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Regional economic diversification through **tourism development**: The case of **Kazakhstan**

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Abstract | This study examines the potential of tourism development as a strategy for economic diversification in Kazakhstan's regions, which have traditionally been heavily reliant on single industries like mineral extraction. The objective is to assess how domestic and international tourism contribute to economic growth in different regional economies. Using correlation analysis and an econometric approach, the study analyses three different groups of regions, based on their level of economic growth: high, moderate and low over the period from 2003 to 2019. The findings indicate that while tourism's impact on economic growth varies, domestic tourism in regions with moderate economic growth shows a positive contribution beyond traditional economic indicators. This suggests that tourism can play a significant role in diversifying regional economies, particularly in areas with existing moderate growth. We then develop a strategy for diversifying the region's economy through the development of the tourism industry.

Keywords | economic diversification, region development, tourism, panel data, Kazakhstan

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1. Introduction

Economic diversification offers a multitude of benefits, particularly for countries or regions that are heavily reliant on a single industry or have a limited number of productive economic sectors (Lashitew et al., 2020). One of the primary advantages is the enhancement of economic resilience (Bristow et al., 2020). By reducing dependency on a narrow economic base, diversification minimizes the risks associated with external shocks, such as fluctuations in global commodity prices or demand, which can have detrimental effects on economies that are overly reliant on a specific industry (Yating et al., 2022). For instance, economies reliant on oil exports are vulnerable to price volatility in global oil markets (Charfeddine & Barkat, 2020); diversification into sectors like technology, tourism, or agriculture can mitigate such vulnerabilities.

Furthermore, economic diversification contributes to sustainable economic growth by fostering innovation and the development of new industries. As economies diversify, they often encourage the growth of sectors that utilize new technologies and approaches, which can lead to higher productivity and the creation of high-value jobs (Sharma et al., 2021). This, in turn, can improve income distribution and reduce poverty, as new employment opportunities emerge across various sectors (Gnangnon, 2020). Diversification also promotes economic stability by spreading risk across multiple industries, thereby reducing the likelihood of severe economic downturns.

A diversified economy is better positioned to integrate into the global market, as it can cater to a broader range of demands and participate in various global value chains (Grossman et al., 2023). This integration can lead to increased foreign direct investment (FDI) and trade, further fuelling economic development. by reducing unemployment and underemployment, which are often associated with economies dependent on a single industry (Qamruzzaman, 2022). By fostering a more inclusive economic environment, diversification can address regional disparities and support the development of rural and underdeveloped areas, thereby contributing to more balanced and equitable economic development (Christiaensen et al., 2013).

Single-industry regions experience many challenges in this respect. These regions, often referred to as monocities or single-industry towns, are common in numerous nations and face particular difficulties due to their mono-sectoral nature (Hayter, 2017). The economy in these areas is typically based on the exploitation of a single resource or industry, leading to problems that can escalate to a national scale. Single-industry regions are characterized by their

dependence on one dominant economic activity, which can make them vulnerable to external shocks and market fluctuations (Antonova et al., 2024). This narrow focus often results in an uneven economic playing field, difficulties in acquiring diverse productive capabilities, and challenges in accessing export markets.

The challenges faced by single-industry regions are not unique to any one country but are observed in various nations with different economic structures and development levels. Nevertheless, there is a prevalence of these types of economies in the former Soviet-bloc countries (Antonova & Pchelintsev, 2022). Kazakhstan is one example, where the majority of revenues are derived from mineral resource extraction, with fluctuations in global prices significantly impacting gross domestic product, the national budget, and direct investment volumes. In an earlier study, Pomfret (2005) deliberates whether the oil boom in Kazakhstan offers a chance for sustainable development. Many single-industry regions in Kazakhstan were established during the country's industrialization period, when a highly centralized planning and distribution system of socialist management was in place (Mishchenko & Mishchenko, 2023). International experience suggests that regions with more diversified economic structures tend to have better socioeconomic outcomes. This underscores the importance of economic diversification for the long-term stability and prosperity of Kazakhstan's single-industry regions (Ministry of Justice for the Republic of Kazakhstan, 2012, 2014, 2019).

The development of tourism, especially in regional areas has been viewed as a possible path to diversify rural economies (Deng et al., 2021). Tourism development may be able to mitigate against some of the negative effects of economic concentration and single-industry economies mentioned above (Ruiz-Real et al., 2022). As such, the purpose of this research is to test, econometrically, the extent to which tourism contributes to economic growth in various regional regions of Kazakhstan. To achieve this aim, the study has four primary objectives: 1) to evaluate the current state of economic diversification in Kazakhstan's regions; 2) to assess the degree of correlation between economic growth, domestic tourism and international tourism; 3) to test the extent to which domestic and international tourism contribute to economic growth over and above standard economic indicators and 4) to propose a strategy for economic diversification through tourism industry development for economic diversification.

This research will contribute to the understanding of how tourism can be leveraged as a tool for economic diversification, particularly in the context of Kazakhstan's regional economies. The research is applicable to other similarly structured economies where there exists single-industry structures and rural economic underdevelopment. This can provide valuable insights for

policymakers and industry stakeholders. The resulting model is expected to offer a strategic framework for regions seeking to diversify their economies through targeted tourism development initiatives.

2. Literature Review

Importance of Diversification for the Economy

Economists have long debated the role and importance of diversification in economies. This discourse, rooted in the early 19th-century theory of comparative advantage, has centered on the concept of maximizing individual strengths (Blaug, 1986). Proponents argue that economic diversification can reduce a nation's vulnerability to adverse economic fluctuations. Consequently, particularly in low-income countries, diverse theories have emerged regarding the optimal path to sustainable economic development (Imbs & Wacziarg, 2003).

Research indicates that low-income economies tend to specialize in a limited range of economic activities (Cadot et al., 2011). As per capita GDP increases, there is a trend towards diversification in production and export sectors, facilitated by the introduction of new products and expansion within existing categories. However, at higher levels of per capita GDP, this diversification trend slows and eventually gives way to a tendency towards specialization (Lee & Zhang, 2022). For low-income countries, this implies that they can overcome economic marginalization by acquiring the necessary skills and knowledge to diversify their economies, rather than solely focusing on activities considered their comparative advantage (United Nations Framework Convention on Climate Change, 2017). Djimeu and Omgba (2019) assert that diversification policies should account for the cyclical nature of the economy. The global recognition of economic diversification's importance is evidenced by numerous resource-rich nations formulating and implementing diversification strategies to enhance economic performance and foster sustainability (Ari et al., 2019).

Economic diversification is an important driver of economic transformation (Frenken & Boschma, 2007; Hanusch & Pyka, 2007). The relationship between economic diversification and creative destruction is clear: when creation surpasses destruction, overall diversification increases. Consequently, the coexistence of pre-existing sectors alongside emerging ones results in a net expansion of diversification (Saviotti & Frenken, 2008). Diversification broadens the spectrum of choices available to economic actors, thereby stimulating economic

growth and enhancing welfare by catering to the society's desire for variety (Clark, 2005). In cases where new opportunities partially replace existing ones, the consequence may involve skill obsolescence and short-term unemployment. This contrasts with scenarios where overall employment levels are anticipated to rise if new opportunities fully supplant existing ones.

Economic diversification is a crucial strategy for transitioning an economy from reliance on a single income source to multiple sources across various sectors and markets (Aigbedion & Iyayi, 2007). Diversification serves as a remedy for excessive dependence on raw material exports by encouraging citizens to engage in a wide range of business activities (Tok et al., 2021). However, it is important to note that the effects of diversification on the economy are not uniformly positive (Hartmann, 2014). While it enhances resilience against economic shocks and broadens choices for occupation and consumption, the process of creative destruction can render certain industries obsolete (Kireyev, 2021). This necessitates swift adaptation by the affected workforce to new sectors. Farsani and Toghraee (2024) note that both conglomerate diversification (creating new unrelated tourism goods and services) and concentric diversification (creating new but related tourism goods and services) are strategies proposed by experts in the tourism, marketing, entrepreneurship, and heritage fields for developing tourism in along the Silk Road in Iran. Campón-Cerro et al. (2014) demonstrate how olive oil tourism can be used as a way to diversify agriculture in the rural areas of southern Europe. In another example of agritourism diversification, Ramírez-García et al. (2023) show how creative and experiential activities involving Spain's lavender fields can play a role in economic diversification in rural areas, through promoting lavender tourism.

Uskelenova and Nikiforova (2024) conduct a review of the regional economic development of Kazakhstan. In their SWOT analysis, the authors note importance of natural resources and geographical location of the regions as well as the need for human and financial capital to foster economic development.

Economic Diversification and Tourism

Economies with abundant natural resources have often perceived sectors such as agriculture, services, and tourism as viable avenues for economic diversification (Wijijayanti et al., 2020). Tourism has long been perceived to be a tool for economic development across both developed and developing nations (León-Gómez et al., 2021). Confronted with volatile global oil prices and uncertainties surrounding the sustainability of oil-centric economies, oil-producing

countries have endeavored to cultivate alternative economic sectors and revenue streams, including tourism, to ensure enduring economic stability (Waheed et al., 2020). For instance, Abu Dhabi has embarked on a diversification trajectory over the past decade aimed at mitigating its reliance on oil, with a notable emphasis on nurturing the tourism sector (Sharpley, 2002).

The exploration of economic diversification through tourism development has received relatively limited attention in academic literature, despite its significant implications for both the tourism sector and the broader economy (Erkuş-Öztürk, 2016). Tourism's role in driving economic growth and development remains a fundamental rationale for its promotion and advancement (GÖkovali & Bahar, 2006). It is widely regarded as a potent catalyst for economic expansion, whether as a mechanism for socio-economic advancement in less developed nations, a strategy for economic diversification in disadvantaged rural areas, or as a nascent industry in urban centres dominated by the tertiary sector (Sinclair, 1998).

Tourism's potential to generate income, accrue foreign exchange earnings, create employment opportunities, and foster connectivity and economic diversification continues to underpin its inclusion in governmental development strategies (Jafari et al., 1990). Many countries view the tourism sector as a promising avenue for economic development. There are several reasons for this. Tourism involves utilizing favourable natural endowments (Morakabati et al., 2014). Tourism engages a large workforce willing to work in personal service jobs at modest wages (Croes et al., 2021) and tourism is comprised of a cluster of interrelated activities spanning multiple sectors that could potentially bring wide-ranging benefits to the economy (Emili & Galli, 2023). As a result, many developing countries have turned to tourism as a means to shift resources away from goods that have lost competitiveness in world markets and diversify their economies (Khan et al., 2020). Ramazanova et al. (2019) provide a review of tourism development in Kazakhstan. They highlight the potential for tourism to diversify the economy but note the challenges that the oil-exporting land-locked country experiences for further tourism development. These challenges include underdeveloped tourism infrastructure, low-quality and limited number of services, lack of professional tourism and hospitality workers, high prices for air travel and accommodation, inadequate marketing strategies and a high reliance on the domestic tourism market. Baiburiev et al. (2018) calculates Keynesian multipliers for Kazakhstan to show how tourism contributes to the Kazakhstan economy.

Diversification Strategies

When applied judiciously, diversification strategies have demonstrated potential in fostering sustainable tourism development by safeguarding natural resources, enhancing value-added products and services, and strengthening interconnections between tourism and other regional industrial sectors (Romão et al., 2017). Several examples of the economic transition process have been documented by Lashitew et al. (2021). Oman, recognizing its overdependence on oil revenues, launched the "Tanfeedh" national diversification program in 2016. This initiative aims to increase local labour force participation and reduce unemployment by strengthening private sector involvement, particularly in logistics, manufacturing, and tourism (Trade Finance Global, 2024). Oman's Vision 2040 emphasizes non-oil sectors, highlighting the importance of infrastructure alongside human capital in attracting foreign investment for economic development (Al Yahyai, 2023).

The United Arab Emirates (UAE) has implemented comprehensive economic policies and initiatives in preparation for the post-oil era. These efforts span various sectors, including foreign direct investment, tourism, manufacturing, trade, education, and entrepreneurship (Shadab, 2019). The government's strategic plans, such as the Abu Dhabi Vision 2030 and 4th Industrial Revolution initiatives, are intricately linked to the central objective of economic diversification (Antwi-Boateng & Al Jaberi, 2022). Vertical diversification strategies, motivated by economic sustainability and internal challenges, form a significant portion of the UAE's economic diversification efforts. In Abu Dhabi, the tourism sector plays a crucial role in national economic diversification policies (Hilal, 2020). The emirate is developing a regulatory framework for circular economy practices and implementing initiatives like the Falcon Economy to nurture talent, encourage investment, and foster business development (Papadopoulou, 2022).

Laos is leveraging its strategic location between major economies like Thailand, Vietnam, and China to pursue an ambitious growth strategy. The country aims to diversify exports, foster macroeconomic stability, and create quality non-farm employment opportunities (Samhungu & Tran, 2023). The government is promoting investment in export-oriented special economic zones while enhancing environmental conservation efforts. Significant investments in rail and road infrastructure are accompanied by reforms to improve transport systems, logistics, and the overall business climate (The World Bank, 2022). The services sector, especially tourism, is

identified as a potential growth driver, with improvements in infrastructure, logistics, and information and communication technologies deemed crucial for its development (ADB, 2017).

Indonesia's economic development strategy focuses on channeling oil revenues towards social initiatives in agriculture, education, and infrastructure, while supporting the growth of capital-intensive industries (Temple, 2003). The country's current economic growth trajectory remains robust, with a primary focus on bolstering private consumption, fostering business investment, and strengthening the tourism sector (The World Bank, 2023).

Similarly, Singapore's tourism industry is a key component of the government's economic diversification agenda and overall national development (Julianti et al., 2023). The country has achieved certification as a sustainable tourism destination based on the Global Sustainable Tourism Council (GSTC) Destination Criteria. Initiatives such as the Singapore Green Plan 2030 and the Singapore Tourism Board's Sustainable Tourism Strategy outline practical measures for advancing Singapore's status as a sustainable urban destination (Sia et al., 2023).

A review of the literature has demonstrated that the successful implementation of economic development strategies in various nations provides valuable insights for crafting tailored domestic economic diversification strategies. These strategies can be effectively adapted to align with each country's unique resources and financial capabilities. Diversification involves expanding the economic landscape by creating and developing new industries or producing goods unrelated to a country's primary specialization. This process can be initiated within existing production sectors, utilizing available equipment and leveraging internal production reserves for essential materials. Successful diversification requires careful planning and execution. Economies must consider their comparative advantages, available resources, and long-term development goals when formulating diversification strategies. Additionally, investments in education, infrastructure, and research and development are often necessary to support new industries and sectors.

3. Methodology

To address the research objectives, we take a quantitative econometric approach.

Data

The data has been sourced from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan (2022). Given that we are interested in rural economic development, we source regional data. Kazakhstan is divided into 17 regions. However, only recently (March 2022), three new regions of those 17 were created. Abai Region was created from East Kazakhstan Region. Ulytau Region was created from Karaganda Region. Jetisu Region was created from Almaty Region. Given that the objective of the research is to examine if tourism contributes to economic development over time in rural regions of Kazakhstan, the analysis will be restricted to the original 14 regions. Further, the analysis is limited to available regional data. As such, data was available for eight regions: Almaty, Akmola, East Kazakhstan Region, Karaganda, Kyzylorda, North Kazakhstan region, Turkestan, and the West Kazakhstan Region. Given the pandemic in 2020, we compile timeseries of the relevant indicators for the eight regions from 2003 to 2019.

For economic development, we use Gross Value Added (GVA) designated in the millions of tenge, Kazakhstan's currency. Labor is measurement as number of persons employed in thousands. The indicator for capital is availability of fixed assets at initial cost in millions of tenge. For international tourism, we use international tourist arrivals as an indicator. For domestic tourism, we use domestic tourist arrivals as an indicator.

A visual examination of these key indicators suggests domestic and international tourism among these regions is vastly different (Appendix 1 and 2). Further, economic development differs across regions. Given we are trying to explain economic development, we ran hierarchical cluster analysis using the economic development variable (GVA) to segment the regions with statistically different levels of economic development. For the eight regions, the analysis determined three distinct segments: one region with a high level of economic activity (Karaganda); one segment with moderate levels of economic activity, as indicated by GVA. There were five regions in this category (East Kazakhstan, Almaty, West Kazakhstan, Turkestan and Akmola) and one segment with low levels of economic activity containing two regions (North Kazakhstan and Kyzylorda) (Figure 1).

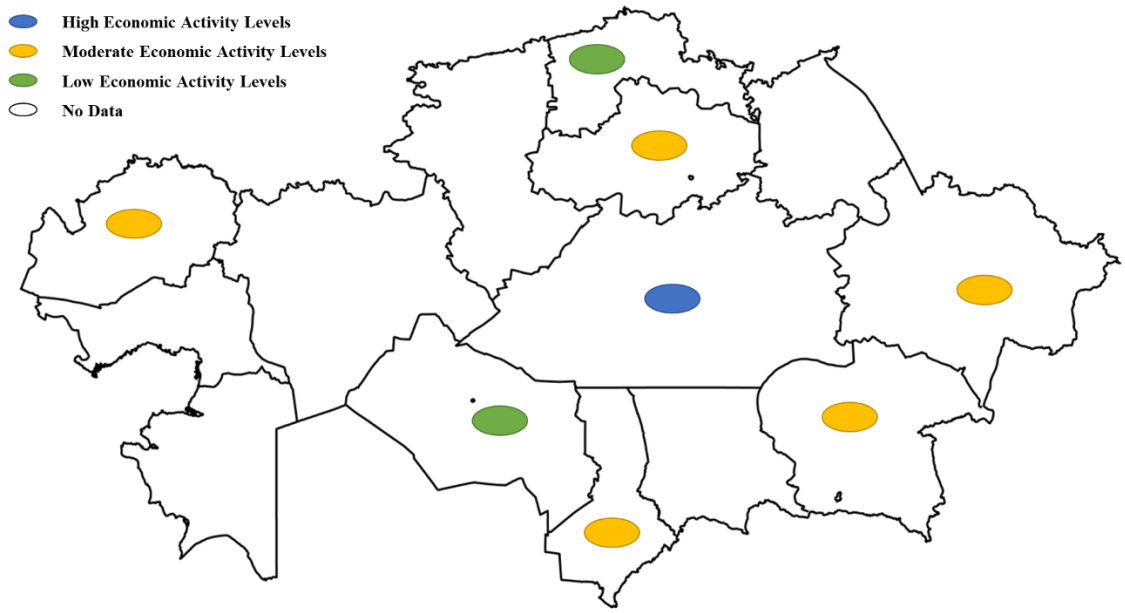

Figure 1: Kazakhstan Regions by Economic Activity Levels

Source: Own Elaboration

Table 1 shows the average annual growth rates, minimum and maximum values and correlation matrices. Panel A is the high economic activity economy (the region of Karaganda), Panel B shows the moderate economic activity economies and Panel C shows the statistics for the low economic activity rural regions (Kyzylorda, North Kazakhstan). As can be seen in Table 1, the growth rates are similar across regions, but the level of economic activity is different, as per the criteria for segmenting the regions. Examining domestic and international tourism correlations, for the high economic activity region (Panel A), economic activity is highly positively correlated to capital (r = 0.992), domestic tourism (r = 0.912) and international tourism (r = 0.845). Labor is moderately negatively related to domestic (r = -0.421) and international tourism (-0.498). For the five moderate economic activity regions (Panel B), economic activity is strongly correlated with capital but not with labour. It is moderately related to domestic tourism (r = 0.613) but less so with international tourism (r = 0.393). Domestic tourism is moderately related to labour (r = 0.314) and capital (r = 0.305) while international tourism is negatively related to labour (r = -0.248) but positively related to capital (0.386). For the low economic activity regions (Panel C), economic growth displays similar correlations as the moderate economic activity group. International tourism has a weak negative relationship with labour (r = -0.163) and capital (r = -0.032).

Table 1: Average Annual Growth Rates and Correlations

Panel A

High Economic Activity (Karaganda)

		AAGR	Min.	Max.	1	2	3	4	5
1	Economic Activity	17.7%	420,860	5,388,300	1	-0.620	0.992	0.912	0.845
2	Labor	-0.2%	649	707		1	-0.678	-0.421	-0.498
3	Capital	14.3%	539,530	4,494,400			1	0.903	0.840
4	Domestic Tourism	15.7%	49,730	298,470				1	0.893
5	International Tourism	7.6%	8,776	21,198					1

Panel B

Moderate Economic Activity (East Kazakhstan, Almaty, West Kazakhstan, Turkestan, Akmola)

		AAGR	Min.	Max.	1	2	3	4	5
1	Economic Activity	17.3%	130,780	4,605,500	1	0.085	0.816	0.613	0.393
2	Labor	0.5%	285	1,058		1	-0.222	0.314	-0.248
3	Capital	18.9%	111,520	7,231,500			1	0.305	0.386
4	Domestic Tourism	19.3%	4,716	829,430				1	0.273
5	International Tourism	13.5%	76	29,741					1

Panel C

Low Economic Activity (Kyzylorda, North Kazakhstan)

		AAGR	Min.	Max.	1	2	3	4	5
1	Economic Activity	18.8%	117,390	2,417,400	1	-0.151	0.871	0.678	0.209
2	Labor	0.0%	255	373		1	0.008	-0.197	-0.163
3	Capital	18.2%	124,020	3,262,900			1	0.415	-0.032
4	Domestic Tourism	17.9%	6,387	151,330				1	0.640
5	International Tourism	13.2%	197	11,988					1

AAGR = Average Annuals Growth Rate; Min. = Minimum; Max. = Maximum

Source: Authors' Elaboration

Analytical Approach

We use the relationship that economic activity is a function of labour and capital, which can be represented as follows:

Y = F(L, K) where Y is Economic activity; L is Labor, and K is Capital.

We then test to see if domestic tourism and international tourism contribute to economic activity over and above that which is captured by labour and capital. This can be formulated as follows:

Y = F(L, K, D) and Y = F (L, K, I) where D is domestic tourism, and I is international tourism.

Before conducting the econometric analysis, the visual representation in Appendix 1 and 2 suggests that several series exhibit trending behavior, indicating non-stationarity. Non-stationary time series may incorporate unit roots, and are consequently classified as integrated of order d, denoted as I(d > 0). This designation stems from the necessity to difference such series d times to achieve stationarity, resulting in difference stationary series.

To examine the trending characteristics of the underlying series, unit root tests are employed. The Augmented Dickey-Fuller (ADF) test checks for unit roots, which indicate whether a time series has a persistent trend or non-stationarity. If the test's p-value is below a certain threshold (commonly 0.05), it suggests that the time series does not have a unit root and is stationary. The null hypotheses for the ADF is a time series sample has a unit root, which means the data's mean is not stationary. Further, the Kwiatkowski-Phillips-Schmidt-Shin (KPSS) test is another statistical test that assesses if a univariate time series is trend stationary. It does this by testing the null hypothesis that the series is trend stationary against the alternative that it is a nonstationary unit root process. The KPSS test is often used in conjunction with the Augmented Dickey-Fuller (ADF) test, which checks for the presence of a unit root in the data.

As can be seen in Table 2, all the variables (Economic Activity, Labor, Capital, Domestic Tourism and International Tourism) are non-stationary in levels (p-value > 0.05 for the ADF and p-value < 0.05 for the KSS test) and stationary when the natural logarithm of the variables are first-differenced (p-value < 0.05 for the ADF and p-value > 0.05 for the KSS test). Therefore, the models will include the log first differenced form of these variables. As moderate economic activity group and the low economic activity group contain multiple regions, the panel data version of these tests and models are used.

Table 2: Unit Root Tests for Stationarity (p-values)

Augmented Dickey-Fuller Test		High Economic Activity Region	Moderate Economic Activity Regions	Low Economic Activity Regions
Economic Activity	I(0)	0.999	0.457	0.310
	I(1)	0.030**	0.000***	0.010**
Labor	I(0)	0.928	0.302	0.487
	I(1)	0.019**	0.000***	0.024**
Capital	I(0)	0.995	0.973	0.376
	I(1)	0.003***	0.000***	0.028**
Domestic Tourism	I(0)	0.795	0.000***	0.902
	I(1)	0.000***	0.000***	0.034**
International Tourism	I(0)	0.739	0.031**	0.106
	I(1)	0.000***	0.000***	0.000***

Kwiatkowski-Phillips-Schmidt-Shin (KPSS) Test		High Economic Activity Region	Moderate Economic Activity Regions	Low Economic Activity Regions
Economic Activity	I(0)	0.014**	0.011**	0.056*
	I(1)	> .10	> .10	> .10
Labor	I(0)	0.086*	0.011**	0.004***
	I(1)	> .10	> .10	> .10
Capital	I(0)	0.015**	0.002***	0.056*
	I(1)	> .10	> .10	> .10
Domestic Tourism	I(0)	0.016**	0.011**	0.056*
	I(1)	> .10	> .10	> .10
International Tourism	I(0)	0.019**	0.011**	0.032**
	I(1)	> .10	> .10	> .10

*p < 0.1; **p < 0.05; ***p < 0.01

Source: Authors' Elaboration

4. Findings

Given the need for first differencing of the variables, we run three models with economic activity as dependent variable with Panel A showing the High Economic Activity region, Panel B showing the Moderate Economic Activity regions and Panel C showing the Low Economic Activity regions. Model 1 is the base model with Labor and Capital as the independent variables. Model 2 adds Domestics Tourism as an explanatory variable and Model 3 includes International Tourism as an explanatory variable.

Model 1: $l\Delta Y_{r,t} = c + \beta_1 l\Delta L_{r,t} + \beta_2 l\Delta K_{r,t} + \varepsilon_t$

Model 2: $l\Delta Y_{r,t} = c + \beta_1 l\Delta L_{r,t} + \beta_2 l\Delta K_{r,t} + \beta_3 l\Delta D_{r,t} + \varepsilon_t$

Model 3: $l\Delta Y_{r,t} = c + \beta_1 l\Delta L_{r,t} + \beta_2 l\Delta K_{r,t} + \beta_4 l\Delta I_{r,t} + \varepsilon_t$

Where l is the natural logarithm, Δ is the first difference, Y is economic activity, K is Capital, L is Labor, D is domestic tourism, I is international tourism, t = time (2003 to 2019), r is the region and ε is the error term.

For the High Economic Activity Region, r = Karaganda (Panel A).

For the Moderate Economic Activity Region, r = East Kazakhstan, Almaty, West Kazakhstan, Turkestan and Akmola (Panel B).

For the Low Economic Activity Region, r = Kyzylorda, North Kazakhstan (Panel C).

Table 3: Estimation Results

Panel A						
High Economic Activity Region	Model 1		Model 2		Model 3	
Constant	0.089	**	0.092	**	0.089	**
	(0.040)		(0.040)		(0.039)	
Labor	2.401	**	2.263	*	2.216	**
	(1.029)		(1.058)		(1.012)	
Capital	0.569	**	0.614	***	0.590	**
	(0.245)		(0.191)		(0.224)	
Domestic Tourism			-0.079			
			(0.075)			
International Tourism					-0.059	
					(0.115)	
Mean Dep. Var. / S.D. Dep. Var	0.159 / 0.088		0.159 / 0.088		0.159 / 0.088	
Sum squared resid. / Log likelihood	0.086 / -19.073		0.081 / -19.616		0.084 / -19.247	
Akaike info / Schwarz criterion	32.146 / 29.829		31.231 / 28.141		30.494 / 27.404	
Hannan-Quinn criter. / DW Stat.	32.028 / 2.258		31.073 / 2.158		30.336 / 2.218	
R^2 / Adj. R^2	0.262 / 0.148		0.310 / 0.137		0.277 / 0.097	
Hausman Test	N/A		N/A		N/A	
Panel B						
Moderate Economic Activity Region	Model 1		Model 2		Model 3	
Constant	-0.014		-0.002		-0.009	
	(0.010)		(0.017)		(0.009)	
Labor	0.213	**	0.181	***	0.205	***
	(0.049)		(0.065)		(0.043)	
Capital	0.935	***	0.840	***	0.956	***
	(0.056)		(0.104)		(0.050)	
Domestic Tourism			0.103	*		
			(0.062)			
International Tourism					-0.054	**
					(0.018)	
Mean Dep. Var. / S.D. Dep. Var	0.120 / 1.221		0.120 / 1.221		0.120 / 1.221	
Sum squared resid. / Log likelihood	10.811 / -31.568		10.387 / -29.664		10.558 / -30.440	
Akaike info / Schwarz criterion	69.135 / 76.797		67.329 / 77.544		76.880 / 97.311	
Hannan-Quinn criter. / DW Stat.	72.231 / 2.952		71.457 / 2.970		85.135 / 2.870	
LSDV R^2 / Within R^2	0.923 / 0.923		N/A		0.925 / 0.925	
Hausman Test	Fixed Effects		Random Effects		Fixed Effects	
Panel C						
Low Economic Activity Regions	Model 1		Model 2		Model 3	
Constant	0.037	***	0.033		0.034	***
	(0.002)		(0.037)		(0.002)	
Labor	0.459	***	0.500		0.491	***
	(0.102)		(0.793)		(0.077)	
Capital	0.885	***	0.854	***	0.891	***
	(0.017)		(0.076)		(0.024)	
Domestic Tourism			0.048			
			(0.088)			
International Tourism					0.028	
					(0.020)	

Mean Dep. Var. / S.D. Dep. Var	0.135 / 0.732	0.135 / 0.732	0.135 / 0.732
Sum squared resid. / Log likelihood	1.616 / -6.076	1.602 / -6.244	1.586 / - 6.433
Akaike info / Schwarz criterion	4.151 / 2.399	2.487 / 5.701	2.865 / 5.323
Hannan-Quinn criter. / DW Stat.	1.821 / 2.242	0.426 / 2.291	0.048 / 2.183
LSDV R^2 / Within R^2	0.918 / 0.918	0.919 / 0.919	0.920 / 0.920
Hausman Test	Fixed Effects	Fixed Effects	Fixed Effects

Note: All variables are in Log first-difference form (LΔ). *p < 0.1; **p < 0.05; ***p < 0.01; Figures in the brackets are standard errors.

Source: Authors' Elaboration

For the high economic activity regions, the LM test for autocorrelation up to order 1 with the null hypothesis of no autocorrelation is accepted with a p-value of 0.705. White's test for heteroskedasticity with the null hypothesis of heteroskedasticity not present is accepted with p-value = 0.835 and the test for normality of residuals where the null hypothesis is that the errors are normally distributed is accepted with a p-value of 0.359.

In the moderate economic activity regions, the panel diagnostics shows that the groups have a common intercept (p = 0.99). The Pesaran CD test for cross-sectional dependence of no cross-sectional dependence is accepted with a p-value = 0.059. The Wooldridge test for autocorrelation in panel data with the null hypothesis of no first-order autocorrelation is rejected with the p-value = 0.002 and the Distribution free Wald test for heteroskedasticity with the null hypothesis of the units have a common error variance is accepted with the p-value = 0.808.

In the low economic activity regions, the panel diagnostics shows that the groups have a common intercept (p = 0.971). The Pesaran CD test for cross-sectional dependence of no cross-sectional dependence is accepted with a p-value = 0.072. The Wooldridge test for autocorrelation in panel data with the null hypothesis of no first-order autocorrelation is rejected with the p-value = 0.048 and the Distribution free Wald test for heteroskedasticity with the null hypothesis of the units have a common error variance is rejected with the p-value < 0.001.

For the high economic activity region (Table 3, Panel A), the baseline (Model 1) shows that economic activity is driven by capital and labor. When domestic tourism (Model 2) and international tourism (Model 3) are not statistically significant. In this situation, the high economic activity is driven by the mineral extraction sector. As such, there is little opportunities

for tourism to grow. The resource-intensive mono-industry of mineral extraction of Karaganda crowds out any entrepreneurial efforts in the tourism sectors (Tleuberdinova et al., 2024).

For the moderate economic activity regions (Table 3, Panel B), while labor and capital contribute to economic activity, domestic tourism (Model 2) also contributes to economic activity, as designated by a statistically significant positive coefficient on the domestic tourism variable. However, international tourism has a statistically significant negative impact on economic activity. There could be several reasons for this. Given the moderate level of economic activity means that international tourism can draw resources from domestic resources. Further, an increase in international tourism may not be able to be accommodated due to the inadequate infrastructure in these regions needed to handle tourist volumes (Tleuberdinova et al., 2022). This can lead to overcrowding, congestion, and negative experiences for both tourists and locals. A large influx of tourists can also drive-up local prices for goods and services, making life more expensive for residents and potentially discouraging other economic activities.

For the low economic activity regions (Table 3, Panel C), like the high economic activity regions, domestic tourism and international tourism, does not contribute to economic activity. The coefficients in Model 2 and Model 3 are not statistically significant and do not add anything beyond the contribution of capital and labor. As with international tourism for moderate economic activity regions, these low economic activity regions may not have enough critical mass to leverage the benefits of tourism. Infrastructure in these regions in terms of adequate transportation networks for access by tourists (Kantarci, 2007) as well as having the entrepreneurial innovation to develop tourism (Tleuberdinova et al., 2021).

5. Discussion and Conclusions

This research uses regional economic and tourism data to understand if domestic tourism and international tourism contribute to economic activity in three types of regions categorized by the level of economic activity. Correlation analysis suggests there is a strong correlation between domestic and international tourism and economic activity in the region of high economic activity. However, when controlling for labor and capital, the effects of tourism are nullified. This can be attributed to the resource-intensive mineral extraction sectors in this region that dominates the economic landscape. For the moderate and low economic activity regions, domestic and international tourism is positively correlated with economic activity with

domestic tourism displaying a stronger correlation. Controlling for labor and capital, tourism does not influence economic activity but for the moderate economic activity regions, domestic tourism contributes to economic activity over and above the effects of labor and capital.

In Kazakhstan, domestic tourism is becoming more popular and affordable than international travel, thanks to improvements in the country's tourism infrastructure and the quality of services offered (Akybayeva et al., 2022). A well-developed tourism infrastructure ensures access to destinations, enhances the comfort of tourists, and generates significant revenue for both the state and private entrepreneurs.

Tourism development offers a significant pathway for economic diversification, providing opportunities for balanced regional development through:

1. Diversification of a single-industry economy: Building a strong tourism sector reduces dependence on primary industries like mining and metallurgy, thereby minimizing vulnerability to external economic fluctuations.
2. Job creation: Tourism development fosters the growth of new businesses and job opportunities in non-traditional sectors, helping to lower unemployment and providing additional employment options within the region.
3. Improvement of living standards: By creating new jobs, tourism enables local residents to realize their professional potential, ensuring stable incomes and enhancing overall living standards.
4. Expansion of the tax base: The growth of tourism-related enterprises across various economic sectors broadens the tax base, benefiting all levels of government budgets.
5. Development of social infrastructure: Economic growth driven by tourism allows for increased investment in social infrastructure, supporting the construction and maintenance of essential facilities to meet community needs.

The researchers propose a strategic model for diversifying the regional economy through tourism development, consisting of three main components: stages, actions, and responsibilities (see Figure 2). The strategy comprises three primary stages: analysis of the current situation, strategy development, and implementation and monitoring. Each stage involves carrying out specific tactical tasks aimed at achieving the strategy's objectives. Clear assignment of responsibilities among relevant authorities is crucial for the successful execution of the strategy. Regular audits and monitoring are essential to ensure timely progress toward the goals. The

effectiveness of the strategy can be measured by evaluating the achievement of target indicators, such as increases in Gross Value Added (GVA) in the tourism industry and employment growth in tourism.

To ensure the success of an economic diversification strategy, the OECD (2019) recommends four key measures:

1. Establishing an adequate incentive system: Develop mechanisms that incentivize and reward diversification efforts, encouraging businesses to explore new industries and activities.
2. Providing investment guarantees and policy reforms to reduce trade costs: Offering investment guarantees and implementing policy reforms to lower trade barriers and costs can facilitate smoother transitions into diversified economic activities.
3. Supporting the adjustment and reallocation of resources to new activities: Implementing policies that assist in the adjustment and reallocation of resources toward new economic activities is crucial for successful diversification.
4. Introducing government regulations targeting market, political, and institutional failures: Addressing market failures, political challenges, and institutional shortcomings through government regulation can help overcome barriers to diversification and promote economic modernization.

The prioritization of diversification in economic development agendas is evident in various government policy documents. Effective mechanisms for managing resource allocation within regional systems and the broader economy are essential for successful diversification. This requires developing a management mechanism focused on sustainable regional development, creating institutional conditions and incentives for economic modernization, and mobilizing resources for diversification-oriented growth strategies at the regional level. For this study, there was data limitations at the regional level, resulting in the modelling of economic activity with capital, labor and tourism. It would have been useful to know the initial sector of the tourism sector to isolate the effect of the tourism sector. However, tourism receipts by region were not available. This would help to understand the impact of economic activity. Further, future research may attempt to explain changes in economic activity through changes in public investments (Perez-Montiel & Manera, 2022), or the contribution of the mining sector to GDP (David et al., 2016).

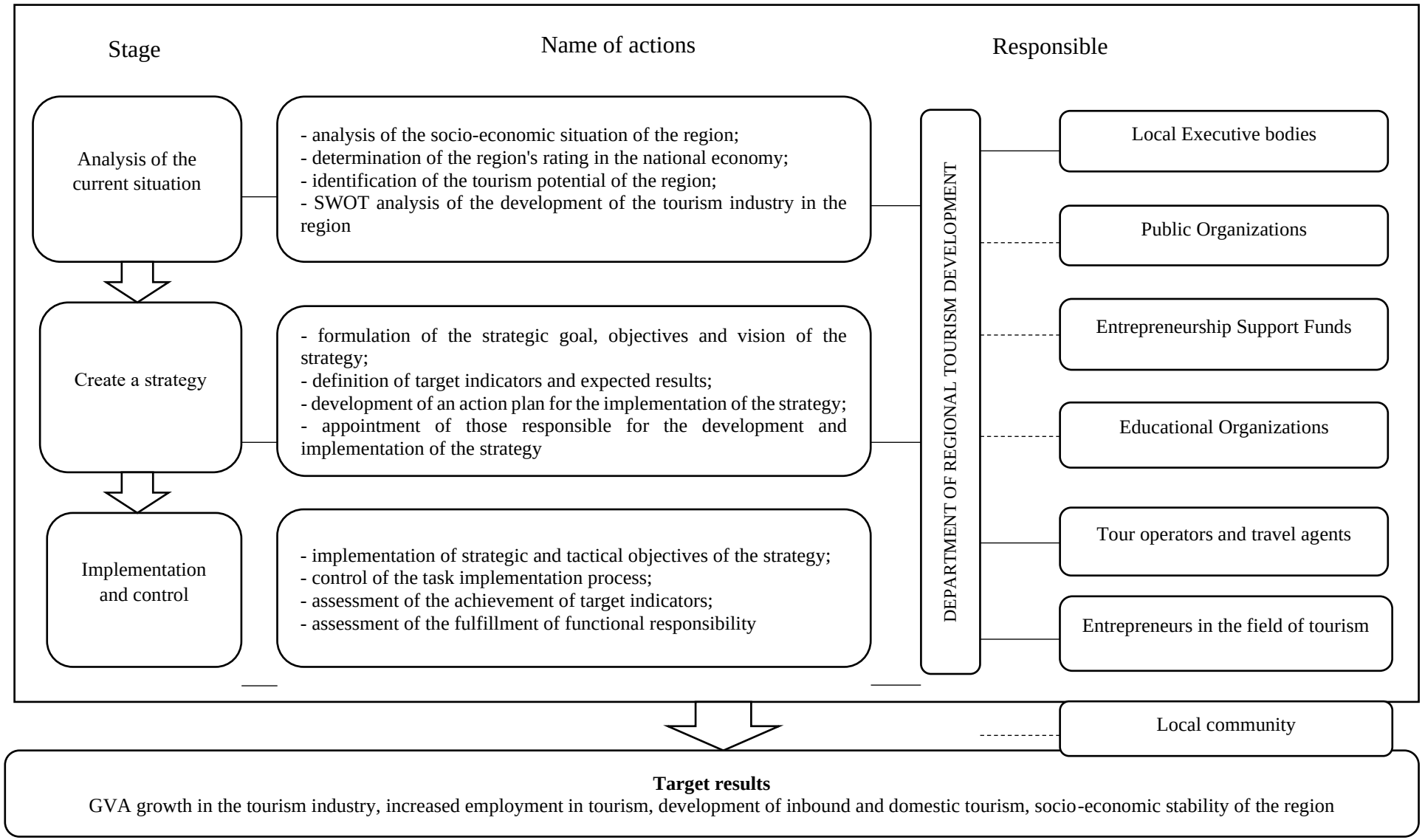

Figure 2: Strategy for diversifying the region's economy through the development of the tourism industry

*Note: compiled by the authors. The dotted line reflects the communication collaboration between the subjects

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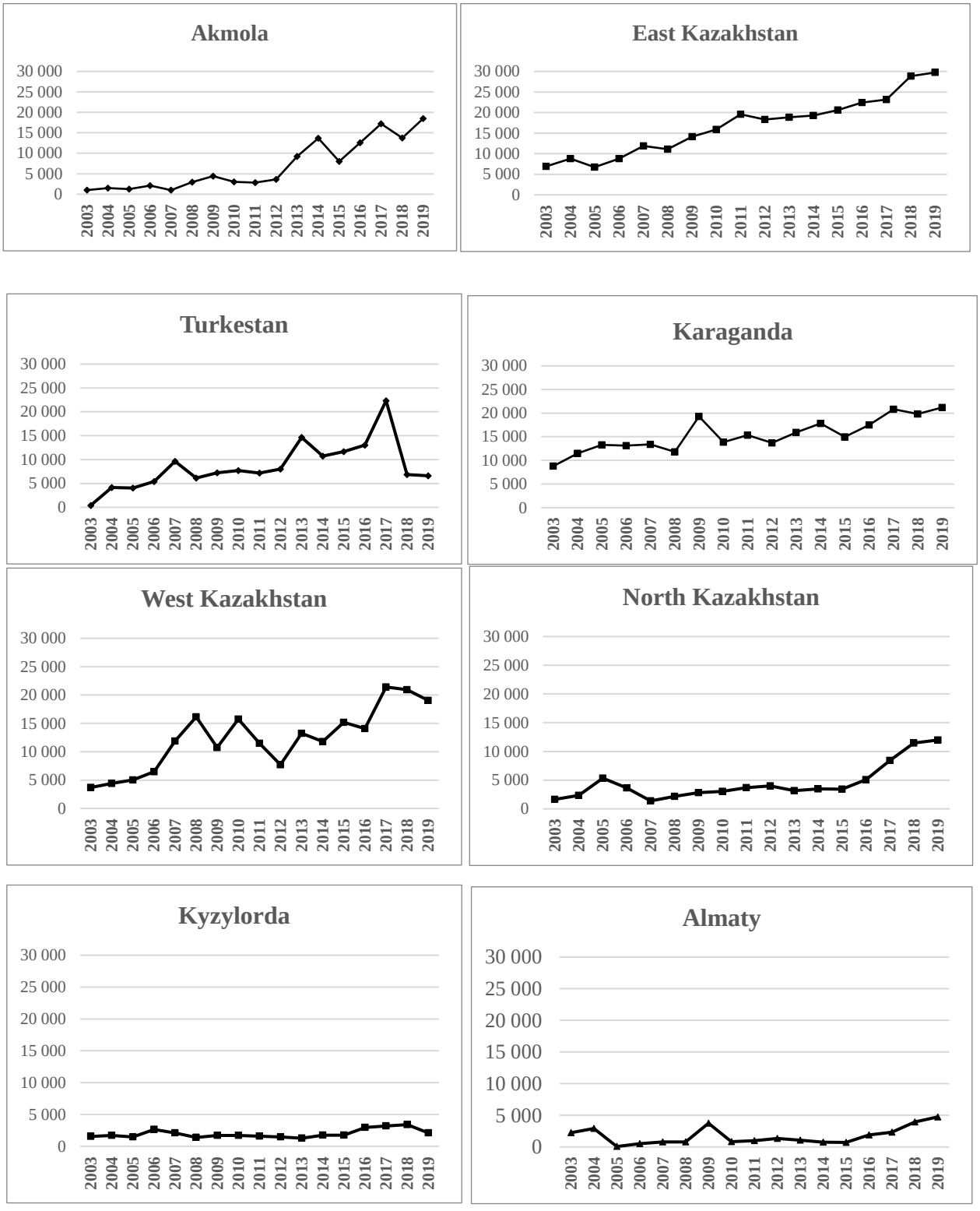
Appendix 1: International Tourism Arrivals



Appendix 2: Domestic Tourism Arrivals