

Textile & clothing clusters – sustainable development drive of the Romanian economy

SABINA OLARU
CATALIN GROSU
EFTALEA CĂRPUȘ
PYERINA CARMEN GHITULEASA

DOI: 10.35530/IT.069.06.1574

MIRELA GRETI PUIU
SANDA-MIRELA BOGYO
SORINA LUMINIȚA BUCURAȘ

REZUMAT – ABSTRACT

Clustere din domeniul textile-confecții – motor de dezvoltare sustenabilă a economiei românești

Tendința, în rândul țărilor dezvoltate, este dezvoltarea de sisteme naționale cu interacțiuni internaționale complexe, numite de specialiști “triunghiuri ale cunoașterii”. Triunghiul cunoașterii, constituit din educație, cercetare și inovare, se concretizează prin cooperarea dintre instituțiile de educație, organizațiile de cercetare și mediul de afaceri.

Importanța clusterelor privind creșterea competitivității regionale derivă din faptul că afacerile co-localizate cresc productivitatea companiilor, conduc la crearea de locuri de muncă, stimulează inovația, stimulează formarea de noi afaceri și sprijină supraviețuirea și dezvoltarea întreprinderilor mici. Această lucrare prezintă elemente pentru definirea clusterelor românești implicate în domeniul textile-confecții și analiza activității acestora. Conform Ministerului Economiei, în România, sunt înregistrate 4 clusteruri în domeniul textile-confecții, prezentate pe regiuni de dezvoltare.

Pentru o imagine detaliată privind activitatea clusterelor românești de textile-confecții, a fost realizată analiza indicatorilor economici ai acestora în perioada 2012-2016. Cifra de afaceri realizată de întreprinderile de textile-confecții din cadrul celor 4 clusteruri a fost, în 2016, de cca. 1,19 miliarde lei, angajând un personal de circa 7078 persoane. Clusterurile au potențial de a crea ecosisteme favorabile inovării pentru întărirea grupurilor de IMM-uri în care nevoile acestora să fie mai bine exploatate, ca mijloc de promovare a creșterii economice.

Cuvinte-cheie: cluster, textile, confecții, sustenabilitate

Textile & clothing clusters – sustainable development drive of the Romanian economy

The tendency among developed countries is the development of national systems with complex international interactions, called by the specialists: “triangles of knowledge”. The triangle of knowledge, consisting of education, research and innovation, is realized through cooperation between education institutions, research organizations and the business environment.

The importance of clusters to increase regional competitiveness comes from the fact that co-located businesses increase company productivity, lead to job creation, stimulate innovation, stimulate new business formation and support the survival and growth of small businesses.

This paper presents elements for defining the Romanian clusters involved in textile & clothing sector and their activity analysis.

According to the Ministry of Economy, in Romania there are 4 clusters in the textile & clothing sector, presented by development regions.

For a detailed view of the Romanian textile & clothing clusters activity, the analysis of their economic indicators during the period 2012-2016 was carried out. The turnover achieved by the textile & clothing enterprises part of the four clusters was in 2016 of 1.19 billion RON, employing a staff of about 7078 employees.

Clusters have the potential to create innovation-friendly ecosystems to strengthen SME clusters to better exploit their needs as a means of promoting economic growth.

Keywords: cluster, textile, clothing, sustainability

INTRODUCTION

The remarkable advances in technological development and innovation, which in recent years have occurred rapidly, influenced the organization and strategies in competitive environment.

The revolution of knowledge has been identified, a complex process of transition from the physical-driven economy to the intangible based one, intellectual resources (knowledge packages, human and informational capital). This approach plays an essential strategic role, being the engine of competitiveness.

It is known that, regardless of the field of activity, social welfare and added value is ensured through a systematic generation and efficient exploitation of knowledge. Thus, among developed countries, the trend is the development of national systems with complex international interactions, called by the specialists: “triangles of knowledge”. The triangle of knowledge, consisting of education, research and innovation, is realized through cooperation between education institutions, research organizations and the business environment. Of these, the highest degree

of complexity, which raises the most problems (specific policies, the well prepared human resource, the financial resources needed to be allocated) is the innovation.

Innovation is a function of many variables due to the role it plays as a link element (bridge between research and industry). Reducing development time in the innovative products and services implemented in the industry is driving the acceleration of the economic circuit and thus increasing the satisfaction of the final user. Thus, the innovative process does not end with the implementation of new products and services in the industry, but it is continuously developing, step by step. Assimilation of the innovative process and ensuring cooperation between education institutions, research organizations and industry represent the environment of economic clusters.

Clusters appear naturally and reflect the unique assets and core competencies of a given region, that create unique competitive advantages for specific industries. Companies that are affiliated to a cluster structure have the benefit of visibility and sharing of tangible and intangible resources.

This paper presents elements for defining the Romanian clusters involved in textile & clothing sector and their activity analysis.

CLUSTER DEVELOPMENT FACTORS

The cluster concept means an organized, legally registered structure, made up of independent partners (enterprises, research organizations, universities, public authorities, nonprofit organizations, consultancy firms, commerce chambers, training centers, etc.), in order to increase the competitiveness of the group, by developing the production of innovative goods (technologies, products, processes) based on the cooperative innovation activities within the group, including through shared use of resources, as well as through the exchange and/or transfer of specialized knowledge [1].

Clusters include tightly linked and interconnected industrial operators operating in a certain geographic area. Companies operating in a cluster are connected through a common workforce, supply chain, customers or technology. Each cluster includes businesses and industry as well as companies that support them, which is a mutually beneficial business ecosystem.

The importance of clusters for increasing regional competitiveness stems from the fact that co-located businesses have the following attributes:

- increase company productivity;
 - lead to job creation;
 - stimulate innovation;
 - stimulate new business formation;
 - support the survival and growth of small businesses.
- Clusters create synergies, and they lead to the creation of competitive advantages best illustrated by economist Michael Porter [2–3], stating that the economic success of a cluster depends on the complex

interaction of factors such as enterprise demand, strategy and competition, production factors, supply chains, and horizontal integration, interconnected into a structure known as Porter's Diamond (figure 1). The Porter's Diamond factor conditions are: material resources; human resources (labour costs, qualifications and commitment); knowledge resources; infrastructure; quality of research; liquidity on stock market; natural resources [4–5].

The relation between the related and supporting industries (suppliers) leads to sharing of know-how and encouraging each other by producing complementary products.

The demand conditions depend on the home demands (buyer needs, composition); size of the market (sophistication of the demands); early saturation. These generate a pressure that constantly improves the enterprise competitiveness [4–5].

The enterprise strategy, structure and right balance between benefits and cost associated with globalization are dynamic conditions, which on actual direct market competition, impels the enterprise to work for increasing its productivity and innovation [4–5].

The government acts as a catalyst and challenger stimulating early demands for advanced products and services. The chance provides many advantages for the enterprises ready to start up new operations [5].

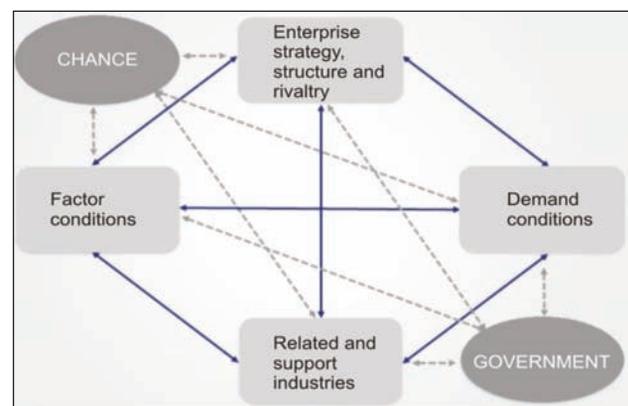


Fig. 1. The main factors that determine the competitive advantage – Porter's Diamond [4–5]

This model plays a critical role in driving innovations and improving the competitive advantage of companies, in terms of internationalization [6].

Clusters are catalysts for economic growth by providing a framework to organize disparate local and regional public policies and investment oriented towards economic development. Achieving this goal requires a number of factors that are closely linked (figure 2) [7].

Small and medium-sized enterprises (SMEs) provide crucial industrial links to trigger a broad-based industrial chain reaction. Without these SMEs, as contributors, industrial growth in developing countries may not be able to maintain an increase in domestic value, employment, productivity and industrial linkages [8]. In this context, innovative regional clusters

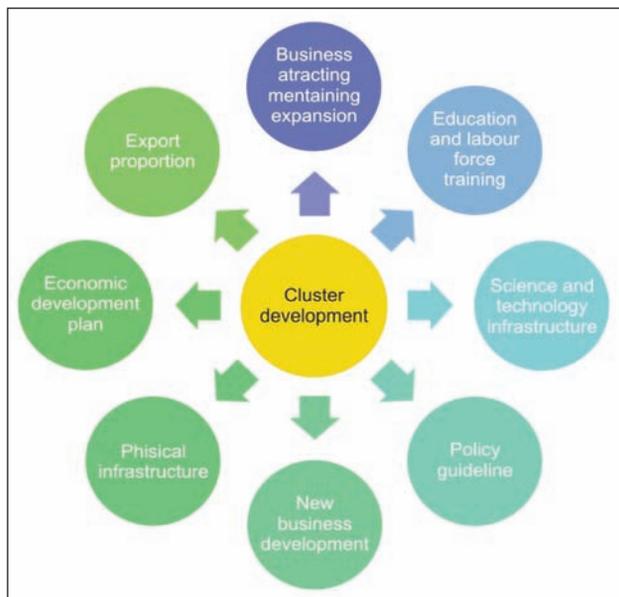


Fig. 2. Strategic framework for cluster development [7]

are a superior step because they ensure economic growth at regional and national level by interlinking cluster companies to a high level, leading them to functioning in an integrated system [9].

Under these circumstances, increasing the competitiveness of SMEs is a critical issue. Increasing the competitiveness and attractiveness of clusters and poles of competitiveness is a key element that can only be achieved by attracting investment. In many countries, cluster-oriented policies and programs have been successfully introduced to strengthen competitiveness and address the challenges of structural issues [10].

In Europe, more than 2000 clusters are active (of which 150 are the world's largest scale, in terms of number of jobs, concentration and specialization). These clusters operate together on regional markets and European consortia, integrating around 38% of the European workforce [11]. At the level of the European Union, the creation of added value and the development of clusters is a topical issue, handled responsibly, with an average of 3% of GDP in the RDI sector, given the threat of a new economic crisis [12]. The national industry is formed, in particular, from large, medium and small companies with private capital and a growing number of SMEs. Under these circumstances, Romania tends to align with this European allocation of additional funds to support RDI activity, adopting strategies aimed at increasing innovation performance in large companies and SMEs, encouraging partnerships between key institutional, economic and educational actors. In addition, the funds for research, development and innovation in clusters and centers of excellence (human resources, technology, infrastructure, managerial skills and abilities) must be increased in order to enhance the competitiveness of the Romanian economy at European and world level [13].

CONSIDERATIONS CONCERNING THE CONTRIBUTION OF TEXTILE – CLOTHING CLUSTERS TO SUSTAINABLE DEVELOPMENT OF ROMANIA

According to the Ministry of Economy, in Romania 72 clusters are registered, of which 52 clusters have been certified by the ESCA-European Secretariat for Cluster Analysis [14]. Among these are the four clusters in the textile-clothing sector, presented by development regions.

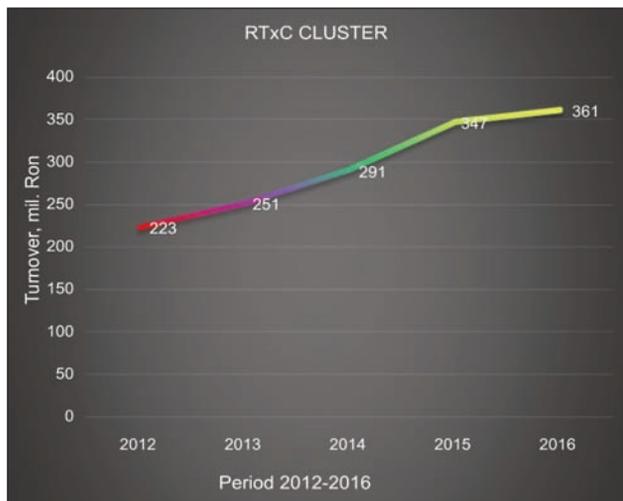
The four existing Romanian clusters in the textile-clothing domain were composed of the partnerships created within the stakeholders (enterprises, research organizations – National R&D Institute for Textiles and Leather, technical/economical/arts universities, public authorities, nonprofit organizations, consultancy firms, commerce chambers), with the support of national authorities and in the framework of specific national funding programs. The synergy of different actors involved in this same sector led to the creation of T&C clusters and generates future paths to realize other clusters.

The ROMANIAN TEXTILE CONCEPT CLUSTER – RTxC cluster [15] concentrates 61 actors (36 manufacturers), especially from the Bucharest-Ifov, South-Muntenia, South-East Regions. The cluster was created as a common platform of cooperation between the members, aiming to support and consolidate their position within the industry by implementing innovative services, products and technologies, thus supporting the sustainable development of the textile industry and of the sector related services (footwear and leather, transport, media, education). RTxC cluster won the SILVER LABEL for cluster management, awarded by ESCA (European Secretariat for Cluster Analysis).

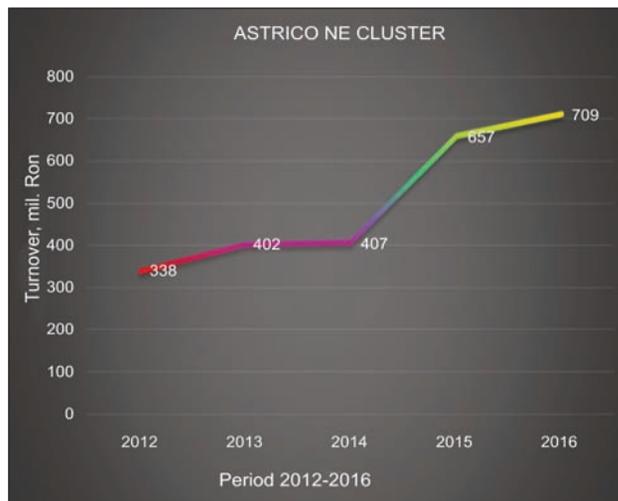
The ASTRICO NORD-EST CLUSTER – ASTRICO NE cluster [16] concentrates 31 members (28 companies) from the North-East Region of Romania. ASTRICO NORD-EST cluster is a powerful industrial production and marketing group based on RIFIL SA Company, a prestigious spinning mill in Europe that produces yarns for garments and industrial use. ASTRICO NORD-EST owns BRONZE LABEL for all managerial activity.

The TRADITIONS MANUFACTURE FUTURE CLUSTER – TMV cluster [17] concentrates 37 members (32 SMEs), especially in the South-East region of Romania, being a national landmark for creativity and technology. The TMV cluster aims to increase consumer consciousness and interest towards the phenomenon of fashion, the stabilization and improvement of the workforce in the field, the attraction of new companies and, last but not least, the creation of a regional brand. TMV cluster owns BRONZE LABEL for all managerial activity.

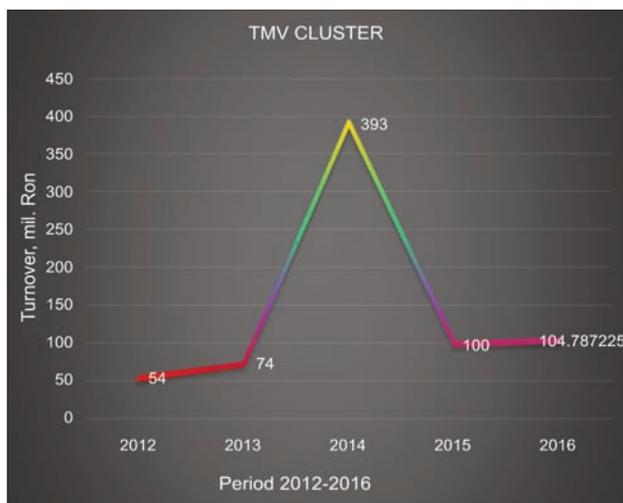
The TRANSYLVANIA TEXTILE & FASHION CLUSTER – TT&F cluster [18] concentrates 40 members (19 SMEs), especially from the central area of Romania. TT&F cluster aims to identify all the opportunities to achieve added value products through technology



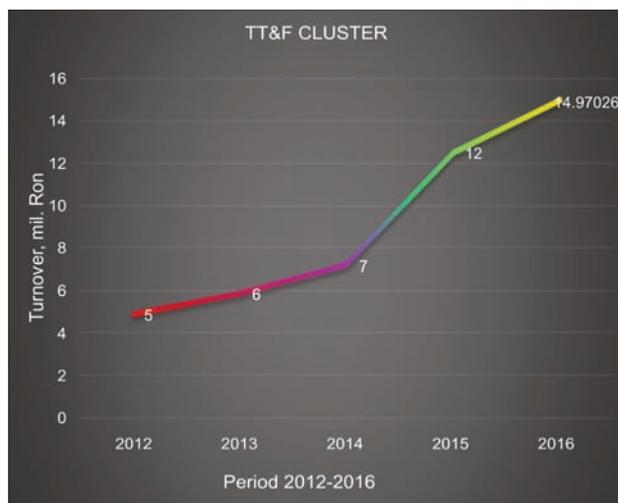
a



b



c



d

Fig. 3. Turnover evolution in RON during 2012-2016: a – RTxC; b – ASTRICO NE; c – TMV; d – TT&F

transfer and applied research. The TT&F cluster owns BRONZ LABEL for all managerial activity. For a detailed view of the activity of the Romanian clusters involved in textile & clothing sector, the analysis of their economic indicators during the period 2012–2016 was carried out. Figure 3 shows the evolution of the turnover indicator for each of the Romanian textile & clothing clusters (figure 3, a – RTxC cluster, figure 3, b – ASTRICO NE cluster, figure 3, c – TMV cluster and figure 3, d – TT&F cluster). The values presented in the figure 3 represent the aggregate value of the turnover only for the producing enterprises, representing the business environment.

Depending on the economic evolution of the members, the clusters record different values for the turnover during the analyzed period.

It is worth mentioning that these clusters, which are a reaction to the market demands and the capitalization of the interconnections between the companies in the “activity area”, can be considered central pillars of the local development.

It is noted that the highest value of this indicator is recorded by the ASTRICO NE cluster, over the entire period considered for the analysis (2012–2016).

The total turnover (of the 4 Romanian textiles & clothing clusters) has a positive evolution, with a maximum of 49.8% in 2014, compared to 2013 (figure 4). The turnover of the enterprises within the four Romanian textile & clothing clusters was 1.19 billion RON in 2016.

In terms of the number of employees, the RTxC cluster recorded a minimum in 2014 of 2754 people, in

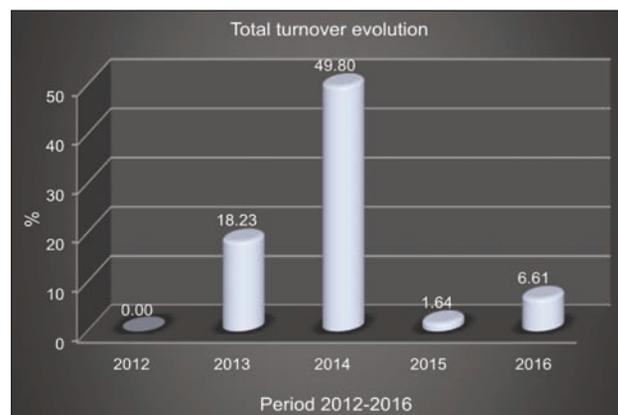
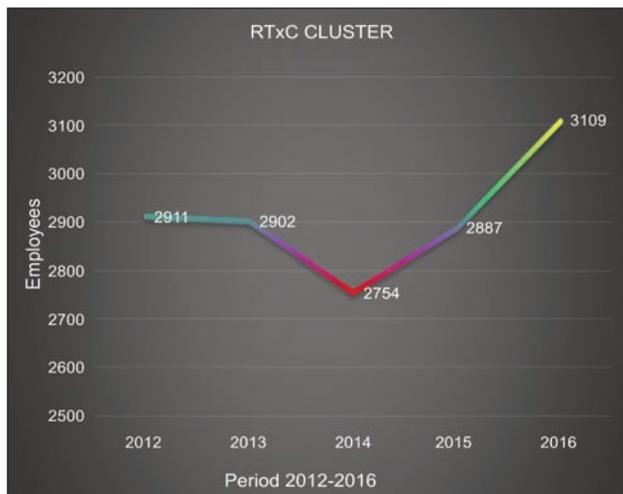
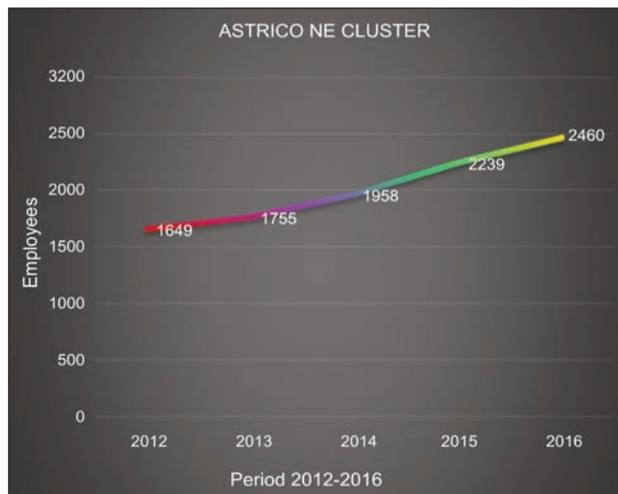


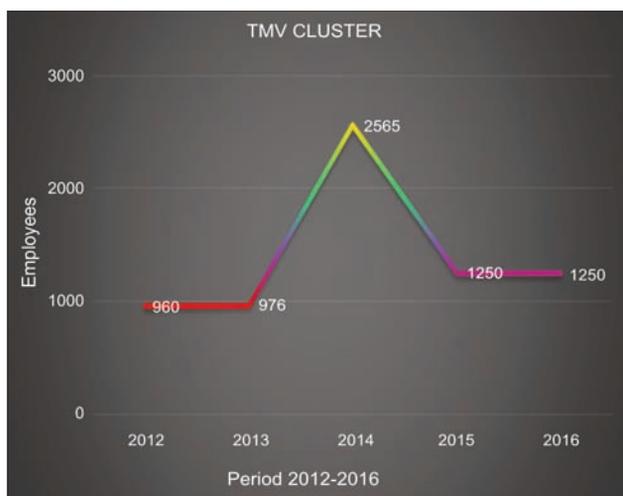
Fig. 4. Turnover evolution for the 4 Romanian textile & clothing clusters



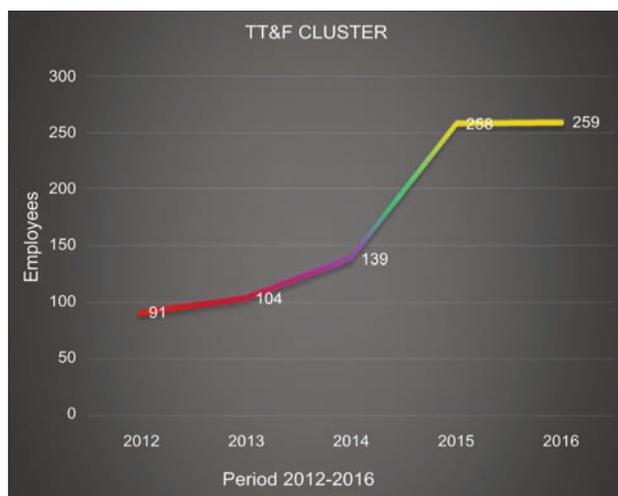
a



b



c



d

Fig. 5. Average number of employees evolution, during 2012–2016:
a – RTxC cluster; b – ASTRICO NE cluster; c – TMV cluster; d – TT&F cluster

order to reach 3109 in 2016. In the case of TMV cluster, in 2014 there was a maximum number of employees.

In the case of ASTRICO NE and TT&F clusters, the number of employees registered a trend of growth from 2012 to 2016 (figure 5).

The average total number of employees of the Romanian textile & clothing clusters had the following evolution in the period 2012–2016: 5611 persons were employed in 2012, the number increased to 5737 persons in 2013 (by 2.25%). The total average number of employees shows a maximum increase of 29.27% in 2014, compared to 2013, strongly influenced by the increase in the TMV cluster's number of employees in that period (figure 6). The total average number of employees decreased in 2015 to 6634 people (by 10.56%), and in 2016 it increased to 7078 people (by 6.71%).

In 2017, there was a turnover increase compared to 2016 for the RTxC, TT&F and ASTRICO NE clusters. Regarding the average number of employees, this indicator had a positive evolution in 2017 compared to 2016 for the RTxC and ASTRICO NE clusters, and a negative evolution for TT&F and TMV, respectively.

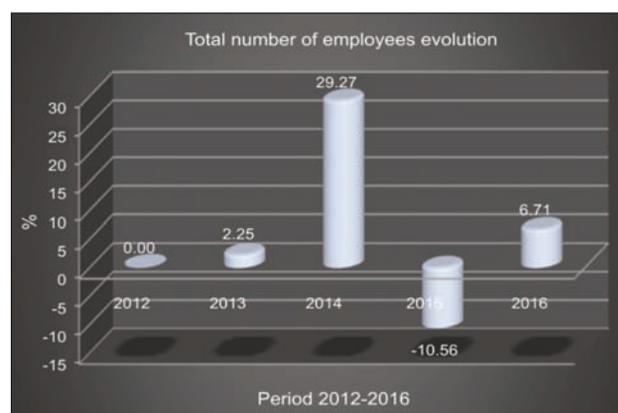


Fig. 6. Total number of employees' evolution for the Romanian textile & clothing clusters

The values of the elements of analysis (turnover, number of employees) are correlated with the dynamics of the local context accentuated by the local competitiveness ("the diamond of competitiveness").

CONCLUSIONS

In their area of activity, clusters have the potential to create innovation-friendly ecosystems to strengthen

SME groups, in order to better exploit their needs as a means of promoting economic growth. Cluster integrated companies are more competitive, more innovative, and cooperate more than single ones. The objectives of the national clusters in the field of textiles & clothing are in line with the strategic objective of the textile sector in Romania, namely to increase the competitiveness of the products under the conditions of the market economy, with minimal material and social costs and maximum efficiency.

The turnover of the Romanian textile & clothing enterprises within the four Romanian clusters was in RON 1.19 billion in 2016, employing a staff of about 7078 people.

In order to increase the economic indicators, textiles & clothing enterprises need support and information,

joint development strategies, joint access to European funds, and the desideratum that is achieved through clustering. It is appreciated that the economic benefits generated by the clusters serve both the cluster members and the public interest, because efficiency, innovation and training levels reach higher odds. Thus clusters are perceived as a success story in the current world dominated by change.

ACKNOWLEDGEMENTS

This paper was elaborated as part of the Nucleu program, executed with the support of ANCSI, project no. PN 16340504 and publishing has been funded by Ministry of Research and Innovation, by Program 1 – Development of the national system for research-development, Subprogram 1.2 – Institutional performance – Projects for funding excellence in RDI, Contract no. 6PFE from 16.10.2018.

BIBLIOGRAPHY

- [1] Pamuk, O. *Clothing comfort properties in textile industry*. In: Natural and Applied Sciences, 2008, vol. 3, issue 1, Pachet de informații, PN III, P2 – *Creșterea competitivității economiei românești prin cercetare, dezvoltare și inovare, Subprogram 2.1. Competitivitate prin cercetare, dezvoltare și inovare – “Organizare și dezvoltare cluster – Cluster inovativ”*, 2017 from <https://uefiscdi.ro/p2-cresterea-competitivitatii-economiei-romanesti-prin-cdi>
- [2] Csaba, N. *Clusters in the Romanian Economy*, In: Analele Universității din Oradea, Științe economice, Tom XVII. 2008.
- [3] Porter, M.E., *Clusters and the new economics of competition*, In: Harvard Business Review, Vol. 76/6, 1998, pp. 77–90.
- [4] Mulder, P., Porter Diamond Model. Retrieved, 2016, from ToolsHero: <https://www.toolshero.com/strategy/porter-diamond-model/>
- [5] Porter, M. E. *The competitive advantage of nations*, Harvard Business Review, 1990.
- [6] Scutaru, L. *Innovative cluster or competitiveness pole?*, In: ECOFORUM, Volume 4, Issue 1 (6), 2015.
- [7] ICIC – Insights for City Leaders from Four Case Studies in the U.S., 2017.
- [8] Lut, D. *The role and importance of clusters in the context of the knowledge economy*. Timisoara: Universitatea Crestina „Dimitrie Cantemir”, 2012.
- [9] Dan, Mihaela-Cornelia, *Clusterelor inovative: o soluție pentru dezvoltarea economică a României*, In: Economie teoretică și aplicată, Volumul XIX, No. 9(574), 2012, pp. 3–14.
- [10] Bergquist, K., Fink, C., Raffo, J. *Identifying and ranking the world’s largest clusters of inventive activity*, In: WIPO, 2017.
- [11] *Raport privind participarea la seminarul “Clusterelor din România pe Calea către Excelență”* București, 6 mai 2016, from <http://www.immoss.ro/usr/casete/96/clusterelor-din-romania.pdf>
- [12] Izsak, K., Markianidou, P., Rivera, L.L. et al. *European cluster trends – report*, In: European Cluster Observatory, Internal Market, Industry, Entrepreneurship and SMEs, 2015.
- [13] Borrás, S., Tsagdis, D. *Cluster policies in Europe*, Edward Elgar Publishing, 2008.
- [14] *Document de politică industrială a României*, iunie 2018, from <http://economie.gov.ro/>
- [15] <http://www.romanian-textile.ro/>
- [16] <http://www.astricone.eu/en/>
- [17] <http://www.tmv-cluster.ro/>
- [18] <http://www.transylvaniatextile.com/>

Authors:

SABINA OLARU¹, CATALIN GROSU¹, EFTALEA CĂRPUȘ¹, PYERINA CARMEN GHIȚULEASA¹
MIRELA GREȚI PUIU², SANDA-MIRELA BOGYO³, SORINA LUMINIȚA BUCURĂȘ⁴

¹National R&D Institute for Textiles and Leather, Lucrețiu Pătrășcanu street, no. 16, sector 3, Bucharest, Romania
e-mail: certex@certex.ro

²Romanian Textile Concept Cluster, Calea Mosilor 268-270, bl. 14, sc. 4, ap. 105, sector 2, Bucharest, Romania
e-mail: office@romanian-textile.ro

³Transylvania Textile & Fashion Cluster, Presei street, no. 4, Sfântu Gheorghe, Covasna, Romania
e-mail: transylvaniatextile@gmail.com

⁴Tradiții Manufactura Viitor Cluster, Calea Moldovei, no. 59, Focșani, Vrancea, Romania
e-mail: tmv.cluster@gmail.com

Corresponding author:

SABINA OLARU
e-mail: sabina.olaru@certex.ro