration and positive agglomeration externalities towards more complex perspectives, in which territorial proximity is complemented by non-spatial proximity, encompassing relationships among economic and institutional actors. From a theoretical and empirical perspective, spatial proximity represents a favourable condition for economic clustering, but is insufficient for clusters to function in the absence of relational capital based on cooperation, trust, knowledge exchange, and shared interests. Only the interaction between the spatial and non-spatial dimensions creates the conditions necessary to harness the advantages of clustering and generate effects on competitiveness. A detailed substantiation of this finding is provided in Subchapter 1.1. of the thesis.

Overall, the advantages of economic clustering extend beyond the individual performance of enterprises. Through the interdependencies that emerge, these advantages can extend to the sectoral level and subsequently to the national economy as a whole. Clusters can thus serve as a

mechanism linking competitiveness across the microeconomic, mesoeconomic, and macroeconomic levels, although the relationship among these levels is neither automatic nor unidirectional. A detailed substantiation of this finding is provided in Subchapter 1.2, while the conclusions drawn from the theoretical and methodological analysis conducted in Subchapters 1.1 and 1.2 confirm the achievement of the first research objective.

2. The research demonstrates that there is no single model of cluster formation and development applicable to all economies, as the configuration and development mechanisms of clusters are shaped by the specific economic, institutional, and territorial characteristics of each country. International practice confirms the important role of the academic and research ecosystem, particularly its applied orientation and the alignment of research outcomes with the needs of enterprises. Cooperation between research institutions and enterprises facilitates knowledge and technology transfer, the commercialisation of research results, and the development of entrepreneurship, including through the creation of university spin-off companies. An important role is also played by organisations acting as catalysts, which facilitate cooperation among enterprises, research institutions, public authorities, and other relevant actors, one example being Romania's cluster support association. At the same time, cluster development is supported through public policies and specific instruments, including dedicated funding programmes. Thus, international experience provides relevant benchmarks and mechanisms for cluster development, but their application needs to be adapted to the specific characteristics and needs of the national economy. A detailed substantiation of these findings is provided in *Subchapter 1.3*, while the conclusions drawn from the analysis confirm the achievement of the *second research objective*.

3. The author finds that, during the Soviet period, the economy of the Republic of Moldova was characterised by pronounced industrial and agricultural specialisation, in which specialised agroindustrial complexes represented an important form of economic organisation and cooperation. The Soviet model of Agroprom-type agroindustrial associations, based on the centralised coordination of agricultural production, processing, and related services, displays certain similarities with the modern cluster model, particularly in terms of the territorial and sectoral concentration of enterprises and the coordination of the different stages of the value chain. However, fundamental differences were identified in their principles of organisation and governance. While Agroprom structures were based on centralised planning, administrative subordination, and top-down coordination, contemporary clusters are predominantly based on the voluntary association of autonomous actors, cooperation, and market mechanisms. Thus, given that both models seek to address the same challenge of territorial economic organisation, namely the vertical and horizontal integration of actors such as producers, processors, and logistics providers in order to reduce transaction costs, we conclude that the similarities between the two models are primarily functional rather than institutional. The results of this stage of the research, presented and substantiated in *Subchapter 2.1*, contributed to the achievement of the *third research objective*.

4. The analysis of the economic structure and business environment in the Republic of Moldova reveals both the conditions for clustering and the structural constraints that limit their effective use. Instability in the economic and business environment, restricted access to finance, and the limited resources of small enterprises reduce investment capacity and hinder cooperation within proximity-based networks. At the same time, the fragmentation of the enterprise sector highlights the need for economic clustering as a mechanism for sharing resources, skills, and infrastructure. These findings are substantiated by the analysis presented in *Subchapter 2.2*.

At the sectoral level, the conditions and constraints vary. In agriculture, fragmented production and the low degree of processing point to the need for closer cooperation between producers and the processing industry. In manufacturing, existing potential is constrained by the low level of technological sophistication and insufficient cooperation between enterprises and the academic and research community. In services, the development of information and

communication technologies (ICT) and export diversification create conditions for new specialisations and economic agglomerations, although the focus on international subcontracting (the provision of outsourced services) limits the expansion of high value-added activities. The results validate the research hypothesis that the structure of the economy and the characteristics of the business environment create distinct sector-specific conditions for the formation and development of economic clusters. The sectoral analysis substantiating these findings is presented in *Subchapter 3.1*.

The policy framework reflects the gradual integration of clusters into the economic development agenda. However, a gap persists between the strategic recognition of their role and the availability of effective national support instruments. Dependence on projects financed by external development partners affects the sustainability of clusters after external funding ends. These findings result from the assessment of the policy framework conducted in *Subchapter 2.3*. Overall, the analysis of the economic and business environment, sectoral characteristics, and policy framework contributed to the achievement of the *fourth research objective*.

5. The methodological approach to identifying and assessing clustering potential in the Republic of Moldova, conducted at a disaggregated level across manufacturing activities and administrative-territorial units, represents a key contribution of this research. The application of the Clustering Index and the mapping of the results made it possible to identify specialisations that are difficult to capture using indicators aggregated at the national level and provided a detailed picture of the location and intensity of industrial concentrations. The feasibility of applying the method using available statistical data disaggregated by sector and territory confirms the hypothesis regarding the informational and methodological basis. At the same time, the identification of distinct industrial concentrations across sectors and territories confirms the hypothesis regarding the analytical methods, demonstrating their applicability for identifying clustering potential in the Republic of Moldova.

The results reveal concentrations across a diverse range of manufacturing activities, from traditional industries such as food manufacturing, textiles, and wearing apparel to more specialised activities such as the manufacture of motor vehicles, electrical equipment, and medical devices. The spatial distribution of highly relevant industrial agglomerations/clusters in the country's manufacturing sector highlights the Bălți industrial pole and the Chișinău industrial pole. The Bălți agglomeration is characterised by deep sectoral specialisations closely linked to global value chains, while Chișinău functions as a complex industrial ecosystem that facilitates access to labour, suppliers, and specialised services and creates favourable conditions for productivity growth. The territorial configuration of areas with moderate clustering potential in the manufacturing sector of the Republic of Moldova highlights the trans-district agri-food agglomeration in the North (Bălți axis), as well as two trans-district agglomerations in the Central Region: the agri-food agglomeration along the Chișinău - Strășeni - Ialoveni axis and the pharmaceutical agglomeration along the Criuleni - Chișinău - Anenii Noi - Ialoveni axis.

At the same time, high values of the Clustering Index cannot automatically be interpreted as evidence of the existence of the critical mass of enterprises required for a cluster. Enterprise-level analysis showed that, in certain activities and administrative-territorial units, a high level of concentration may result from the presence of a single large enterprise. Such cases require additional analysis but should not be excluded from the assessment of clustering potential, as the dominant enterprise may act as an anchor firm around which suppliers, specialised services, and other related activities can develop.

The results also indicate that clustering potential should not be interpreted exclusively within the boundaries of an administrative-territorial unit. In some cases, the core of a concentration is located within a particular administrative-territorial unit, while enterprises engaged in the same or related activities are located in neighbouring districts, even if these districts independently record lower values of the Clustering Index. Therefore, assessing the potential for

cluster formation requires complementing the statistical criterion with an analysis of enterprise structure, territorial proximity, and existing or potential economic linkages between activities. The results substantiated by the analysis presented in *Subchapter 3.2* confirm the achievement of the *fifth research objective*.

6. The empirical analysis conducted in *Subchapter 3.1* reveals a predominantly positive, although heterogeneous, relationship between the degree of clustering and enterprise competitiveness. The strength of this relationship varies according to the characteristics of the economic activity, with strong correlations identified for some activities and weak or statistically insignificant correlations for others. At the same time, the results challenge the assumption that the mere geographical concentration of economic activity automatically leads to higher productivity. The differences observed across activities indicate that the ability to harness the advantages of clustering depends on the characteristics of the sector and enterprises, as well as on the capacity of economic actors to transform geographical proximity into functional relationships based on cooperation, specialisation, knowledge exchange, and technology transfer. Thus, the empirical results validate the theoretical conclusion regarding the need to combine spatial proximity with the non-spatial dimension, including relational capital, in order to harness the economic advantages of clustering.

Overall, the results of the empirical analysis support the research hypothesis regarding the existence of a positive relationship between the degree of clustering and enterprise competitiveness, while also highlighting the heterogeneous nature of this relationship. At the same time, the combined theoretical and empirical findings lead to the conclusion that cluster development can serve as an instrument for enhancing the competitiveness of the economy of the Republic of Moldova, provided that existing economic agglomerations are leveraged through stronger cooperation among the actors involved. From this perspective, cluster development should not be assessed solely by the number of formally established structures, but rather by their capacity to generate cooperation among members, integrate local suppliers, develop skills, facilitate technology transfer, and foster innovation. These mechanisms can contribute to translating the advantages of proximity and economic concentration into higher labour productivity, value added, and competitiveness. This conclusion demonstrates the achievement of the *sixth research objective*.

In line with the *seventh objective* of the research, the findings of the present research provide the basis for the following recommendations, structured across three levels of intervention.

I. Systemic-level interventions

➤ Ensuring a stable and predictable business environment

This requires continuing the simplification of administrative procedures and increasing the predictability of the regulatory framework. Reducing uncertainty in economic activity facilitates long-term investment planning and creates favourable conditions for developing inter-firm cooperation, expanding proximity networks, and forming clusters.

➤ Strengthening the institutional framework, reducing information asymmetries, and building trust among economic actors

Developing cooperative relationships among enterprises requires an institutional framework that fosters trust and reduces risks. To this end, institutional mechanisms for contract enforcement, effective protection of property rights, including intellectual property rights, and institutional integrity should be strengthened, contributing to lower transaction costs and facilitating joint initiatives among enterprises.

➤ Modernising infrastructure as a driver of spatial concentration advantages

Strengthening technical and logistics infrastructure, both physical and digital, particularly in the second-level administrative-territorial units of the Republic of Moldova, represents a key

instrument for enabling enterprises to benefit from agglomeration economies. To this end, it is propose:

- Aligning infrastructure with sectoral specialisation: public investment in utilities, transport networks, and industrial parks should be linked to the Clustering Index (CI), accelerating the development of proximity networks and strengthening the comparative advantages of manufacturing branches.
- Developing shared infrastructure: investment in facilities jointly used by enterprises, such as testing laboratories, technology centres, and logistics infrastructure within the same administrative-territorial unit, can generate economies of scale and reduce fixed costs for small enterprises and micro-clusters.

II. Policy framework interventions and sectoral instruments supporting cluster development

➤ Development of digital tools to facilitate cooperation between enterprises

To facilitate the identification of potential business partners and the development of cooperation and subcontracting relationships, particularly among SMEs, it is recommended to leverage and further develop existing digital tools for connecting enterprises. In this regard, the existing BusinessLink platform could be strengthened by expanding its supplier database, systematically updating and completing company profiles, and promoting the platform more actively within the business community. Greater attention could be given to including information on technological capabilities, production capacities, certifications, and availability for subcontracting, enabling enterprises to identify potential suppliers and partners more easily. These actions could be complemented by more active use of matchmaking mechanisms, the organisation of business-to-business events, and the facilitation of contacts between local enterprises and potential contractors. In this way, existing digital tools can contribute to strengthening cooperation between enterprises, integrating SMEs into supplier networks, and reinforcing value chains.

➤ Establishing sectoral export consortia, a model validated United Nations Industrial Development Organization (UNIDO)

International evidence demonstrates that such sectoral export consortia reduce transaction costs for small enterprises and facilitate their access to foreign markets. Cooperation enables, first and foremost, the joint fulfilment of orders that exceed the individual production capacities of enterprises, as well as the joint implementation of promotional activities, participation in international trade fairs and exhibitions, and the identification of foreign buyers.

➤ Aligning technology transfer grants with the industrial profile of administrative-territorial units

Public funding for technology transfer and enterprise modernisation could be more closely aligned with existing territorial industrial specialisations. In this regard, clustering potential could be incorporated into the evaluation criteria for projects financed through national technology transfer programmes and SME technology support schemes. The Clustering Index could serve as one of the benchmarks for identifying territories with relevant concentrations of industrial activity, without constituting an exclusive selection criterion. Such an approach could include two directions:

- Prioritising projects located in areas with high clustering potential. In project evaluation, locating an investment in an administrative-territorial unit with a relevant industrial specialisation could serve as an additional prioritisation criterion. Directing part of the funding towards such concentrations could facilitate technology adoption and use by a larger number of enterprises and strengthen existing industrial specialisations.
- Promoting projects implemented in partnership between enterprises and the research sector. Technology transfer programmes could prioritise projects developed through cooperation among enterprises, education and research institutions, and public authorities.

Such projects can help transform occasional collaborations into more stable relationships focused on applied research, technology transfer, and the economic valorisation of research results.

- Adapting vocational training to the economic and industrial profile of territories

Skills development should be aligned with economic specialisations and labour demand at the territorial level. In this regard, partnerships among educational institutions, enterprises, and local public authorities should be strengthened in line with the triple helix model. These partnerships would help identify skills needs, adapt vocational education and training programmes, and develop training and retraining programmes according to enterprise demand. Such an approach can help reduce skills shortages and better align education and training provision with local labour market needs.

III. Cluster-specific interventions through dedicated programmes

- Strengthening the coordination of policies relevant to cluster development

At present, cluster development measures are integrated into several policy documents and programmes, including the National Industrial Development Programme and the National Smart Specialisation Programme of the Republic of Moldova. This approach requires stronger coordination among economic, innovation, and regional development policies, as well as a clear division of responsibilities among the institutions involved. A designated institution should be responsible for coordinating cluster development policy, with clear responsibilities for implementation, coordination of interventions, and monitoring of results.

- Introducing periodic mapping of clustering potential in the economy of the Republic of Moldova

Cluster mapping enables the identification of territorial specialisations and economic concentrations with favourable conditions for cluster development, providing an empirical basis for targeting public interventions. Its results can inform the selection of cluster initiatives eligible for support.

- Establishing a national programme dedicated to economic cluster development

Moving from sporadic initiatives and projects towards a coherent economic cluster development policy requires the establishment of a dedicated national programme. The programme should provide a stable support framework and define funding mechanisms, eligibility criteria, institutional responsibilities, and arrangements for monitoring results. A potential cluster development programme should include:

- differentiating support according to cluster maturity, through distinct instruments for emerging initiatives and more developed clusters. At the initial stage, support may facilitate the development of relationships among members and the launch of joint activities, while at later stages it may focus on co-financing projects that contribute to cluster development;
- supporting joint projects among cluster members, prioritising activities that generate benefits for multiple enterprises, such as research and innovation, shared testing infrastructure, certification, digitalisation, employee training, and the development of shared services;
- professionalising cluster management, through the development of managers' competencies, training and mentoring programmes, exchange of experience, and certification of cluster management organisations in accordance with European standards and practices;
- gradually increasing members' financial contributions as clusters mature, so that cluster development does not lead to permanent dependence on public financial support. A gradual increase in members' own contributions is important for strengthening cluster autonomy and ensuring long-term financial sustainability.

BIBLIOGRAFY

1. ANDERSSON, Thomas; Sylvia Schwaag Serger; Jens Sörvik and Emily Wise Hanssonet. Cluster Policies Whitebook. Göteborg: IKED – International Organisation for Knowledge Economy and Enterprise Development, 2004. Disponibil: https://www.researchgate.net/publication/284163165_The_Cluster_Policies_Whitebook [accesat 2023-09-07].
2. ANDRUȘCEAC, V. et al. *Istoria Republicii Moldova: din cele mai vechi timpuri până în zilele noastre*. Online. Chișinău: Asociația oamenilor de știință din Moldova „N. Milescu Spătaru”, 2002. 420 p. Disponibil: <https://www.scribd.com/document/95461045/Istoria-Republicii-Moldova-din-cele-mai-vechi-timpuri-până-in-zilele-noastre> [accesat 2022-02-07].
3. *Anuarul statistic al Republicii Moldova*, edițiile 2002-2025. Online. Chișinău: Biroul Național de Statistică. Disponibil: https://statistica.gov.md/ro/anuarul-statistic-al-republicii-moldova-editiile-2002-2024-9877_59482.html [accesat 2026-08-06].
4. *Anuarul statistic: Economia Națională a Republicii Moldova*. Chișinău: Departamentul de Stat pentru Statistică, 1990. Disponibil: <https://istmat.org/node/65800> [accesat 2025-05-16].
5. ASHEIM, Bjørn T. Interactive learning and localised knowledge in globalising learning economies. *GeoJournal*. 1999, vol. 49, nr. 4, pp. 345-352. Disponibil: <https://link.springer.com/article/10.1023/A:1007155221758> [accesat 2021-06-06].
6. BECATTINI, Giacomo. The Marshallian industrial district as a socio-economic notion. *Revue d'Économie Industrielle*. 2017, nr. 157, pp. 13-32. Disponibil: <https://journals.openedition.org/rei/6507> [accesat 2021-06-25].
7. BENEĂ-POPUȘOI, Elina și Ecaterina RUSU. Clusters as an environment of competitive collaboration. A case study on the emerging apparel economic cluster in the Republic of Moldova. In: XU, J.; G. DUCA; S. AHMED; F. GARCÍA MÁRQUEZ și A. HAJIYEV, eds. *Proceedings of the Fourteenth International Conference on Management Science and Engineering Management*. ICMSEM 2020. Advances in Intelligent Systems and Computing, vol. 1191. Cham: Springer, 2020. Disponibil: https://doi.org/10.1007/978-3-030-49889-4_57. Baza de date: SpringerLink [accesat 2021-09-26].
8. BENEĂ-POPUȘOI, Elina and Ecaterina RUSU. Knowledge spillovers in the process of formation of the economic clusters. *Eastern European Journal of Regional Studies*. 2018, vol. 4, nr. 2, pp. 94-107. Disponibil: https://csei.ase.md/journal/files/issue_42/EEJRS_0402_94-107_BEN.pdf [accesat 2019-09-07].
9. BETTIOL, Marco et al. Local or global? Does internationalization drive innovation in clusters? In: *Rethinking Clusters*. London: Routledge, 2021, pp. 117-136. Disponibil: <https://doi.org/10.4324/9781003130222> [accesat 2022-11-08].
10. BOSCHMA, Ron. Proximity and innovation: a critical assessment. *Regional Studies*. 2005, vol. 39, nr. 1, pp. 61-74. Disponibil: https://www.researchgate.net/publication/24087849_Proximity_and_Innovation_A_Critical_Assessment [accesat 2023-09-17].
11. BREMS, Hans. Bertil Ohlin's Contributions to Economic Theory. *BEER Faculty Working Paper* nr. 1305, 1986. Disponibil: <https://www.ideals.illinois.edu/items/32994/bitstreams/107305/data.pdf> [accesat 2022-09-17].
12. CRESCENZI, Riccardo; Luisa GAGLIARDI și Marco PERCOCO. The “bright” side of social capital: how “bridging” makes Italian provinces more innovative. In: *Geography, Institutions and Regional Economic Performance*. Berlin, Heidelberg: Springer, 2012, pp. 143-164. Disponibil: https://doi.org/10.1007/978-3-642-33395-8_8 [accesat 2021-05-23].
13. DADASHIAN, Fatemeh.; S. SHAKIBFAR și Mohammad Hossein Fazel ZARANDI. Strategic alliance for core competencies improvement in textile industries. *International Journal of Management Science and Engineering Management*. 2007, vol. 2, nr. 2, pp. 98-107. Disponibil: <https://www.researchgate.net/publication/228925515> [accesat 2022-06-21].
14. DELGADO, Mercedes; Michael E. PORTER and Scott STERN. Clusters, convergence, and economic performance. *Research Policy*. Online. 2014, vol. 43, nr. 10, pp. 1785–1799. Disponibil: <https://doi.org/10.1016/j.respol.2014.05.007> [accesat 2023-09-23].
15. ETZKOWITZ, Henry și Loet LEYDESDORFF. The dynamics of innovation: from National Systems and “Mode 2” to a Triple Helix of university-industry-government relations. *Research Policy*. 2000,

- vol. 29, nr. 2, pp. 109-123. Disponibil: <https://www.researchgate.net/publication/222547985> [accesat 2023-11-17].
16. FROMHOLD-EISEBITH, Martina și Günter EISEBITH. How to institutionalize innovative clusters? Comparing explicit top-down and implicit bottom-up approaches. *Research Policy*. 2005, vol. 34, nr. 8, pp. 1250-1268. Disponibil: <https://www.researchgate.net/publication/222298114> [accesat 2023-08-04].
 17. GHEORGHITA, Maria. Modele de dezvoltare durabilă a industriei de confecții din Republica Moldova în condițiile globalizării. În: *Creșterea economică în condițiile globalizării = Economic Growth in Conditions of Globalization*: conferință științifico-practică internațională, ediția a VII-a, 18-19 octombrie 2012, Chișinău: IEFS, 2012, vol. 2, pp. 404-408. ISBN 978-9975-4381-1-7. Disponibil: https://ibn.idsi.md/vizualizare_articol/214655 [accesat 2022-07-28].
 18. GHEORGHITA, Maria și Stela PRIPA. Rolul triple helix în proiectarea unui sistem regional de inovare viabil. *Competitiveness and Sustainable Development*, ediția a 4-a, 3-4 noiembrie 2022, Chișinău. Chișinău: Tehnica-UTM, 2022, pp. 79-84. ISBN 978-9975-45-872-6 (PDF). Disponibil: https://ibn.idsi.md/ro/vizualizare_articol/171100/crossref [accesat 2022-11-24].
 19. HĂMURARU, Maria și Adriana BUZDUGAN. Rolul conexiunilor sociale în fundamentarea teoretică și empirică a bunăstării economice. În: *Intellectus*. 2025, nr. 2, pp. 115-127. Disponibil: <https://doi.org/10.56329/1810-7087.25.2.11>; https://ibn.idsi.md/ro/vizualizare_articol/241957 [accesat 2025-10-24].
 20. HECKSCHER, Eli F. The Effect of Foreign Trade on the Distribution of Income. În: ELLIS, Howard S.; METZLER, Lloyd A. (eds.). *Readings in the Theory of International Trade*. Philadelphia: Blakiston, 1949, pp. 272–300.
 21. Hotărârea Guvernului Republicii Moldova cu privire la aprobarea Programului național de dezvoltare industrială pentru anii 2024-2028: nr. 280 din 17.04.2024. Online. LEGIS. Disponibil: https://www.legis.md/cautare/getResults?doc_id=143460&lang=ro [accesat 2025-07-15].
 22. Hotărârea Guvernului Republicii Moldova cu privire la aprobarea Strategiei naționale de dezvoltare economică 2030: nr. 393 din 05.06.2024. Online. LEGIS. Disponibil: https://www.legis.md/cautare/getResults?doc_id=143524&lang=ro [accesat 2025-08-24].
 23. IAMMARINO, Simona și Philip MCCANN. The structure and evolution of industrial clusters: transactions, technology and knowledge spillovers. *Research Policy*. 2006, vol. 35, nr. 7, pp. 1018-1036. Disponibil: https://www.pmf.unizg.hr/_download/repository/Clusters_and_spillovers.pdf [accesat 2021-06-05].
 24. IGNATIUC, Diana. Aspecte teoretico-metodologice privind competitivitatea instituțională a economiei naționale. *Economica*. Online. 2020, nr. 3 (113), pp. 81–91. Disponibil: <https://ase.md/wp-content/uploads/2020/11/Revista-Economica-Nr-3-113-2020-1.pdf?utm> [accesat 2021-11-17].
 25. KRUGMAN, Paul. Increasing returns and economic geography. *Journal of Political Economy*. 1991, vol. 99, nr. 3, pp. 483-499. Disponibil: https://pr.princeton.edu/pictures/g-k/krugman/krugman-increasing_returns_1991.pdf [accesat 2017-09-10].
 26. KRUGMAN, Paul. Competitiveness: A Dangerous Obsession. *Foreign Affairs*. Online. 1994, vol. 73, nr. 2, pp. 28–44. Disponibil: <https://doi.org/10.2307/20045917> [accesat 2025-07-16].
 27. MARSHALL, Alfred. *Principles of Economics*. London: Macmillan, 1890 (ed. 1920). 627 p. Disponibil: <https://www.scribd.com/document/853575736/Marshall-Alfred-Principles-of-Economics-1920-8-ed> [accesat 2021-06-21].
 28. OHLIN, Bertil. *Interregional and International Trade*. Cambridge: Harvard University Press, 1933. Harvard Economic Studies, vol. 39, 617 p.
 29. ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD). *Competitive Regional Clusters: National Policy Approaches*. Online. OECD *Reviews of Regional Innovation*. Paris: OECD Publishing, 2007. Disponibil: <https://doi.org/10.1787/9789264031838-en> [accesat 2023-10-04].
 30. PARAUŠIĆ, Vesna; Drago CVIJANOVIĆ; Branko MIHAILOVIĆ și Kristina VELJKOVIĆ. Correlation between the state of cluster development and national competitiveness in the Global Competitiveness Report of the World Economic Forum 2012–2013. *Economic Research-Ekonomska Istraživanja*. Online. 2014, vol. 27, nr. 1, pp. 662–672. Disponibil: <https://doi.org/10.1080/1331677X.2014.974917> [accesat 2017-07-23].

31. PENCEA, Sarmiza. Promovarea clusterelor industriale inovatoare, componentă a strategiilor de creștere a competitivității pe piețele globale. *Revista OEconomica*. 2007, nr. 2. Disponibil: <https://oeconomica.org.ro/files/pdf/47.pdf> [accesat 2023-10-09].
32. PENEDER, Michael and Christian RAMMER (eds.). *Measuring Competitiveness*. Online. Vienna: Austrian Institute of Economic Research (WIFO); Centre for European Economic Research (ZEW), 2018. Disponibil: https://www.wifo.ac.at/wp-content/uploads/upload-7455/s_2018_competitiveness_60838.pdf [accesat 2024-08-13]
33. PERROUX, François. Economic space: theory and applications. *The Quarterly Journal of Economics*. 1950, vol. 64, nr. 1, pp. 89-104. Disponibil: <https://ideas.repec.org/a/oup/qjecon/v64y1950i1p89-104.html> [accesat 2017-10-03].
34. PORTER, Michael E. Location, competition, and economic development: local clusters in a global economy. *Economic Development Quarterly*. 2000, vol. 14, nr. 1, pp. 15-34. Disponibil: <https://journals.sagepub.com/doi/10.1177/089124240001400105> [accesat 2017-11-05].
35. PORTER, Michael E. *The Competitive Advantage of Nations*. New York: Macmillan, 1990. Disponibil: <https://www.hbs.edu/faculty/Pages/item.aspx?num=189> [accesat 2017-11-28].
36. PORTER, Michael E. The economic performance of regions. *Regional Studies*. 2003, vol. 37, pp. 549-578. Disponibil: <https://scispace.com/papers/the-economic-performance-of-regions-5fae2sjsqy> [accesat 2017-12-19].
37. RUSU, Ecaterina și Elina BENEĂ-POPUȘOI. Economic Cluster Development in the Republic of Moldova: Policy Challenges and Future Directions in a Global and EU Comparative Context. *Review of International Comparative Management*, 2026, vol. 27, nr. 3, pp. 650–664. DOI: 10.24818/RMCI.2026.3.650. Disponibil: <https://research.ebsco.com/c/zjt300/search/details/t4ldh3pgdf/related-items?ampSessionId=1788851758519&DeviceId=a87f27ab-09a8-464e-917e-a82f3410e615&request-context=plink&db=buh> [accesat 2026-09-08].
38. RUSU, Ecaterina și Elina BENEĂ-POPUȘOI. How economic clusters could address the low resilience under pandemic disruptions of the inward processing industries of the Republic of Moldova. Online. *Ecoforum Journal*. 2021, vol. 10, nr. 3. Disponibil: <https://ecoforumjournal.ro/index.php/eco/article/view/1819> [accesat 2021-10-25].
39. RUSU, Ecaterina și Elina BENEĂ-POPUȘOI. Evaluarea potențialului de formare a clusterelor economice în ramurile industriale ale Republicii Moldova, cu utilizarea indicelui de clusterizare. Online. *Economica*. 2024, vol. 128, nr. 2, pp. 36-43. Disponibil: https://irek.ase.md/xmlui/bitstream/handle/123456789/3458/Ec_2024_2_p36-43.pdf?sequence=3&isAllowed=y [accesat 2025-10-12].
40. SFORZI, Fabio. The Quantitative Importance of Marshallian Industrial Districts in the Italian Economy. In: *Industrial Districts and Inter-Firm Co-operation in Italy*. Geneva: International Institute for Labour Studies, 1990, pp. 75-107. Disponibil: <https://www.researchgate.net/publication/262564260> [accesat 2021-07-13].
41. STERNBERG, Rolf and Timo LITZENBERGER. Regional Clusters in Germany – Their Geography and Their Relevance for Entrepreneurial Activities. *European Planning Studies*. 2004, vol. 12, nr. 6, pp. 767-791. Disponibil: <https://www.researchgate.net/publication/248961491> [accesat 2023-11-23].
42. STRATAN, Alexandru. Tendencies, progress and challenges related to the improvement of national competitiveness. In: *ACROSS Journal of Interdisciplinary Cross-Border Studies*. 2022, vol. 5, nr. 1, pp. 71-78. ISSN 2602-1463. DOI: 10.35219/across.2022.5.1.10. Disponibil: <https://www.researchgate.net/publication/391917261> [accesat 2025-10-22]
43. WORLD BANK. *Worldwide Governance Indicators*. Online. 2024 Update. Disponibil: <https://www.govindicators.org> [accesat 2025-10-30].

LIST OF SCIENTIFIC PUBLICATIONS

on the topic of the doctoral thesis

“Formation of Economic Clusters as a Factor in Enhancing the Competitiveness of the Economy of the Republic of Moldova”

by **Ecaterina RUSU**, PhD student at the ASEM Doctoral School,

Scientific specialty 521.01. Economic Theory and Economic Policies

2. Articles in scientific journals

2.1. In journals indexed in the Web of Science and SCOPUS databases

1. BENEĂ-POPUȘOI, Elina, **RUSU, Ecaterina**. *Economic clustering as a driver of the Republic of Moldova's competitiveness: Evidence from cluster index and labor productivity analysis in the processing industries*. În: *Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development*, Vol. 26, Issue 3, 2026. Baze de date: Web of Science Core Collection (ESCI), Index Copernicus, CABI, DOAJ, PBN (Polish Scholarly Bibliography), CiteFactor, SCIPPO, OCLC-WorldCat, ResearchBib, Google Scholar. Disponibil: (accepted for publishing)

2.2. In journals indexed in other databases recognized by ANACEC (with the database specified)

2. **RUSU, Ecaterina**, BENEĂ-POPUȘOI, Elina. *How economic clusters could address the low resilience under pandemic disruptions of the inward processing industries of the Republic of Moldova*. În: *Ecoforum Journal*, 10(3), 2021. Baze de date: RePEc, CEEOL, EconBiz, ZDB, EZB, JISC, Scope, SSRN, BASE, Europub, Citefactor, Sindexs, ResearchBib, Scispace. Disponibil: <https://ecoforumjournal.ro/index.php/eco/article/view/1819>

3. **RUSU, Ecaterina**, BENEĂ-POPUȘOI, Elina. *Economic Cluster Development in the Republic of Moldova: Policy Challenges and Future Directions in a Global and EU Comparative Context*. În: *Review of International Comparative Management*, vol. 27, nr. 3, 2026, pp. 650–664. DOI: 10.24818/RMCI.2026.3.650. Baze de date: RePEc, DOAJ, ERIH PLUS, EBSCO, The World Wide Web Virtual Library for European Integration, NewJour Electronic Journals and Newsletters, Cabells Database, Google Scholar, OCLC WorldCat, CEEOL. Disponibil: <https://www.rmci.ase.ro/no27vol3/13.pdf>

2.3. In journals included in the National Register of Scientific Journals (with the category specified)

4. **RUSU, Ecaterina**. *Repere metodologice pentru identificarea ramurilor industriale cu potențial de clusterizare ale economiei Republicii Moldova*. În: *Revista Economica*, nr. 2 (112), 2020, pp. 38–50. Categoria B. Disponibil: https://ase.md/files/publicatii/economica/ec_2020_2_r2.pdf

5. **RUSU, Ecaterina**, BENEĂ-POPUȘOI, Elina. *Evaluarea potențialului de formare a clusterelor economice în ramurile industriale ale Republicii Moldova, cu utilizarea indicelui de clusterizare*. În: *Economica*, 128(2), 2024, pp. 36–43. Categoria B. Disponibil: https://irek.ase.md/xmlui/bitstream/handle/123456789/3458/Ec_2024_2_p36-43.pdf?sequence=3&isAllowed=y

6. BENEĂ-POPUȘOI, Elina, **RUSU, Ecaterina**. *Knowledge spillovers in the process of formation of the economic clusters*. În: *Eastern European Journal for Regional Studies (EEJRS)*, Volume 4, Issue 2, 2018, pp. 94–107. Categoria B. Disponibil: https://csei.ase.md/journal/files/issue_42/EEJRS_0402_94-107_BEN.pdf

3. Articles in conference proceedings and other scientific events

3.1. In proceedings of scientific events indexed in the Web of Science and Scopus databases

7. BENEĂ-POPUȘOI, Elina, RUSU, Ecaterina. **Clusters as an Environment of Competitive Collaboration. A Case Study on the Emerging Apparel Economic Cluster in the Republic of Moldova.** În: Xu, J., Duca, G., Ahmed, S., García Márquez, F., Hajiyeu, A. (eds) *Proceedings of the Fourteenth International Conference on Management Science and Engineering Management. ICMSEM 2020. Advances in Intelligent Systems and Computing*, vol. 1191. Springer, Cham, 2021. DOI: https://doi.org/10.1007/978-3-030-49889-4_57. Baze de date: Scopus. Disponibil: <http://www.scopus.com/inward/record.url?eid=2-s2.0-85088234138&partnerID=MN8TOARS>

3.3. *In proceedings of scientific events included in the Register of Published Materials of Scientific Events Organized in the Republic of Moldova*

8. RUSU, Ecaterina. **Evolution of the Concept of Economic Cluster.** În: *Simpozion științific al tinerilor cercetători*, Ed. 15, 28–29 aprilie 2017, Chișinău. Chișinău: Departamentul Editorial-Poligrafic al ASEM, 2017, Vol. 1, pp. 116–120. Disponibil: https://ibn.idsi.md/vizualizare_articol/58273

9. RUSU, Ecaterina. **Rolul politicii statale și a inițiativelor sectorului privat în formarea clusterelor economice: experiența internațională și cazul Republicii Moldova.** În: *Competitivitatea și inovarea în economia cunoașterii*, Conf. Șt. Ed. XXI, 27–28 septembrie 2019, Chișinău. Chișinău: Departamentul Editorial-Poligrafic al ASEM, 2019, Ediția a 21-a, pp. 389–397. ISBN 978-9975-75-968-7. Disponibil: https://ibn.idsi.md/vizualizare_articol/93259

4. Abstracts in scientific proceedings

4.2. *în lucrările conferințelor științifice internaționale (Republica Moldova)*

10. RUSU, Ecaterina, BENEĂ-POPUȘOI, Elina. **Formarea clusterelor economice – repere teoretice.** În: *Competitivitatea și inovarea în economia cunoașterii*, 22–23 septembrie 2017, Chișinău. Chișinău: Departamentul Editorial-Poligrafic al ASEM, 2017, pp. 115–117. Disponibil: https://ibn.idsi.md/vizualizare_articol/164098

5. Other works and achievements specific to different scientific fields

11. LUPUȘOR, A., GAIBU, C., RUSU, Ecaterina, SOLOVIOVA, M., MADAN, S.. **Assessing the Economic Resilience of the Republic of Moldova in the Context of Recent Security Threats.** (No. 0509). CASE – Center for Social and Economic Research, 2025. Baze de date: RePEc (Research Papers in Economics). Disponibil: <https://ideas.repec.org/p/sec/report/0510.html>

ADNOTARE

RUSU Ecaterina, „Formarea clusterelor economice ca factor de sporire a competitivității economiei Republicii Moldova”, teză de doctor în științe economice, Chișinău, 2026

Structura tezei: introducere, trei capitole, concluzii generale și recomandări, bibliografie (194 surse), 158 de pagini de text de bază, 22 tabele, 19 figuri și 11 anexe. Rezultatele științifice sunt reflectate în 11 publicații științifice.

Cuvinte-cheie: economic competitiveness, economic cluster, clustering potential, cluster policies, agro-industrial association, spatial proximity, non-spatial proximity, Clustering Index, labour productivity, economic specialisation, glocalisation.

Domeniul de studiu: Teorie economică și politici economice.

Scopul lucrării: constă în investigarea procesului multidimensional de formare și dezvoltare a clusterelor economice și evaluarea implicațiilor acestui proces asupra competitivității economiei Republicii Moldova.

Obiectivele cercetării: 1. fundamentarea teoretico-metodologică a procesului de formare a clusterelor economice și a mecanismelor de influență a acestui proces asupra competitivității economiei naționale; 2. analiza modelelor și mecanismelor de configurare, formare și dezvoltare a clusterelor, prin prisma practicilor internaționale; 3. analiza sub aspectul premiselor clusterizării economice, a structurii economiei Republicii Moldova în perioada sovietică, cu accent pe experiența complexelor agroindustriale; 4. evaluarea structurii economiei naționale, a mediului antreprenorial și a cadrului de politici din perspectiva premiselor pentru dezvoltarea clusterelor economice; 5. identificarea și evaluarea potențialului de clusterizare în Republica Moldova la nivelul ramurilor economice și al unităților administrativ-teritoriale; 6. evaluarea relației dintre gradul de clusterizare economică și competitivitatea întreprinderilor prin aplicarea analizei de corelație; 7. elaborarea recomandărilor privind stimularea proceselor de clusterizare și valorificarea potențialului clusterelor economice în vederea consolidării competitivității.

Noutatea și originalitatea științifică: constă în fundamentarea unei concepții teoretico-metodologice integrate privind evaluarea nivelului actual și a potențialului de clusterizare economică, demers ce depășește viziunea statică a aglomerărilor industriale izolate și estimează, în premieră pentru Republica Moldova, corelația dintre nivelul de clusterizare și competitivitatea economică. Originalitatea cercetării derivă și din operaționalizarea conceptului de clusterizare ca pilon de politică economică adaptat realităților din Republica Moldova.

Implementarea rezultatelor științifice se consemnează prin două certificate de implementare obținute de la Ministerul Dezvoltării Economice și Digitalizării și de la Comisia pentru Economie Buget și Finanțe a Parlamentului Republicii Moldova.

Semnificația teoretică și valoarea aplicativă a lucrării: rezidă în extinderea și sintetizarea paradigmelor doctrinare referitoare la mecanismele de formare și funcționare a clusterelor, oferind totodată un cadru explicativ consolidat asupra interdependenței dintre procesul de clusterizare și competitivitatea economică. Totodată, cercetarea contribuie la dezvoltarea cadrului metodologic de identificare a potențialului de clusterizare, prin integrarea analizei sectoriale și teritoriale a concentrării activităților economice. Valoarea aplicativă a lucrării constă în utilizarea rezultatelor cercetării pentru fundamentarea politicilor de clusterizare în Republica Moldova, contribuind la realizarea obiectivelor *Programului Național de Dezvoltare Industrială 2024-2028* privind evaluarea potențialului de clusterizare și dezvoltarea clusterelor industriale. Rezultatele obținute în profil sectorial și teritorial permit identificarea activităților economice și a unităților administrativ-teritoriale cu potențial de clusterizare și pot servi drept suport pentru fundamentarea inițiativelor și măsurilor de sprijin în acest domeniu. Dimensiunea aplicativă a cercetării a fost validată și prin fondarea *Asociației Naționale a Clusterelor din Republica Moldova*.

ANNOTATION

RUSU Ecaterina, "The Formation of Economic Clusters as a Factor for Enhancing the Competitiveness of the Economy of the Republic of Moldova," PhD thesis in economic sciences, Chişinău, 2026

Thesis structure: introduction, three chapters, general conclusions and recommendations, bibliography (194 sources), 158 pages of main text, 22 tables, 19 figures, and 11 appendices. The scientific results are reflected in 11 scientific publications.

Keywords: economic competitiveness, economic cluster, clustering potential, cluster policies, agro-industrial association, spatial proximity, non-spatial proximity, Clustering Index, labour productivity, economic specialisation, glocalisation.

Aim of the thesis: consists in investigating the multidimensional process of the formation and development of economic clusters and assessing the implications of this process for the competitiveness of the economy of the Republic of Moldova.

Research objectives: 1. establish the theoretical and methodological foundations of economic clustering and its mechanisms for enhancing national competitiveness; 2. to analyze the models and mechanisms of cluster configuration, formation, and development from the perspective of international practices; 3. to analyze the structure of the economy of the Republic of Moldova during the Soviet period in terms of the prerequisites for economic clustering, with particular emphasis on the experience of agroindustrial complexes; 4. to assess the structure of the national economy, the entrepreneurial environment, and the policy framework in terms of the prerequisites for the development of economic clusters; 5. to identify and assess the clustering potential in the Republic of Moldova at the level of economic sectors and administrative-territorial units; 6. to assess the relationship between the degree of economic clustering and enterprise competitiveness by applying correlation analysis; 7. to develop recommendations for stimulating clustering processes and realizing the potential of economic clusters to strengthen competitiveness.

Scientific novelty and originality: consist in developing an integrated theoretical and methodological framework for assessing the current level and potential of economic clustering. This approach goes beyond the static view of isolated industrial agglomerations and, for the first time in the Republic of Moldova, assesses the correlation between the level of clustering and economic competitiveness. The originality of the research also lies in operationalizing the concept of clustering as a pillar of economic policy adapted to the specific context of the Republic of Moldova.

Implementation of the scientific results is confirmed by two implementation certificates obtained from the Ministry of Economic Development and Digitalization and from the Economy, Budget and Finance Committee of the Parliament of the Republic of Moldova.

Theoretical significance and applied value of the thesis: stems from the extension and synthesis of doctrinal paradigms concerning the mechanisms of cluster formation and functioning, while providing a consolidated explanatory framework for the interrelationship between clustering and economic competitiveness. The research also contributes to the development of the methodological framework for identifying clustering potential by integrating sectoral and territorial analyses of the concentration of economic activities. The practical value of the thesis lies in the applicability of the research findings to the formulation of clustering policies in the Republic of Moldova, contributing to the achievement of the objectives of the *National Industrial Development Programme 2024-2028* regarding the assessment of clustering potential and the development of industrial clusters. The sectoral and territorial results enable the identification of economic activities and administrative-territorial units with clustering potential and can support the development of cluster initiatives and related support measures. The practical dimension of the research was also validated through the founding of the National Cluster Association of the Republic of Moldova

RUSU ECATERINA

**FORMATION OF ECONOMIC CLUSTERS AS A FACTOR IN
ENHANCING THE COMPETITIVENESS OF THE ECONOMY OF THE
REPUBLIC OF MOLDOVA**

**SPECIALTY: 521.01 – ECONOMIC THEORY AND ECONOMIC
POLICIES**

Summary of the Doctoral Thesis in Economics

Approved for printing: data
Offset paper. Offset printing.
Printing sheets: 2.69

Paper format: 60 × 84 1/16
Print run: 20 copies.
Order No.

The Summary was printed by the Editorial and Printing Service of the Academy of Economic Studies of Moldova, 61 Gavril Bănulescu-Bodoni Street, MD-2005, Chişinău, Republic of Moldova.