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Industrial clusters in Russia: The development of special economic zones and industrial parks

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Abstract

This paper investigates the process of developing and implementing special economic zones (SEZs) and industrial parks in Russia. Governments commonly use SEZ policies to develop and diversify exports, create jobs and launch technology/knowledge sharing. The industrial cluster concept is based on the significance of rivalry and supplier networks within the cluster, the combination of geographical specificities and government policies that lead to innovation and productivity growth. This study reveals that in Russia the government's approach in developing these initiatives has strongly interfered with business activities and prevented the vital competitive and collaborative behavior of firms within these economic zones.

JEL classification: F23, G18, M16, M21, O19, P25, P33.
Keywords: industrial cluster, special economic zone, industrial park, Russia, state, competition, collaboration, innovation

1. Introduction

Industrial cluster policies are a key and widely used tool for economic development in local and regional economic development planning. Industrial clusters, i.e., groups of geographically proximate companies within a similar industry, are believed to enhance employment, diversify exports and transfer technology and managerial know-how. Crucial elements of the industrial cluster model include the provision of a collaborative and competitive environment, an appropriate geographical location and proximity to resources, related and supporting firms, and state regulations and strategic programs that facilitate innovation and pro-

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ductivity (Delgado et al., 2016; Feser et al., 2008; Ketels, 2013; Krugman, 1991; Porter, 1990; Schmitz and Nadvi, 1999).

The formation of industrial clusters is an important part of governmental policies and regional development in Russia. Some internationally competitive industrial zones originated in the former economic regime, such as conglomerates in the oil and gas sectors, the aluminum and airspace industries, and military and strategic defense (Romanova and Lavrikova, 2008). However, the stimulation of industrial clusters did not emerge until the early 2000s in the form of industrial parks in 2006 (Ablaev, 2015; Sandler and Kuznetsov, 2015). Among the determining factors in 2005, President Putin signed a decree, No. 116-Federal Law "Establishment of special economic zones (SEZs) in the Russian Federation", which envisioned four types of SEZs: industrial, innovation, tourism, and port and logistics zones. This paper focuses predominantly on industrial SEZs, as industrial development is a core objective for the Russian economy. Later, the Ministry of Economic Development of Russia in accordance with paragraph 6.1 of Appendix 3 of the decree of June 27, 2016 No. 400 "On the priority project of the Ministry of Economic Development of Russia 'Development of innovative clusters — leaders in world-level investment attractiveness'" announced a competitive selection of applications for inclusion in the list that implied the provision of state funding for the establishment of the innovative clusters in the regions. In order for the economic zones to succeed, an industrial cluster concept should be employed (Aggarwal, 2011; Hsu et al., 2013; Zeng, 2012). However, this paper doesn't cover general stimulation state programs of implementation of innovation clusters, but only concentrates and evaluates the application of industrial cluster model in the Russia's context that implies different perception and attitude towards competition and collaboration, which are crucial factors for the sustainable development of the economic zones.

SEZs and industrial parks are emerging in Russia around existing resources, especially research and development (R&D) and human resources. They have been created mostly in areas that have not only weak infrastructure and low production capacity but also the potential for economic growth. The Russian government has offered local and foreign investors various greenfield and brownfield projects in these zones, which are supported by incentives such as an established communal infrastructure, simplified "one-window" administrative procedures and low taxes (Maslikhina, 2016; Yankov et al., 2016). The emerging clusters are expected to create large national corporations, thereby reducing import-dependency in strategic areas. However, SEZs and industrial parks have been generally established on the initiative of regional policymakers, who have little guidance from the federal government and little experience and knowledge. These policies are motivated by a desire to overcome particular political, economic or organizational challenges rather than being part of a coherent regional development plan. As a result, while some projects have developed as exemplars, most of them have struggled to survive.

Current literature regarding the SEZs in Russia is very limited. There are only a few substantial articles, which are either very outdated and cover Kaliningrad FTZ only, or descriptive and didn't provide any specific empirical evaluations with application of the industrial cluster concept (Ablaev, 2015; Burnasov et al., 2013; Dudkina, 2013; Gareev, 2013; Ivanova et al., 2015; Maslikhina, 2016; Prihodko et al., 2007; Romanova and Lavrikova, 2008; Sandler and Kuznetsov,

2015; Yankov et al., 2016). Moreover, Russian case is unique as it suggests cultural aspects in management that differ from Western or Asian approaches: they involve different perceptions of cooperative networks and competitive environment.

This paper aims to investigate the implementation process of industrial cluster policies in Russian regions with SEZs and industrial parks. In doing so, it will fill a gap in the literature related to the establishment of SEZs and industrial parks in the Russian context. It thus investigates the operational impact of high levels of bureaucracy and state interference on business activities and the unique mindset of both state officials and entrepreneurs concerning managing business activities with proclaimed capitalist intent but a socialist mentality. The study has implications for policymakers not only in Russia but also in other developing countries. The paper is structured as follows. It begins with a review of the literature on the industrial cluster model and SEZs and industrial park policies in particular. This review is followed by a description of the methods used in the research and the findings. The last section concludes and presents some recommendations for further research.

2. Literature review

2.1. The concept of industrial clusters

The concept of industrial clusters originates with Marshall (2013 [1890]), who used the term "industrial districts" (ID) to characterize the benefits gained by locating firms in the same geographical area. These benefits comprise access to three types of positive externalities: specialized workers, specialized suppliers of inputs and services, and technological and knowledge spillovers among co-located companies. Subsequently, these externalities have been noted to be generated not only by geographic proximity but also by sectoral, horizontal and vertical agglomerations in terms of the division of labor; all those involved benefit from the specialization that accompanies operating within the same industry, using the same set of resources, or occupying the same supply chain (Feser et al., 2008; Keeble and Nachum, 2002; Sonobe and Otsuka, 2006; Swords, 2013). Social, cultural and institutional "proximity" provide similar benefits (Becattini et al., 2003).

Industrial clusters have three defining characteristics. The first is proximity: clusters are fostered by accessibility, which is generally considered in geographical terms at the level of a region or town. Another characteristic is value creation: clusters comprise distinct firms that are related to one another through the production of goods and services that are valued by customers. The third characteristic is the business environment: firms share a cluster-specific business environment that is generated by both individual actions and collaboration among companies, government agencies, universities and other organizations in what is sometimes described as an "innovation system" (Cooke, 2001; Feldman et al., 2005; Lechner and Dowling, 2003). The balance between collaboration and competition in the business environment, which combines information exchange and specialization advantages, is a critical determinant of an industrial cluster's innovative capacity and, in turn, its members' competitiveness (Porter, 1990).

Clusters improve industrial competitiveness through product specialization and enhance collective efficiency through business value chains and reduced transaction costs. Additionally, firms within clusters foster a high degree of networking

and interconnections that encourage knowledge and technology spillovers, thus stimulating productivity and innovation (Maskell, 2001; Maskell and Malmberg, 1999). Such enterprises can obtain a self-sustaining dynamic result from a robust reasonable advantage in a specific range of products and services. Knowledge spillovers and close interactions with customers and other companies, venture capitalists and knowledge-intensive service providers generate more new ideas and provide intense pressure to innovate, while the cluster environment reduces the costs of experimenting. Business formation is expected to be higher within clusters. Start-ups are more dependent on external suppliers and partners within the cluster (Feldman et al., 2005; Wennberg and Lindqvist, 2007). New opportunities have been created for small and medium-sized enterprises (SMEs) when multi-national enterprises (MNEs) start to do less of their work in-house, preferring to delegate some of their activities to specialist sub-contractors. Small manufacturers work more efficiently in a geographically clustered environment and are assisted by supporting organizations that stimulate information exchanges (De Marchi and Grandinetti, 2014).

Industrial clusters are fostered by externalities of different types, supplier relationships, and the utilization of common factor inputs, such as specialized labor markets or knowledge-sharing processes. When some of these positive externalities occur naturally, their dynamics can be furthered through a combination of networking, collaboration and competition (Best, 2001; Delgado et al., 2014). However, not all economic activities lead to clusters. For some companies within a certain industry, the need to be close to the potential market is more essential than the possible benefits of being geographically close to other companies in the same field. In these circumstances, companies do not compete across regions, and they are not directly exposed to competitors, who can draw on the business environment and cluster conditions elsewhere. For the firms in other industries, the cluster benefits are more vital than proximity to the market. In these circumstances, competition is based not only on complex internal business strategies and operational practices but also on the skills and assets that they can obtain from the location of their activities (Dunning and Narula, 2005; Ketels and Memedovic, 2008; Porter, 2003). However, many examples suggest that a decade or more is required to develop a real competitive advantage. Clusters' governance or policymakers should facilitate clusters' development and improve their innovative capacities; otherwise, they will remain stable, not transform and potentially stagnate, especially if firms do not upgrade, move up the value chain, and diversify (Delgado et al., 2014, 2016; Ketels, 2013; Porter, 1990).

Clusters survive and succeed predominantly because they can increase the diversity and sophistication of their business activities to attain greater productivity and efficiency. In an export-led growth model, this capability is particularly significant. It includes efficiency achievements and reduced entry barriers through business value chains, production specialization and division of labor; efficient local state support; knowledge, technology, and skill spillovers through interfirm relations, including those with state-owned enterprises and foreign corporations; entrepreneurial initiatives and social networks; innovation and technology support from knowledge and public organizations and from industrial associations (Boja, 2011; Delgado et al., 2016; Porter, 2003; Porter, 1990; Swann and Prevezer, 1996).

Some authors suggest that industrial clusters develop spontaneously (Brusco, 1982; Delgado et al., 2014; Ketels, 2013; Schmitz and Musyck, 2016) when the interaction of market forces causes cluster growth by combining rich craft-skilled labor and benefiting from the social and institutional capital. Other researchers stress the significance of the role of national and international government policies (Bianchi, 2000; Cowling and Sugden, 1999; Parrilli, 2009). In particular, they suggest that cluster development is not spontaneous; instead, it occurs due to the implementation of national laws and initiatives to facilitate the development of SMEs and to support their competitive progress. The cluster's success significantly depends on the robustness of the government's strategy for upgrading competitiveness. The government should be open to providing support to all emerging clusters that show a willingness to cooperate and that have some assets on which to build. It also should be engaged in cluster initiatives as a facilitator and participant — not as a leader. The most successful cluster initiatives stem from public — private partnerships (PPPs). According to Porter (1990), the government should not provide subsidies, protection or the relaxation of competition laws to develop clusters, which is even more important in countries that have less experience with competition in their domestic markets.

2.2. Special economic zones and industrial parks

The concept of a SEZ is not novel. Its early, simpler version can be traced back to economic districts, which were later extended to a free trade format or export-processing zones. Since the 1960s, many countries, particularly in Asia, have used zones of this type to break away from an import-substitution development strategy and promote export-driven economic growth. However, most of these zones predominantly specialized in one or more type of export-oriented economic activity, ranging from bonded warehouses, export assembling, processing, and border trade to transportation and financial services. Others have been explicitly established to facilitate technology transfer and promote R&D, as in the case of hi-tech development zones and scientific parks. Most SEZs are either associated or co-located with ports (Creskoff and Walkenhorst, 2009; Farole, 2011; Kirk, 2014).

SEZ is a general definition that covers recent iterations of traditional commercial zones. The basic concept of the SEZ reflects several specific characteristics (Akinci and Crittle, 2008):

- its territory is geographically demarcated;
- it has a single administration;
- it offers tax benefits within this area;
- it provides an autonomous customs zone with simplified procedures and duty-free benefits;
- it offers more liberal economic and juridical regulations than those in the rest of the country.

SEZs are geographic concentrations of firms. They are created to provide better infrastructure and R&D, and they offer various fiscal incentives that are not found outside the zones. They are often established by direct industrial policy interventions to promote regional economic growth, where state policy offers incentives to attract anchor investors and other firms to the same location (Aggarwal, 2010; Gupta, 2008). There are some core types of SEZs (Table 1).

Table 1
Types of special economic zones.

Type	Clarification
Free trade zones (FTZ)	Small and are also known as commercial-free zones; they are fenced-in, duty-free, providing warehousing, storage, and distribution facilities for trade, transshipment, and re-export activities.
Export-processing zones (EPZ)	Industrial estates aimed predominantly at foreign markets. They offer potential investors free-trade conditions and a liberal regulatory environment. There are two types of EPZs: one is a comprehensive type that is open to all industry sectors, and another one is a specialized type, which is only open for certain specialized industries.
Hybrid EPZs	Normally sub-divided into a general zone open to all industries regardless of export orientation and a separate EPZ area reserved for export-oriented, EPZ-registered enterprises.
SEZs	Represent a much broader concept and typically comprise much larger territories. They accommodate all types of activities, including tourism and retail sales, permit people to reside on site, and provide a much broader set of incentives and benefits.
Enterprise specific — single factory zones	Provide incentives to individual enterprises regardless of location; factories do not have to locate within a designated zone to receive incentives and privileges.
Comprehensive SEZs	Also called as multi-functional because they are large and have a combination of different industrial services and urban amenity operations. These zones can comprise an entire city or a jurisdiction (e.g. Shenzhen or Hainan provinces in China).
Industrial parks	Largely manufacturing-based sites. Some multi-functional ones similar to "Comprehensive Special Economic Zones" exist but usually operate at a smaller scale and are typically designed for SMEs. The parks normally offer a broad set of incentives and benefits.
Bonded areas	Also known as "Bonded Warehouses". They are specific real estate facilities or other secured territories, in which goods may be stored, manipulated, or can undergo manufacturing operations without payment of duties that would ordinarily be imposed. To some extent, a "bonded area" is similar to FTZ or "free port" models. Nevertheless, the major difference is that a "bonded area" is subject to customs laws and regulations, while a FTZ is exempt from these provisions.
High tech zones	Promote R&D activities and high technology or science based industries; petrochemical and heavy industries.
Eco-industrial zones or parks	Concentrate on ecological developments concerning the reduction of waste and enhancement of the environmental performance of companies. They commonly employ "industrial symbiosis" principles and green technologies to achieve energy and resource efficiency. Given the severe environmental challenges, a growing number of countries is embracing this new type of zone.

Source: Compiled by the author from Aggarwal (2010), Akinci and Crittle (2008), and Zeng (2016).

The industrial park is a territory zoned and planned for industrial development. It is commonly located in the suburbs or completely outside a city's residential areas, but it has well-developed transportation connections, such as roads and railways. This concept is predominantly based on the following ideas (Geng and Hengxin, 2009; Ratinho and Henriques, 2010):

- establishing the necessary infrastructure in a specifically restricted territory reduces certain expenses for businesses (e.g., roads, rail sidings, electricity, water, and gas);
- the distant localization of industrial zones decreases their environmental impact on urban areas.

Murphy and Baldwin (1959) made the first attempt to define the industrial park, suggesting that it had three features. First, industrial parks must enforce

mandatory restrictions on the firms within its confines, including minimum and maximum lot sizes and land-use ratios, industry types, and environmental standards. The park has to be zoned correctly and regulated by private agreements. Second, an industrial park should employ a management organization to enforce restrictions, approve new firms, regulate private agreements and supervise their fulfillment. An industrial park cannot use a single-firm development model. Third, the park must be some form of planned industrial district. To ensure the project's success, it must provide detailed planning for the territory that accounts for all necessary utilities for each site, including water, electricity, gas, sewage, and transport infrastructure (i.e., access to highways and railways).

One could divide industrial parks into three groups: research parks, innovation centers and science parks (Moudi and Hajihosseini, 2011). Some research suggests that the industrial park is a sub-type of the FTZ or the SEZ, i.e., a smaller version that is specifically designed for SMEs (Akinci and Crittle, 2008; Farole, 2011; Meng, 2003; Sandler and Kuznetsov, 2015; Shaw and Yeoh, 2000). Some authors combine the definitions for technology or science parks (Liberati et al., 2016; Phillimore, 1999; Sun et al., 2007), while others suggest that an industrial park is merely a "heavyweight" version of a business or office park (Behera et al., 2012; Frej and Gause, 2001; Moore and Jennings, 1993). In this paper, an industrial park is considered a SEZ sub-type because the Russian government has deliberately and specifically initiated the establishment of industrial parks for SMEs and SEZs for MNEs.

In the UK, the term "science park" is typically used, which is closely linked to universities. Whereas, in Australia, "technology park" is typically used and it gives high-tech firms access to specialized infrastructure and services to stimulate their development (Volkonitskaia, 2015). The UK Science Park Association suggests a combination of the two terms, i.e., science and technology parks, and clarifies that such parks are initiatives for business development support, whose key goal is to stimulate start-ups and innovative firm growth by providing the necessary infrastructure and stimulation services, such as cooperative links with economic development organizations, universities, research centers, and management consultants (Heikkilä et al., 2016; Liberati et al., 2016). The International Association of Science Parks and Areas of Innovation states that a science or technology park is a territory that accommodates various firms within a certain industry and that is managed by a professional team that offers value-added services, whose core aims are to improve the competitiveness of the host region or territory by inspiring a philosophy of quality and innovation among established businesses and knowledge-based organizations, thereby stimulating the transfer of knowledge and technologies, the creation of innovative products and the founding of innovation-based start-ups (Clausen and Rasmussen, 2013). Figlioli (2007) proposes a business model for industrial parks, which explains how the park's administration creates and delivers value to firms and other stakeholders. This model is not novel, but it aptly summarizes the ways of increasing profits from the implementation and maintenance of an industrial park through its administration, including participation in the real-estate transaction as the owner of the land on which the park is located, the provision of various services (e.g., business consulting), infrastructure maintenance, and the creation of cooperative networks among the firms in the park.

In 2013, Gerardo Angulo Cuentas and a group of Columbian scientists presented a classification of science and technology parks based on research conducted on 45 technology parks of the International Association of Science Parks and Areas of Innovation (Angulo-Cuentas et al., 2013). The project was based on the CANVAS framework developed by Osterwalder et al. (2005). Angulo-Cuentas et al. (2013) defined eight types of parks (Table 2).

As the foundations of SEZ and industrial park models correspond with the concept of industrial cluster development, they have to pursue the following objectives to progress: cooperation and competition, knowledge exchange and innovations, interactions with outside firms and technology exchange, production and export diversification, new start-ups, and the emergence of other supplementary industries (Bräutigam and Tang, 2014; Hsu et al., 2013; Landingin and Wadley, 2005; Nel and Rogerson, 2014; Zeng, 2012). Despite the growth of SEZs worldwide, many have failed to fulfill their objectives, such as employment growth and export diversification. SEZ policy and management practices have progressed over time (Aggarwal, 2010; Gupta, 2008). Many successful SEZs have changed their foundation of competitiveness, concentrating on service quality rather than counting on fiscal incentives. These factors were ultimately vital in determining the differences between successful and failing economic zones (Farole, 2011; Kirk, 2014). Formulating policies for a functioning zone is much easier than bringing it into existence. If the development of a SEZ is not complex, then it may not lead to expected results concerning adequate tax profits, as they are very low. Fiscal incentives can play a vital role in attracting investments in the short term, especially during the initial stages of zone development. Nevertheless, they

Table 2
Types of the industrial parks.

Type	Clarification
Megaparks	Created by the government and are expected to stimulate regional economic development.
University parks	Established by universities with the aim of using their human resources to generate innovative projects.
Entrepreneurship parks	Founded on the basis of the PPP model. This type aims to promote the entrepreneurial activities of businesses, individuals, scientists and even students at every stage of the park's lifecycle.
Departmentalized research parks	Focus on the organization of research departments that combine tangible and intangible resources in one specific area.
Parks with laboratories and technological support	Financed by state organizations to develop and apply R&D to park firms.
Parks with intensive infrastructure	Established to provide a specialized business environment for technology firms and knowledge institutions.
Parks with virtual offerings	Provide value to firms with innovation activity without any obligation to be established in the park. This type mixes virtual and physical approaches. In this case, firms can contact partners and research centers that are located in other physical facilities.
E-community parks	Concentrate on encouraging human development through innovation and technology exchanges based on scientific and business collaboration.

Source: Angulo-Cuentas et al. (2013).

have an insufficient impact on long-term success: no significant correlation exists between fiscal incentives (particularly tax holidays) and outcomes (Akinci and Crittle, 2008; Shakya, 2009).

SEZs are created to ease serviced land and infrastructural complexity that may prevent investment inflow into regional or national economies by providing potential investors with access to prebuilt manufacturing sites, necessary utilities (e.g., electricity, water, telecommunications, and sewage), and long-term leases. SEZs also facilitate the administrative procedures associated with business registration, license acquisition, and access to key services, such as utilities and construction. They provide so-called "single-window" or "one-stop" services, meaning that their management takes full responsibility for coordinating all administrative procedures. Lastly, an essential component of the administrative services provided by zones is customs administration, which is commonly offered with fiscal incentives, with a customs officer inside or at the gate of the zone to perform customs clearance to speed up import and export operations (Aggarwal, 2010; Akinci and Crittle, 2008; Cheesman, 2012; Farole, 2011; Kirk, 2014; Shakya, 2009; Tantri, 2015).

The management of SEZs and industrial parks, along with other public authorities, is responsible for attracting investors and creating networks to promote such zones and, in turn, stimulate their growth. Additionally, most successful zones use an anchor investor strategy, where high-profile companies are invited to join at the initial stages of zone creation, thereby signaling the zone's solidity to other potential investors and stressing this factor to provide them with a useful network of suppliers and partners. Commonly, with this strategy, SEZ authorities strive to attract well-known MNEs in certain industries (Aggarwal, 2010; Basile and Germidis, 1984; Farole, 2011; Gupta, 2008; Tyler and Negrete, 2009). In Russia, the government has played a vital role in the creation of SEZs and industrial parks because its initial aim is to resolve problems concerning the improvement of the investment climate and weak governance rather than to overcome economic and legal limitations in trade operations (Barkhatova, 2000; Tolmachev et al., 2011).

3. Methodology

This paper investigates the implementation and development processes of industrial clusters in Russia by analyzing SEZs and industrial parks. These issues have not been previously explored and analyzed, as they are relatively new. First, I undertook a documentary analysis that reviewed the established procedure, scope and geographic locations of SEZs and industrial parks in Russia. Data were collected from the official government websites of SEZs and the Association of Industrial Parks (AIPs) in Russia, which included zone descriptions, various presentations, and financial reports. Second, semi-structured interviews were conducted with the managers of five SEZs (Titanium Valley, Alabuga, Lipetsk, Togliatti and Moglino), three tenants from two of these SEZs, and two representatives from the AIPs. Primary data collection was conducted in two stages: December 2014 – January 2015 and January–February 2016. Overall, twenty in-depth interviews lasted one to two hours each. Twelve interviews were face-to-face meetings that took place at the managers' offices, and eight were telephone

interviews. To obtain the most relevant information about the targeted organizations, only top management had been reached: general directors, deputy directors, and research managers. The SEZ investors belonged to the following industry sectors: titan production, the production of components and equipment for metallurgy and mechanical engineering, and the manufacturing of plastics, rubber, and chemicals. Interviews were conducted in Russian and subsequently examined and translated into English.

In this study, three types of interview questions were employed for three groups of respondents: SEZ administrators, SEZ investors, and AIPs representatives. The interview questions have been composed according to eight relevant themes. The themes have been identified as the result of the literature review analysis, which revealed the most significant topics that required deeper investigation. Sections 1 and 2 were introductory and concerned the establishing process of the SEZ or industrial park, some aspects of the managing companies and information about the tenants. Section 3 concentrated on the market topic specifically emphasizing the linkages with other tenants within the economic zones and the inquiry about export-oriented activities. These two aspects were essential to investigate according to the concept of industrial clusters suggesting the importance of trade or cooperative linkages within the clusters (Delgado et al., 2016; Ketels and Memedovic, 2008; Porter, 2003), and significance of export-oriented activities within the SEZs that facilitated sustainable development (Aggarwal, 2010; Akinci and Crittle, 2008; Zeng, 2012). Sections 4-6 were based on the cluster theory that suggested the importance of three factors (competition, cooperation, and innovation) for facilitating the development of the clusters (Breschi and Malerba, 2005; Delgado et al., 2014; Ketels, 2013; Porter, 2000). Section 7 investigated the significance of the regional government in the development of the zones (Aggarwal, 2006, 2010; Chen, 1994; Ge, 1999), and about Russian business realities: perception of competition as a threat, resistance towards knowledge sharing processes, and over-reliance on the state (Ivanov, 2016; Kuznetsova and Roud, 2014; Tsygankov, 2014). The last Section 8 touched upon the factors for sustainable development according to the views and perceptions of the respondents within the specific SEZs and industrial parks.

Respondents required not to disclose their names, positions or connections of their organizations in this study, nor any possible signs and associations that could potentially reveal this information. Responses were gathered and merged according to their groups (i.e., SEZ administrators, SEZ investors and AIPs representatives); patterns have been identified and compared. This approach is descriptive in nature; therefore, the information derived from the interviews cannot be found in available open-source documents and the Internet. All the data obtained from the interviews turned out to be highly valuable. The results of this study are presented jointly to preserve the respondents' anonymity.

4. Results

4.1. Implementation of regulations for the SEZs and industrial parks in Russia

After President Putin signed the decree No. 116-Federal Law "Establishment of special economic zones in the Russian Federation" in 2005, which referred

to the creation of four types of SEZs, many regions had applied to establish these projects on their soil. A regional governor or a group of state officials or ministers could apply. However, only two regions obtained permission to create SEZs: the Tatarstan Republic and the Lipetsk region. The Ministry of Economic Development has been managing the SEZ project since then. A few essential elements played a vital role in winning this competition: the regions' financial strength, their industrial capacity, and their recognition as appropriate locations from an economic perspective. The biggest problem for Russian business is its remoteness from borders and customs; thus, location is a key element. Transport costs in Russia play a vital role in the product's final price. The respondents mentioned the possibility of personal networks and warm relationships between the regional and federal government during the selection of pioneering regions for SEZs.

The federal government created a public organization in the form of a joint-stock company based in Moscow — the headquarters of the SEZ's administration — and subsidiaries across the country, so-called "managing companies" that are responsible for establishing and developing their projects in different regions. These managing companies have not been initiated to gain profits; instead, they have been established to attract investors, prepare the necessary infrastructure for them, and supervise the functionality of this infrastructure and the project in general. Although it is a joint-stock company, 100% of the shares belong to the government. Therefore, SEZs are entirely owned by the state. Managing companies usually profit from investors' payments to use the SEZ infrastructure (e.g., electricity, water, sewage, and recycling). However, they keep all the profits gained from infrastructure rent in the regional budget, and they do not share them with the federal office. The federal SEZ organization in Moscow merely monitors regional SEZs to ensure that they stick to the schedule for establishing and developing the project. The Moscow headquarters acts as an intermediary between regional SEZs and the Ministry of Economic Development, which monitors the efficiency and development of these projects. In the early stages, regional managing companies and SEZs are financed by the state budget, but they are expected to become self-sufficient in the long term. The financial structure of the SEZ project is mixed: the federal government sponsors about half of the funding, and the other half is provided by the regional government.

The respondents denied the possibility of private investors managing SEZ projects for several reasons. First, an immense budget is required to finance the launch of this project. Second, even if the project is privately initiated, it can lead the investor to increase infrastructure rent and result in the exclusion of tax benefits, which has been observed in industrial parks. However, the respondents suggested that, at the government level, only attempts to create SEZs on a private basis were discussed. Federal Law No. 398 "The criteria for establishment of special economic zones" (26 April 2012) provides the list of requirements that every region must meet in their application to obtain the right to establish a SEZ, including a description of the potential territory, a list of the necessary infrastructure, the region's industrial capacity, and a general business plan. Although the government initiated the SEZ project, a few private organizations could have facilitated applications to the Ministry of Economic Development by expressing an interest in establishing their companies in the zone after it was created.

A group of experts on the federal level evaluates such applications and then makes a decision. Who is included in this group of experts is unclear. Information is vague, referring, for instance, to managers from various ministry departments and economists. While making its decision, the group considers the region's general strategic development program, including the potential collaboration of existing companies in the area with the companies in the SEZ.

The Ministry of Economic Development monitors SEZs' efficiency annually. The Federal Law No. 491 "Criteria for evaluating the performance of special economic zones" (10 June 2013) describes how a SEZ's managing company is examined. Among the many criteria, the most important ones are presented below:

- the amount of FDI attracted to the project;
- the number of new investors emerged in the zone;
- the number of newly created workplaces;
- the amount of SEZ companies' revenues;
- the amount of tax paid;
- the coefficient between investments in the project by the state and by private investors.

Notably, sanctions are not enacted if the managing company produces unsatisfactory results. The respondents claimed that the Ministry of Economic Development had never been very unsatisfied with any SEZ's results; thus, no sanctions had been applied. In the worst-case scenario, a SEZ closure is impossible, as the contract agreements between the investors and the regional government have been signed for a long-term period. Nevertheless, the federal government has the right to alter the SEZ's management.

Concerning the creation of the industrial parks, Russia inherited many industrial zones and manufacturers after the collapse of the USSR, and many organizations have not managed to survive in the market economy since then. The federal government decided to create industrial parks in two possible forms. One was merely a greenfield project, where the necessary infrastructure (e.g., gas, electricity, and sewage) was provided, but the investor was expected to build the real-estate infrastructure. Another form was a brownfield project, where the old infrastructure of a derelict industrial area was transformed into a business park. Primary industrial parks in Russia were state-owned projects that appeared in 2006. This concept was estimated to be an essential tool for resolving the problem of economic development. The industrial park was not widely used in Russia because of the lack of necessary funding, legal regulations, and general information about this model. Nevertheless, some regions were pioneers in implementing these initiatives. First parks appeared in the 2006s, and the pioneering one was a privately owned by the Swiss development company. In the 2008s, there was an economic crisis, and some banks received assets as securities from the construction companies that had failed on the market. These banks started to construct the industrial parks as well. Later, the regional government established specific departments that were responsible for the development of the parks in the regions as tools for economic development.

By the 2010s, when the national economy was recovering, the investors became more active, but there were no specific industrial districts in the country. Those regions that had anticipated such situation two-three years before were able to offer the market a limited number of quality parks. These regions were

the Tatarstan Republic, Kaluga, Moscow, Leningrad, and Ulyanovsk regions. The most successful were located in the Tatarstan Republic and Kaluga region as they managed to attract a large amount of FDI with the help of local governors. The turning point was the decree No. 59 of 16 February 2010, which suggested the term "manufacturing park," clarifying its meaning as a number of real estate units (such as manufacturing, administration, logistics, warehouses, and other facilities necessary for production activities) that are managed by a single company, with a territory of no less than 10 hectares and a basic infrastructure for efficient functioning of SMEs (e.g., water, electricity, gas, and sewage). By 2009, industrial parks had been established in 15 regions of Russia, and by 2015 in 48 regions. Businesses of any industry sectors can establish their production sites in industrial parks; however, they should still comply with the regulations based on the Federal Law No. 488 "About the industrial policy in the Russian Federation" (31.12.2014).

Also, in 2010, Association of Industrial Parks (AIPs) in Russia was established. It is important to note that it was an initiative of a private sector, not of the state. The active development of the industrial parks in Russia before had also been prevented by the absence of the legislative basis and federal support. After the emergence of the AIPs, a lot had changed. It is a public organization that makes research and product reports about the industrial parks in Russia. It arranges different networking events for business actors, specifically, tenants of the parks to stimulate the development, and offer consultancy service regarding the establishment of the parks and regulation aspects. AIPs also plays a role of an intermediary between the state and the business. Straight after its foundation in 2010, it had devised the program under the support of the federal government that was directed to facilitate the development of the industrial parks in Russia. As a result, under the Act No. 233 from the 23rd of April 2012, the regions were granted federal funding on a competitive basis to finance the activities related to the establishment of the parks. This program implied the provision of funding to SMEs that became the tenants of the parks. Another important function of AIPs is the certification. This certificate is an essential document that allows the parks to attract investors easier proving the feasibility of the project, and apply for state financial support, grants and tax incentives for investors. Some projects failed in development. The key reasons behind their failure were the lack of political activity and funding in the region, which were crucial for the establishment of industrial parks. In 2015, the federal government signed the decree No. 794 "Industrial parks and the managing companies of industrial parks" (4 August 2015), which clarified industrial parks, their characteristics, their rules for creation and the general national standards.

4.2. The establishment process and the promotion of the SEZs and industrial parks in Russia

The process of preparing the infrastructure varies across different SEZs. The managing companies suggested that this variance could be one reason why some SEZs had developed more intensively than others. The current success model, as well as international experience, suggests that infrastructure should be created first to attract investors (Aggarwal, 2010; Gupta, 2008; Tantri, 2015;

Wang, 2013). Nonetheless, few SEZs have attempted to attract investors first or receive primary contractual obligations; only later have they begun to build the necessary infrastructure. One respondent claimed the following:

> *"We cannot build the infrastructure first. This approach does not suit our realities. What happens if we prepare the infrastructure for the entire SEZ territory and don't manage to attract all the investors straight away? Who is going to cover the costs of unused areas? We need to get initial contractual obligations from an investor that show serious intentions and financial capacity for this project. Afterwards, we start establishing the infrastructure on a certain delimited area particularly for this investor."*

As a result, investors did not display much interest in these projects. In some cases, a SEZ began preparing an infrastructure for a specific investor while it was building its factory on site. In relation to the fulfillment of contractual obligations, the government guaranteed financial support for the project. Regional policymakers also ensured the fulfillment of contractual obligations, which helped create healthy relationships with investors.

Investors go through a particular assessment procedure before being accepted in the zone. Once the company shows an interest in establishing its business in the zone, it submits an application with its business plan. All the requirements are written in the Federal Law No. 116. Among the many requirements, several are stressed: the amount of money to be invested over a certain period, the number of workplaces that will be created, ecological standards, and industry and infrastructure specifications. A group of experts in the regional and federal governments assesses this application. After the government approves the application, a company must invest at least USD 1.8 million in the project, of which 600,000 should be invested in first three years. As such, both sides of the agreement have contractual obligations.

One respondent was an anchor investor, i.e., the first enterprise to come to the SEZ to create supply-chain collaboration. This company had already been established in the proximity of the SEZ for many decades and had planned to create a subsidiary in the zone, which was located near its parent company. Financial benefits were another important reason that this investor came to the SEZ (e.g., a duty-free zone and various tax benefits). Additionally, this company cooperated with the local government to create a SEZ in the region. However, the process of establishing this SEZ took many years because of the lack of activity by regional policymakers. Some companies came to the SEZ because of personal contacts in this zone, which facilitated the bureaucratic procedures required to register the company. Other reasons, such as financial benefits and product market share in the region, may play a secondary role. Some firms plan to import raw materials from abroad, which means that the duty-free customs regime will be beneficial. Additionally, proximity to the anchor investor is perceived as an additional benefit for product realization, although it is not a crucial factor. The main problem for investors in the selection of SEZs for their businesses was the lack of trust in the local government and managing companies, which did not negotiate or provide guarantees regarding the timely preparation of infrastructure. In addition, constantly changing rules and laws

and complex legislation in Russia also contributed to this distrust. The tenants stressed the importance of built infrastructure, as infrastructure preparation played a vital role in the selection of SEZs in Russia. If the company plans to build infrastructure on its own, it must complete complicated and time-consuming procedures to obtain the necessary approvals and signatures from state officials. One respondent commented as follows:

"Key factors for the successful development of SEZs are not connected with its model, but with the general economic policies of the country, which include time-consuming sequential bureaucratic procedures, complex juridical regulations, huge construction costs, etc. Most of the time, state officials make incompetent decisions, as they do not bear any real responsibility. All these factors make Russia unattractive for investment: if you are not competitive in your investment costs, you do not invest. The Russian market is not big enough for sales. Reduced import barriers are good, but, because of the large volume of work required to establish the business, Russia becomes uncompetitive even for export-oriented operations."

The creation process of the industrial parks is similar to the SEZs. Regional governments used the industrial park to attract investors to the region. Local governments and other state officials played a significant role in building warm relationships with major investors and provided substantial financial support for the project. The federal government does not have any direct control over these regional industrial parks, as these projects are entirely initiated and sponsored by regional governments. In some cases, the federal government has provided financial support for certain industrial parks, but such actions were based merely on personal favor and networks between particular state officials in the regional and federal administration. Additionally, state-owned industrial parks offer few regional tax benefits to investors. The respondents stressed the importance of the regional government in developing industrial park initiatives:

"Basically, the regional government plays a crucial role in establishing industrial parks in their region. It is not only about funding, but bringing MNEs into the region through personal networks, which subsequently help attract other good investors to the park. A good example can be Kaluga region, in which the regional governor managed to attract several huge investors to its industrial parks, such as Volkswagen, L'Oréal, Continental, Samsung, etc. As a result, it greatly facilitated the development of industrial parks in the Kaluga region, boosted the local economy and improved the general investment climate."

Private industrial parks started to emerge in 2008–2009 as predominantly brownfield projects due to construction costs. The typical scenario was that the owner of an industrial area or a factory with unprofitable financial activities had decided to transform it into an industrial zone for more prosperous purposes. In the case of greenfield projects, the model is similar to SEZs as well: tenants pay rent for the utilization of communal infrastructure, but they do not own the actual land. In brownfield projects, tenants pay rent for both the communal infrastruc-

ture and the real estate. In some cases, companies have the opportunity to redeem the real estate or even the land on which they are established, although this is not a common phenomenon. Both state- and privately owned industrial parks have managing companies that are similar to those in the SEZ model, which are responsible for, among other things, monitoring the parks' efficiency, searching for investors, receiving payments from tenants, and looking after the park's territory. State-owned industrial parks occasionally hire private organizations to manage their clusters, but the project remains under state control and supervision. The respondents also reported that the entire industrial park project lacked juridical support and regulations, which was commonly discussed.

The SEZs are promoted in different ways in Russia. First, the governor and his colleagues promote their SEZ projects at the meetings with foreign or regional partners. Second, managing companies — in collaboration with the Department of International Affairs and Regional Development, which is the part of Ministry of Economic Development — organize international meetings, conferences, and exhibitions with similar organizations in other countries. Additionally, when investors plan to locate their businesses in an EZ, they usually contact state institutions to obtain information about free zones in Russia. In some cases, investors conduct research to determine a suitable location for their businesses. SEZ investors have commonly been found through the personal networks of the regional governors, or they were successful companies in the region that planned to expand. Some respondents suggested that a correlation existed between the regional government's promotional activity and the SEZ's success:

> *"There was a situation when a big investor required a personal meeting with the regional governor before locating its factory in a certain SEZ, but the governor refused, explaining that these sorts of activities were not necessary and a waste of his time. State managers from different regions heard about this, came to invite the investor to their SEZs, and provided personal meetings with their regional governors. As a result, this investor located its business in their SEZ."*

Similar to the SEZs, industrial parks are promoted in different ways. The regional government supports state-owned projects at various international events, conferences, and exhibitions. The managing companies organize meetings with foreign colleagues, as they have a solid financial basis for doing so. The situation is a little bit different for private parks. Although state officials claim that they also promote private industrial parks, in reality, these projects attempt to survive on their own, searching for investors and operating independently without any additional financial support. The key factor that attracts investors to the industrial parks is the established infrastructure that reduces investment costs.

4.3. Competition and collaboration factors

All the managing companies noted that no real competition existed among SEZs in Russia. They compete to some degree, but every economic zone is unique due to its industrial, economic, and geographical specificities. SEZs are relatively geographically distant from one another and thus cover their

own regional markets. Moreover, no competition exists between the tenants in the zones for the following reasons. First, the concept of two SEZs was to create supply chain cooperation to a certain extent. Other zones attract various investors from different industries, but according to the federal law requirements. Second, when an investor's application is assessed by a group of experts before it is fully accepted in the zone, the experts consider the industry type and whether organization's goals are in line with regional interests regarding strategic development. In other words, both the managing company and regional state officials attempt to avoid a competitive environment by refusing investors who operate in the same industry as the existing companies in the SEZ and the region. The respondents stated that they had not had to directly refuse an investor because investors usually did not want to come to a zone where their potential competitors already operated:

> *"If we bring competing companies into our SEZ, it will be chaos. Can you imagine what would happen? Despite the fact that we haven't faced such situations yet when companies from similar industry segments plan to establish themselves in our SEZ, we still try to avoid this."*

The only form of competition within the SEZs is for qualified specialists and managers. According to respondents, industrial parks do not compete with SEZs. These projects offer different benefits. Moreover, industrial parks might provide an additional opportunity for investors to establish their businesses in the same region. If both types of clusters operate in the same regions, they are commonly managed by one government organization. In terms of the collaborative environment, as mentioned above, two of the SEZs were created following the supply-chain concept. However, even in supply-chain SEZs, the number of companies involved in cooperative networks is relatively low, for instance, three of four companies, which is similar to free zones that did not claim a supply-chain concept. Therefore, the collaborative environment surrounding these SEZs is lacking.

Industrial parks in different regions compete a bit for investors, but such competition is not essential. From the perspective of managing companies, an investor's selection of a park is primarily a game of chance. No competition exists between firms within the parks. As in SEZs, investors do not want to come to a park where their competitors operate; managing companies or regional administration do not attract companies from the same industry sector. However, companies do compete for qualified labor, though it is not a widespread practice in the supply-chain networks within industrial parks. Most parks consist of companies that are randomly established; they come from different industries without any concrete structure or policy.

The tenants agreed that they did not experience a competitive environment inside or outside the SEZ. Competitors are located in other regions or even in other countries. Due to the enormous size of Russia, every region is perceived as a different market (Brown and Earle, 2000; Tsukhlo, 2007). Moreover, managing companies try to avoid attracting companies from similar market segments. This avoidance reflects a specific culture of doing business in Russia, where companies try to prevent competition in every possible way, while foreign busi-

nesses perceive competition as a motivating factor or a stimulus (Michailova and Husted, 2003; Orlov, 2013; Shastitko et al., 2009):

> *"Innovation will come when there are a lot of companies working in the same area, and they start to collaborate. It is too early; now there is no need. But innovation also comes when there is competition. You do not find any competition among Russian companies, and they do not tend to innovate. This is what the state does not understand. This is the main issue that the government refuses to understand: competition is good. Our managing companies tell us that they do not bring competitors to our SEZ, but we say that we do not care because our company is competitive. That is the difference: competition for foreigners is a sport; for Russians, it is a threat."*

In supply-chain SEZs, some companies expect to collaborate with all members of the SEZ in the long term, but, in the meantime, they do not have such opportunities due to the absence of potential partners and the zone's immaturity. Companies that collaborated with other members of the SEZ claimed that it had happened on its own: the first investor simply joined the cluster, the other two noticed the location of the first one and chose the same zone to benefit from their proximate location to one another.

4.4. Factors for the sustainable development

The six industrial SEZs have already had primary positive effects: attracting FDI in these projects and the regional economy; increasing employment; enhancing the region's infrastructure and production capacity; and launching minor collaborative activities between companies inside and outside the SEZ. The creation of one workplace within the SEZ leads to the creation of four to five workplaces outside the SEZ. Investors predominantly pull employees from the local population, though they employ a small percentage of foreign staff. All respondents report key factors that can stimulate the SEZ's sustainable development. The first key factor is the country's general investment climate because countries compete to attract new investors. The second essential factor is the financial capacity of both the local government and investors.

Financial benefits of the SEZ stimulate the development of its tenants, particularly in the early phases of the company's activity. Duty-free customs benefits are predominantly utilized for import procedures, as few businesses in Russian SEZs are export-oriented. Despite fiscal incentives, the most important factor for a company's growth is still linked with the market sales. The respondents also claimed that, because of high state interference in business activities in Russia due to bureaucracy and state officials' insufficient knowledge regarding the management of business processes, Russia is always one step behind other competitive nations or is simply slower in its development than other countries. Consequently, the development of SEZ projects and, in turn, of companies located within SEZs is slowed. Political stability, the country's general investment climate and regional government activity in attracting investors and promoting SEZ projects are also significant factors. Additionally, the tenants stressed the importance of the anchor investor in leading and directing the entire SEZ: small companies that collaborate

with the anchor firm will follow its lead. Some respondents claimed that the key factors for successful SEZ development were linked with the country's general economic policies, including time-consuming bureaucratic procedures, complex juridical regulations, and enormous construction costs, rather than with the model. Moreover, most of the time, state officials make incompetent decisions, as they do not bear any real responsibility for the outcome. All these factors make Russia unattractive for investment.

According to the respondents, industrial parks have already attracted many investments, increased employment and improved the economic situation of the regions in general. However, these projects tend to appear only in the western part of Russia because of the developed markets there. The federal government is striving to change the situation and to establish parks in the eastern part of the country. However, such efforts have thus far been unsuccessful, as companies do not see the potential for business growth in those regions. The basic rules of markets dominate here. Moreover, the government does not provide enough financial support for private industrial parks. Entrepreneurs have claimed that the circumstances are unfair because state industrial parks have received more support than private ones. Regional governments more intensively promote state-owned industrial parks. While the government claims that it provides financial support for all projects through special banking lending programs, entrepreneurs are not satisfied with these programs, as they involve time-consuming and complicated bureaucratic procedures and the financial support is generally inadequate. Some businesses claim that, given the high rents and high costs within industrial parks, operating inside and outside the parks does not differ significantly.

5. Discussion

This article aims to examine the implementation and development processes of industrial clusters in Russia by analyzing SEZs and industrial parks. According to the literature about the establishment and development models for SEZs and industrial parks, they vary in different countries; however, certain patterns exist. Countries worldwide have launched FTZ projects to pursue similar aims: to attract FDI; increase employment, knowledge and technology exchanges; create innovations; increase the competitiveness of the economy (locally and internationally); and diversify exports, among other aims (Akinci and Crittle, 2008; Farole, 2011; Gupta, 2008; Kirk, 2014; Tantri, 2015; Wang, 2013; Zeng, 2012). Governments produce and adjust local laws to create more attractive conditions for investors. The basic idea is to reduce the number of bureaucratic procedures and to make the processes of registering and starting a business even quicker. Moreover, the structure of most SEZ projects involved the infrastructure being initially built entirely for investors before attempting to attract them to the free zone. In other countries, particularly those in Southeast Asia, the economic zone is typically created entirely in advance before attracting investors (Cheesman, 2012; Chen, 1993; Gupta, 2008; Tantri, 2015).

In Russia, some aspects are different. First, although the "one-window" model has been created both in SEZs and industrial parks, the registration process and launch of the business remains complicated. As a result, the procedures have not been simplified; thus, investors are not attracted to the zone. Second, in the early

stages of establishing the SEZ in Russia, the infrastructure was not created, and the zone's administration strove to attract the investors to practically empty territories, promising the fulfillment of future obligations. The investor was expected to construct the manufacturing site and create the real estate for its business, and the managing company simultaneously started building the necessary infrastructure specifically for that investor. This uncertainty did not inspire investors to come to the zones because of the high risk of the nonfulfillment of contractual obligations. The "Russian approach" might partly explain the inefficient development of the economic zones; however, this question should be further investigated. Moreover, when the first SEZs and industrial parks were created, the juridical system had not been adjusted to such initiatives. For example, "Lipetsk" and "Alabuga" SEZs were pioneers that experienced all possible challenges, such as import-export duty-free procedures, tax payments, cooperation issues, and an investor seeking procedures. Even now, many gaps in jurisdiction still prevent the sustainable development of economic zones in Russia.

The choice to enter a particular economic zone is based on a number of key factors, such as proximity to resources, tax benefits, the potential of cooperation with other companies inside and outside the zone, and labor resources (Aggarwal, 2010; Moberg, 2015; Wang, 2013). Investors come to industrial economic zones in Russia for similar reasons — to be close to potential markets and to reduce production costs by locating manufacturing sites close to these markets and resources. The managing companies' representatives mentioned these aspects during their interviews. Nevertheless, investors emphasized the importance of the potential zone's development level and its infrastructural capacity. In general, companies have a wide range of choices among SEZs and industrial parks in the regions, which makes factors such as tax incentives and proximity to resources and markets secondary. The core element concerns providing infrastructure in the cluster's territory; otherwise, the company must go through a very complicated and time-consuming procedure to establish everything on its own. SMEs prefer brownfield projects to access established real-estate infrastructure and to avoid costs on construction activities. Companies predominantly sell their goods either locally in the same region or in Russia. Export-oriented activities are not widespread, but they are expected to commence in the near future. To select an appropriate location for the business, SMEs mainly investigate the markets of potential economic zones themselves, while MNEs use personal networks or participate in various discussions with state representatives.

Another essential aspect that deserves attention is the role of the regional government in the development of the economic zone because, in Russia, all free economic zones and most industrial parks are owned and managed by the state. According to the respondents, the local government acts as the key "salesman" for local SEZs or industrial parks, especially for state-owned projects. In some cases, personal networks and relationships between the investor and regional officials played a crucial role in developing the cluster. The local government determines how quickly the industrial cluster is established, registered, approved in a particular region, and funded. The literature has found that state involvement in the development of SEZs or industrial parks is limited only in terms of investing in the projects and providing necessary juridical support (Aggarwal, 2010; Hsu et al., 2013; Moberg, 2015; Sonobe and Otsuka, 2006). This Russian pheno-

menon implies that the more active a local government is in promoting industrial clusters in its region, the more SEZs and industrials are developed. Moreover, it inspires an inquiry into the essence of the "entrepreneurial state" (Mazzucato, 2015; Pereira, 2004).

Industrial cluster model has been taken as a key theoretical framework for this research as its fundamentals comply with the development concepts of the SEZs and industrial parks (Aggarwal, 2011; Bräutigam and Tang, 2014; Hsu et al., 2013; Meng, 2003; Nel and Rogerson, 2014; Zeng, 2012). The foundations of this model are the proximity of companies that cooperate and compete, launch knowledge and technology exchanges, and create innovation, all of which lead to a competitive advantage of a certain industry or a region (Delgado et al., 2016; Ketels, 2013; Porter, 1990). Hence, competition and collaboration are crucial factors for the cluster's sustainable development. The findings clearly demonstrate the absence of competition between companies within SEZs and industrial parks, as well as the lack of cooperative networks. Both parties seek to avoid a competitive environment within the cluster. Some investors do not come to a certain economic zone because of the existing rivals in it, or they negotiate with the managing company to avoid attracting companies that operate in the same market segment. The managing companies prefer to honor these requests or even do this job in advance without the investors' appeals. Moreover, the respondents did not notice much active cooperation among the companies in the zone, and they did not manage to clarify the reasons for this lack of cooperation. According to the literature, the causes can be different, for instance, an inappropriate concept for the economic zone (Farole, 2011; Kirk, 2014; Moberg, 2015; Yankov et al., 2016) or a major restriction of knowledge sharing and collaboration activities among firms due to the Russian mentality (Dickenson and Blundell, 2000; Ivanov, 2016; Kuznetsova and Roud, 2014; Levin and Satarov, 2000; Longenecker and Popovski, 1994; Michailova and Husted, 2003). In general, investors come to clusters due to the basic laws of the market economy, which do not depend on the SEZ or industrial park models. According to the literature on cluster lifecycles and possible reasons for their extinction (Alberti, 2006; Boja, 2011; Porter, 1990; Swann and Prevezer, 1996), Russian economic zones and parks have pre-conditions that slow down development or even result in failure.

6. Conclusion

This paper aims to explore the Russian experience in implementing and developing industrial cluster policies by analyzing SEZs and industrials parks and identifying potential emerging issues. After approximately 10–15 years of this model's implementation, these zones remain immature and encounter many difficulties. Most regional governments still struggle to attract investors and efficiently develop their economic zones. The government's approach to developing these initiatives implies a reliance on state interference in business processes and, in turn, the prevention of healthy competition and collaboration, which are crucial factors for a successful industrial cluster model. This approach will not result in innovation growth, which means that economic zones will not accomplish their intended objectives. The successful development of industrial cluster initiatives

in Russia will require in-time funding from the federal government, a free-market approach to their establishment and development, better negotiations with potential investors regarding infrastructure preparation, and the implementation of appropriate regulations that can help attract foreign and local investors and trigger economic activity.

Policymakers should initially construct economic zones with cluster features to improve industry competitiveness and innovation capacity in regions. The location of industrial clusters should be prioritized according to factors such as cost reduction, profitability growth, and performance improvement, instead of simply choosing regions in dire economic straits. Strategic alliances, competition, and collaboration must be based on resource sharing and integration. The state and cluster companies should establish collaborative principles, which facilitate mutual efforts in innovation and R&D and, in turn, enhance the international competitiveness of companies or industries. SEZs and industrial parks are expected to develop high value-added products and services and brace themselves for market challenges.

However, it should be taken into account that the findings regarding the perception of competition and collaboration among Russian state managers and entrepreneurs are of the nature of hypotheses. Data collection comprised in-depth semi-structured interviews and, hence, current research provides only an overall picture and understanding of the cluster phenomenon in the Russia's context with the SEZs and industrial parks, as cases of analysis. This uninvestigated phenomenon, such as the emergence of industrial clusters in Russia, requires a more complex approach and calls for the use of multiple data collection methods and analyses. Further research would involve conducting interviews with SEZ tenants and industrial park representatives, the distribution of questionnaires, analyses of statistical data on the regions where these economic zones are established, and financial data on the companies based in the zones. Such research would enable the evaluation of the impact of these industrial clusters on economic development in the regions and would help determine whether they facilitate the development of the companies within these clusters.

References

Ablaev, I. (2015). Innovation clusters in the Russian economy: Economic essence, concepts, approaches. *Procedia Economics and Finance, 24*, 3–12.

Aggarwal, A. (2006). Special economic zones: Revisiting the policy debate. *Economic & Political Weekly, 41* (43–44), 4533–4536.

Aggarwal, A. (2010). Economic impacts of SEZs: Theoretical approaches and analysis of newly notified SEZs in India. *MPRA Paper*, No. 20902.

Aggarwal, A. (2011). Promoting agglomeration economies and industrial clustering through SEZs: Evidence from India. *Journal of International Commerce, Economics and Policy, 2* (2), 201–227.

Akinci, G., & Crittle, J. (2008). *Special economic zones: Performance, lessons learned, and implications for zone development* (Working Paper No. 45869). Washington, DC: World Bank, Foreign Investment Advisory Service (FIAS).

Alberti, F. G. (2006). The decline of the industrial district of Como: Recession, relocation or reconversion? *Entrepreneurship & Regional Development, 18* (6), 473–501.

Angulo-Cuentas, G., Arenas Diaz, P., Carballido, L., & Lizarazo, M. (2013). *Science and technology parks' characterization based on their business model*. Paper presented at the 22nd International Conference on Management of Technology. https://doi.org/10.13140/RG.2.1.4173.9689

Barkhatova, N. (2000). Russian small business, authorities and the state. *Europe-Asia Studies, 52* (4), 657–676.

Basile, A., & Germidis, D. A. (1984). *Investing in free export processing zones.* Paris: Development Centre of the Organisation for Economic Co-operation and Development.

Becattini, G., Bellandi, M., Ottati, G. D., & Sforzi, F. (2003). From industrial districts to local development: An itinerary of research. Cheltenham, UK; Northhampton, MA: Edward Elgar.

Behera, S. K., Kim, J.-H., Lee, S.-Y., Suh, S., & Park, H.-S. (2012). Evolution of "designed" industrial symbiosis networks in the Ulsan Eco-industrial Park: "Research and development into business" as the enabling framework. *Journal of Cleaner Production, 29–30*, 103–112.

Best, M. H. (2001). *The new competitive advantage: The renewal of American industry*. Oxford: Oxford University Press.

Bianchi, P. (2000). Policies for small and medium-sized enterprises (SMEs). In W. Elsner, & J. Groenewegen (Eds.), *Industrial policies after 2000* (pp. 321–343). Dordrecht: Springer.

Boja, C. (2011). Clusters, Models, factors and characteristics. *International Journal of Economic Practices and Theories, 1* (1), 34–43.

Bräutigam, D., & Tang, X. (2014). "Going global in groups": Structural transformation and China's special economic zones overseas. *Economic Transformation in Africa, 63*, 78–91.

Breschi, S., & Malerba, F. (2005). *Clusters, networks and innovation*. Oxford: OUP Oxford.

Brown, D., & Earle, J. (2000). Market competition and firm performance in Russia. *Russian Economic Trends, 9* (1), 13–18.

Brusco, S. (1982). The Emilian model: Productive decentralisation and social integration. *Cambridge Journal of Economics, 6* (2), 167–184.

Burnasov, A., Ilyushkina, M., Kovalev, Y., & Stepanov, A. (2013). Neoindustrialization of former industrial regions of Russia: The example of "Titanium Valley." *Prace Komisji Geografii Przemysłu Polskiego Towarzystwa Geograficznego, 21*, 327–331.

Cheesman, A. (2012). Special economic zones & development: Geography and linkages in the Indian EOU scheme. *Development Planning Unit Working Paper*, No. 145.

Chen, J. (1993). Social cost-benefit analysis of China's Shenzhen special economic zone. *Development Policy Review, 11* (3), 261–272.

Chen, X. (1994). The changing roles of free economic zones in development: A comparative analysis of capitalist and socialist cases in East Asia. *Studies in Comparative International Development, 29* (3), 3–25.

Clausen, T. H., & Rasmussen, E. (2013). Parallel business models and the innovativeness of research-based spin-off ventures. *Journal of Technology Transfer, 38* (6), 836–849.

Cooke, P. (2001). Regional innovation systems, clusters, and the knowledge economy. *Industrial and Corporate Change, 10* (4), 945–974.

Cowling, K., & Sugden, R. (1999). The wealth of localities, regions and nations: Developing multinational economies. *New Political Economy, 4* (3), 361–378.

Creskoff, S., & Walkenhorst, P. (2009). *Implications of WTO disciplines for special economic zones in developing countries* (Policy Research Working Paper No. 4892). Washington, DC: World Bank.

De Marchi, V., & Grandinetti, R. (2014). Industrial districts and the collapse of the Marshallian model: Looking at the Italian experience. *Competition & Change, 18* (1), 70–87.

Delgado, M., Porter, M. E., & Stern, S. (2014). Clusters, convergence, and economic performance. *Research Policy, 43* (10), 1785–1799.

Delgado, M., Porter, M. E., & Stern, S. (2016). Defining clusters of related industries. *Journal of Economic Geography, 16* (1), 1–38.

Dickenson, R. P., & Blundell, B. (2000). Transferring quality management experience to the Russian aerospace industry. *Total Quality Management, 11* (3), 319–327.

Dudkina, N. S. (2013). Special economic zone as a strategic resource of innovative development of the Northern region: A case of Magadan region, Russia. *Ekonomika i Ekonomicheskiye Nauki, 1* (45), 134–137 (In Russian).

Dunning, J. H., & Narula, R. (2005). Multinationals and industrial competitiveness: A new agenda. Cheltenham, UK; Northhampton, MA: Edward Elgar.

Farole, T. (2011). Special economic zones in Africa: Comparing performance and learning from global experiences. Washington, DC: World Bank.

Feldman, M., Francis, J., & Bercovitz, J. (2005). Creating a cluster while building a firm: Entrepreneurs and the formation of industrial clusters. *Regional Studies, 39* (1), 129–141.

Feser, E., Renski, H., & Goldstein, H. (2008). Clusters and economic development outcomes. *Economic Development Quarterly, 22* (4), 324–344.

Figlioli, A. (2007). *Financing of technology parks originated from public-private partnerships: Outlining business models*. Unpublished manuscript, School of Economics, Business and Accounting, University of São Paulo.

Frej, A., & Gause, J. A. (2001). Business park and industrial development handbook (2nd ed.). Washington, DC: Urban Land Institute.

Gareev, T. (2013). The special economic zone in the Kaliningrad region: Development tool or institutional trap? *Baltic Journal of Economics, 13* (2), 113–129.

Ge, W. (1999). Special economic zones and the opening of the Chinese economy: Some lessons for economic liberalization. *World Development, 27* (7), 1267–1285.

Geng, Y., & Hengxin, Z. (2009). Industrial park management in the Chinese environment. *Journal of Cleaner Production, 17* (14), 1289–1294.

Gupta, E. K. R. (2008). Special economic zones: Issues, laws and procedures (Vol. 2). New Delhi, India: Atlantic Publishers & Dist.

Heikkilä, M., Bouwman, H., Heikkilä, J., Solaimani, S., & Janssen, W. (2016). Business model metrics: An open repository. *Information Systems and e-Business Management, 14* (2), 337–366.

Hsu, M.-S., Lai, Y.-L., & Lin, F.-J. (2013). Effects of industry clusters on company competitiveness: Special economic zones in Taiwan. *Review of Pacific Basin Financial Markets and Policies, 16* (3), 1350017.

Ivanov, D. (2016). Human capital and knowledge-intensive industries location: Evidence from Soviet legacy in Russia. *Journal of Economic History, 76* (3), 736–768.

Ivanova, V., Gorokhov, A., Gorokhov, D., Ignatiev, A., Smirnov, V., & Tuchinskiy, A. (2015). Special economic zone in the Kaliningrad region: Imperfection of the legislation basis. *Ekonomicheskie Nauki, 6* (127), 90–97 (In Russian).

Keeble, D., & Nachum, L. (2002). Why do business service firms cluster? Small consultancies, clustering and decentralization in London and southern England. *Transactions of the Institute of British Geographers, 27* (1), 67–90.

Ketels, C. (2013). Recent research on competitiveness and clusters: what are the implications for regional policy? *Cambridge Journal of Regions, Economy and Society, 6* (2), 269–284.

Ketels, C. H. M., & Memedovic, O. (2008). From clusters to cluster-based economic development. *International Journal of Technological Learning, Innovation and Development, 1* (3), 375–392.

Kirk, R. (2014). *Special economic zones and economic transformation: An assessment of the impact of the special economic zones program in Mozambique* (No. EDH-I-00-05-00004-00/13). United States Agency for International Development, prepared by DAI and Nathan Associates: Mozambique Support Program for Economic and Enterprise Development (SPEED).

Krugman, P. R. (1991). *Geography and trade.* Cambridge, MA: MIT Press.

Kuznetsova, T., & Roud, V. (2014). Competition, innovation, and strategy. *Problems of Economic Transition, 57* (2), 3–36.

Landingin, N., & Wadley, D. (2005). Export processing zones and growth triangle development: the case of the BIMP-EAGA, Southeast Asia. *Journal of International Development, 17* (1), 67–96.

Lechner, C., & Dowling, M. (2003). Firm networks: External relationships as sources for the growth and competitiveness of entrepreneurial firms. *Entrepreneurship & Regional Development, 15* (1), 1–26.

Levin, M., & Satarov, G. (2000). Corruption and institutions in Russia. *European Journal of Political Economy, 16* (1), 113–132.

Liberati, D., Marinucci, M., & Tanzi, G. M. (2016). Science and technology parks in Italy: main features and analysis of their effects on the firms hosted. *Journal of Technology Transfer, 41* (4), 694–729.

Longenecker, C. O., & Popovski, S. (1994). Managerial trials of privatization: Retooling Russian managers. *Business Horizons, 37* (6), 35–43.

Marshall, A. (2013 [1890]). *Principles of economics*. Basingstoke: Palgrave Macmillan.

Maskell, P. (2001). Towards a knowledge-based theory of the geographical cluster. *Industrial and Corporate Change, 10* (4), 921–943.

Maskell, P., & Malmberg, A. (1999). Localised learning and industrial competitiveness. *Cambridge Journal of Economics, 23* (2), 167–185.

Maslikhina, V. Y. (2016). Special economic zones in Russia: Results evaluation and development prospects. *International Journal of Economics and Financial Issues, 6* (S1), 275–279.

Mazzucato, M. (2015). *The entrepreneurial state: Debunking public vs. private sector myths*. New York: PublicAffairs.

Meng, G. (2003). *The theory and practice of free economic zones: A case study of Tianjin* (Doctoral dissertation). Heidelberg, Germany: University of Heidelberg.

Michailova, S., & Husted, K. (2003). Knowledge-sharing hostility in Russian firms. *California Management Review, 45* (3), 59–77.

Moberg, L. (2015). The political economy of special economic zones. *Journal of Institutional Economics, 11* (1), 167–190.

Moore, J., & Jennings, D. (1993). *Reading business park: A Bronze Age landscape.* Oxford: Oxford University School of Archaeology.

Moudi, M., & Hajihosseini, H. (2011). Science and technology parks, tools for a leap into future. *Interdisciplinary Journal of Contemporary Research in Business, 3* (8), 1168–1176.

Murphy, R. T., & Baldwin, W. L. (1959). Business moves to the industrial park. *Harvard Business Review, 37* (3), 79–88.

Nel, E. L., & Rogerson, C. M. (2014). Re-spatializing development: Reflections from South Africa's recent re-engagement with planning for Special Economic Zones. *Urbani Izziv, 25* (Supplement), 24–35.

Orlov, P. V. (2013). *Introduction to business law in Russia*. Farnham: Ashgate Publishing.

Osterwalder, A., Pigneur, Y., & Tucci, C. L. (2005). Clarifying business models: Origins, present, and future of the concept. *Communications of the Association for Information Systems, 16* (1), 1–27.

Parrilli, M. D. (2009). Collective efficiency, policy inducement and social embeddedness: Drivers for the development of industrial districts. *Entrepreneurship & Regional Development, 21* (1), 1–24.

Pereira, A. A. (2004). State entrepreneurship and regional development: Singapore's industrial parks in Batam and Suzhou. *Entrepreneurship & Regional Development, 16* (2), 129–144.

Phillimore, J. (1999). Beyond the linear view of innovation in science park evaluation. An analysis of Western Australian Technology Park. *Technovation, 19* (11), 673–680.

Porter, M. (2003). The economic performance of regions. *Regional Studies, 37* (6–7), 549–578.

Porter, M. E. (1990). The competitive advantage of nations. New York: Free Press.

Porter, M. E. (2000). Location, competition, and economic development: Local clusters in a global economy. *Economic Development Quarterly, 14* (1), 15–34.

Prihodko, S., Volovik, N., Hecht, A., Sharpe, B., & Mandres, M. (2007). Special economic zones (No. ISBN 978-5-93255-207-0). Moscow: IET.

Puffer, S. M., & McCarthy, D. J. (2003). The emergence of corporate governance in Russia. *Journal of World Business, 38* (4), 284–298.

Ratinho, T., & Henriques, E. (2010). The role of science parks and business incubators in converging countries: Evidence from Portugal. *Technovation, 30* (4), 278–290.

Romanova, O. A., & Lavrikova, Y. G. (2008). The cluster development potential of a regional economy. *Studies on Russian Economic Development, 19* (4), 366–375.

Sandler, D., & Kuznetsov, P. (2015). Industrial parks in Russia: Conceptual development of the project. *Economy of Region, 41* (1), 76–88.

Schmitz, H., & Musyck, B. (2016). Industrial districts in Europe: Policy lessons for developing countries? In T. Hashino, & K. Otsuka (Eds.), Industrial districts in history and the developing world (pp. 117–151). Singapore: Springer Singapore.

Schmitz, H., & Nadvi, K. (1999). Clustering and industrialization: Introduction. *World Development, 27* (9), 1503–1514.

Shakya, M. (2009). Clusters for competitiveness: A practical guide and policy implications for developing cluster initiatives. Washington, DC: World Bank.

Shastitko, A., Avdasheva, S., & Golovanova, S. (2009). Competition policy during a crisis. *Problems of Economic Transition, 52* (5), 74–95.

Shaw, M. P., & Yeoh, C. (2000). Singapore's overseas industrial parks. *Regional Studies, 34* (2), 199–206.

Sonobe, T., & Otsuka, K. (2006). *Cluster-based industrial development: An East Asian model.* New York: Palgrave Macmillan.

Sun, H., Ni, W., & Leung, J. (2007). Critical success factors for technological incubation: Case study of Hong Kong science and technology parks. *International Journal of Management, 24* (2), 346.

Swann, P., & Prevezer, M. (1996). A comparison of the dynamics of industrial clustering in computing and biotechnology. *Research Policy, 25* (7), 1139–1157.

Swords, J. (2013). Michael Porter's cluster theory as a local and regional development tool: The rise and fall of cluster policy in the UK. *Local Economy, 28* (4), 369–383.

Tantri, M. L. (2015). Fiscal implications of special economic zones (SEZs) expansion in India: A resource cost approach. *Journal of International Commerce, Economics and Policy, 6* (1), 1550006.

Tolmachev, D., Zhoga, G., Aleynikova, I., & Legkaya, J. (2011). *The conception of Titanium Valley.* Ekaterinburg, Russia: Development Corporation of Mid-Ural, Analytical Centre "Expert-Ural", Centre for Regional Economic Development of Graduate School of Economics and Management of the Ural Federal University.

Tsukhlo, S. V. (2007). Competition in Russian industry (1995–2002). *Problems of Economic Transition, 49* (11), 5–92.

Tsygankov, A. (2014). *The strong state in Russia: Development and crisis.* New York: Oxford University Press.

Tyler, W. G., & Negrete, A. C. A. (2009). *Economic growth and export processing zones: An empirical analysis of policies to cope with Dutch disease*. Paper presented at the Latin American Studies Association 2009 Congress, Rio de Janeiro, June 11–14.

Volkonitskaia, K. (2015). *Business models of technoparks in Russia* (Basic Research Program Working Papers No. WP BRP 55/STI/2015). Moscow: National Research University Higher School of Economics, Institute of Statistical Studies and Economy of Knowledge.

Wang, J. (2013). The economic impact of Special Economic Zones: Evidence from Chinese municipalities. *Journal of Development Economics, 101*, 133–147.

Wennberg, K., & Lindqvist, G. (2007). *How do entrepreneurs in clusters contribute to economic growth?* (Working Paper No. SSE/EFI). Stockholm, Sweden: Stockholm School of Economics.

Yankov, K. V., Moiseev, A. K., & Efgrafov, D. A. (2016). Problems and prospects of special economic zones in Russia. *Studies on Russian Economic Development, 27* (3), 311–317.

Zeng, D. Z. (2012). China's special economic zones and industrial clusters: The engines for growth. *Journal of International Commerce, Economics and Policy, 3* (3), 1250016.

Zeng, D. Z. (2016). Special economic zones: Lessons from the global experience. *PEDL Synthesis Paper Series*, No. 1.