

Uncertain Supply Chain Management

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Territorial marketing and its role in determining regional competitiveness. Evaluating supply chain management

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ABSTRACT

Nowadays, development and sustainability are often combined in the analysis of regional and local processes. In this case, the definition of both competitiveness and sustainability of development require adequate interpretation and quantitative assessment. Territorial marketing is used as a tool to assess the competitiveness of a region. The main purpose of our research is to analyze the methodological and practical aspects of the sustainable development strategy of competitiveness of the Kazakhstan regions and the ways to implement it based on territorial marketing. Among the crucial indicators of territorial marketing, which this article tackles, supply chain management draws particular interest. Each indicator includes a set of criteria that best describe it. This is a 10-point rating system, where the region that showed the best result gets 10 points. It is assumed that based on the generally accepted methods the overall competitiveness can be measured, considering the competitiveness of the 5 mentioned indicators, as well as their assessment with regard to the competitiveness of their criteria. The research results showed that the aggregate indicator for all the regions is below average. The findings show that the Turkestan and Pavlodar regions are the most competitive in supply chain management, having the largest number of shipments. The overwhelming majority of Kazakhstan enterprises are small enterprises, which suggests that the logistics services market is still developing. The use of modern information technologies will optimize warehouse operations. A positive result is ensured by effective local regulation since doing business in Kazakhstan is relatively cheap. In our research, we offer some recommendations for improving the territorial indicators that determine the competitiveness of regions.

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1. Introduction

Fast modernization of regions requires: quality breakthroughs in priority areas based on innovation; creation of new economic growth points and concentration of production and labor force. The development of market relations demanded a deeper study of markets, customer needs and demands. This fact contributed to the development of a new marketing direction, which is based on the systematization of territorial and methodological knowledge, allowing the adaptation of the main aspects of classical marketing to the needs of the territory.

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A characteristic feature of territorial marketing fundamentally distinguishing it from, for example, banking or industrial marketing is the possibility to mark the territory (Eidelman et al., 2016). In addition, the term “territorial marketing” is characterized by scalability principles, that is, the ability to adapt classical marketing methods and principles to any administrative and territorial unit: city, region or country (Romanova et al., 2015; Sowier-Kasprzyk et al., 2017). The main objectives of territorial marketing are (Renigier-Biłozor & Biłozor, 2015):

- creation and maintenance of the territorial identity;
- creation of favorable life and business conditions;
- increased competitiveness;
- attraction of foreign investments;
- stimulation of the demand for a territorial product both in domestic and foreign markets.

The tasks of territorial marketing are determined by the specifics of the marketing activity, as well as its purpose. The tasks of territorial marketing as a tool to increase economic attractiveness are identifying, advertising and promoting the advantages of regional products in the domestic and foreign markets; attracting tourists, business partners, investors to the region; preserving and developing the cultural heritage; preserving and developing human resources of the region and attracting financial resources to the region (Ivanov, 2016). Innovative activity in the market context, supply chain management and the output of goods and services, scientific and management potential, business climate, quality of management potential, labor costs and infrastructure are referred to as territorial marketing indicators of regional competitiveness (Cliquet, 2002; Comino & Ferretti, 2016; Danko et al., 2016; Popović et al., 2018). Let us briefly consider each indicator in relation to Kazakhstan. Since the innovation economy is a flexible and dynamic economy, in which new companies are created, outmoded companies disappear. There are studies for new markets and the development of innovation markets. The implementation of innovation policy in Kazakhstan is moving to the regional level (Schumpeter, 2018). Supply Chain Management (SCM) is an effective territorial marketing indicator to optimize business process management and gain regional competitive advantages (Gold et al., 2015). It appeared in Kazakhstan along with other Western technologies. Today it may help to ensure effective interaction between the companies and enterprises of the region. The leaders of domestic businesses realize that the introduction of SCM is crucial in order to consolidate their competitive advantages in the region and become successful abroad (Kot et al., 2018). This is evidenced by the fact that in an increasing number of Kazakhstan companies there are top managers responsible for the supply chain development (Dobrzykowski, 2019). The importance of service quality for consumers and suppliers cannot be denied. Consumers are serious about the quality in their purchases and lives. In recent years, customers have been requiring a higher quality of services (Burnes & Towers, 2016). For service, quality is directly related to the identity, sales and profitability of a region (Dabholkar, 2015).

Human capital is an intensive productive factor of economy, family and society development, including the educated part of labor force, knowledge, intellectual and managerial tools, as well as living and working environment. It ensures the effective and rational functioning of human capital as a productive development factor (Blundell et al., 2016). Today the human capital index in Kazakhstan is 0.75. The index consists of several key indicators: labor productivity, probability of dying among children under 5, expected years of quality-adjusted school, *harmonizing test scores*, number of years of school, adult survival rates (aging index), healthy growth (percentage of not stunted children) (Samans et al., 2016).

As it has already been mentioned, one of the objectives of territorial marketing is to ensure the competitiveness of the region. Regional competitiveness and regional competitive advantage are developed at the meso-level, which includes the macro and micro level elements. There are also three theoretical approaches to the formation of a competitive advantage: a market approach that focuses on cost and differentiation, a resource-based approach and a marketing approach that compromise between these two approaches. It is possible to consider a particular approach creating a new knowledge-based

advantage; cooperation of the public, private and non-profit sectors; networking and partnership. There are certain methods to ensure and manage regional competitiveness. The idea of sectoral clusters is singled out as the basis for economic development (Etzkowitz & Leydesdorff, 2000; Beer, 2016; Lund-Thomsen et al., 2016). This theory resulted in the innovation systems theory, which includes a wide list of network partners, including universities, research centers, government agencies and enterprises (Mattes et al., 2015; Coenen et al., 2017). This idea was adapted to the concept of constructed advantage (Camagni, 2017). In the literature, the following indicators are used to assess competitiveness: labor costs and their structure (staff), the intensity of renewal of fixed assets (technology), the state of investment market (finance), innovative mobility (innovation) increased profitability due to agglomeration (Budd & Hirmis, 2004; Aiginger & Firgo, 2017). The resource potential of the territory and infrastructure development should be added to the above-mentioned criteria for assessing the competitiveness of a region (Palei, 2015; Lengyel, 2016, Afzal, 2018). In this case, the infrastructure of the region is a set of social and transport components that form a general idea of the territory's ability to develop individual priority areas. In the works of Porter, the competitiveness of a region, as well as of the whole country, can be developed in four stages (levels) of competition based on production factors, investments, innovations and wealth. In accordance with the relevance of the research, the purpose of the research is to determine the level of regional competitiveness management based on territorial marketing indicators, such as innovation, supply chain management, the efficiency of the production of goods and services, and human resource development (Porter& Kramer, 2006).

2. Methodology

In this research, we propose a methodology for assessing the effectiveness of managing the competitiveness of the Kazakhstan regions. The basic idea is to determine the rating of regions according to the five territorial-marketing indicators that best characterize the management level of the region's competitiveness. The literature analysis has shown that the most relevant and informative territorial marketing indicators are the output of services and goods in the region, human resource development, regional innovation activity, supply chain management and ease of doing business. The rating consisted of 16 Kazakhstan regions (14 regions and the cities of Nur-Sultan and Almaty). To characterize the regions based on these indicators, the criteria were selected that will allow a quantitative assessment. The criteria for each indicator are presented in Table 1.

Table 1
Territorial marketing indicators and their criteria

Indicator	Criteria
<i>Innovation activity</i>	- The volume of innovative products (goods and services) *millions of tenge - Internal research and development costs - The number of innovative enterprises - Investments in fixed assets per capita, thousands of tenge/capita
<i>Supply chain management</i>	The number of logistics centres Transport infrastructure Freight transportation
<i>Human resource development</i>	Labor force Ageingindex (per 100 children) Unemployment rate
<i>The output of goods and services</i>	Production output (millions of tenge) The volume of goods and services produced by large and medium-size enterprises (millions of tenge) Core cattle production (millions of heads) Retail trade volume
<i>Ease of doing business</i>	Opening of new enterprises Procurement of building permit Connecting to power supply Registering property

The rating is based on a 10-point system. The region that showed the best result received 10 points. The other participants were rated in relation to the leader's indicator, proportionally decreasing from the maximum score. Having analyzed each region, we calculated the integral rating.

Based on the compiled rating, we have identified 3 levels of the effective regional competitiveness management. Level I – not effective management (<3), Level II – medium management (3 - 6), Level III – effective management (≥ 6). In order to process the data, we used the statistical method with the t-Student criterion, the standard deviation σ and the value $p \leq 0.05$. The data were processed in Origin 9.0. In addition, for the further analysis, the overall variable of territorial marketing, there are three sub divisions under the title of requirements for territorial marketing applications or TM, contents of territorial marketing or CTM items, and finally the difficulties in the application of territorial marketing or DATM. For the measurement of regional compactivities (RC), five items are added in the questionnaire. Additionally, data was collected through a sample of 240 respondents in the region of Kazakhstan who were dealing with the territorial marketing, regional competitiveness in supply chain. After the collection of data, descriptive, factor analysis and structural equation modeling techniques are applied, and findings are presented in the next section.

3. Results and Discussion

Based on our research, we constructed Tables 1-5.

Kazakhstan has entered the industrial and innovative stage of economic development. This stage is characterized by the adaptation of science to modern economic conditions, which should lead to fundamental changes in the structural, organizational, staffing, infrastructure and financial support for the development of science, regulated by the appropriate regulatory and legal framework. The rating of Kazakhstan regions in terms of innovation management is presented in Table 2.

Table 2
Rating of Kazakhstan regions in terms of innovative activities

Region	The volume of innovative products (goods and services) *millions of tenge	Internal research and development costs *, Millions of tenge	The number of innovative enterprises *	Investments in fixed assets per capita, thousands of tenge/capita	Integrated indicator
Akmola	0.88	0.64	1.68	7.0	2,55
Aktobe	2.2	0.37	1.99	8.10	3,17
Almaty	0.7	0.42	2.5	7.57	2,80
Atyrau	0.32	1.69	1.58	10	3,40
East Kazakhstan	4.5	2.00	5.2	7.7	4,85
Jambyl	2.85	0.28	1.65	7.9	3,17
West Kazakhstan	1.01	0.33	0.84	7.5	2,42
Karaganda	1.8	1,32	4.41	8.8	4,08
Kostanay	5.1	0,31	2.87	8.3	4,15
Kyzylorda	0.3	0,11	1.53	9.1	2,76
Pavlodar	10	0.1	1.92	6.6	4,66
NorthKazakhstan	0.77	0.085	1.98	7.9	2,68
Mangystau	0.016	3.7	0.69	7.79	3,05
Almaty city	1.47	10	9.45	8.08	7,25
Nur-Sultan city	8.4	5.3	10	7.35	7,76
SouthKazakhstan (Turkistan)	0.74	0.10	0.85	7.4	2,27

Source: Regional data from the statistical reports of the Statistics Committee of the Republic of Kazakhstan

The analysis revealed that the most innovative region is the city of Nur-Sultan (integrated indicator is 7.76) and Almaty, the average positions are occupied by the Kostanay, Pavlodar and East Kazakhstan regions. The regions whose indicators are below 3 should focus on limiting the administrative burden on small and medium-size enterprises and the difficulties of new innovative enterprises. The analysis of the current state and policy advice should be developed as a result of a dialogue between the government and business. Let's consider the supply chain management indicator. The results of the study are shown in Table 3.

Table 3
Rating of Kazakhstan regions on the SCM indicator

Region	The number of logistics centers	Transport infrastructure (buses)**(units)	Freight transportation railway***(millions of tons)	Integrated indicator
Akmola	0.75	1.2	1.60	1,18
Aktobe	1.57	2.8	7.50	3,96
Almaty	1.65	5.5	6.25	4,47
Atyrau	1.05	3.5	5.61	3,39
Nur-Sultan city	3.75	2.3	9.37	5,14
East Kazakhstan	1.33	3.2	4.92	3,15
Jambyl	0.42	1.9	3.8	2,04
West Kazakhstan	0.71	1.8	2.11	1,54
Karaganda	1.76	4	8.125	4,63
Kostanay	1.03	1.4	5.72	2,72
Kyzylorda	0.71	0.99	4.30	2
Pavlodar	1.03	1.7	8.75	3,83
NorthKazakhstan	0.73	0.76	0.98	0,82
Mangystau	1.72	0.89	2.98	1,86
Almaty city	10	6	10.00	8,67
SouthKazakhstan(Turkistan)	1.36	10	6.88	6,08

Source: Data from the statistics of the Committee of Statistics of the Ministry of Industry and Infrastructural Development of the Republic of Kazakhstan (Transport Committee) * and from the reports of Translogistika Kazakhstan **. A single logistics portal of Kazakhstan for 2018.

The Logistics Performance Index created by the World Bank shows the efficiency of supply chain management in a country. In Kazakhstan, the LPI is 2.8 and in Russia – 2.75. The highest LPI is observed in Germany (4.2) and Sweden (4.05). Low LPI compared to the developed European countries indicates the need to develop supply chain management strategies in Kazakhstan. It should be noted that the overwhelming majority of enterprises in Kazakhstan are small enterprises. This suggests that the logistics services market is still developing. Some years ago, experts noted the need for an active logistics development in Kazakhstan, but there haven't been any significant changes yet. The biggest number of transportation and storage enterprises, as well as the main financial flows are concentrated in the two largest cities of the country – Almaty (4369) and Nur-Sultan (1637), while the rest of the Kazakhstan regions and cities are characterized by an acute shortage of logistics companies.

Human potential is another important territorial indicator. The human potential assessment is a necessary element of socio-economic development, since the consideration of demographic indicators improves the quality of life of the population of Kazakhstan. It is also an important indicator of the region's competitiveness. The analysis of the regions in terms of human resource development is presented in Table 4.

Table 4
Rating of Kazakhstan regions on the human resource indicator

Region	Labor force	Ageing index (per 100 children)	Unemployment rate	Integrated indicator
Akmola	7	6.875	0.95	4,94
Aktobe	4.11	5	1.92	3,68
Almaty	8.3	4.375	3.9	5,53
Atyrau	2.4	1.875	3.5	2,59
Nur-Sultan city	3.33	3.125	1.17	2,54
East Kazakhstan	5.8	8.75	2.5	5,68
Jambyl	4.75	3.75	3.42	3,97
West Kazakhstan	2.6	5.625	1.62	3,28
Karaganda	5.67	7.5	1.86	5,01
Kostanay	3.83	9.375	1.57	4,93
Kyzylorda	2.5	2.5	2.31	2,44
Pavlodar	3.2	8.125	1.86	4,40
NorthKazakhstan	2.5	10	1.23	4,58
Mangystau	2.3	0.625	1.89	1,61
Almaty city	6.67	6.25	2.54	5,15
South Kazakhstan (Turkistan)	10	1.25	10	7,08

Source: the statistics of the Ministry of Labor and Social Protection of the Population of the Republic of Kazakhstan for 2018*; official statistics of the Statistics Committee of the Ministry of National Economy of the Republic of Kazakhstan**.

It should be noted that we consider the regions with high unemployment rates on the positive side, since there it is possible to develop industry, open new enterprises and increase job opportunities. The output of services and goods makes the gross domestic product (GDP) of the state. It is an indicator of the

competitiveness of the state and its regions. Table 5 shows the analysis of regions in terms of the output of goods and services.

Table 5
The output of goods and services

Region	Production output (millions of tenge)	The volume of goods and services produced by large and medium-size enterprises (millions of tenge)	Core cattle production (millions of heads)	Retail trade volume (millions of tenge)	Integrated indicator
Karaganda	3.4	3.7	6.4	9.54	5,76
Atyrau	10	10	1.11	1	5,5275
Almaty	1.17	1.20	10	1.47	3,46
East Kazakhstan	2.49	2.52	5.2	3.22	3,3575
Almaty city	1.18	1.21	0.04	10	3,1075
Akmola	0.86	0.89	7.84	0.83	2,605
Aktobe	2.47	2.5	2.03	2.90	2,475
Kostanay	1.16	1.19	5.65	0.99	2,2475
Mangystau	3.9	4.2	0.44	0.58	2,28
West Kazakhstan	3.29	3.34	1.53	0.92	2,27
North Kazakhstan	0.33	0.4	7.17	0.72	2,155
Pavlodar	2.61	2.65	1.90	1.44	2,15
Nur-Sultan city	0.80	0.84	0.02	4.49	1,5375
Jambyl	0.52	0.55	3.9	0.98	1,4875
Kyzylorda	1.24	1.28	1.00	1	1,13
South Kazakhstan (Turkistan)	0.60	0.64	1.66	0.51	0,8525

Source: the official statistics data of the Statistics Committee of the Ministry of National Economy of the Republic of Kazakhstan for 2018*

In the regional context, the largest production output is observed in mega-cities, where the headquarters of many large and medium-size companies are located. At the same time, the share of Karaganda and Atyrau regions is the largest in the national index, followed by the city of Almaty and Nur-Sultan. The integrated indicator in all regions is lower. This means that the regions' potential is not sufficiently developed. Let us have a look at the ease of doing business in each Kazakhstan region in order to fully consider its competitiveness (Table 6). According to the 2018 World Bank rating, Kazakhstan was ranked 28 in the Ease of Doing Business Index, while Russia – 31, Kyrgyzstan – 70, Armenia – 41, Belarus – 37. The leaders were New Zealand (87.01), Singapore (85.05) and Denmark (84.87).

Table 6
Ease of doing business

Region	Opening of new enterprises	Procurement of building permit	Connecting to power supply	Registering property	Integrated indicator
Akmola	-	-	-	-	-
Aktobe	8.99	7.23	6.91	8.40	7,88
Almaty	9.19	10	10	10	9,80
Atyrau	-	-	-	-	-
Nur-Sultan city	10	7.245	4.144	8.41	7,45
East Kazakhstan	9.01	6.85	6.25	8.42	7,63
Jambyl	-	-	-	-	-
West Kazakhstan	-	-	-	-	-
Karaganda	9.194	7.248	4.74	8.42	7,4
Kostanay	9.00	7.30	6.79	8.42	7,88
Kyzylorda	-	-	-	-	-
Pavlodar	9.18	7.18	5.97	8.42	7,69
North Kazakhstan	-	-	-	-	-
Mangystau	-	-	-	-	-
Almaty city	-	-	-	-	-
South Kazakhstan	9.195	6.70	5.22	8.42	7,38

Source: "DoingBusiness" database

The cities with the highest rates (Almaty, Aktobe and Kostanay) have been the most successful in the indicators related to the spheres in which local authorities have the most autonomy in developing and implementing regulatory rules – procurement of building permits and connecting to power supply. The smallest regional disparities are observed in starting a business and registering property. Kazakhstan lags behind in terms of starting a business, in comparison with global indicators. The biggest regional discrepancy is connected with power supply. To achieve the tasks set by the president, the Ministry of Energy of the Republic of Kazakhstan is actively working to improve the quality and reliability of power supply to consumers, as well as the conditions for connecting them to the power supply system. In terms of property registration, all Kazakhstan regions meet the global standard, but they do not occupy a leading position. In order to see the general trend of regional competitiveness, we calculated the aggregated indicator for all the presented indicators of territorial marketing (Fig. 1). The aggregated index was calculated as an arithmetic average of all the integrated territorial marketing indicators. It can also be calculated by giving weight to the indicators based on their importance.

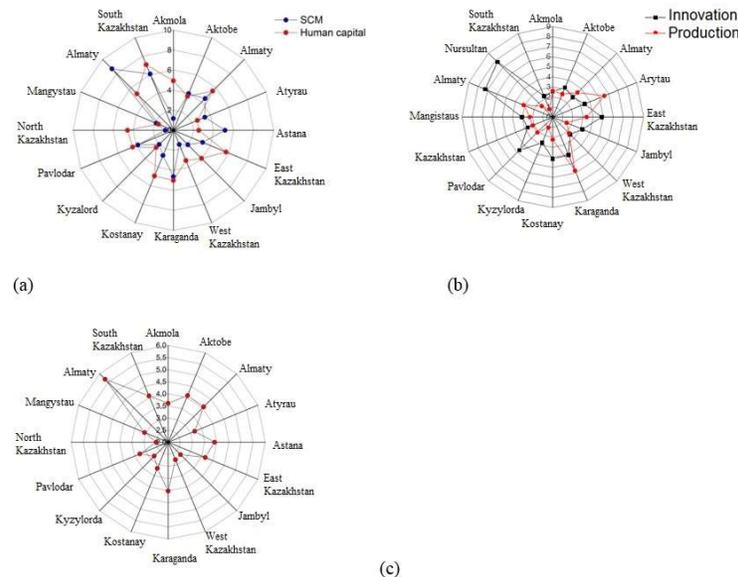


Fig. 1. Integrated indicator for a) Supply chain management and human potential, b) Innovation and production output, c) overall regional competitiveness index

NB. Fig. 1 does not present data on the ease of doing business, since there do not provide business reports for all regions. Table 5 shows an integral indicator of the ease of doing business.

It should be noted that most of the studied regions have a low level of competitiveness and the average score in almost all regions is 3.8 ± 2.7 (Fig. 1 c). The highest indicator is the aggregate indicator of Almaty (5 points) and Karaganda (3.2 points). None of the regions has a high level of output and the average score is below 5 (Fig. 1b). In terms of innovation development, Almaty and Nur-Sultan hold the leading position. The average indicator is observed in the East Kazakhstan, Atyrau and Mangystau and Pavlodar regions, in the remaining regions it is below 3 with a possible maximum value of 10.0. The indicator is the lowest in the North Kazakhstan and Turkistan regions. The Turkistan region is characterized by great human potential and effective supply chain management. But the unemployment rate is the highest there. The state should stimulate the development of the region by attracting investors and opening new enterprises. It should be noted that the ease of doing business in all regions is at the same level (Table 5). This means that from a territorial perspective the state has an effective management policy.

The results of the three groups are presented in Table 7. There are 5 of them in the text.

Table 7
Generalization

Indicator/Level	I-ineffective	II - average	III- effective
<i>Innovation activities</i>	South Kazakhstan (Turkistan) North Kazakhstan Kyzylorda West Kazakhstan Almaty Akmola	Aktobe Atyrau East Kazakhstan Jambyl Mangystau Pavlodar Karaganda Kostanay	Almaty city Nur-Sultan city
<i>Supply chain management</i>	Akmola West Kazakhstan Kyzylorda North Kazakhstan Mangystau	Aktobe Almaty Atyrau Nur-Sultan city East Kazakhstan Jambyl Karaganda Pavlodar	Almaty SouthKazakhstan (Turkistan)
<i>Human potential</i>	Atyrau Nur-Sultan city Kyzylorda Mangystau	Akmola Aktobe Almaty East Kazakhstan Jambyl West Kazakhstan Karaganda Kostanay Pavlodar North Kazakhstan Almaty city	SouthKazakhstan (Turkistan)
<i>The output of goods and services</i>	Aktobe Akmola Kostanay Mangystau West Kazakhstan North Kazakhstan Pavlodar Nur-Sultan city Jambyl Kyzylorda South Kazakhstan (Turkistan)	Karaganda Atyrau Almaty East Kazakhstan Almaty city	-
<i>Ease of doing business</i>	-	-	South Kazakhstan (Turkistan) Pavlodar Karaganda Kostanay Nur-Sultan city East Kazakhstan Aktobe Almaty

The highest indicator of human resources is observed in the Turkistan region, but according to the other indicators it is not effectively managed. The analysis of the territorial marketing indicators showed that all Kazakhstan regions are attractive for doing business. But there are some obstacles. The level of regulatory obstacles that entrepreneurs face depends on the region in which they open their commercial enterprises. Regulatory effectiveness varies significantly in two of the four studied areas (procurement of building permits, connecting to power supply). This is due to the differences in the local law enforcement practice and the implementation level of recent reforms. The city of Almaty, where new reforms are usually implemented much earlier than in other regions, has the most favorable regulation for business. The capital city – Nur-Sultan, where pilot reforms are often introduced, is less favorable. Local regulatory effectiveness provides a higher overall ranking. Doing business in Kazakhstan is relatively inexpensive. The country ranks 6 in the cost of registering property and is in the top 30 countries to open an enterprise. The assessment based on territorial marketing showed that only 2 out of 16 regions take a proactive approach to innovation. This means that local authorities should attract investments to the regions with a low innovation level (level I and II regions which are presented in

Table 6). The analysis of the territorial marketing indicators showed that the innovation policy of local authorities is ineffectively implemented. This is evidenced by the low integrated indicator of innovation activity (3.8 ± 2.7). In addition, the territorial marketing research allowed us to establish that the Karaganda, Pavlodar and East Kazakhstan regions have a relatively average competitiveness level. The number of jobs could be increased by opening new enterprises focused on innovations. We propose to analyze the relationship between science and production and determine its bottlenecks and difficulties, which concern the interaction of different institutional sectors and their motivation, as well as the increase of the interest of private enterprises to participate in state funded projects or cooperation agreements. It is recommended to expand horizontal policy by limiting vertical methods. This involves the use of horizontal policy instruments aimed at strengthening the relationship between science and production, for example, the creation of technological platforms with the criteria characterizing the intensity of such relations. Special support should be given to new small companies that can connect science and markets. Knowledge transfer capacity can be increased through the use of effective intermediary services and experience. The study based on territorial marketing showed that the Turkistan region is not competitive in terms of innovation and production of goods and services. It also has the highest unemployment rate. We propose to invest in innovation and open innovative enterprises to improve competitiveness

The analysis of territorial marketing indicators revealed that supply chain management in the level I and level II regions is not effective. The Turkistan and Pavlodar regions are the most competitive in supply chain management. They provide the most freight and cargo transportation. When choosing supply chain management strategies for the regions with inefficient management policies, it is necessary to take into account that SCM has a huge impact on financial performance and competitiveness of a company. An increase in its turnover and profit directly depends on the speed and efficiency of supply chains. It should be highlighted that it is much easier to increase profit through the reduction of internal costs rather than supplier cost. It can be also done by increasing the selling price of finished products or services. In the end, SCM also raises the shareholder value of the enterprise. In the West, the concept of SCM has become popular over the past decade (Boström et al., 2015.). Leading companies have managed to significantly reduce their operating costs by focusing on the following aspects of SCM:

- Improved demand forecasting based on modern software applications. This helps to reduce procurement and increase turnover. In turn, it makes it possible to unlock working capital and reduce the cost of warehouse operations.
- Reduced supplier prices due to close cooperation with suppliers and exchange of information on the planned volume of procurement.
- Optimization of warehouse operations through the use of modern IT-technologies.
- Simplifying of procurement processes online orders.
- Reduced material procurement cost through the use of standardized materials. This reduces the setup time for a particular process.
- Improved quality of the goods and reduced number of manufacturing defects.
- The introduction of cost-effective production techniques to reduce waste.
- Optimization of logistics processes, which contributes to a reduction in transportation costs.

When choosing a supply chain management strategy for the regions with low efficiency (Table 6), the above-mentioned recommendations should be used. According to the territorial marketing analysis, the state should support supply chain management in the Turkistan region, ensure more freight traffic, simplify procurement processes through the use of online orders. In addition, the effectiveness of SCM can be increased by introducing innovation in these regions. World practice shows that the introduction of SCM is impossible without the use of advanced IT solutions. Of course, domestic companies cannot use all technologies in the same way as it is done in the West (Gundlach et al., 2019). For example, it is too early to talk about Trading Exchanges and e-Procurement (conducting operations on online

exchanges and electronic procurement). However, other IT solutions are already being implemented in Kazakhstan. Almost all enterprises implement ERP (enterprise resource planning system), many companies use WMS (warehouse management system) and TMS (transportation management system). Some enterprises use Demand Planning (and QMS (quality management) systems, etc. (Acar et al., 2017; Yu et al., 2017). The territorial marketing analysis showed that the policy on the production of goods and services is very ineffective in Kazakhstan. The division of labor and specialization can significantly increase productivity due to the following factors:

- workers perform certain operations in accordance with their skills;
- focus on simple actions;
- minimum number of tools and movements;
- the possibility of process mechanization.

All production is divided into sectors: metallurgical, agricultural, engineering, etc. According to its scale, production can be divided into single unit, batch or mass production. In single unit production, one or more units are produced. In mass production, various goods are manufactured in batches. It is divided into large, medium and small batch production. The most extensive production is the mass production of homogeneous products for a long period of time. Table 8 provides the descriptive findings of the study, covering the title of various items for territorial marketing and regional competitiveness. For this purpose, data is collected through a questionnaire approach developed for the various respondents who are linked to the different activities of supply chain in the region of Kazakhstan are selected. For the territorial marketing, three sub divisions are made under the title of requirements for territorial marketing applications, or TM items, contents of territorial marketing or CTM items, and finally the difficulties in the application of territorial marketing or DATM. For the measurement of regional compactivities (RC), five items are added in the questionnaire as presented under Descriptive findings of the study. It is observed for the TM items, maximum mean score belongs to TM5; 3.47, followed by TM4; 3.39 respectively. For CTM highest average value is 3.26 as presented by CTM5. In addition, mean score for the factors of DATM are also presented under descriptive findings.

Table 8
Descriptive Statistics of the Study

	Descriptive Statistics							
	N Statistic	Range Statistic	Mean Statistic	Std. Deviation Statistic	Skewness		Kurtosis	
					Statistic	Std. Error	Statistic	Std. Error
TM1	240	4.00	2.9833	1.35673	.030	.157	-1.143	.313
TM2	240	4.00	3.3708	1.21703	-.335	.157	-.874	.313
TM3	240	4.00	3.0250	1.32224	-.046	.157	-1.170	.313
TM4	240	4.00	3.3958	1.23647	-.482	.157	-.660	.313
TM5	240	4.00	3.4708	1.13483	-.378	.157	-.570	.313
CTM1	240	4.00	2.6625	1.41075	.300	.157	-1.166	.313
CTM2	240	4.00	2.9917	1.28393	-.092	.157	-.998	.313
CTM3	240	4.00	3.1375	1.27818	-.212	.157	-1.032	.313
CTM4	240	4.00	3.3125	1.24013	-.307	.157	-.907	.313
CTM5	240	4.00	3.1083	1.30205	-.191	.157	-1.063	.313
CTM6	240	4.00	3.2625	1.24165	-.352	.157	-.801	.313
CTM7	240	4.00	3.2708	1.33726	-.348	.157	-1.040	.313
DATM1	240	4.00	2.9042	1.34879	.124	.157	-1.082	.313
DATM2	240	4.00	2.8667	1.36871	.125	.157	-1.204	.313
DATM3	240	4.00	3.8875	1.11281	-.970	.157	.325	.313
DATM4	240	4.00	3.8542	1.09372	-.849	.157	.035	.313
DATM5	240	4.00	3.6875	1.18844	-.551	.157	-.700	.313
DATM6	240	4.00	3.8625	1.02778	-.724	.157	-.109	.313
RC1	240	4.00	3.7000	1.09850	-.605	.157	-.361	.313
RC2	240	4.00	3.5875	1.20349	-.455	.157	-.746	.313
RC3	240	4.00	3.6417	1.09999	-.546	.157	-.393	.313
RC4	240	4.00	3.8000	1.10230	-.844	.157	.146	.313
RC5	240	4.00	3.7167	1.12546	-.578	.157	-.499	.313
Valid N (listwise)	240							

After describing the data trends through mean score and other descriptive measures, next step is to develop a structural model, covering the title of confirmatory factor analysis or CFA. One of the significant benefits for analyzing the selected items for CFA is that it provides the relevant factor loadings for each of the item, which provide the overview about their presence in the model. For this purpose, figure 1 provides an overview for the structural model of CFA, covering the latent variables like TM, CTM, and DATM as observed for the territorial marketing. For TM, five items, for CTM, seven items and for DATM, six items are under consideration. In addition, Fig. 2 explains that there is a covariance between the three latent variables as presented through double headed arrow. Besides, selected items of TM, CTM, and DATM are presented through observed variables with their relative error terms. Findings for the CFA are presented in the subsequent discussion.

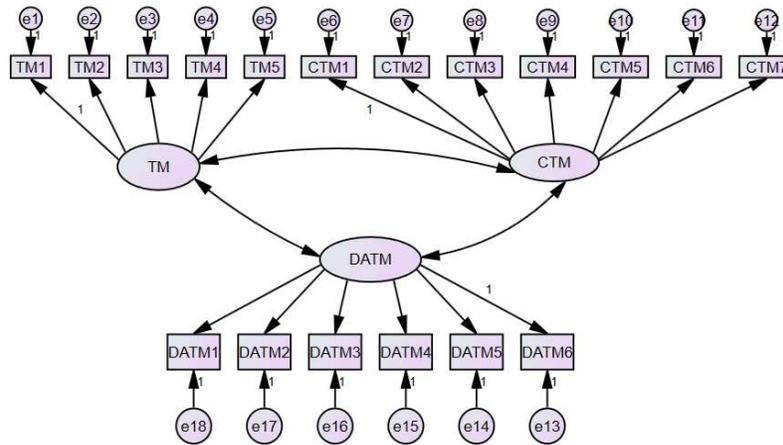


Fig. 2. Model of the Study for CFA

Table 9 provides the model fit indices for the CFA, covering the chi-square value, probability value, GFI, AGFI, TLI, CFI, PCFI, and finally RMSEA respectively. It is observed that overall value of chi-square is 412.50 as significant at 1 percent chance of error. It means there is 99 percent chance to state that overall CFA is under good fit or covering the criteria of model fit as observed through chi-square and its significance. For GFI, value is 88.9 percent and found to be acceptable among other model fits like AGFA and TLI. Besides, the value of RMSEA is .402 indicating that it is quite below the threshold point of .050 as observed in various earlier studies.

Table 9
Model Fit indices for CFA

Description of Fit Measurement	Value achieved	Accepted/Not accepted
Chi-square	412.25	Accepted
Probability value	0.000	Accepted
GFI	.889	Accepted
AGFI	.881	Accepted
TLI	.875	Accepted
CFI	.888	Accepted
PCFI	.871	Accepted
RMSEA	.042	Accepted

Table 10 provides the overall findings for the covariance between the CTM-DATM, between TM-DATM, and between TM-CTM respectively. It is observed that for CTM-DATM relationship covariance is .095 and significant at 5 percent. For TM-DATM covariance estimate is .189 and significant at 5 percent chance of error. Additionally, the covariance between TM-CTM is .310 as significant at 5 percent. Whereas, Table 10 provides the correlation between the variables of the study. For the correlation between CTM and DATM value is .267, between TM and DATM is .397, and between TM-CTM is .930 respectively.

Table 10

Covariances: (Group number 1 - Default model)

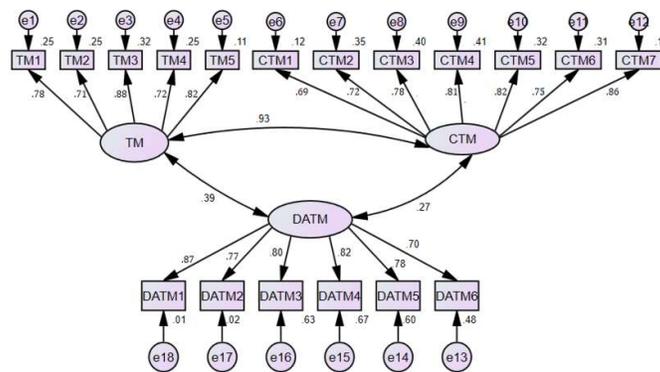
Variables	Covariance	Variables	Estimate	S.E.	C.R.	P
CTM	↔	DATM	.095	.035	2.729	.006
TM	↔	DATM	.189	.051	3.701	***
TM	↔	CTM	.310	.078	3.978	***

Table 11

Correlations: (Group number 1 - Default model)

Variables	Correlation	Variables	Estimate
CTM	↔	DATM	.267
TM	↔	DATM	.395
TM	↔	CTM	.930

After the description of correlation and covariance measures, Table 12 provides the weights for the factor loadings for the various items of the study. It is found that for the selected items of TM, loadings are .78, .71, .88, .72, and .82 respectively. For the factor loadings of CTM, maximum loading is observed for the CTM7, followed by CTM5, and CTM4 respectively. In addition, CTM3 has a factor loading of .78, followed by CTM2 and finally CTM1. Furthermore, DATM has shown a factor loading of DATM1 is .87, for DATM4 is .82, and DATM5 is .78. Fig. 3 provides an overview for the factor loadings of various items of territorial marketing.

**Fig. 3.** Output for the for CFA**Table 12**

Standardized Regression Weights: (Factor Loadings)

Items	Direction	Variables	Estimate
TM1	←	TM	.780
TM2	←	TM	.712
TM3	←	TM	.881
TM4	←	TM	.721
TM5	←	TM	.820
CTM1	←	CTM	.691
CTM2	←	CTM	.720
CTM3	←	CTM	.780
CTM4	←	CTM	.810
CTM5	←	CTM	.823
CTM6	←	CTM	.750
CTM7	←	CTM	.861
DATM6	←	DATM	.701
DATM5	←	DATM	.775
DATM4	←	DATM	.817
DATM3	←	DATM	.796
DATM2	←	DATM	.772
DATM1	←	DATM	.872

After the calculation of factor loading for the various items of territorial marketing, Fig. 4 provides the structural model of the study, covering the impact of TM, CTM, and DATM on regional competitiveness or RC. For TM five items, for CTM, seven items, for DATM, six items, and for RC five items are under consideration, covering the title of latent variables of the study. In addition, various error terms are presented through the title of e1 to e23 are also presented and added in the Figure 4 of the study.

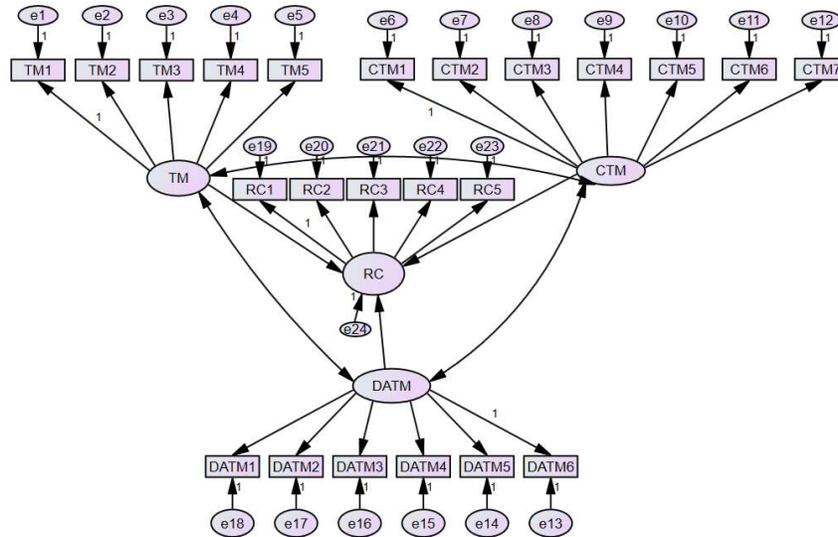


Fig. 4. Structural Model of the Study

Table 13 provides the findings for the various model fit measures of structural model of the study, covering the title of Chi-square along with other measures. It is found that the value of chi-square is highly significant, along with other model fit indices of the study. for GFA value is .881, for AGFA value is .872, for TLI value is .870, for CFI value is .876 and for PCFI value is .864 respectively. The last model fit indices of the study is RMSEA which is .048, indicating that overall structural model of the study is fit for explaining the impact of TM and related factors on RC.

Table 13
Model Fit indices for Structural Equation Model of the Study

Description of Fit Measurement	Value achieved	Accepted/Not accepted
Chi-square	456.02	Accepted
Probability value	0.000	Accepted
GFI	.881	Accepted
AGFI	.872	Accepted
TLI	.870	Accepted
CFI	.876	Accepted
PCFI	.864	Accepted
RMSEA	.048	Accepted

Table 14 provides the outcome for the impact of CTM, DATM, and TM on RC. It is found that the value of coefficient for the effect of CTM on RC is .838, indicating that there is a positive influence of CTM on RC. The value of standard error for this coefficient is .180 and critical ration of 4.65 respectively. It means that the overall effect of CTM on RC is highly significant and positive at 1 percent chance of error. This overall effect further implies the factors under the title of contents of territorial marketing have their direct influence on increase the RC in Kazakhstan region. For the effect of DATM on RC, coefficient is -.955 with the standard error of .132. It means that there is a significant and negative influence of difficulties in the application of territorial marketing or DATM on RC. The value of critical ration is -7.219, showing a significance level of 1 percent. It explains that with the more difficulties in the application of territorial marketing, there is an adverse influence on the value

of RC. For measuring the effect of TM on RC, standardized regression estimate of .587 indicates a positive causal relationship between the both. It means that requirements for territorial marketing and related items have presented their positive and significance influence on the value of RC. It further specifies that with the increase in the requirements for the territorial marketing application, there is a constructive influence on the value of RC. In addition, Table 15 provides the findings for the variance of the various factors, and error terms of the study.

Table 14

Regression findings for Structural Equation Model of the Study

			Estimate	S.E.	C.R.	P
RC	←	CTM	.838	.180	4.65	***
RC	←	DATM	-.955	.132	-7.219	***
RC	←	TM	.587	.053	11.07	***

Table 15

Variances: (Group number 1 - Default model)

Variables, Error terms	Estimate	S.E.	C.R.	P
TM	.441	.123	3.576	***
CTM	.259	.099	2.607	.009
DATM	.558	.089	6.296	***
e24	.055	.040	1.382	.167
e1	1.393	.140	9.970	***
e2	1.090	.111	9.844	***
e3	1.188	.126	9.450	***
e4	1.140	.115	9.907	***
e5	1.137	.108	10.563	***
e6	1.723	.163	10.547	***
e7	1.075	.112	9.566	***
e8	.974	.106	9.189	***
e9	.894	.099	9.077	***
e10	1.140	.118	9.690	***
e11	1.063	.109	9.786	***
e12	1.601	.150	10.645	***
e13	.494	.052	9.556	***
e14	.579	.063	9.175	***
e15	.416	.048	8.622	***
e16	.471	.053	8.939	***
e17	1.834	.168	10.911	***
e18	1.785	.164	10.914	***
e19	.554	.059	9.378	***
e20	1.078	.103	10.493	***
e21	.533	.058	9.256	***
e22	.590	.062	9.539	***
e23	.510	.057	8.956	***

4. Conclusion

In our research, we assessed the competitiveness of Kazakhstan regions with the help of territorial marketing indicators. As a result of our research, it was established that the aggregate indicator in all regions is below average. The cities of Almaty and Karaganda are characterized by the most effective management strategy. At the same time, innovation activities prevail in the cities of Almaty and Nur-Sultan. Supply chain management is best organized in the city of Almaty and the Turkistan region. Human resources are the most developed in the Turkistan region, but the unemployment rate is the highest there. Opening of new enterprises focused on innovation could increase job opportunities there. The production of goods and services is not competitive in all regions of Kazakhstan. It is a positive sign that in all Kazakhstan regions it is easy to do business. According to this indicator, Kazakhstan is in the top 30 countries. Low indicators of innovation activities (3.8 ± 2.7) indicate the ineffectiveness

of regional policy. The Karaganda, Pavlodar and East Kazakhstan regions have a relatively average level of competitiveness. In our research, we have also provided some recommendations for improving territorial indicators to increase regional competitiveness. In addition, this study has provided a good understanding for the causal relationship between territorial marketing and its impact on regional competitiveness. It is found that effect of TM and CTM is significantly positive for RC, while the effect of DATM on RC, effect is significant and negative.

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