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SOCIAL FACTORS

OF INNOVATIVE ECONOMIC DEVELOPMENT IN THE REPUBLIC OF AZERBAIJAN

FACTORES SOCIALES DEL DESARROLLO ECONÓMICO INNOVADOR EN LA REPÚBLICA DE AZERBAIYÁN

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ABSTRACT

The article pursues to examine the factors of innovative economic development in Azerbaijan. Today, we are living in a transformation period of our planet into a single economic market. In turn, this transformation process requires the unification of countries' powers, developing the modern concept of a "borderless world". In response to such challenges, in 2015, UN member countries adopted the "Sustainable Development Goals". The purpose of this Agenda is to align national strategies with a universal vision of the future of all humanity that provides the trinity of economic, social, and environmental principles. New challenges show that without high-quality human capital, it is impossible to effectively implement any sustainable development goal. Consequently, the demand for education is increasing rapidly as global challenges in the economy and climate demand a rapid transformation of human capital, lifestyles, mentalities, and habits. For these changes to become a reality, we need new practical skills, values, and attitudes that will ensure the continuous development of society.

Keywords: Azerbaijan, Innovation, Economic development.

RESUMEN

El objetivo del artículo es examinar los factores del desarrollo económico innovador en Azerbaiyán. Hoy se vive en un período de transformación de nuestro planeta en un mercado económico único. A su vez, este proceso de transformación requiere de la unificación de poderes de los países, desarrollando el concepto moderno de un "mundo sin fronteras". En respuesta a tales desafíos, en 2015, los países miembros de la ONU adoptaron los "Objetivos de Desarrollo Sostenible". El propósito de esta Agenda es alinear las estrategias nacionales con una visión universal del futuro de toda la humanidad que proporcione la trinidad de principios económicos, sociales y ambientales. Los nuevos desafíos muestran que, sin capital humano de alta calidad, es imposible implementar eficazmente cualquier objetivo de desarrollo sostenible. En consecuencia, la demanda de educación está aumentando rápidamente a medida que los desafíos globales en la economía y el clima exigen una rápida transformación del capital humano, los estilos de vida, las

mentalidades y los hábitos. Para que estos cambios se conviertan en realidad, se necesitan nuevas habilidades, valores y actitudes prácticas que aseguren el desarrollo continuo de la sociedad.

Palabras clave: Azerbaiyán, Innovación, Desarrollo económico.

INTRODUCTION

Innovation involves the creation of novel ideas or enhancements to existing ones, whether in products, services, or procedures (Boslaugh, 2024). It plays a crucial role in the business realm, where it entails discovering new solutions that meet consumer demands or introducing entirely new offerings to thrive in the market and gain a competitive edge (Suchek et al., 2021). Today, innovation is especially relevant due to several factors. We live in a dynamic and changing world, where consumer needs and preferences evolve rapidly. Therefore, innovation allows companies to adapt and offer solutions that are relevant and appealing to customers (Roy, 2024). Besides, since market competition is intensifying, firms are compelled to innovate to avoid lagging and losing market share. Innovation also allows companies to distinguish themselves from competitors by offering unique offerings (Pieroni et al., 2019). Considering these dynamics, innovation emerges as a pivotal driver for economic advancement and societal progress. For instance, the adoption of new technologies, streamlined processes, and inventive business models can spur job creation, boost productivity, and enhance people's quality of life.

Among the many factors to consider to analyze innovation phenomena, social factors play a crucial role. It is impossible to foster an environment conducive to innovative economic development without addressing factors such as education and human capital, cultural values and attitudes, social mobility, and inclusion, collaboration and networking, supportive institutions and policies, and social infrastructure (Leal et al., 2022). For example, regional variations are very relevant since different areas have diverse levels of economic development, engagement in innovative activities, and scientific resources. The innovative agenda must account for these regional discrepancies (Tatyana, 2023). Innovative progress in sectors like agriculture has direct social impacts, especially in rural communities. This demonstrates the interconnected nature of industrial innovation and socioeconomic conditions, necessitating improved policies that address both domains (Akmarov et al., 2023). On the other hand, the concept of corporate social responsibility highlights the importance of balancing profit motives with societal

welfare considerations. Companies must pursue sustainable development practices that foster positive social outcomes alongside economic growth (Hovsieiev, 2023). In essence, the interplay between social factors and innovative economic development is complex and multi-dimensional. Comprehensive strategies are needed that simultaneously drive innovation, fuel economic progress, and uplift societal well-being across all regions and communities. Failure to harmonize these elements can hinder the transformative potential of innovation.

As in other countries, the creation of an innovative economy is an important component of the economic and social policy of Azerbaijan, the development of which is given great importance. In recent years, the leadership of the republic has been taking serious measures to develop and widely introduce innovations in various sectors of the economy and society, as well as to modernize the production sector. An innovative economy is an economy of society based on knowledge, the perception of new ideas, systems of technologies, new equipment, and the readiness for their practical implementation in various spheres of the economy (Boyukkishi, 2017).

Considering the above, the goal of this article is to examine the factors of innovative economic development in Azerbaijan. To accomplish this goal, it analyses the economic development prospects of Azerbaijan in post-pandemic conditions using scholarly research, rankings around the world, and statistical data. In general, it is displayed a growing economic trend, and advancements in physical capital, human capital, and technology in this nation, based on modern economic growth theory. We also used features of techniques for comparative analysis and qualitative research that enable inspection, interpretation, and assessment. In the study it is employed statistical data from the IMF World Economic Outlook Database, ECI, WIPO, FSI, and NRI, which are all publicly available sources. These statistical sources were selected because they provide a comparative study of the key drivers of economic growth in Azerbaijan and the country's potential for economic growth.

DEVELOPMENT

To fully express the current state of innovation in countries there are many indexes although the Global Innovation Index is one of the most accepted. It is divided into two different sub-indexes: the innovation factors sub-index (innovation input) and the innovative results sub-index (innovation output). In summary, the index combines 7 components, 5 of these components are included in the innovation factors sub-index, and 2 (Scientific-technological innovations, Creative results) belong to the innovative

results sub-index. According to the 2023 report, which covers 132 countries, we can note that the innovation potential and current development of countries are evaluated by taking into account about 82 factors. According to the 2023 edition of the report, which includes Azerbaijan, the most innovative economy this year is Switzerland, followed by the United States, the United Kingdom, and Singapore. If we analyze the ranking among the post-Soviet countries, we will see that, as in the 2022 report, this year Estonia is ranked 16th, Lithuania 34th, and Latvia 37th (Table 1).

Table 1. Rating indicators of some post-Soviet countries by GDP.

Countries	2023		
	GDP	Innovation factors	Innovation outcomes
Estonia	16(+2;+5)	14(+1;+10)	16(+6;+4)
Lithuania	34(+5;+5)	32(+2;+3)	37(+10;+6)
Latvia	37(+4;+1)	38(+1;=)	39(+3;=)
Russia	51(-4;-6)	58(-12;-15)	53(-3;-1)
Kazakhstan	81(+2;-2)	68(-3;-7)	87(+10;+14)
Azerbaijan	89(+4;-9)	76(+3;-2)	104(+6;-13)
Kyrgyzstan	106(-12;-8)	94(-9;-13)	112(-4;+7)
Tajikistan	111(-7;-8)	109(-5;-5)	107(-6;-11)

Source: own elaboration

We can note that the number of organizations performing research and work in our republic was 134 in 2021 and 131 in 2022. When divided into separate parts, 90 and 86 respectively were for the public sector in 2021-2022; 7 in 2021, and 6 in 2022 were in the private sector; the number of organizations performing research and work for higher education institutions was 37 in 2021 and 39 in 2022. From the public information accessible, it can be concluded that only 2.9 percent of the total cost was covered by the private sector in 2021, and 1.8 percent in 2022. Despite the increase in research and development expenses and the number of organizations, the private sector is lagging in the implementation of this process. There may be various reasons for this.

Regarding the university ranking, according to the 2023 report, our country ranked 71st in 2023 and 72nd in 2022. Compared to last year, 1 step of progress was witnessed, but the general result is not encouraging at all. The indicator "Rating of universities, the average index of universities in the top 3" is measured by the index of the average score of universities in the top three across the country. According to the QS World University Ranking 2023 report, BSU and UNEC were among the TOP 1,100-1,200 in the QS World Ranking. The mentioned universities were included in the ranking in 2021 and 2022. It should also be noted that our country was able to participate in this rating only in 2021. Even though Azerbaijan entered this rating for the 3rd time, the fact that we still could not achieve the desired result is related to several existing problems. The low level of researchers and innovators among teachers can be considered as one of the factors that have a great negative impact on both the academic reputation and the statistics of scientific research, as mentioned in the QS World Ranking. Because science is constantly being updated, failure to update teachers' information accordingly leads to repetition of the same information in the classrooms every year, which is the opposite of development.

As the next factor, we can point to the lack of favorable conditions for students. This causes a decrease in foreign students' interest in Azerbaijan, and an increase in Azerbaijani students' inclination to study abroad. The internationalization of higher education has social, cultural, political, economic, and scientific motives, but its main goal is the harmonization of higher education systems in the world. Factors determining the internationalization of higher education include, in particular, the rapid growth of participation in higher education in the West in recent decades, the "global knowledge economy", the transition to technology and science-based international economic relations, and the increasing importance of research in this regard, increasing attention to the role of higher education in the formation of human

capital, including the institutionalization of academic autonomy and freedom, and the formation of global ranking systems of universities (Bigos & Wach, 2021).

The reason for the weakness of the result does not only cover the problems mentioned. Various causal obstacles related to the participants of this process can be mentioned (Guliyeva, 2023). There will inevitably be problems of various causes, but various measures should be implemented to eliminate these obstacles. Considering this, numerous initiatives are being carried out to raise our nation's ranking in this assessment. Let's take the "State Programme on Increasing the International Competitiveness of the Higher Education System in the Republic of Azerbaijan for the years 2019-2023" as an example, which was authorized by the President of the Republic of Azerbaijan's Decree No. 711 on November 16th, 2018. As mentioned in the State Programme, industrialized nations have successfully and sustainably advanced economically because they have brought their education systems up to par with international standards.

At the same time, we can also mention the "Strategic Road Map of the National Economy Prospects of the Republic of Azerbaijan", where the issues related to the promotion of innovations and the development of human capital at a high level are reflected in detail. To establish an effective interaction between education, science, and innovation, i.e., to form the "knowledge triangle", the promotion of development in the format of "education-research-innovation" in higher education institutions in the "Strategic Road Map on the perspective of the national economy of the Republic of Azerbaijan" is intended as a separate measure. The "education - research - innovation" chain functions more efficiently when university clusters are established. University clusters will boost the efficiency of education-science-production interactions, the application of scientific results to production, and the implementation of research and improvements (Ismayilov & Aliyev, 2014).

In this context, the commercialization of the results of the scientific activity of universities and research institutes is of priority importance. Considering that the investments made in human capital mainly bear fruit in the long term, as a result of conducting the correct state policy in this direction, our success in the direction of creating an innovative economy in the future is beyond doubt. This will lead to an increase in Azerbaijan's international competitiveness and the strengthening of our country's position in the "Human Development Index" ranking.

Low labor productivity can be considered as one of the main features of the Azerbaijani economy. The main indicator that reveals this situation is that the contribution of the agricultural sector, in which a significant part of the working population is employed, to GDP remains at very low levels. Although approximately one-third of the total employment in Azerbaijan belongs to the agricultural sector, only one percent of the working population is employed in the oil and natural gas sector, which is the most productive sector and constitutes a significant part of the economy. Small business sizes, restricted access to raw materials, low levels of mechanization, antiquated manufacturing technologies, issues with legal and regulatory frameworks, inadequate infrastructure, and restricted availability of financial resources are the primary causes of agriculture's low productivity (Brownbridge & Canagarajah, 2020).

The fact that the Azerbaijani economy is not sufficiently diversified makes it highly sensitive to external shocks (Aliyeva, 2018). This is one of the main structural problems that threaten the sustainability of the country's economic growth. The fact that the hydrocarbon resources sector in Azerbaijan has a very large share in both production and exports remains the main structural problem of the economy and causes its sensitivity to external shocks to remain at high levels. Zulfikarov and Neuenkirch tried to learn the relationship between oil price fluctuations and economic activities in Azerbaijan for the period between 2002 and 2018. The first result of the study is that increases and decreases in oil prices increase and decrease GDP in the non-oil sector as well as in the oil sector because fluctuations in the oil sector also cause fluctuations in the non-oil sector. This is mainly because fluctuations in oil and gas revenues affect the government's ability to subsidize the non-oil sector. The second consequence is that changes in oil prices lead to higher inflation in Azerbaijan. In this period, as a reaction to the forced tightening of monetary policy, the manat gains value against the US dollar, reducing the competitiveness of the non-oil sector. The third result is that GDP effects primarily occur after increases in oil prices, while interest rates and exchange rates predominantly react to decreases in oil prices. Inflation, on the other hand, is rising due to both the effect of supportive monetary policy in case of decreases in oil prices and the effects of increases in oil prices. Another study by Guliyev shows that the external shock that had the greatest impact on the Azerbaijani economy was the sharp increase and decrease in oil prices. In addition, one

of the results of the research is that shocks in oil prices are the main determinant of Azerbaijan's non-oil economy and exports (Suleymanov & Heyderova, 2021).

While the sharp decline in oil prices and the devaluation of the manat in 2015-2017 encouraged reforms towards the development of the non-oil sector in Azerbaijan, it also revealed the fragility of the private sector. The main weaknesses relate to long-term structural problems arising from the resource dependence of the economy. This has also limited the competitiveness of private firms in other business sectors. Indeed, it is not surprising that the international competitiveness of Azerbaijan's agricultural and food industry exports was under pressure during the oil boom. However, this situation has changed little even after 2014 (Aslanli, 2017).

The fact that investors, particularly foreign direct investors, prioritize finding avenues and assets over efficiency, revealing an over-reliance on market conditions, is one of the reasons impeding economic progress in Azerbaijan. Therefore, foreign investments in Azerbaijan are mainly in favor of resource extraction and sales, and their contribution to diversified production is very limited. This dependence of economic growth on natural resources in the Azerbaijani economy also gives rise to discussions about the Dutch Disease in the economy. In recent years, scientific literature has been formed on this subject, contributed by various authors (Gasimov & Jabiyev, 2019).

Problems experienced in the areas of migration abroad and the development of human capital threaten the stability of economic growth in the country. Brownbridge & Canagarajah (2020) point out that the human capital of the workforce in the South Caucasus is relatively high compared to countries with similar development levels, and this creates a serious incentive for migration in the countries of the region because human capital tends to fully realize itself and obtain maximum income. At the same time, the relative deprivation of the household also plays a major role in the tendency to migrate. Therefore, according to previous results, the relative position of households in the South Caucasus relative to reference groups is an important factor in the intention of their members to migrate abroad, and in this regard, Azerbaijanis predominantly tend to migrate to Russia. One of the main conclusions of the study is that reducing absolute poverty alone may not be sufficient if migration is to be prevented. Therefore, attention should be paid to reducing relative income differences.

Comparative studies show that there is a skill mismatch problem in the workforce in Azerbaijan's labor market (Guliyeva, 2021). Thus, human capital and insufficient investments in this field are shown among the factors limiting economic growth in the Azerbaijani economy. Particularly the low level of higher education enrollment rate, student results, and health sector problems are very important in this regard.

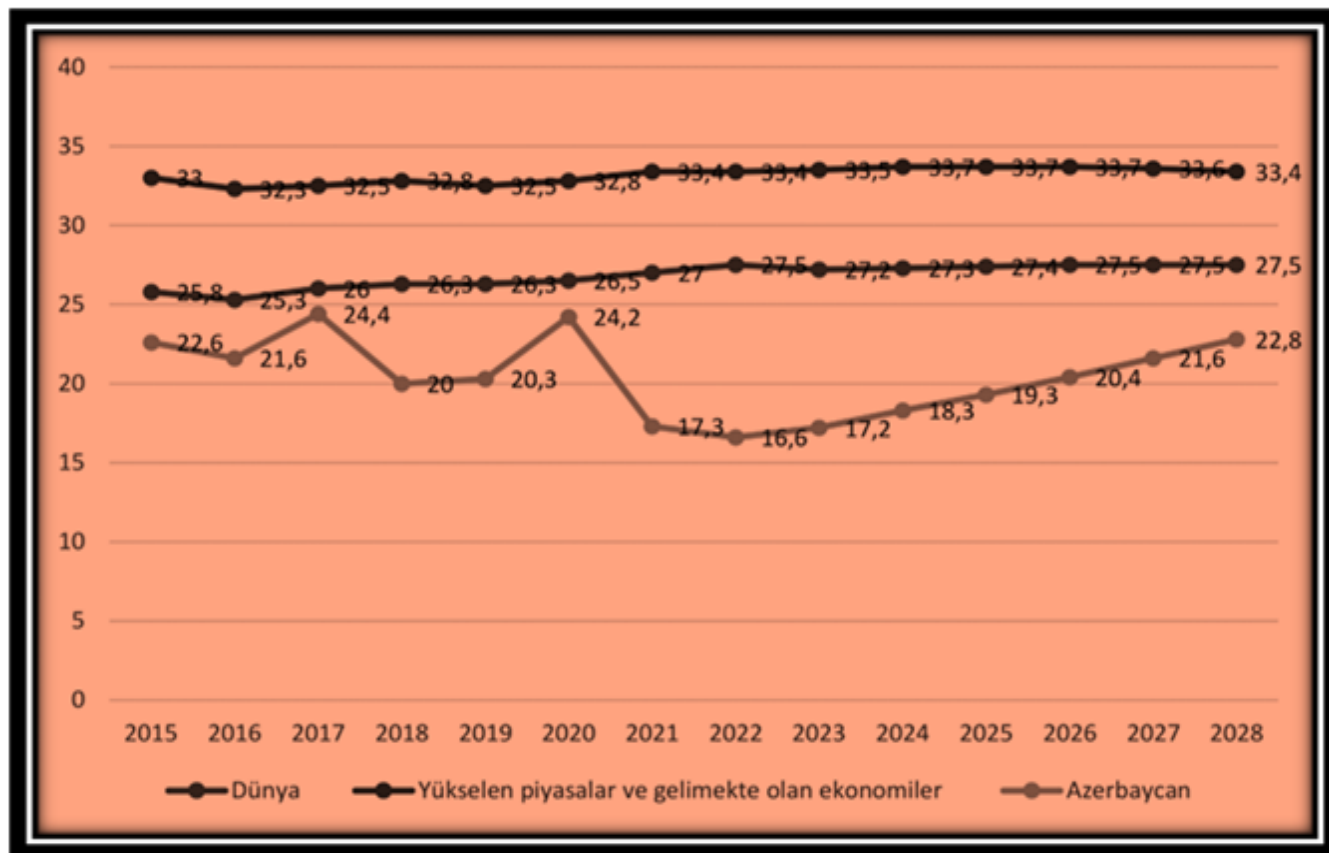
The stability of economic growth in Azerbaijan is also threatened by many issues coming from the banking and financial sectors. First, the nation's business community has restricted access to low-cost financial resources. The nation's high interest rates and high costs of financial intermediation made it a necessity and access to cash reserves remained restricted both preceding and following the 2014 oil price shock. Azerbaijan's banking sector is characterized by low credit activity and a high level of non-performing loans, which reduces the stability of the system. Again, according to Gouranga Das and others, high financing costs in Azerbaijan are one of the two issues that policymakers must urgently address (Boyukkishi, 2017).

One of the main structural problems of the Azerbaijani economy in the post-independence period is informality and unfair competition practices. Many researchers, including us, have produced various figures regarding the size of the informal economy in Azerbaijan at various periods. The main common feature of these studies is that they reveal that the size of the informal economy is sufficiently high. The latest study results published by "World Economics" show that the informal economy in Azerbaijan is equal to 36.8 percent of GDP (Gokhan & Emre, 2021).

In this work, we conduct data compilation and analysis to analyze Azerbaijan's post-pandemic economic development possibilities using the primary metrics that establish the sustainability of this nation's economic growth. In this sense, the focus is typically on the nation's physical capital, human capital, and technological development indicators, under modern economic growth theory. Figure 1 illustrates that Azerbaijan's GDP shares of investments or physical capital are substantially lower than those of emerging market and developing economies, and the global average. The indicator

has been steadily declining in the last few years. According to IMF projections, this metric will progressively increase between 2023 and 2028, but it will still be below the average for the entire globe, emerging markets, and developing economies.

Fig 1. Share of total investments in GDP in Azerbaijan (percentage).



World

Emerging markets and developing

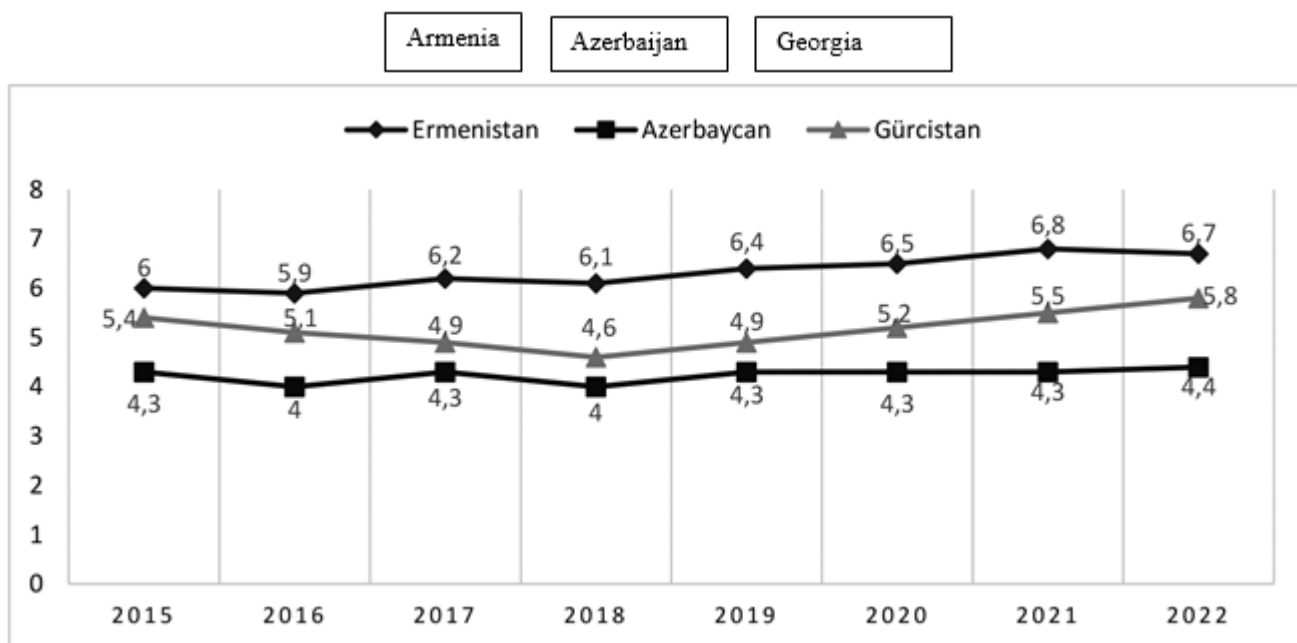
Azerbaijan

Source: IMF World Economic Outlook Database: April, 2023.

Figure 2 shows that, unlike other countries of the South Caucasus, namely Armenia and Georgia, the population of Azerbaijan is expected to continue to increase at a not very high rate until 2028. According to Figure 3, although there has been a relative increase in the index of human flight and brain drain from the country, Azerbaijan is in a better situation compared to other countries of the South Caucasus in this respect. The indicators in both figures determine the development trend of the workforce in Azerbaijan to a certain extent.

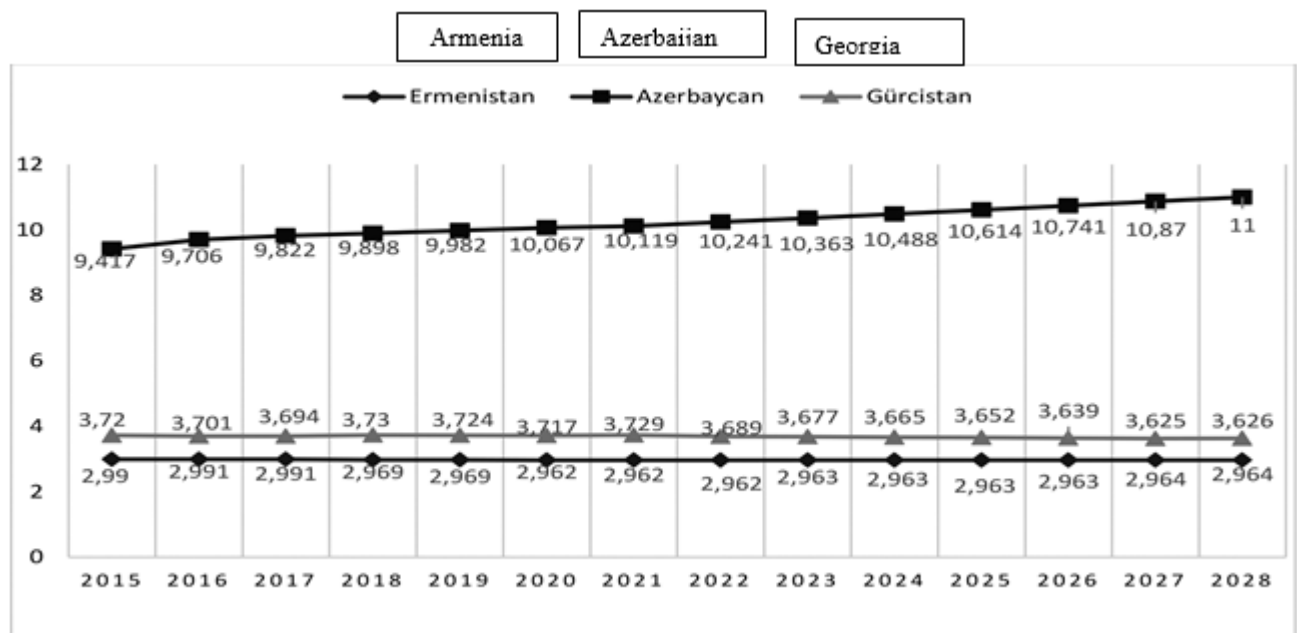
According to modern growth theory, physical capital, human capital, and technology are the three fundamental drivers of economic growth. The progress of human capital and technology is what mostly determines how long an economy can sustain growth. The findings of the study demonstrate how far behind Azerbaijan is in terms of developments in technology and human capital, and how recent years have seen a decline in both types of investments in this economy. Because of this, the economy of this country continues to be dependent on natural resources, the production and export of goods with little added value, rather than on productivity and innovation, and it is also insufficiently diversified. Given that the country's financial system still relies primarily on the sale of goods from the primary sector, it is reasonable to assume that during the post-pandemic phase, the economy will be sufficiently fragile to withstand external shocks.

Fig 2. The total population of Azerbaijan is, a million people. Note: Data between 2023-2028 are estimates.



Source: IMF

Fig 3. The brain drains and people flight index for Azerbaijan.



Source: IMF

From this perspective, the medium-term economic outlook shows that fluctuations in the cost of raw materials and the economic growth rates of major trading partners and investor countries will have a substantial impact on this country's economic growth. The likelihood that these developments will be adverse is increased by several factors, including the ongoing Russia-Ukraine war, the ongoing global food and energy crises, the unresolved issue of global inflation, and the growing likelihood of a global recession. A developing country like Azerbaijan, which has long had rapid growth

rates, cannot be said to be in an optimistic situation given that the IMF's projections for the country's GDP growth through 2028 are less than 3 percent annually. As a result, Azerbaijan must intensify its efforts to find new catalysts and sources of economic growth. Specifically, industries including agriculture, petrochemicals, and other resource-based businesses, logistics and transportation services, ICT services, and tourism.

CONCLUSIONS

Azerbaijan's efforts to mobilize new drivers for economic growth are positively influenced by several factors. Among these factors we can highlight the interest in the Azerbaijani economy was heightened, in part, by the sanctions imposed on Russia; the opportunities for new economic cooperation and development that arose in the region following the Karabakh War; the growing importance of the Central Corridor—which connects Azerbaijan to China and serves as a vital link in the Belt and Road Initiative—as well as the conflict between Russia and Ukraine, and the European Union. Besides, there has been an ongoing strengthening of the economic and energy cooperation between Turkey and Azerbaijan. But to fully capitalize on all these opportunities, Azerbaijan must also implement numerous economic reforms. The primary development requirement for small economies like Azerbaijan is to ensure the country's transition to an export-oriented economic growth model. It is also crucial to establish an environment that is conducive to entrepreneurship, specifically for small and medium-sized businesses, with functional economic institutions and regulatory systems. From the standpoint of Azerbaijan's economic development, it is crucial that these concerns are thoroughly addressed in future research, and undoubtedly innovation processes will play a crucial role in the future.

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